Birds

Species status assessments for the birds listed below have not yet been updated since 2015, however they are still part of the Spring 2024 public comment period for the NY SWAP.

The 2015 species status assessments for these species are available as follows:

2015 High Priority SGCN Birds
https://extapps.dec.ny.gov/docs/wildlife_pdf/hpsgcnbirds.pdf

2015 SGCN Birds
https://extapps.dec.ny.gov/docs/wildlife_pdf/sgcnbirds.pdf

2015 SPCN Birds
https://extapps.dec.ny.gov/docs/wildlife_pdf/spcnbirds.pdf

Common Name	Scientific Name	2015 Rank
American black duck	*Anas rubripes*	HPSGCN
American golden-plover	*Pluvialis dominica*	SPCN
American kestrel	*Falco sparverius*	SGCN
American oystercatcher	*Haematopus palliatus palliatus*	SGCN
bald eagle	*Haliaeetus leucocephalus*	SGCN
barn owl	*Tyto alba*	HPSGCN
black skimmer	*Rynchops niger*	HPSGCN
black tern	*Chlidonias niger*	HPSGCN
black-bellied plover	*Pluvialis squatarola*	SGCN
bobolink	*Dolichonyx oryzivorus*	HPSGCN
Bonaparte's gull	*Chroicocephalus philadelphia*	SGCN
buff-breasted sandpiper	*Tryngites subruficolis*	HPSGCN
Canada warbler	*Cardellina canadensis*	HPSGCN
Cape May warbler	*Setophaga tigrina*	HPSGCN
cattle egret	*Bubulcus ibis*	HPSGCN
cerulean warbler	*Setophaga cerulea*	SGCN
common loon	*Gavia immer*	SGCN
common nighthawk	*Chordeiles minor*	HPSGCN
common tern	*Sterna hirundo*	SGCN
Cory's shearwater	*Calonectris diomedea borealis*	SGCN
golden eagle	*Aquila chrysaetos*	SGCN
grasshopper sparrow	*Ammodramus savannarum*	HPSGCN
great shearwater	*Puffinus gravis*	SPCN
greater yellowlegs	*Tringa melanoleuca*	SGCN
gull-billed tern	*Gelochelidon nilotica*	SGCN
Henslow's sparrow	*Centronyx henslowii*	HPSGCN
horned grebe	*Podiceps auritus*	SGCN
Hudsonian godwit	*Limosa haemastica*	SPCN
Iceland (Thayer's) gull	*Laris glaucoides*	SPCN
king rail	*Rallus elegans*	HPSGCN
least bittern	*Ixobrychus exilis*	SGCN
least tern	*Sternula antillarum*	SGCN
little gull	*Hydrocoloeus minutus*	HPSGCN

loggerhead shrike	*Lanius ludovicianus*	HPSGCN
long-eared owl	*Asio otus*	SGCN
marbled godwit	*Limosa fedoa*	SPCN
northern harrier	*Circus hudsonius*	SGCN
piping plover	*Charadrius melodus*	HPSGCN
prothonotary warbler	*Protonotaria citrea*	HPSGCN
purple sandpiper	*Calidris maritima*	SGCN
razorbill	*Alca torda*	SGCN
red knot	*Calidris canutus*	HPSGCN
red-necked phalarope	*Phalaropus lobatus*	SPCN
roseate tern	*Sterna dougallii*	HPSGCN
ruddy turnstone	*Arenaria interpres*	SGCN
saltmarsh sparrow	*Ammospiza caudacuta*	HPSGCN
sanderling	*Calidris alba*	SPCN
seaside sparrow	*Ammospiza maritima*	HPSGCN
sedge wren	*Cistothorus stellaris*	HPSGCN
semipalmated sandpiper	*Calidris pusilla*	HPSGCN
short-billed dowitcher	*Limnodromus griseus*	HPSGCN
short-eared owl	*Asio flammeus*	HPSGCN
Tennessee warbler	*Leiothlypis peregrina*	SPCN
whimbrel	*Numenius phaeopus*	HPSGCN
willet	*Tringa semipalmata*	SGCN

Species Status Assessment

Common Name: American goshawk **Date Updated:** January 5, 2024

Scientific Name: *Accipter atricapillus* **Updated By:** Jed Hayden

Class: Aves

Family: Accipitridae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

Historically, Northern goshawks nested principally in Canada, but the breeding range has expanded southward into northeastern North America since around 1950 as forests have regenerated (Speiser and Bosakowski 1987). Goshawks occur in boreal or temperate forests, preferring large tracts of coniferous, deciduous, or mixed coniferous-deciduous forests with relatively open understory.

Population trends for Northern goshawk are poorly understood. Status and distribution of New England populations remain largely unknown, though their numbers appear to be stable or increasing (DeStefano 2005). As top-level carnivores, the density of breeding pairs is low and breeding is difficult to document because extensive nest searches are needed over large areas. Breeding Bird Survey trends are non-significant, and data are deficient for all states and regions analyzed; the Eastern region shows a nonsignificant decrease of -0.31% per year from 1966-2015 and a nonsignificant increase of 1.11% per year from 2005-2015 (Sauer et al. 2017). In New York, the second Breeding Bird Atlas showed a 20% decrease in occupancy from 1980-85 to 2000-05 but the percent of blocks with Confirmed records changed little. Preliminary data from the first year of the third BBA (2020) documented breeding behavior in 19 blocks (J. Hart pers. comm. 2020). Data from New York migration stations show declining trends.

I. Status

a. Current legal protected Status

i. **Federal:** Not listed **Candidate:** No

ii. **New York:** Special Concern; SGCN

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** S3S4B, S3N **Tracked by NYNHP?:** No

Other Ranks:

New York Natural Heritage Program – Watch List

North American Bird Conservation Initiative (NABCI) Conservation Concern Score 11 (of 20)

IUCN – Least Concern

Audubon New York Priority Forest Bird

Status Discussion:

Northern goshawk is an uncommon breeder that is widely but sparsely distributed across the state with the exception of the Coastal Lowlands and the Erie-Ontario Plain. As a non-breeder, northern goshawk is a rare migrant and winter visitor across the state. It is ranked as Vulnerable in New

York, Massachusetts, and Quebec; as Imperiled in Pennsylvania and Vermont; and as Critically Imperiled in Connecticut and New Jersey (NatureServe 2020). The IUCN Red List status is Least Concern and global population trend considered unknown (Birdlife International 2016).

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Declining	Increasing	1966-2015	None	No
Northeastern US	Yes	Declining	Increasing	1966-2015	None	Yes
New York	Yes	Declining	Declining	1980-2007	Special Concern	Yes
Connecticut	Yes	Declining	Declining	2005-2015	Threatened	Yes
Massachusetts	Yes	Declining	Declining	1974-2011	None	Yes
New Jersey	Yes	Declining	Declining	1982-1997	Endangered	Yes
Pennsylvania	Yes	Declining	Declining	1980-2021	Endangered	Yes
Vermont	Yes	Declining	Declining	1976-2017	None	Yes
Ontario	Yes	Stable	Stable	1984-2014	Threatened in Canada	No
Quebec	Yes	Increasing	Increasing	1984-2014	Threatened in Canada	No

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

As part of a study of timber management effects on nesting raptors in central New York, a number of northern goshawk territories were monitored annually from 2004 to 2019 (Crocoll pers. comm.). DEC continues to conduct a limited number of call-broadcast surveys on several Wildlife Management Areas where forest management is proposed. Migration monitoring occurs at several hawkwatch locations annually. The New York State Breeding Bird Atlases monitor Goshawks in 5 year periods.

Trends Discussion *(insert map of North American/regional distribution and status):*

The northern goshawk was rare in New York until the 1950s when the population began expanding in response to regenerating forests. By the 1970s, 52 new nest sites were mapped in addition to the four that were known prior to the expansion. The breeding range in the eastern U.S. expanded through the 1990s as second-growth forests matured (Squires and Reynolds 1997).
Population trends are obscured by the lack of historic data, periodic fall irruptions of large numbers of individuals, and by the need for species-specific surveys to adequately track populations. Christmas Bird Count (CBC) data (1959-1988; Sauer et al. 1996) and North American Breeding Bird Survey (BBS) data (1966-2015; Sauer et al. 2017) do not indicate any significant changes in populations. However, data derived from CBC and BBS are difficult to interpret due to low sample sizes and the possibility that birds counted may not be a random sample of the breeding population.

Counts from migration monitoring stations are complicated by population fluctuations resulting from periodic invasions of large numbers of birds (Bednarz et al. 1990, Titus and Fuller 1990, USFWS

1998). The Raptor Population Index (RPI) based on spring and fall migration counts at New York locations shows significant declines from 2009-2019, including a -16.89%/year decline at Braddock Bay Bird Observatory (spring), a -13.67%/year decline at Derby Hill Bird Observatory (spring), and a -7.41%/year decline at Franklin Hill (fall; Brandes et al. 2016, Crewe et al. 2016).

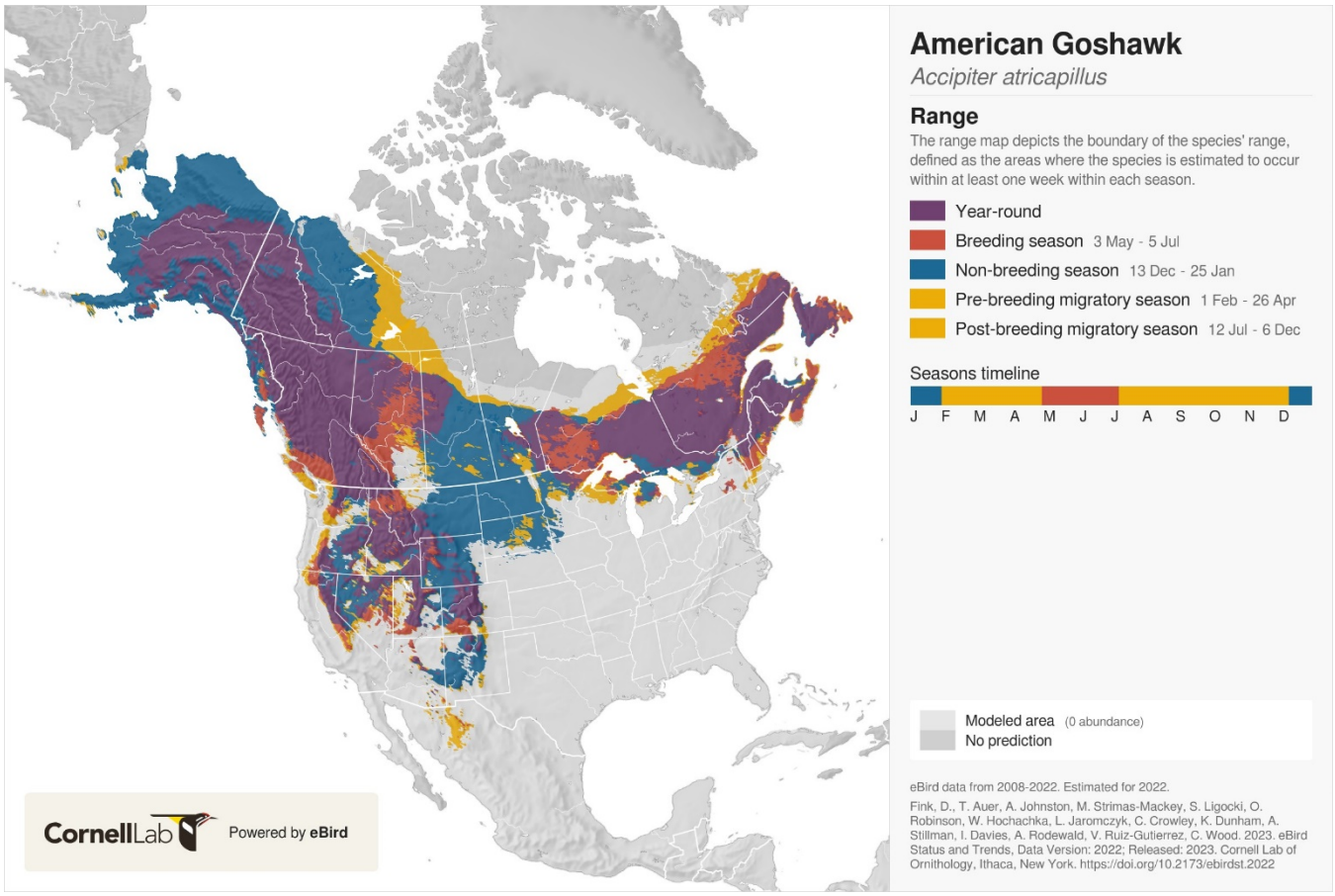

Figure 1. American goshawk distribution in North America (eBird)

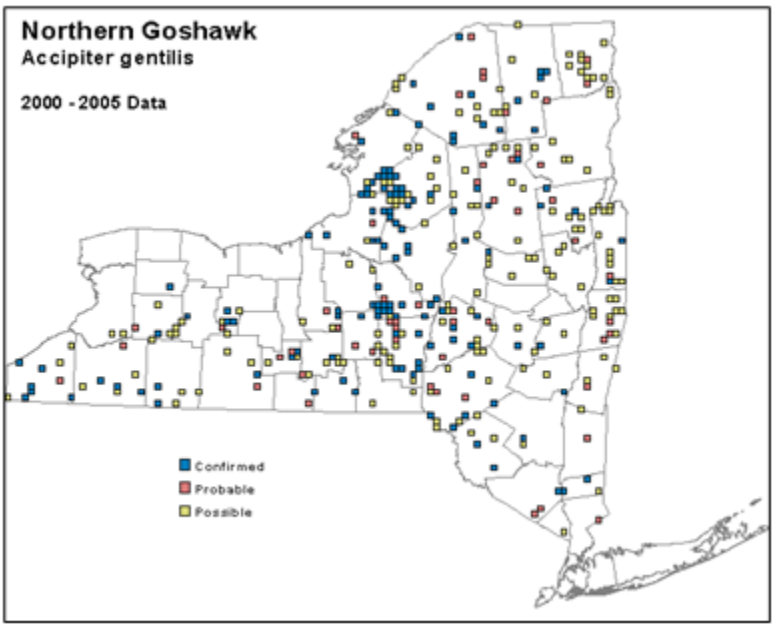

Figure 2. American goshawk occurrence in New York State during the second Breeding Bird Atlas (Corwin 2008).

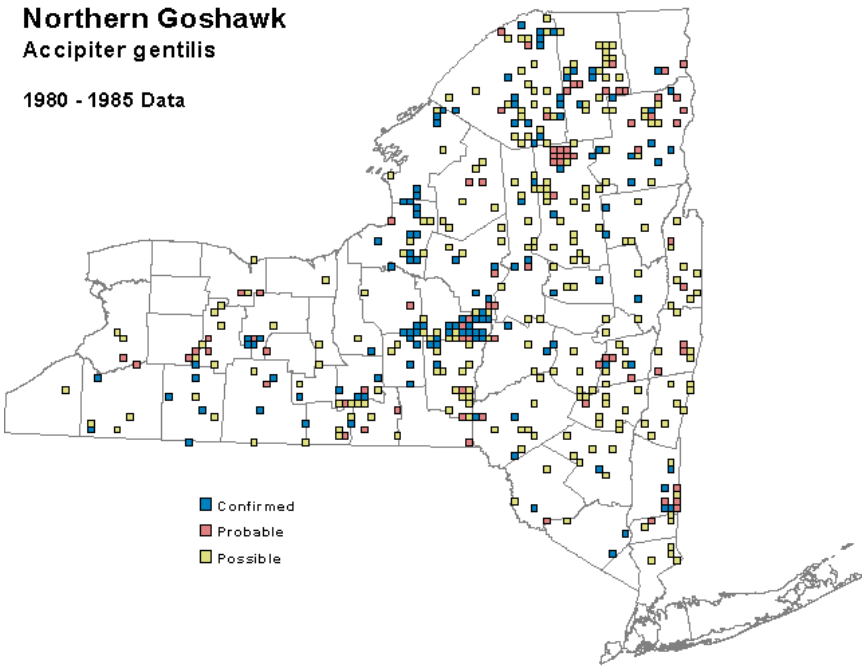

Figure 3. American goshawk occurrence in New York State during the first Breeding Bird Atlas (Corwin 2008).

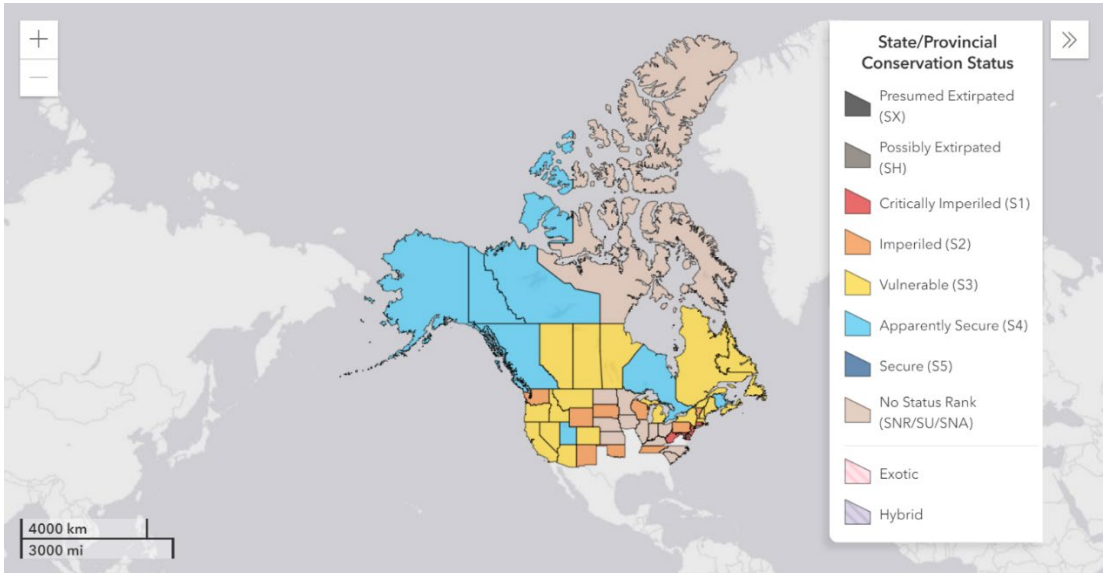

Figure 4. Conservation status of the American goshawk in North America (NatureServe 2020).

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

Years	# of Records	# of BBA Blocks	% of State
Pre-1980	_____	_____	_____
1980-1985	_____	128	2.4%
2000-2005	_____	130	2.4%
2020-2023	_____	47	0.8%

Table 1. Records of American goshawk in New York.

The first Breeding Bird Atlas (BBA) (1980-85) documented occupancy in 128 blocks, 2.4% of the survey blocks statewide (Andrle and Carroll 1988). The second BBA (2000-05) documented occupancy in 130 blocks, 2.4% of the survey blocks statewide, not a significant change since the first atlas (McGowan and Corwin 2008).

The third BBA is currently underway and utilizes a different number and layout of survey blocks across New York, making direct comparison with the first two Atlases difficult. There were 5,333 blocks in the first and second BBAs, and there are 5,710 blocks in the current BBA. To date, American goshawks have been documented in 47 blocks, 0.8% of survey blocks statewide during the third BBA (NYS BBA III Overview, 2023).

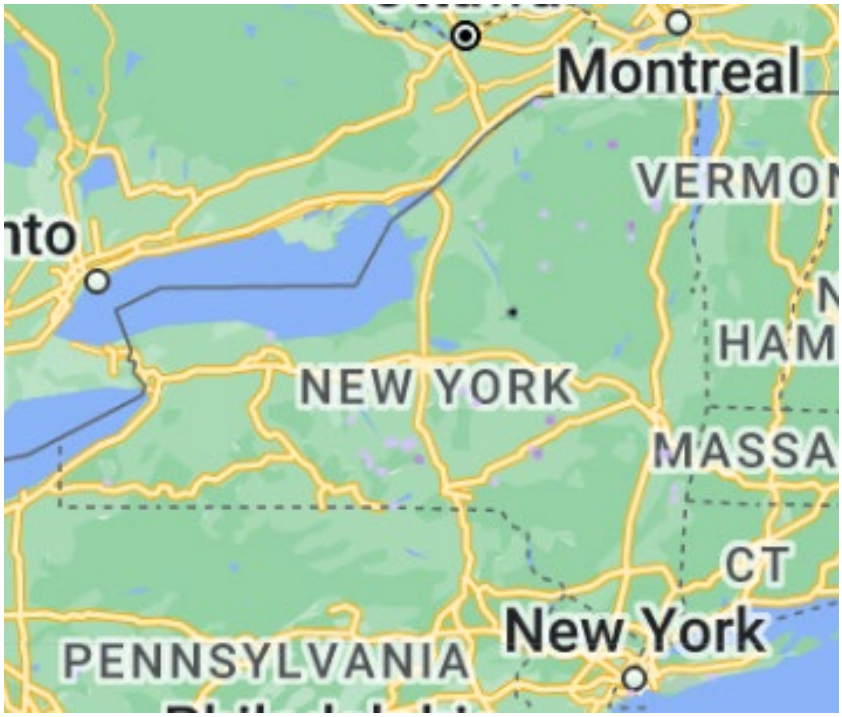

Figure 5. Breeding Bird Atlas 3 records of American goshawk in New York (BBA eBird)

Details of historic and current occurrence:

Northern goshawk was a rare breeder in New York with only a handful of records from the early part of the century (Eaton 1914, Bull 1974). A dramatic increase in breeding across the state began in 1952 and by the 1970s, 52 new breeding locations had been recorded. The first Breeding

Bird Atlas (1980-85) documented occupancy in a total of 445 survey blocks statewide. Confirmed breeding was reported in 128 blocks (29%). The second Breeding Bird Atlas (2000-05) documented occupancy in a total of 355 survey blocks statewide. Confirmed breeding was reported in 130 survey blocks. Occupancy decreased between the two Atlas periods by 20% but the occurrence of Confirmed breeding remained unchanged (+2%).

Preliminary data from the first year of the third BBA (2023) documented American goshawks in 47 blocks (eBird 2023).

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Peripheral	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

a.

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
Yes	No	Stable	1980-2023

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

Northern goshawks nest in a wide variety of forest types including deciduous, coniferous, and mixed forests as well as conifer plantations. They typically nest in mature or old-growth forests (Reynolds et al. 1982, Speiser and Bosakowski 1987, Hayward and Escano 1989, Squires and Ruggiero 1996) and generally select larger tracts of forest over smaller tracts (Bosakowski and Speiser 1994, Woodbridge and Detrich 1994). In the eastern United States, goshawks nest in hardwood-hemlock forests, where black birch and American beech are preferred nest trees (Speiser and Bosakowski 1987).
More recent research has explored landscape-level factors related to habitat selection. At the landscape-scale, goshawk habitat use during the breeding season is positively related to increasing conifer cover (Donner et al. 2013), average percent of canopy cover, percent of landscape with canopy heights between 10-25 m and 25-50m, and variability in canopy base height (Bruggeman et al. 2014). Probability of goshawk nesting decreased with both aspen-birch cover and road density (Donner et al. 2013) and was negatively related to average canopy base height (Bruggeman et al. 2014).

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	No	No	Yes	No	(blank)

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

The lifetime reproductive success for this species is little studied. In Europe, two studies estimated that 15.5% of nesting females produced 50% of the young (Kenward 2006). In Minnesota, nesting success ranged from 38% to 83% with annual variation, the average number of fledglings per year was 1.14 including both successful and unsuccessful nests, and predation and inclement weather both negatively affected nest success (Boal et al. 2005).

Females occasionally nest as subadults (1–2 years old, juvenal plumage) and young adults (2–3 years old, retaining some juvenal plumage). The proportion of young nesting females varies among populations; there is a high frequency of nesting subadults in increasing populations and low frequency in stable populations (Reynolds and Wight 1978). In New York and New Jersey, only 2 females (*n* = 35 nesting attempts) were in immature plumage and all males (*n* = 18) were in adult plumage (Speiser and Bosakowski 1991).

The longevity record from banding records is at least 17 years, 7 months from a bird banded and later found dead in Michigan (BBL 2020). In Finland, apparent survival of breeding adult goshawks was low (53–72%; Tolvanen et al. 2017) and in Minnesota, adult annual survival was 75% (Boal et al. 2005). Sources of mortality include predation by both birds and mammals as well as human persecution, with nearly 60% of mortality occurring in the breeding season (Boal et al. 2005).

VI. Threats *(from NY 2015 SWAP or newly described):*

Habitat alteration and loss due to timber harvest has long been considered the principal threat to breeding populations (Squires and Reynolds 1997, Palis et al. 1999). In addition to the relatively long-term impacts of removing nest trees and degrading habitat by reducing stand density and canopy cover, logging activities conducted near nests during the incubation and nestling periods can have an immediate impact: nest failure due to abandonment (Boal and Mannan 1994, Squires and Reynolds 1997). A meta-analysis of goshawk response to logging and tree size concluded that site occupancy of breeding goshawks was positively associated with less timber harvest and larger trees; however, productivity was not similarly affected (Rodriguez et al. 2016). This species does not nest in small forest tracks bounded by roads (DeGraaf & Yamasaki 2001). Additionally, fire suppression, grazing, and insect and tree disease outbreaks can result in the deterioration or loss of nesting habitat (Graham et al. 1999).

Competition and predation are additional factors. Following canopy reduction by logging, goshawks are often replaced by other raptors including red-shouldered hawk, red-tailed hawk, great horned owl, and long-eared owl (Crocker-Bedford 1990, Erdman et al. 1998). The incursion of great horned owls is especially significant as they prey on both adult and nestling goshawks (Boal and Mannan 1994, Erdman et al. 1998, Rohner and Doyle 1992). Other known or suspected predators include martens, fishers, and wolverines (Doyle 1995, Erdman et al. 1998, Paragi and Wholecheese 1994, Graham et al. 1999).

Pesticides do not appear to be a major threat, presumably since agricultural landscapes are seldom used. In the early 1970s, pesticide levels in tested birds were low, and egg thinning due to DDT contamination had not occurred in most populations (Snyder et al. 1973). In addition, population trends derived from counts of migrants at Hawk Mountain, Pennsylvania, were generally upward during DDT period, 1946-1972 (Squires and Reynolds 1997). More recently, mortality and sublethal exposure have been better studied outside of the U.S. Persistent organic pollutants (POPs) and per- and polyfluorinated alkyl substances (PFASs) have been documented in goshawk nestlings in Norway (Briels et al. 2019) and severe clinical poisoning from lead ingestion has been documented in Spain (Descalzo et al. 2021).

Additional wildlife health concerns may include West Nile Virus; goshawk mortality from West Nile has been documented in the Czech Republic (Hubálek et al. 2018).

The National Audubon Society's climate vulnerability assessment found that, under the +3.0 °C scenario, the northern goshawk had an overall species vulnerability status of "high" with a projected range shift out of the lower 48 states (National Audubon Society 2019). Again, research on the effects of climate on goshawks has been better studied beyond the U.S. Research on climate change and goshawk productivity in Finland indicate that hatching date could shift 2.5 days earlier with little change in average reproductive success (Lehikoinen et al. 2013), brood size was negatively associated with temperature in March and May but positively in June, and forest cover may help mitigate the negative impacts of increased precipitation on chick condition (Conenna et al. 2017).

Threats to NY Populations	
Threat Category	**Threat**
1. Residential & Commercial Development	Housing & Urban Areas
2. Biological Resource Use	Logging & Wood Harvesting
3. Natural System Modifications	Fire & Fire Suppression
4. Invasive & Other Problematic Species & Genes	Problematic Native Species (great horned owl)
5. Human Intrusions & Disturbance	Recreational Activities
6. Climate Change & Severe Weather	Habitat Shifting & Alteration

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

Northern goshawk is protected by the Migratory Bird Treaty Act.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

Science-based Best Management Practices (BMPs) for northern goshawk habitat exist for British Colombia (Stuart-Smith et al. 2012), however, management of eastern forests may differ. In general, it is important to maintain large tracts of mature to late-successional forest with open understories and to prevent disturbance of nesting pairs. Trails may need to be closed when

goshawks are nesting near suburban areas, partly to protect humans from injury, but also to reduce disturbance to nesting pairs.

Based on a study in central New York (Crocoll 2012), the following recommendations have been made to maintain nesting in goshawk territories in New York: (1) no disturbance near an active nest between 1 March and 31 July, (2) canopy closure post-harvest should be greater than 70%, (3) minimum tree density should be 200-300 trees per hectare, (4) maintain an uncut buffer of 100m around the active nest, (5) row thinning can be used in goshawk territories, but single tree selection is a better harvest method.

Management guidance in Wisconsin includes: maintaining moderate to high canopy closure; retaining large diameter trees > 15" dbh for nesting; conserving large forest blocks of deciduous, coniferous, and mixed stands; retaining >70% residual basal area in stands with known or potentially nesting activity; retaining or promoting tree and shrub diversity in harvested stands; and utilizing uneven-aged management to foster heterogeneity in large forested landscapes (Wisconsin DNR 2012).

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
Land/Water Protection	Site/Area Protection
Land/Water Protection	Resource/Habitat Protection
Land/Water Management	Site/Area Management
Land/Water Management	Habitat/Natural Process Restoration

Table 3. Recommended conservation actions for American goshawk.

VII. References

Barber, P.M., and S.M. 2021. Northern Goshawk Status Report. Pennsylvania Game Commission.

Bird Banding Laboratory (BBL). 2020. Longevity Records of North American Birds. Version 2019.2. Patuxent Wildlife Research Center. US Geological Survey. Laurel, MD.

BirdLife International. 2016. Accipiter gentilis. The IUCN Red List of Threatened Species 2016: e.T22695683A93522852. https://dx.doi.org/10.2305/IUCN.UK.2016-3.RLTS.T22695683A93522852.en. Downloaded on 04 November 2020.

Boal, C. W., and R. W. Mannan. 1994. Northern goshawk diets in ponderosa pine forests on the Kaibab Plateau. Studies in Avian Biology 16:97-102.

Boal, C.W., D.E. Andersen, and P.L. Kennedy. 2005. Productivity and mortality of northern goshawks in Minnesota. Journal of Raptor Research 39(3):222-228.

Bosakowski, T., and R. Speiser. 1994. Macrohabitat selection by nesting northern goshawks: implications for managing eastern forests. Studies in Avian Biology 16:46-49.

Brandes, D., D. Oleyar, S. Hoffman, and L. Goodrich. The Raptor Population Index, 2016 Regional Trend Summaries and Conservation Assessments. Available at http://rpi-project.org/2016/assessments2013.php

Briels, Nathalie, L.N. Torgersen, J.M. Castaño-Ortiz, M.E. Løseth, D. Herzke, T. Nygård, J.O. Bustnes, T.M. Ciesielski, G. Poma, G. Malarvannan, A. Covaci, V.L.B. Jaspers. 2019. Integrated exposure assessment of northern goshawk (*Accipiter gentilis*) nestlings to legacy and emerging organic pollutants using non-destructive samples. Environmental Research 178.

Bruggeman, J.E., D.E. Andersen, and J.E. Woodford. 2014. Factors related to northern goshawk landscape use in the Western Great Lakes Region. Journal of Raptor Research 48 (3):228–239.

Conenna, I., J. Valkama, and D. Chamberlain. 2017. Interactive effects of climate and forest canopy cover on goshawk productivity. Journal of Ornithology 158:799–809.

Crewe, T., P. Taylor, D. Lepage, L. Goodrich, J. Brown, and J. Sodergren. The Raptor Population Index, 2016 Analysis Methods and Trend Results. Available at http://rpi-project.org/2016/

Crocker-Bedford, D. C. 1990. Goshawk reproduction and forest management. Wildlife Society Bulletin 18:262-269.

Crocoll, S.T. 2012. Raptor management on New York State forests. Unpublished report, New York State Department of Environmental Conservation, Albany, NY.

DeGraaf, R.M., and M. Yamasaki. 2001. New England Wildlife: habitat, natural history, and distribution. University Press of New England. Hanover, New Hampshire, USA.

Descalzo, E., P.R. Camarero, I.S. Sánchez-Barbudo, M. Martinez-Haro, M.E. Ortiz-Santaliestra, R. Moreno-Opo, and R. Mateo. 2021. Integrating active and passive monitoring to assess sublethal effects and mortality from lead poisoning in birds of prey. Science of the Total Environment 750.

DeStefano, S. 2005. A review of the status and distribution of northern goshawks in New England. Journal of Raptor Research. 39(3):342-350.

Donner, D.M, D. Anderson, D. Eklund, and M. St. Pierre. 2013. Large-scale forest composition influences northern goshawk nesting in Wisconsin. Journal of Wildlife Management 77(3):495-504.

Doyle, F. I. 1995. Bald eagle (HALIAEETUS LEUCOCEPHALUS) and northern goshawk (ACCIPITER GENTILIS) nests apparently preyed upon by a wolverine(s), (GULO GULO) in the southwestern Yukon Territory. Canadian Field-Naturalist 109:115-116.

Erdman, T. C., D. F. Brinker, J. P. Jacobs, J. Wilde, and T. O. Meyer. 1998. Productivity, population trend, and status of northern goshawks, Accipiter gentilis atricapillus, in northeastern Wisconsin. Canadian Field-Naturalist 112:17-27.

Fink, D., T. Auer, A. Johnston, M. Strimas-Mackey, O. Robinson, S. Ligocki, B. Petersen, C. Wood, I. Davies, B. Sullivan, M. Iliff, S. Kelling. 2020. eBird Status and Trends, Data Version: 2018;

Released: 2020. Cornell Lab of Ornithology, Ithaca, New York. https://doi.org/10.2173/ebirdst.2018

Gardner, I.E. 2014. Northern goshawk habitat suitability and monitoring plan. M.S. Thesis. Pennsylvania State University.

Graham, R.T., R.L. Rodriguez, K.M. Paulin, R.L. Player, A.P. Heap, and R. Williams. 1999. The Northern Goshawk in Utah: habitat assessment and management recommendations. USDA Forest Service, Rocky Mountain Research Station, General Technical Report RMRS-GTR-22. 48 pp.

Hayward, G. D., and R. E. Escano. 1989. Goshawk nest-site characteristics in western Montana and northern Idaho. Condor 91:476-479.

Hubálek, Z., M. Kosina, I. Rudolf, J. Mendel, P. Straková, and M. Tomešek. 2018. Mortality of goshawks (*Accipiter gentilis*) due to West Nile Virus Lineage 2. Vector Borne & Zoonotic Diseases 18(11):624-627.

Kenward, R. 2006. The goshawk. T&AD Poyser, London.

Lehikoinen, A., A. Lindén, P. Byholm, E. Ranta, P. Saurola, J. Valkama, V. Kaitala, and H. Lindén. 2013. Impact of climate change and prey abundance on nesting success of a top predator, the goshawk. Oecologia 171:283–293.

National Audubon Society. 2019. How climate change will reshape the range of the northern goshawk. Online: https://www.audubon.org/field-guide/bird/northern-goshawk#bird-climate-vulnerability.

NatureServe. 2020. NatureServe Explorer [web application]. NatureServe, Arlington, Virginia. Available https://explorer.natureserve.org/. Accessed November 17, 2020.

New York State Department of Environmental Conservation (NYSDEC). 2005. New York State Comprehensive Wildlife Conservation Strategy. <http://www.dec.ny.gov/index.html>. Accessed 9 July 2013.

North American Bird Conservation Initiative (NABCI). 2016. State of North America's Birds. Online: https://www.stateofthebirds.org/2016/resources/species-assessments/

Palis, J., J. Soule, and G. Hammerson. 1999. Species Management Abstract, Northern goshawk, *Accipiter gentilis*. The Nature Conservancy.

Paragi, T. G. and G. M. Wholecheese. 1994. Marten, *Martes americana*, predation on a northern goshawk, *Accipiter gentilis*. Canadian Field-Naturalist 108:81-82.

Reynolds, R. T. and H. M. Wight. 1978. Distribution, density, and productivity of accipiter hawks breeding in Oregon. Wilson Bull. 90:182-196.

Reynolds, R. T., E. C. Meslow, and H. M. Wight. 1982. Nesting habits of coexisting Accipiter in Oregon. Journal of Wildlife Management 46:124-31.

Rodriguez, S.A., P.L. Kennedy, and T.H. Parker. 2016. Timber harvest and tree size near nests explains variation in nest site occupancy but not productivity in northern goshawks (*Accipiter gentilis*). Forest Ecology & Management 374:220-229.

Rohner, C. and F. I. Doyle. 1992. Food-stressed great horned owl kills adult goshawk: exceptional observation or community process? Journal of Raptor Research 26:261-263.

Rosenberg, K. V., J. A. Kennedy, R. Dettmers, R. P. Ford, D. Reynolds, J.D. Alexander, C. J. Beardmore, P. J. Blancher, R. E. Bogart, G. S. Butcher, A. F. Camfield, A. Couturier, D. W. Demarest, W. E. Easton, J.J. Giocomo, R.H. Keller, A. E. Mini, A. O. Panjabi, D. N. Pashley, T. D. Rich, J. M. Ruth, H. Stabins, J. Stanton, T. Will. 2016. Partners in Flight Landbird Conservation Plan: 2016 Revision for Canada and Continental United States. Partners in Flight Science Committee. 119 pp. Available online: https://partnersinflight.org/resources/the-plan/

Rosenberg, K. V., A. M. Dokter, P. J. Blancher, J. R. Sauer, A. C. Smith, P. A. Smith, J. C. Stanton, A. Panjabi, L. Helft, M. Parr, and P. P. Marra. 2019. Decline of North American avifauna. Science 366:120-124. DOI: 10.1126/science.aaw1313

Sauer, J. R., D. K. Niven, J. E. Hines, D. J. Ziolkowski, Jr, K. L. Pardieck, J. E. Fallon, and W. A. Link. 2017. The North American Breeding Bird Survey, Results and Analysis 1966 - 2015. Version 2.07.2017 USGS Patuxent Wildlife Research Center, Laurel, MD.

Speiser, R., and T. Bosakowski. 1987. Nest site selection by northern goshawks in northern New Jersey and southeastern New York. Condor 89:387-394.

Speiser, R. and T. Bosakowski. 1991. Nesting phenology, site fidelity, and defense behavior of northern goshawks in New York and New Jersey. Journal of Raptor Research 25:132-135.

Squires, J.R. and R.T. Reynolds. 1997. Northern Goshawk (*Accipiter gentilis*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/298 doi:10.2173/bna.298

Squires, J. R. and L. F. Ruggiero. 1996. Nest-site preference of northern goshawks in south-central Wyoming. Journal of Wildlife Management 60:170-177.

Stuart-Smith, A.K., W.L. Harrower, T. Mahon, E.L. McClaren, and F.I. Doyle. 2012. A scientific basis for managing northern goshawk breeding areas in the interior of British Columbia: best management practices. FORREX Series 2012(29):i-x-103.

Tolvanen, J., V.M. Pakanen, J. Valkama, and R. Tornberg. 2017. Apparent survival, territory turnover and site fidelity rates in northern goshawk *Accipiter gentilis* populations close to the northern range limit. Bird Study 64(2):168-177.

Treyger, S.M. and M.F. Burger. 2017. Forest management for New York birds: a forester's guide. Audubon, NY.

Wisconsin DNR. 2012. Wisconsin northern goshawk species guidance. Bureau of Natural Heritage Conservation, Wisconsin Department of Natural Resources, Madison, WI. PUB-ER-679.

Woodbridge, B. and P. J. Detrich. 1994. Territory occupancy and habitat patch size of northern goshawks in the southern Cascades of California. Studies in Avian Biology 16:83-87.

Originally prepared by	Kimberley Corwin
Date first prepared	May 9, 2012
First revision	December 9, 2020 (Katherine Yard)
Latest revision	January 5, 2024 (Jed Hayden)

Species Status Assessment

Common Name: American bittern **Date Updated:** February 2, 2024

Scientific Name: *Botaurus lentiginosus* **Updated By:** Heidi Kennedy

Class: Birds

Family: Ardeidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

The American bittern occurs across the northern half of North America and in most of Canada where it breeds in freshwater wetlands. Although nests are usually built within stands of emergent wetland vegetation, they can sometimes be found on dry ground within adjacent grasslands. The species is monotypic. It occurs sparsely throughout the state, occurring in 9% of Breeding Bird Atlas survey blocks statewide with concentrations in St. Lawrence and Jefferson counties (McGowan 2008). Since the early 1980s, a 10% decline in occurrence was documented during the second Breeding Bird Atlas survey. Historic declines were documented in the 1950s through 1970s due to loss of wetland habitat, but populations now appear to be fairly stable. Detection of American bittern is best attained through species-specific surveys because of its secretive nature.

I. Status

a. Current legal protected Status

i. **Federal:** Not Listed **Candidate:** No

ii. **New York:** Special Concern; SGCN

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** S4 **Tracked by NYNHP?:** No

Other Ranks:

IUCN Red List Category: LC - Least concern

Status Discussion:

American bittern is an uncommon breeder in New York. Stoner (1998) referred to it as “declining.” It is uncommon but regular along New York’s coastline in winter and rare inland. It is listed as Endangered in CT, MA, and PA, and Threatened in NJ. It is not listed in NH or VT.

II. Abundance and Distribution Trends

Note - Due to the secretive nature of this species, the North American Breeding Bird Survey (BBBS) does not provide credible results for this species at smaller scales and shorter time frames due to low/very low route abundance (birds per route). Most of the trends listed below are not statistically significant.

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Declining	Declining	1966-21 BBS showed significant decline of -1.2% annually		Choose an item.
Northeastern US	Yes	Declining	Declining	2000 – 2021 BBS showed non-significant decline of -0.59		Choose an item.
New York	Yes	Declining	Declining	2000-2021 BBS showed a non-significant decline of -0.28. Between the 1980-1985 and 2000-2005 Breeding Bird Atlases it was found it 10% fewer blocks	SC	Yes
Connecticut	Yes	Unknown	Unknown	only one confirmed breeding location reported in the last decade.	E	Yes
Massachusetts	Yes	Declining	Declining	2000-2021 BBS showed a non-significant decline of -0.44.	E	Yes
New Jersey	Yes	Declining	Declining	2000-2021 BBS showed a non-significant decline of -1.37.	T	Yes
Pennsylvania	Yes	Declining	Declining	2000-2021 BBS showed a non-significant decline of -2.16. The PA 2nd BBA showed a 42% decline from 1983-1989 to 2004 to 2009	E	Yes
Vermont	Yes	Increasing	Increasing	2000-2021 BBS showed a non-significant increase of 0.48. The Vermont 2nd BBA showed a 71% increase from 1976-1981 to 2003-2007	Not listed S3B	Yes
Ontario	Yes	Stable	Stable	2000-2021 BBS showed a non-significant increase of 0.06.	Not listed	Choose an item.

Quebec	Choose an item.	Stable	Stable	2000-2021 BBS showed a non-significant increase of 0.29.	Not listed	Choose an item.
Southern Great Lakes Basin	Yes	Stable	Stable	The Bird Studies Canada Marsh Monitoring Program showed that American bittern populations were stable overall between 1995-2020		

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York*: (specify any monitoring activities or regular surveys that are conducted in New York):*

NYSDEC conducted a three-year pilot study of the National Marsh bird Monitoring Program from 2009-2011 at selected wetlands across the state. Standardized surveys continued from 2012 through 2019 using both random and non-random points on public and private land in managed and non-managed marshes. Surveys were done at a significantly reduced level in 2020 -2022. In addition, the Marsh Monitoring Program through Bird Studies Canada has long term marsh bird monitoring routes in the Great Lakes Basin part of New York.

The American bittern is a target species in both of these survey protocols.

Trends Discussion *(insert map of North American/regional distribution and status):*

The second breeding bird atlas (BBA) in New York showed a decline in occupancy of 10% from 1980-85 to 2000-05.

Long-term data is not available range-wide; however, habitat trends suggest that substantial declines of 30-70 percent have probably occurred.

Between 1966-2021 the North American Breeding Bird Survey (BBS) showed significant declines of -1.2% annually in North America and –1.45 annually in the United States. Breeding Bird Survey (BBS) data (1966-1989) indicated a decline in the north-central U.S. (Hands et al. 1989, Brewer et al. 1991) and possibly in New England (USFWS 1987), due mainly to loss and degradation of wetlands. However, due to the secretive nature of this species, the BBS does not typically provide credible results for this species at smaller scales and shorter time frames due to low/very low route abundance (birds per route). Other sources suggest that declines have occurred in portions of New York and in southern New England, Pennsylvania, New Jersey, and Delaware (Gibbs and Melvin 1992). Eaton (1988) stated that the species had declined in New York since the 1950s.

Targeted standardized marsh bird surveys using broadcast calls would be more effective to determine secretive marsh bird species trends. The Bird Studies Canada Marsh Monitoring Program uses standardized marsh bird surveys within the Great Lakes basin, and their data from 1995 to 2020 showed that American Bittern appeared to be stable overall within the Southern Great Lakes Basin (Tozer, 2020).

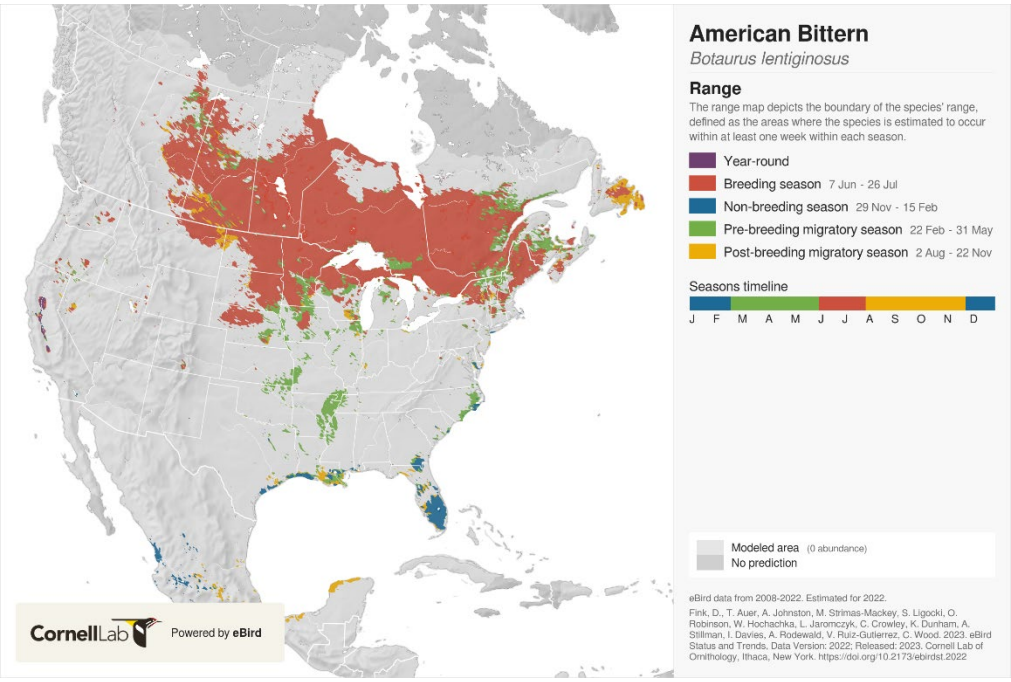

Figure 1. American bittern distribution in North America (eBird 2022)

Figure 2. Distribution of American bittern in North America (Birds of North America Online).

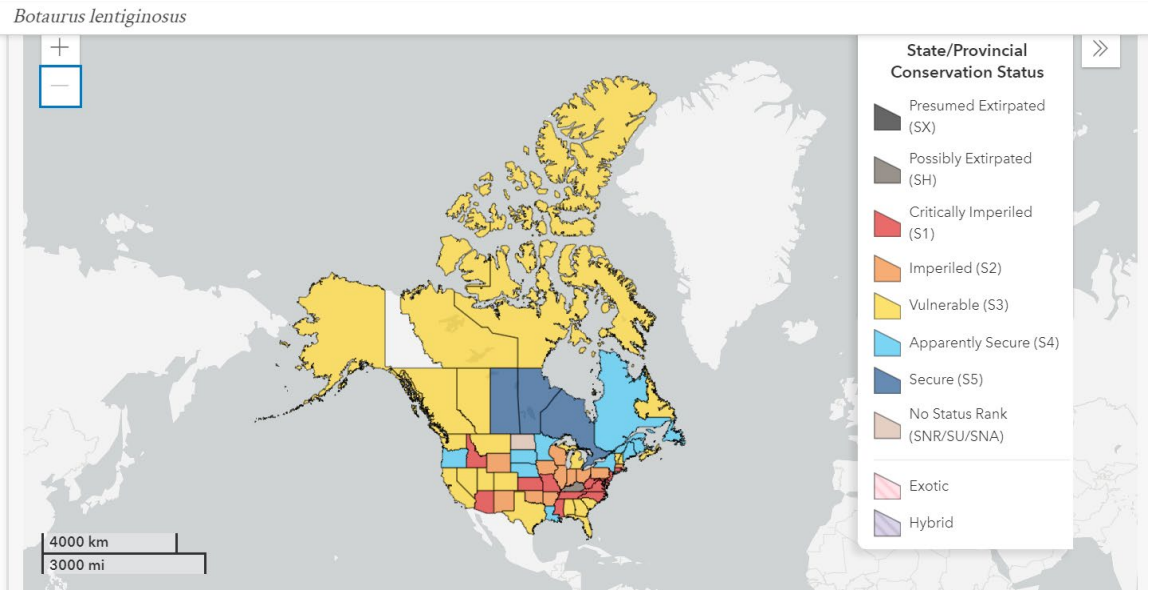

Figure 3. Conservation Status of American bittern in North America (NatureServe 2023)

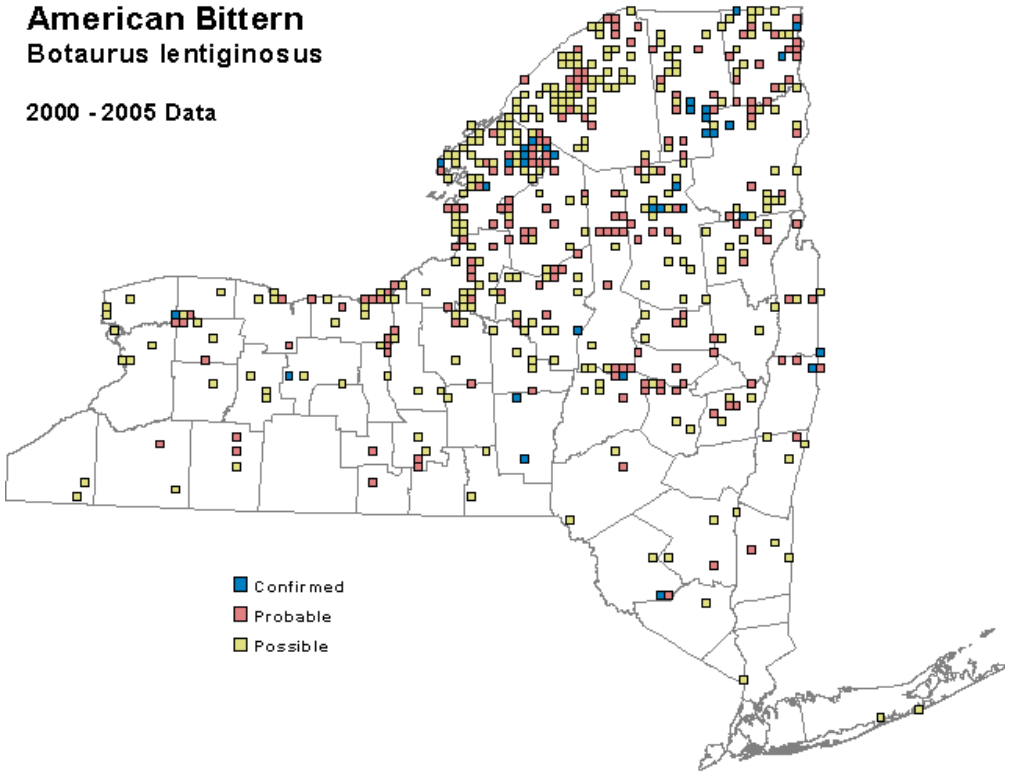

Figure 4. American bittern occurrence from second NY Breeding Bird Atlas (NYSDEC)

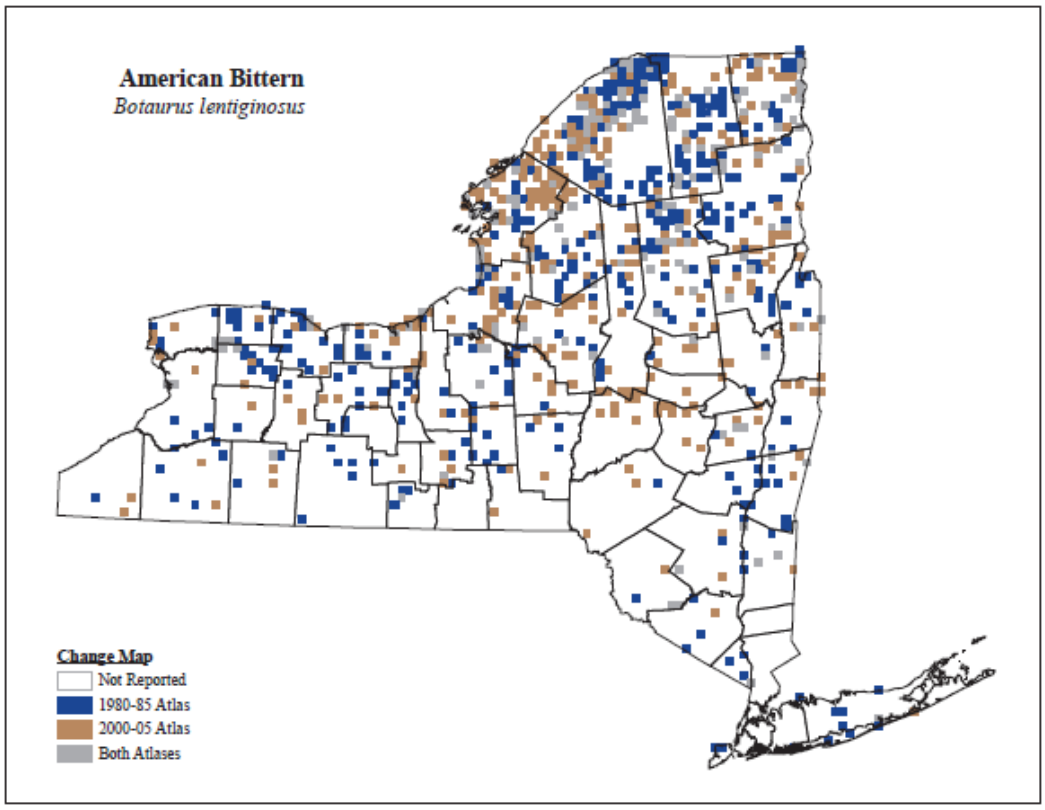

Figure 4. Change in occurrence between the first and second BBA (NYSDEC)

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

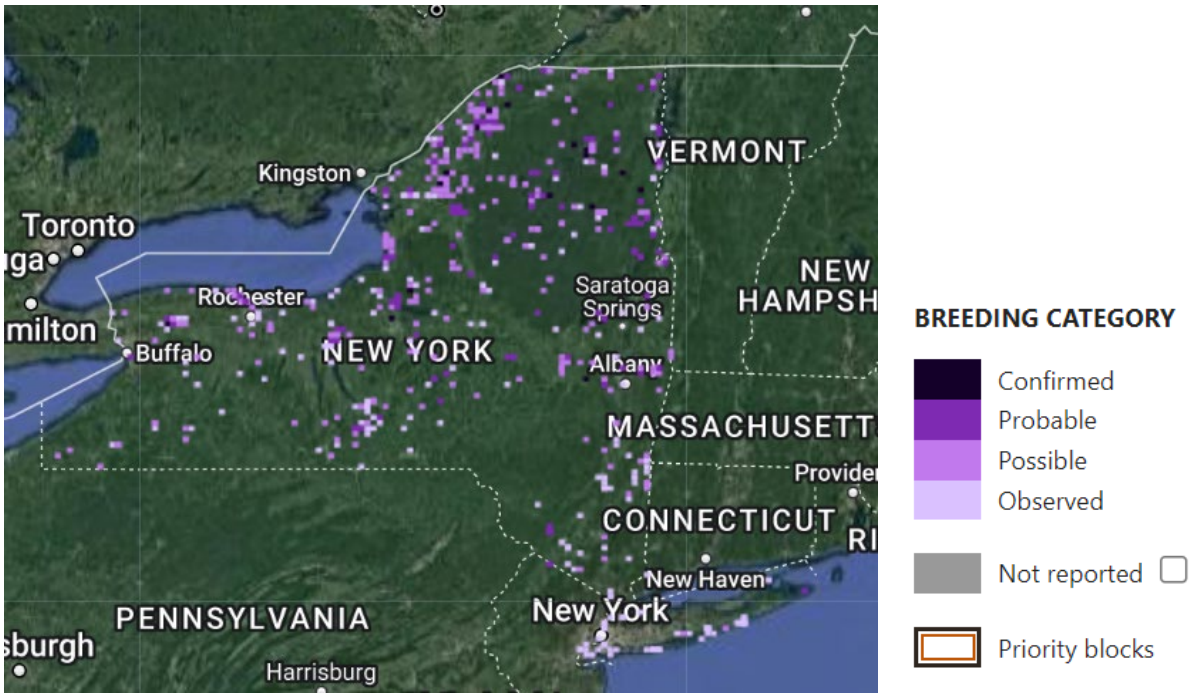

Figure 5. Records of American bittern in New York (NYS BBA III Map, 2023)

Years	# of Records	# of BBA Blocks	% of State
Pre-1980	_____	_____	_____
1980-1985	_____	534	10%
2000-2005	_____	478	9%
2020-2023	_____	_____	_____

Table 1. Records of American bittern in New York.

Details of historic and current occurrence:

Breeding Bird Atlas data from 1980-85 show statewide distribution with concentrations in the northern part of the state. Eaton (1988) stated that the species had declined since the 1950s.

Breeding Bird Atlas data from 2000-05 documented occupancy in 9% of the state, a 10% decrease in occupancy since the first Atlas in 1980-85 (McGowan and Corwin 2008).

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Core	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

1. Freshwater Marsh
2. Great Lakes Freshwater Estuary Marsh
3. Wet Meadow/Shrub Swamp
4. Old Field Managed Grasslands
5. Native Barrens and Savannah
6. Open Alkaline Peatlands
7. Open Acidic Peatlands
8. Estuarine, Freshwater Intertidal, Tidal Wetland, Freshwater Tidal Marsh

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
No	No	Declining	Since the 1950s

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

American bitterns breed in freshwater wetlands with tall emergent vegetation, especially larger wetlands with abundant amphibian populations, and rarely tidal marshes. Eaton (1914) suggested that there were occurrences in New York at marshes of less than four hectares. This bittern seems to be adaptable to a wide variety of wetland habitats, ranging from margins of boreal lakes in

Quebec (DesGranges and Houde 1989) to dense cattail marshes in New York (Andrle and Carroll 1988), and can thrive at wetlands of many types as long as suitable prey and adequate cover are available (Gibbs et al. 1991). Nesting can also occur in grasslands adjacent to wetland habitat.

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	Choose an item.	Choose an item.	Yes	Choose an item.	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

Remarkably little is known about the biology of this species. There is no information on age at first breeding, but it is 1 year in the closely related Eurasian Bittern. The maximum reported longevity is 8 years, 4 months. Minimal information is available on the effects of predation or parasites and disease. The species is thought to undergo extensive, post-breeding dispersal (Lowther et al. 2009). Because of extensive post-breeding dispersal (Cramp 1977), bitterns are able to colonize new areas and persist as small, isolated populations. The species also seems adaptable to a wide range of wetland habitats.

VI. Threats *(from NY 2015 SWAP or newly described):*

Threats to NY Populations	
Threat Category	**Threat**
1. Residential & Commercial Development	Housing & Urban Areas (wetland fragmentation)
2. Residential & Commercial Development	Tourism & Recreation Areas (shoreline development)
3. Invasive & Other Problematic Species & Genes	Invasive Non-Native/Alien Species (purple loosestrife, phragmites)
4. Pollution	Agricultural & Forestry Effluents (runoff, siltation)
5. Pollution	Industrial & Military Effluents (acid deposition)
6. Natural System Modification	Other Ecosystem Modification (succession)
7. Natural System Modification	Dams & Water Management/Use
8. Climate Change & Severe Weather	Habitat Shifting & Alteration

9. Climate Change & Severe Weather	Storms & Flooding
10. Climate Change & Severe Weather	Drought

The most serious factor limiting populations is availability of wetland habitat. Loss is due to drainage, filling, conversion to agriculture or recreational use, siltation, and pollution. The entire life cycle is dependent on wetlands, yet over half the original wetlands in the conterminous U.S. have been destroyed (Tiner 1984). The most serious losses have occurred among palustrine emergent wetlands, of which about 4.75 million acres (1.92 million ha) were lost between the mid-1950s and mid-1970s (Tiner 1984). Inland, freshwater wetlands, the most important nesting and wintering areas, are among the most threatened habitats (Tiner 1984). Larger wetlands (greater than 10 ha) may support large portions of regional nesting populations, and loss of these wetlands can be critical to populations in many areas. Fortunately, many of the larger emergent marshes and marsh complexes in New York are publicly owned and managed for wildlife habitat.

Agricultural chemicals may have significant, indirect effects by entering wetlands via runoff from upland areas and reducing prey populations. Many of this bird's prey, including aquatic insects, crayfish, and amphibians, are vulnerable to agricultural pesticides.

Threat from acid rain is related to high proportion of amphibians in the American bittern’s diet. However, wetlands are typically buffered against shifts in acidity. Wading birds tend to be susceptible to many diseases such as avian cholera, botulism, lice and mites, but little is known about the effects of disease and parasites on reproduction (NatureServe 2013).

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: _X_ **No: _____** **Unknown: _____**

If yes, describe mechanism and whether adequate to protect species/habitat:

American bittern is protected under the Migratory Bird Treaty Act of 1918. The Freshwater Wetlands Act provides protection for wetlands greater than 12.4 acres in size under Article 24 of the NYS Conservation Law. Small wetlands that serve as important alternate feeding sites and as "stepping stones" during movements between larger wetlands, receive no legal protection in New York.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

Large wetlands (>12 acres) with abundant emergent vegetation need preservation, protection, and improvement (Gibbs and Melvin 1992). It is important to prevent chemical contamination, siltation, eutrophication, and other forms of pollution in marsh habitats and to control invasive species (such as purple loosestrife). When managing large wetland complexes for waterfowl, consider retaining areas with cattails and bulrush.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions

Action Category	Action
Education and Awareness	Awareness and communications
Education and Awareness	Training
Land/Water Protection	Site/Area Protection
Land/Water Protection	Resource/Habitat Protection
Land/Water Management	Site/Area Management
Land/Water Management	Invasive/Problematic Species Control
Land/Water Management	Habitat & Natural Process Restoration

Table 3. Recommended conservation actions for American bittern

VII. References

Andrle, R.F. and J.R. Carroll, eds. 1988. The Atlas of Breeding Birds in New York State. Cornell University Press, Ithaca, NY.

Brewer, R., G.A. McPeek, and R.J. Adams, Jr. 1991. The Atlas of Breeding Birds of Michigan. Michigan State University Press, East Lansing, Michigan. xvii + 594 pp.

Cramp, S., ed. 1977. Handbook of the Birds of Europe, the Middle East, and North Africa; the Birds of the Western Paleartic. Vol. 1: Ostrich to Ducks. Oxford University Press, Oxford, England. 722 pp.

Desgranges, J. L., and B. Houde. 1989. Effects of acidity and other environmental parameters on the distribution of lacustrine birds in Quebec. In J. L. DesGranges (editor) Studies of the Effects of Acidification on Aquatic Wildlife in Canada: Lacustrine Birds and Their Habitats in Quebec. Can. Wildl. Serv. Occas. Pap. No. 67.

Eaton, E. H. 1914. Birds of New York. Part 2. Univ. of the State of New York, Albany.

Eaton, S.W. 1988. American bittern, *Botaurus lentiginosus*. Pages 32-33 in The Atlas of breeding birds in New York State (R.F. Andrle and J.R. Carroll, eds.). Cornell University Press, Ithaca, NY.

Fink,D., T. Auer, A. Johnston, M. Strimas-Mackey, S. Ligocki, O. Robinson, W. Hochachka, L. Jaromczyk, C. Crowley, K. Dunham, A. Stillman, I. Davies, A. Rodewald, V. Ruiz-Gutierrez, C. Wood. 2023. eBird Status and Trends, Data Version: 2022; Released: 2023. Cornell Lab of Ornithology, Ithaca, New York. https://doi.org/10.2173/ebirdst.2022

Gibbs, J. P., J. R. Longcore, D. G. McAuley, and J. K. Ringelman. 1991. Use of wetland habitats by selected nongame water birds in Maine. U. S. Fish & Wildlife Service, Fish and Wildlife Research 9, 57 pp.

Gibbs, J. P., and S. M. Melvin. 1992. American bittern, *Botaurus lentiginosus*. Pages 51-69 in K. J. Schneider and D. M. Pence, editors. Migratory nongame birds of management concern in the Northeast. U.S. Fish and Wildlife Service, Newton Corner, Massachusetts. 400 pp.

Hands, H. M., R. D. Drobney, and M. R. Ryan. 1989. Status of the American bittern in the northcentral United States. Missouri Coop. Fish Wildl. Res. Unit Rep. 13 pp.

McGowan, K.J. 2008. American bittern, *Botaurus lentiginosus*. Pages 156-157 *in* The Second Atlas of Breeding Birds in New York State (K.J. McGowan and K. Corwin, editors). Cornell University Press, Ithaca, NY.

McGowan, K.J. and K. Corwin, eds. 2008. The Second Atlas of Breeding Birds in New York State. Cornell University Press, Ithaca, NY.

NatureServe. 2013. NatureServe explorer: an online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available: http://www.natureserve.org/explorer. Accessed: June 27, 2013.

NatureServe. 2023. NatureServe Explorer. Page last published 1/5/2024. https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.103409/Botaurus_lentiginosus. Accessed 2/2/2024

New York Breeding Bird Atlas III Map (NYS BBA III Map). 2024. https://ebird.org/atlasny/explore. Accessed 2/2/2024

IUCN 2024. The IUCN Red List of Threatened Species. Version 2023-1. https://www.iucnredlist.org

Sauer, J.R., Link, W.A., and Hines, J.E., 2020, The North American Breeding Bird Survey, Analysis Results 1966 - 2021: U.S. Geological Survey data release, https://doi.org/10.5066/P96A7675.

Stoner, S. J. 1998. American bitter, Botaurus lentiginosus. Pages 122-23 in Bull's Birds of New York State (E. Levine, ed.). Cornell University Press, Ithaca, NY.

Therres, G.D. 1999. Wildlife species of regional conservation concern in the northeastern United States. Northeast Wildlife 54:93-100.

Tiner, R. W., Jr. 1984. Wetlands of the United States: current status and recent trends. U.S. Fish and Wildlife Service, National Wetlands Inventory, Washington, D.C. 59 pp.

Tozer, D.C. 2020. Great Lakes Monitoring Program: 25 years of conserving birds and frogs. Bird Canada, Port Rowan, Ontario, Canada. 24pp.

U.S. Fish and Wildlife Service (USFWS). 1987. Migratory nongame birds of management concern in the United States: the 1987 list. U.S. Fish and Wildlife Service, Office of Migratory Bird Management, Washington, D.C. 63 pp.

Originally prepared by	Kimberley Corwin
Date first prepared	November 14, 2011
First revision	July 2014 (Jenny Murtaugh)
Latest revision	

Species Status Assessment

Common Name: Amer. three-toed woodpecker **Date Updated:** Dec. 29, 2023

Scientific Name: *Picoides dorsalis* **Updated By:** Angelena Ross

Class: Aves

Family: Piciformes

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

The Northern three-toed woodpecker was separated into distinct New World and Old World species in 2006: American three-toed woodpecker (*Picoides dorsalis*) in North America and Eurasian three-toed woodpecker (*P. tridactylus*) in Europe and Asia. The American three-toed woodpecker has the northernmost distribution of any woodpecker in North America, remaining year-round in boreal regions of Canada and northernmost regions of the United States. The population in New York is found in the Adirondack Mountains where breeding occurs in black spruce bogs and mountain spruce-fir forests. In all areas where the American three-toed woodpecker occurs, it is sparsely distributed and is thus a difficult species to monitor. There are indications of decline in New York: the second Breeding Bird Atlas documented the species in 32% fewer survey blocks than the first Breeding Bird Atlas 20 years previous, though Peterson (1988) noted that the difficulties in finding this species result in uncertainty regarding its true status.

Although trends are difficult to determine with a species having such low detectability, populations at the southern edge of the range are thought to be smaller than they were previously. The American three-toed woodpecker's use of old-growth forests and its dependence on ephemeral habitats created by natural disturbances make it a conservation concern.

I. Status

a. Current legal protected Status

i. **Federal:** Not listed **Candidate:** no

ii. **New York:** SGCN

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** S2 **Tracked by NYNHP?:** No

Other Ranks:
-IUCN Red List: Least Concern

Status Discussion:

The American three-toed woodpecker is a rare local resident in the Adirondacks and the Tug Hill Plateau, and a very rare winter resident elsewhere in the state. It is ranked as Imperiled in New York and New Hampshire, Critically Imperiled in Vermont, Vulnerable in Maine, but is Apparently Secure in Ontario and Quebec, Canada.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Unknown	Unknown	1980-2016		Choose an item.
Northeastern US	Yes	Unknown	Unknown	1985-2016		Choose an item.
New York	Yes	Unknown	Declining	1883-2023		Yes
Connecticut	No	Choose an item.	Choose an item.			Choose an item.
Massachusetts	No	Choose an item.	Choose an item.			Choose an item.
New Jersey	No	Choose an item.	Choose an item.			Choose an item.
Pennsylvania	No	Choose an item.	Choose an item.			Choose an item.
Vermont	No data	Unknown	Unknown	1976-1981, 2003-2007		No
Ontario	Yes	Unknown	Stable	1981-85, 2001-23		No
Quebec	Yes	Unknown	Stable	1984-89, 2012-2023		No

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

The Adirondack Wetland Institute has been monitoring boreal peatlands in the Adirondacks with Citizen Scientists since 2003. However, the species has not been observed with enough frequency to detect trends. The same is true in Vermont, where detections have gone from one to zero blocks between the last two Breeding Bird Atlases, respectively.

Trends Discussion *(insert map of North American/regional distribution and status):*

The Wildlife Conservation Society, the Adirondack Watershed Institute, and NYSDEC have conducted surveys for boreal breeding birds at several sites in the Adirondack Park since 2003 (Glennon 2014, 2019). The American three-toed woodpecker is one of 12 target species monitored by these efforts. However, detections of American three-toed woodpeckers have been so sparse that it has not been possible to develop reliable estimates of the species' trend (Glennon 2014).

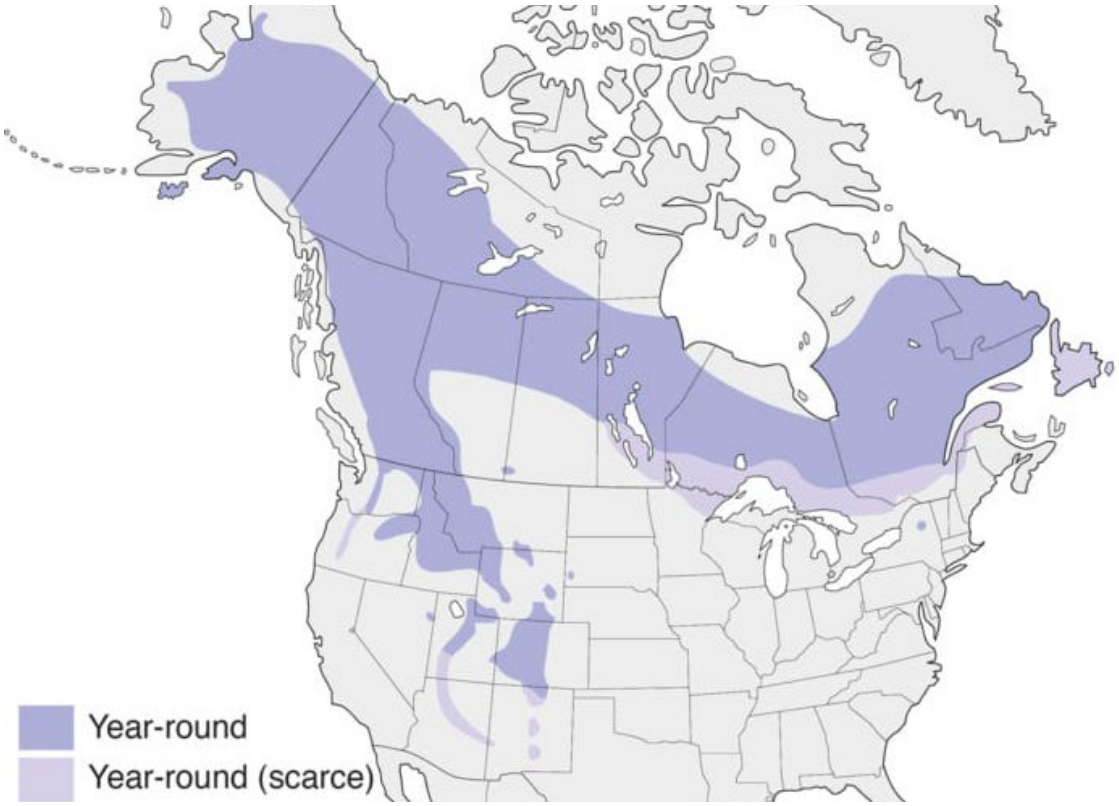

Figure 1. Distribution of the American three-toed woodpecker (*Picoides dorsalis*) in North America. (modified from Birds of the World).

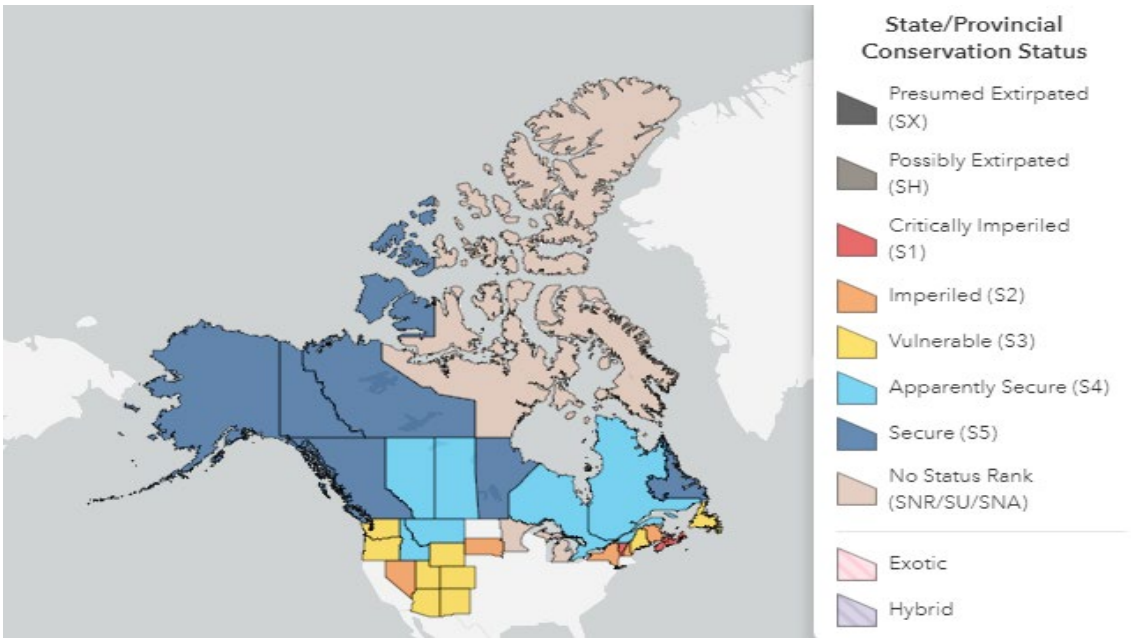

Figure 2. Conservation status of American three-toed woodpecker in North America (NatureServe 2024).

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

Years	# of Records	# of BBA Blocks	% of State
Pre-1980			
1980-1985		22	
2000-2005		15	
2020-2023		0	

Table 1. Records of the American three-toed woodpecker *(Picoides dorsalis)* in New York.

Details of historic and current occurrence:

The first Breeding Bird Atlas (1980-85) documented occupancy in 22 survey blocks statewide with confirmed breeding in only 8 blocks. The second Breeding Bird Atlas (2000-05) documented occupancy in 15 survey blocks statewide with confirmed breeding in only 5 blocks, a decline of 32% overall. The third Breeding Bird Atlas does not yet contain any records of breeding American three-toed woodpeckers as of 2023.

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Peripheral	280 km

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

In New York, the American three-toed woodpecker occurs at the southernmost edge of the breeding distribution in Canada. It occurs sparsely in the Adirondack Mountains, about 480 km south of the population in Quebec.

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

American three-toed woodpeckers occur in the Northern Appalachian – Boreal Forest ecoregion.

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
Yes	No	Declining	

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

The American three-toed woodpecker is associated with spruce-fir and spruce-fir-northern hardwood forests, which are often associated with bogs and swamps. It is found in areas where dead standing timber remains following burning or logging. Occasional irruptions of this woodpecker follow increased bark beetle populations that result from disturbances including burns, but also storms and flooding.

In New York, three-toed woodpeckers breed in mountain spruce-fir forests and black spruce bogs, as well as forests with deciduous trees.

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	Choose an item.	Choose an item.	Yes	Yes	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

Little is known of the demography and life history of American three-toed woodpeckers. The age at first breeding is probably one year; one brood is raised per season. There are limited studies on the species' life span. In Oregon, one banded individual was still alive after at least 6 years. There are limited to no data on survivorship. In addition, the degree of site fidelity is unknown in North America (Leonard 2001).

American three-toed woodpeckers move into areas where insect populations increase following disturbance such as fire, disease, flooding, logging, and storms. The opportunistic use of disturbed areas suggest an evolutionary history tied to exploiting ephemeral resources resulting from periodic, natural disturbances (Leonard 2001).

VI. Threats *(from NY 2015 SWAP or newly described):*

Threats include incompatible forestry practices and deforestation (Leonard 2001). The species association with spatially unpredictable disturbance and its large home range make it sensitive to timber harvest and forest fragmentation, and these activities have likely resulted in population declines (Hunter 1992, Hagan et al. 1997, Imbeau et al. 1999, Leonard 2001). In black spruce-dominated forests in Quebec, this species is restricted to forests that are older than planned cutting rotations (Imbeau et al. 1999).

Modern forestry practices use fire suppression, salvage logging (cutting of burned trees), and suppression logging (cutting of insect infested trees), all of which reduce or remove the dead and dying trees on which this species depends. In addition to fire suppression, alteration of natural fire intensity (e.g., from intense stand replacement to "cool" understory fires) has likely resulted in population declines (Hutto 1995).

The American three-toed woodpecker was classified as "presumably stable" in regard to predicted climate change in an assessment of vulnerability conducted by the New York Natural Heritage Program (Schlesinger et al. 2011).

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

American three-toed woodpecker is protected under the Migratory Bird Treaty Act of 1918.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

This woodpecker benefits from burning, so efforts to prevent fire are likely detrimental (Spahr et al. 1991). Large forest tracts should be protected so that adequate stands are continuously available as local conditions change through time.

In Oregon, Goggans et al. (1988) reported a close tie between American three-toed woodpeckers and tree disease and decay. Trees with heart rot were necessary to house nests, and dying and decaying trees were necessary for a sufficient prey base; such conditions, however, are counter to maximizing timber output. Goggans et al. (1988) recommend providing or setting aside areas exempt from commercial or salvage-timber management and managing these areas to retain characteristics of old-growth or late-successional habitat, as well as rotating protected areas as current sites become degraded and others become suitable to minimize fragmentation of protected areas.

The NY Comprehensive Wildlife Conservation Strategy (CWCS; NYSDEC 2005) states the need for a management plan for high-altitude conifer forest birds that incorporates the results of the 2004 State Wildlife Grant study on boreal forest birds (Glennon 2010). Conservation actions following IUCN taxonomy are categorized in the table below.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
Land/water protection	Resource & habitat protection (secure easements)

Land/water management	Site/area management (manage forests, control acid rain) Invasive/problematic species control (West Nile Virus, reduce spraying chemicals that control spruce budworm outbreaks)
Livelihood, economic & other incentives	Conservation payments (where habitat management would otherwise not take place)

Table 2. Recommended conservation actions for the American three-toed woodpecker *(Picoides dendroica)* by action category identified in the IUCN conservation actions taxonomy.

Habitat monitoring: Conduct field studies to determine causes for declines of species known to be declining.
Habitat research: Complete an inventory and analysis of the distribution and abundance of boreal species.
Population monitoring: Develop a long-term monitoring program to determine population trends of boreal forest birds.
State land unit management plan: Review Department wildfire management for Forest Preserve lands.

VII. References

Burdett, C. L. and G. J. Niemi. 2002. Conservation assessment for three-toed woodpecker (Picoides tridactylus). USDA Forest Service, Eastern Region, Milwaukee, WI.

Glennon, M. 2010. Distribution and abundance of boreal birds in the Adirondack Park. Final Report to the New York State Department of Environmental Conservation. Wildlife Conservation Society, Saranac Lake, NY.

Glennon, M. 2014. Dynamics of Boreal Birds at the Edge of their Range in the Adirondack Park, NY. Northeastern Naturalist 21(1):51-71.

Glennon, M. S.F. Langdon, M.A. Rubenstein, and M.S. Cross. 2019. Temporal changes in avian community composition in lowland conifer habitats at the southern edge of the boreal zone in the Adirondack Park, NY. PLoS ONE 14(8): e0220927. https://doi.org/10.1371/journal.pone.0220927.

Googans, R., R.D. Dixon, and L.C. Seminara. 1988. Habitat use by Three-toed and Black-backed Woodpeckers. Oregon Dept. Fish and Game Nongame Rep. 87-3-02.

Hagan, J. M. III, P. S. McKinley, A. L. Meehan, and S. L. Grove. 1997. Diversity and abundance of landbirds in a northeastern industrial forest. Journal of Wildlife Management 61:718-735.

Hunter, M. L., Jr. 1992. Natural fire regimes as spatial models for managing boreal forests. Biological Conservation 65:115-120.

Hutto, R. L. 1995. Composition of bird communities following stand-replacement fires in northern Rocky Mountain (U.S.A.) conifer forests. Conserv. Biol. 9:1041-1058.

Imbeau, L, J. L. Savard, and R. Gagnon. 1999. Comparing bird assemblages in successional black spruce stands originating from fire and logging. Canadian Journal of Zoology 77:1850-1860.

Leonard, Jr., D. L. 2001. American Three-toed Woodpecker (Picoides dorsalis), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/588 doi:10.2173/bna.588

Peterson, J.M.C. 1988. Three-toed Woodpecker, Picoides tridactylus. Pages 236-239 in The Atlas of Breeding Birds in New York State, R.F. Andrle and J.R. Carroll, editors. Cornell University Press, Ithaca, New York, USA.

New York State Department of Environmental Conservation (NYSDEC). 2005. New York State Comprehensive Wildlife Conservation Strategy. http://www.dec.ny.gov/index.html

Schlesinger, M.D., J.D. Corser, K.A. Perkins, and E.L. White. 2011. Vulnerability of at-risk species to climate change in New York. New York Natural Heritage Program, Albany, NY.

Spahr, R., L. Armstrong, D. Atwood, and M. Rath. 1991. Threatened, endangered, and sensitive species of the Intermountain Region. U.S. Forest Service, Ogden, Utah.

Originally prepared by	Kimberley Corwin
Date first prepared	November 8, 2012
First revision	July 2014 (Jenny Murtaugh)
Latest revision	December 29, 2023 (Angelena Ross)

Species Status Assessment

Common Name: American woodcock **Date Updated:** December 28, 2023

Scientific Name: *Scolopax minor* **Updated By:** Beth Cooper

Class: Aves

Family: Scolopacidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

The American woodcock is a popular game bird in New York and is managed on the basis of two management regions: eastern and central (see below). Woodcock are widely distributed in New York, occurring in 38% of the state as documented by the 2000-05 Breeding Bird Atlas. New York is well within the core of the species' North American distribution. Woodcocks depend on early-successional habitat with a mix of shrublands, canopy cover, and moist soils.

Significant declines in American woodcock have been documented in both eastern and central populations since the 1970s. Although its abundance has declined historically, particularly in its eastern range and probably owing to natural succession and human-caused loss of forests, there is no evidence that its overall range has shrunk. The Eastern Management Region has shown a significant decreasing trend during 2013-23, particularly due to declines in NY and WV. Other states in the region had no significant trend, suggesting a more broadly stable population (Seamans and Rau 2023). Preliminary results of the 2020-24 Breeding Bird Atlas data for New York concur, indicating >10% decrease in occupancy since 2000-05.

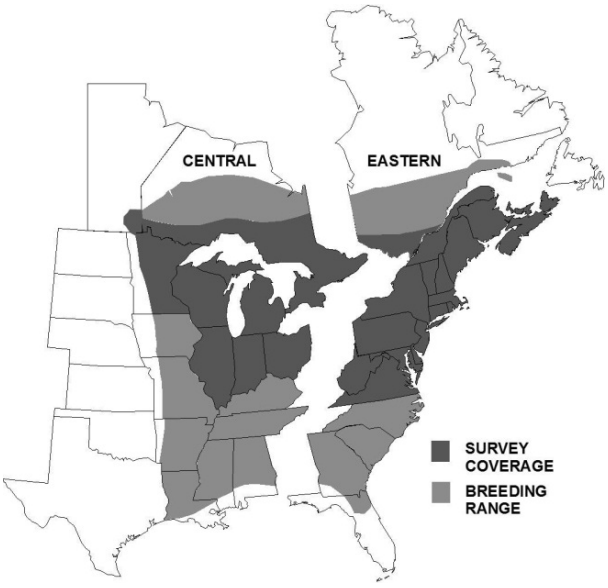

Figure 1. Eastern and central management regions for American woodcock (Kelley et. al. 2008).

I. Status

a. Current legal protected Status

i. **Federal:** Not Listed (Game species) **Candidate:** No

ii. **New York:** SGCN/Game Species

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** S5B **Tracked by NYNHP?:** No

Other Ranks:
IUCN Red List: LC (Least Concern)

U.S. Shorebird Conservation Plan: Species of High Concern

Partners in Flight – Continental Concern Score 12 out of 20

Status Discussion:

American woodcock is a popular game bird species with open season in New York. It is found across the state, though less frequently in areas that have been subject to heavy development.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Declining	Stable	1968-2023		Choose an item.
Northeastern US	Yes	Declining	Stable	2013-2023		Choose an item.
New York	Yes	Declining	Stable	2013-2023		Yes
Connecticut	Yes	Stable	Stable	2013-2023		Yes
Massachusetts	Yes	Stable	Stable	2013-2023		Yes
New Jersey	Yes	Stable	Stable	2013-2023		Yes
Pennsylvania	Yes	Stable	Stable	2013-2023		Yes
Vermont	Yes	Stable	Stable	2013-2023		Yes
Ontario	Yes	Declining	Unknown	2013-2023		Choose an item.
Quebec	Yes	Stable	Unknown	2013-2023		Choose an item.

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

The USFWS coordinates singing-ground surveys annually. Since 2016, NYSDEC has conducted presence/absence surveys on select Wildlife Management Areas to assess species response to forest management.

Trends Discussion *(insert map of North American/regional distribution and status):*

Population trends are monitored by singing-ground surveys, which have documented long-term declines (1968-2023) across the range of 0.71% per year. There was a significant negative 10-year trend for woodcock heard in the Eastern and Central Management Regions during 2013-23, with declines of 1.18% and 1.25% per year respectively. Although there was a 4% increase in occupancy between the first (1980-85) and second Breeding Bird Atlas (2000-05), preliminary results from the third Atlas (2020-24) show >10% decrease in occupancy.

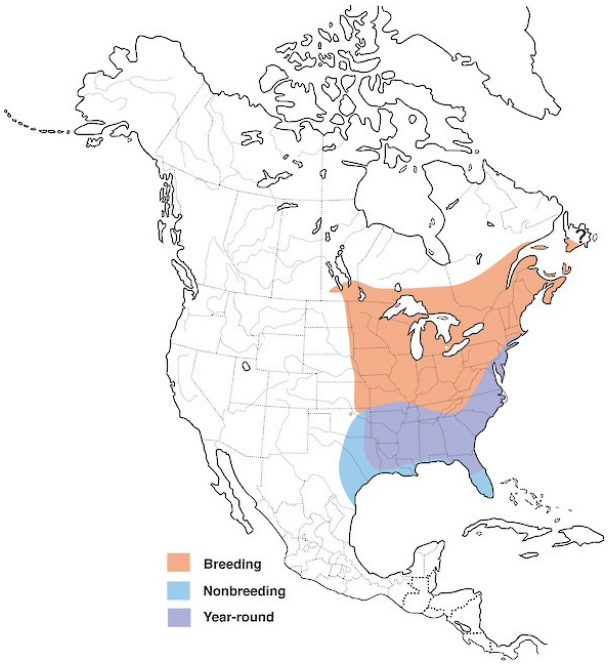

Figure 2. Range of the American woodcock in North America (Birds of North America Online 2023).

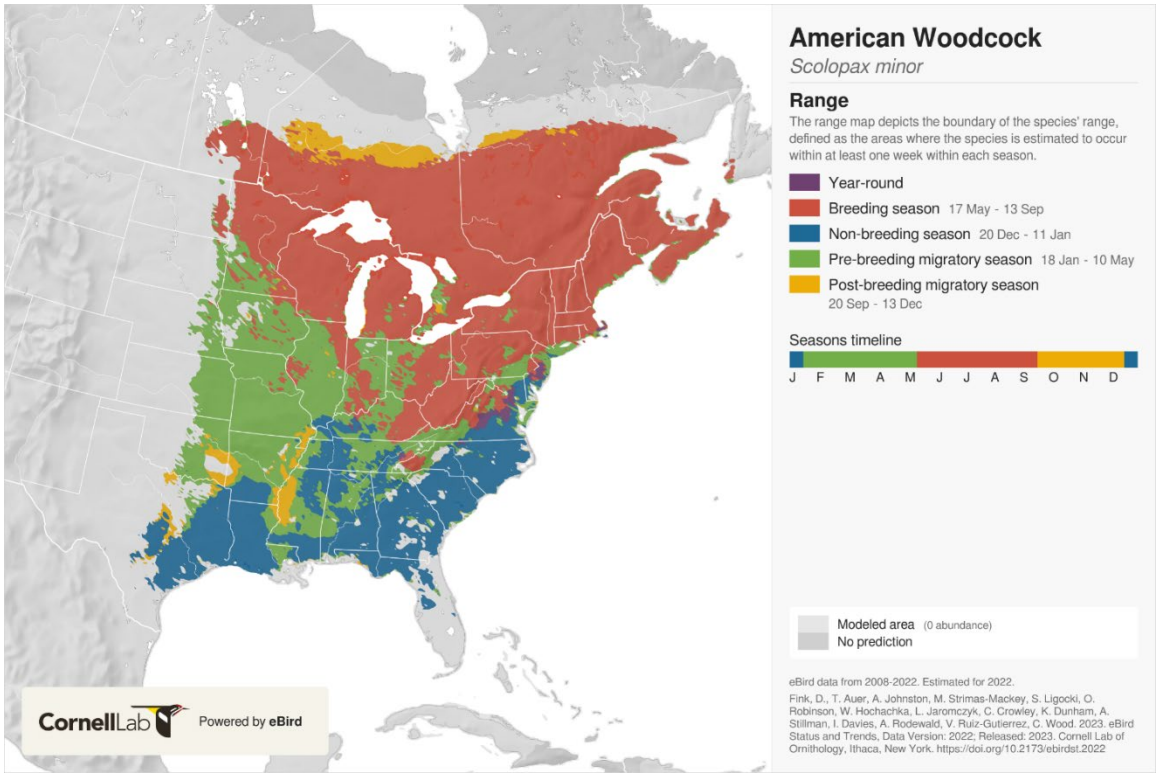

Figure 3. American woodcock range (eBird www.ebird.org, 11/27/2023)

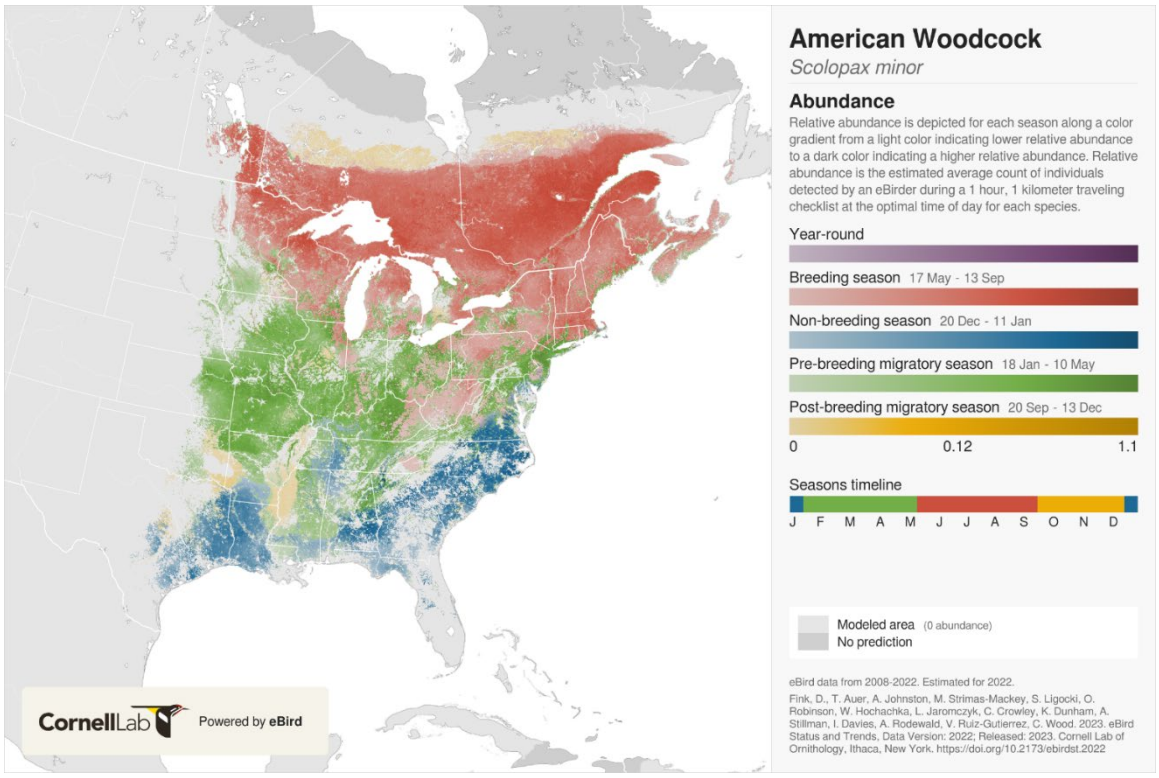

Figure 4. American woodcock abundance (eBird www.ebird.org, 11/27/2023)

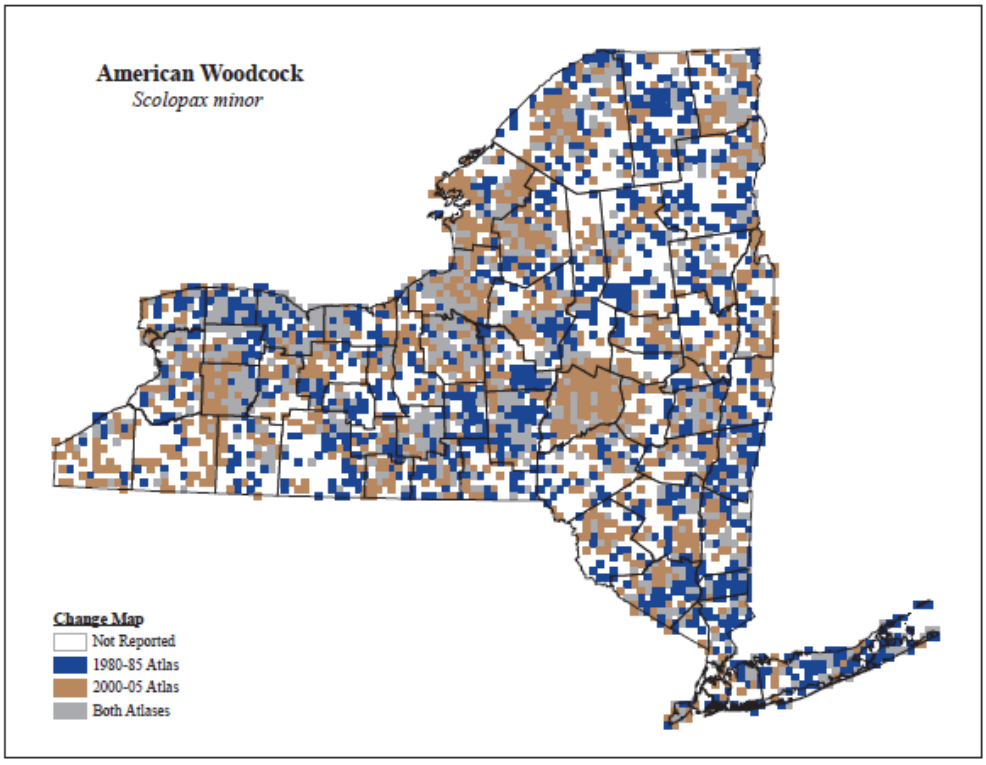

Figure 5. Change in American woodcock occurrence in New York State between the first Breeding Bird Atlas and the second Breeding Bird Atlas (McGowan and Corwin 2008).

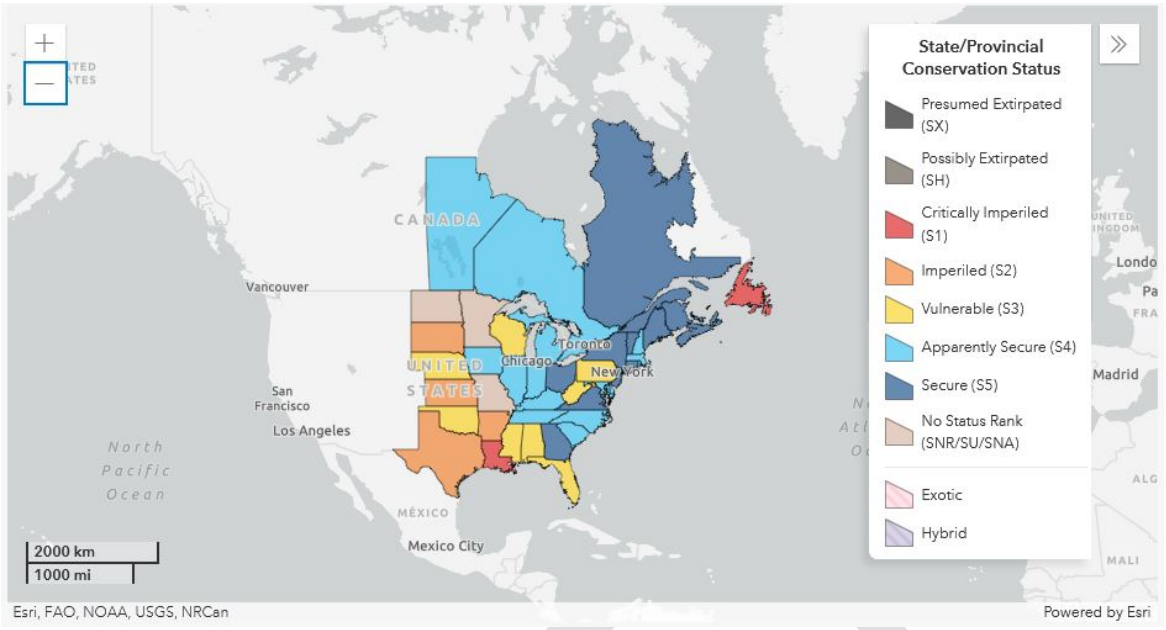

Figure 6. Conservation status of the American woodcock in North America (NatureServe 2023).

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

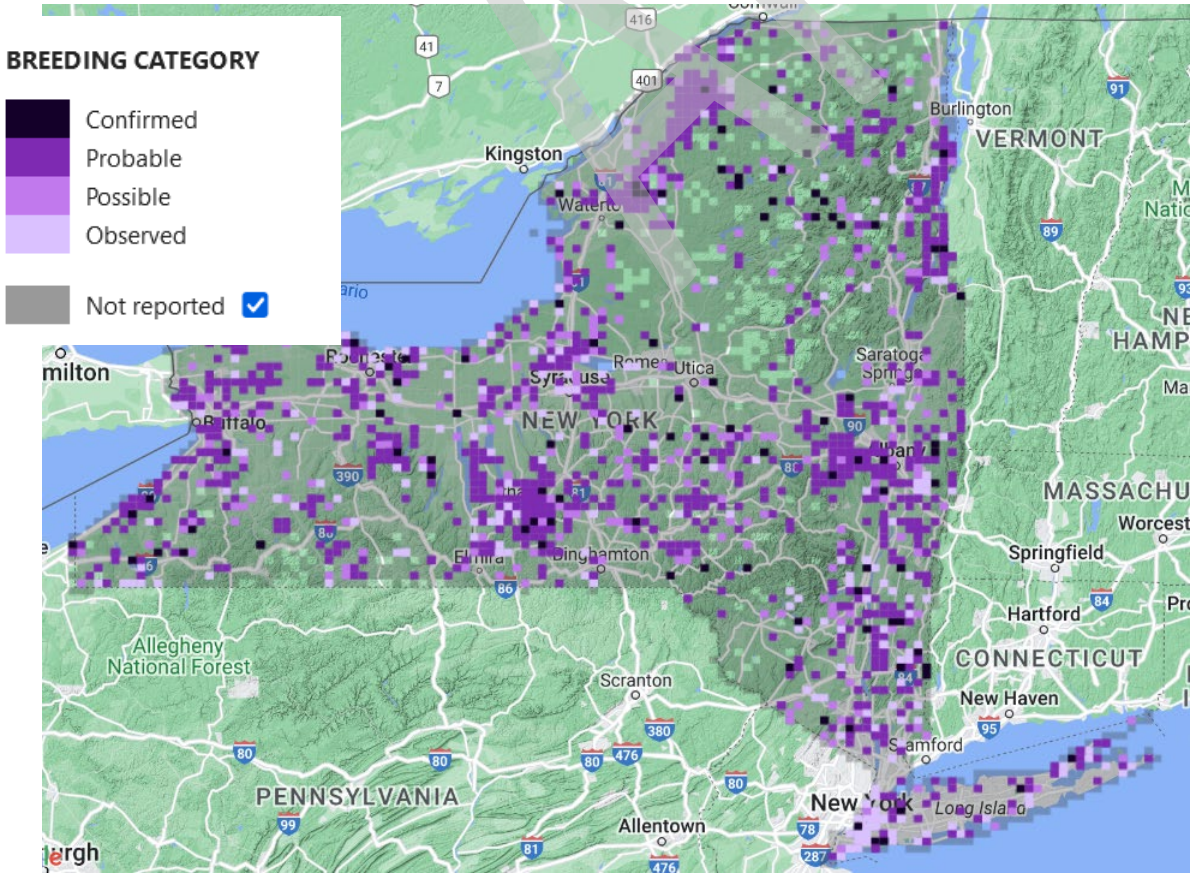

Figure 7. Preliminary American woodcock occurrences from the third year of the third New York State BBA (eBird 2023).

Years	# of Records	# of BBA Blocks	% of State
Pre-1980	_____	_____	_____
1980-1985	_____	1,926	36%
2000-2005	_____	2,004	38%
2020-2023	_____	1,173	21%

Table 1. Records of American woodcock in New York (December 28, 2023).

Details of historic and current occurrence:

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Core	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

1. Riparian
2. Wet Meadow/Shrub Swamp
3. Mixed Hardwood Swamp
4. Hardwood Swamp
5. Floodplain Forests
6. Powerline
7. Conifer Forest Swamp
8. Northern White Cedar Swamp

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
No	No	Declining	Since mid 1900s

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

American woodcock requires a mix of habitats in close proximity: early-successional forests or shrublands with canopy cover, moist soils, and abundant worm populations for feeding. Riparian shrublands and forests can be a particularly important habitat type. It is generally considered an edge species.

This bird's extensive use of northern coniferous forests that are being opened up by large-scale harvesting is encouraging and suggests that the species may be extending its distribution northward and westward.

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	Choose an item.	Choose an item.	Yes	Choose an item.	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

A national wing-collection survey indicates that there have been long-term declines in recruitment. The 2022 recruitment index in the Eastern Region (1.21 immatures per adult female) was 12.3% lower than the 2021 index (1.38) and 24.9% lower than the long-term (1963-21) regional average.

The maximum known life span is an 8 year old female. Females are known only to produce one brood to independence per year. No information is available about lifetime reproductive success. Impact of predation and all other forms of mortality at population level, local and regional, is unknown or speculative. Females are sensitive to disturbance at nests and often abandon, but population impacts unknown.

VI. Threats *(from NY 2015 SWAP or newly described):*

Threats to NY Populations	
Threat Category	**Threat**
1. Residential & Commercial Development	Housing & Urban Areas (habitat loss)
2. Agriculture & Aquaculture	Annual & Perennial Non-timber Crops (intensification & changes in agriculture)
3. Invasive & Other Problematic Species & Genes	Problematic Native Species (raptors, raccoons)
4. Pollution	Agriculture & Forestry Effluents (pesticides)
5. Natural System Modifications	Other Ecosystem Modifications (succession)
6. Biological Resource Use	Hunting & Collecting Terrestrial Animals (hunting)
7. Human Intrusion & Disturbance	Recreational Activities
8. Natural System Modification	Dams & Water Management Use (wetland filling, ditching)
9. Pollution	Industrial & Military Effluents (DDT, lead)
10. Transportation & Service Corridors	Utility & Service Lines (cell towers)
11. Energy Production & Mining	Renewable Energy (wind turbines)
12. Energy Production & Mining	Oil & Gas Drilling (fracking)

Early-successional habitat has declined due to forest maturation, urbanization, reforestation, drainage of wetlands, agricultural development. There has been some early debate on whether regional habitat area was decreasing or not but consensus is that quantity and probably quality of habitat is decreasing as the rate of change of farm land into young growth forests decreases. Habitat change across woodcock range is a suspected cause of region-wide declines in abundance.

A USFWS waterfowl harvest survey in the mid-1980s estimated that 700,000 hunters annually harvest 2 million woodcock (Roberts 1989); New York is among the five leading harvest states (Maine, Michigan, New York, Pennsylvania, Wisconsin). During 2022-23, hunters in the Eastern Management Region harvested 65,400 birds. Data does not indicate that hunting has played a major role in declines, but proper management requires a better understanding of the relationship among regulations, harvest, and populations (Straw et al. 1994).

High levels of DDT have been detected in the breast muscle of American woodcock. Acid deposition poses a potential threat through its effect on soil pH and earthworms (Esher et al. 1993). Lead contamination is thought to be widespread in eastern Canada and is likely problematic throughout regions in the U.S. where woodcock is hunted (Scheuhammer et al. 1999).

There is concern about the effect of mowing low vegetation and prescribed burning on populations, but little information is available (Walker and Causey 1982). Females are sensitive to disturbance at nests and often abandon, but population impacts are unknown.

Impacts with communications towers are likely as woodcock are nocturnal migrants thought to fly at low altitude; few data are available, however.

General threats to the early successional forest/shrubland bird suite in New York include reversion of shrublands to forest; loss of small dairy farms; fire suppression; more intensive agriculture that results in loss of hedgerows, shrubs, and shrub wetlands; reversion of young forest habitat to mature forest; inadequate amounts of forest management that includes even aged and heavy partial removal; and the erroneous public perception that forest management is harmful to birds (NYSDEC 2005).

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

This is a game species with an open season. Seasons can be modified or closed. As the species utilizes wet shrubby areas for nesting and feeding, some habitat protection is also offered through the NYS Freshwater Wetlands law.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

Monitoring of harvest and restoration of habitat is essential. The American Woodcock Conservation Plan estimates that 20.8 million acres (8.4 million ha) of new woodcock habitat needs to be created across the range in order to eliminate the population deficit and return woodcock densities to those observed during the early 1970s.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**

1. Land/Water Protection	Site/Area Protection
2. Land/Water Protection	Resource and Habitat Protection
3. Land/Water Management	Site/Area Management
4. Land/Water Management	Invasive/Problematic Species Control
5. Land/Water Management	Habitat and Natural Process Restoration
6. Species Management	Harvest Management
7. Education and Awareness	Training
8. Education and Awareness	Awareness and Communications
9. Law and Policy	Policies and Regulations

Table 3. Recommended conservation actions for American woodcock

VII. References

Andrle, R.F and J.R. Carroll, eds. 1988. The Atlas of Breeding Birds in New York State. Cornell University Press, Ithaca, NY.

BirdLife International. 2020. *Scolopax minor*. *The IUCN Red List of Threatened Species* 2020: e.T22693072A182648054. https://dx.doi.org/10.2305/IUCN.UK.2020-3.RLTS.T22693072A182648054.en. Accessed on 28 December 2023.

Corwin, K. 2013. NYSDEC SWAP 2015 Species Status Assessment for American woodcock. Prepared on November 15, 2011. Revised July 2014.

Esher, R. J., et al. 1993. Responses of invertebrates to experimental acidification of the forest floor under southern pines. Pages 75-83 in J. R. Longcore and G. F. Sepik, editors. Proceedings of the eighth American woodcock symposium. U.S. Fish and Wildlife Service Biological Report 16. Vi + 139 pp.

Fink, D., T. Auer, A. Johnston, M. Strimas-Mackey, S. Ligocki, O. Robinson, W. Hochachka, L. Jaromczyk, C. Crowley, K. Dunham, A. Stillman, I. Davies, A. Rodewald, V. Ruiz-Gutierrez, C. Wood. 2023. eBird Status and Trends, Data Version: 2022; Released: 2023. Cornell Lab of Ornithology, Ithaca, New York. https://doi.org/10.2173/ebirdst.2022

Kelley, J.R., S. J. Williamson, and T.R. Cooper (editors). 2008. American Woodcock Conservation Plan: a summary of and recommendations for woodcock conservation in North America. Compiled by the Woodcock Task Force, Migratory Shore and Upland Game Bird Working Group, Association of Fish and Wildlife Agencies. Wildlife Management Institute, Washington, D.C. www.timberdoodle.org.

McAuley, D. G., D. M. Keppie, and R. M. Whiting Jr. (2020). American Woodcock (Scolopax minor), version 1.0. In Birds of the World (A. F. Poole, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.amewoo.01. Accessed 27 November 2023.

McGowan, K.J. and K. Corwin, eds. 2008. The Second Atlas of Breeding Birds in New York State. Cornell University Press, Ithaca, NY.

Morgan, M. R. and M. F. Burger. 2008. A plan for conserving grassland birds in New York: Final report to the New York State Department of Environmental Conservation under contract #C005137. Audubon New York, Ithaca, NY. http://ny.audubon.org/PDFs/ConservationPlan-GrasslandBirds-NY.pdf. Accessed 6 June 2013.

Morrison, R. I. G., R. E. Gill, Jr., B. A. Harrington, S. Skagen, G. W. Page, C. L. Gratto-Trevor, and S. M. Haig. 2001. Estimates of shorebird populations in North America. Occasional Paper Number 104, Canadian Wildlife Service, Environment Canada, Ottawa, ON. 64 pages.

NatureServe. 2023. NatureServe Explorer. Page last published 1 December 2023. https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.105226/Scolopax_minor. Accessed 27 December 2023.

New York State Department of Environmental Conservation (NYSDEC). 2005. New York State Comprehensive Wildlife Conservation Strategy. Albany, NY. https://extapps.dec.ny.gov/docs/wildlife_pdf/cwcs2005.pdf

New York State Third Breeding Bird Atlas (NYS BBA III). 2023. New York Overview. https://ebird.org/atlasny/state/US-NY. Accessed 27 Decemeber 2023.

Partners in Flight. 2021. Avian Conservation Assessment Database, version 2021. http://pif.birdconservancy.org/ACAD. Accessed on November 27 2023.

Scheuhammer, A. M., C. A. Rogers, and D. Bond. 1999. Elevated lead exposure in American Woodcock (SCOLOPAX MINOR) in eastern Canada Archives of Environmental Contamination and Toxicology 36: 334-340.

Seamans, M.E., and R.D. Rau. 2023. American woodcock population status, 2023. U.S. Fish and Wildlife Service, Laurel, Maryland. 17 pp.

Straw, J. A., D. G. Krementz, M. W. Olinde, and G. F. Sepik. 1994. American Woodcock. Pages 97-114 IN T.C. Tacha and C.E. Braun, editors. Migratory Shore and Upland Game Bird Management in North America. International Association of Fish and Wildlife Agencies, Washington, D.C.

Walker, W. A., Jr. and M. K. Causey. 1982. Breeding activity of American Woodcock in Alabama. Journal of Wildlife Management 46:1054-1057.

Originally prepared by	Kimberly Corwin
Date first prepared	15 November 2011
First revision	July 2014, Jenny Murtaugh
Last revision	28 December 2023, Beth Cooper

Species Status Assessment

Common Name: Bay-breasted warbler **Date Updated:** 10 January 2024

Scientific Name: *Setophaga castanea* **Updated By:** Angelena Ross

Class: Aves

Family: Parulidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

Formerly *Dendroica castanea*, bay-breasted warbler was reclassified into the genus *Setophaga* in July 2011 (AOU 2011). This species breeds in mature spruce-fir forests. About 98% of the population breeds across the boreal forests in Canada. In New York, the species is found only in the Adirondack Mountains, where it occurs as a disjunct population at the southernmost edge of the North American range, about 250 miles from its core breeding population. A 63% decline in occupancy in New York was documented by the Breeding Bird Atlases from 1980-85 to 2000-05.

Local populations fluctuate with the presence of a favored food item, the spruce budworm. Royoma et al. (2005) refer to bay-breasted warbler as a cyclical species that has a very high probability of returning to higher population levels.

I. Status

a. Current legal protected Status

i. **Federal:** not listed **Candidate:** no

ii. **New York:** SGCN

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** S2 **Tracked by NYNHP?:** no

Other Ranks:
IUCN Red List: LC - Least concern
Partners in Flight – Watch List

Status Discussion:

The bay-breasted warbler is a rare breeder in New York. It is widespread in Canada, and rarely occurs in the Adirondack region. It was found in the Tug Hill region during the first Breeding Bird Atlas, but not during the second. It is a fairly common migrant in western New York. It is ranked as imperiled in New York and Vermont, but as apparently secure in adjacent states and provinces. There was an observed increase from 3 to 4 atlas blocks where bay-breasted warblers were “possible” from the 1976-1981 and 2003-2007 breeding bird atlases, respectively.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Unknown	Unknown	1980-2012		Choose an item.
Northeastern US	Yes	Declining	Unknown	1980-2000, 1996-2012		Choose an item.
New York	No	Unknown	Unknown	1980-2023		Yes
Connecticut	No	Choose an item.	Choose an item.			Choose an item.
Massachusetts	No	Choose an item.	Choose an item.			Choose an item.
New Jersey	No	Choose an item.	Choose an item.			Choose an item.
Pennsylvania	No	Choose an item.	Choose an item.			Choose an item.
Vermont	Yes	Increasing	Increasing	1976-1981, 2003-2007		Yes
Ontario	Yes	Unknown	Unknown	1980-2012		Choose an item.
Quebec	Yes	Unknown	Unknown			Choose an item.

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

The Wildlife Conservation Society, the Adirondack Watershed Institute, and NYSDEC have conducted surveys for boreal breeding birds at several sites in the Adirondack Park since 2003 (Glennon 2014, 2019). The bay-breasted warbler is one of 12 target species monitored by these efforts. However, detections of bay-breasted warblers have been so sparse that it has not been possible to develop reliable estimates of the species' trend (Glennon 2014).

Trends Discussion *(insert map of North American/regional distribution and status):*

Bay-breasted warbler numbers fluctuate markedly across the species range corresponding to outbreaks of spruce budworm (*Choristoneura fumiferana*) (Venier et al. 2009). In Canada, which contains more than 90% of its range, the bay-breasted warbler declined 0.43% annually from 1996-2012, corresponding to an 18% decline (Sauer et al. 2014). In New York, the Breeding Bird Atlas documented 2 confirmed blocks (4 probable) in 1980-85 and 1 confirmed (3 probable) 2000-05. Sauer et al. (2012) have suggested that declines in the New York from 2001-2011 are approximately 5.4% per year, which indicates a 43% decline in abundance over the period; however, data are sparse and should be interpreted with caution.

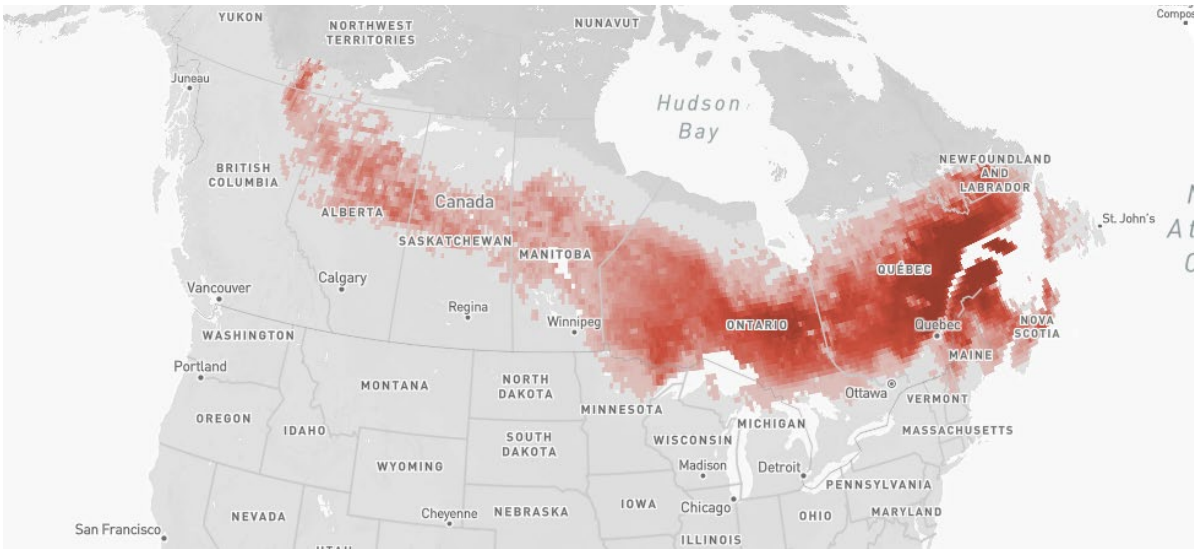

Figure 1. The bay-breasted warbler (*Setophaga castanea*) breeding distribution in North America (eBird)

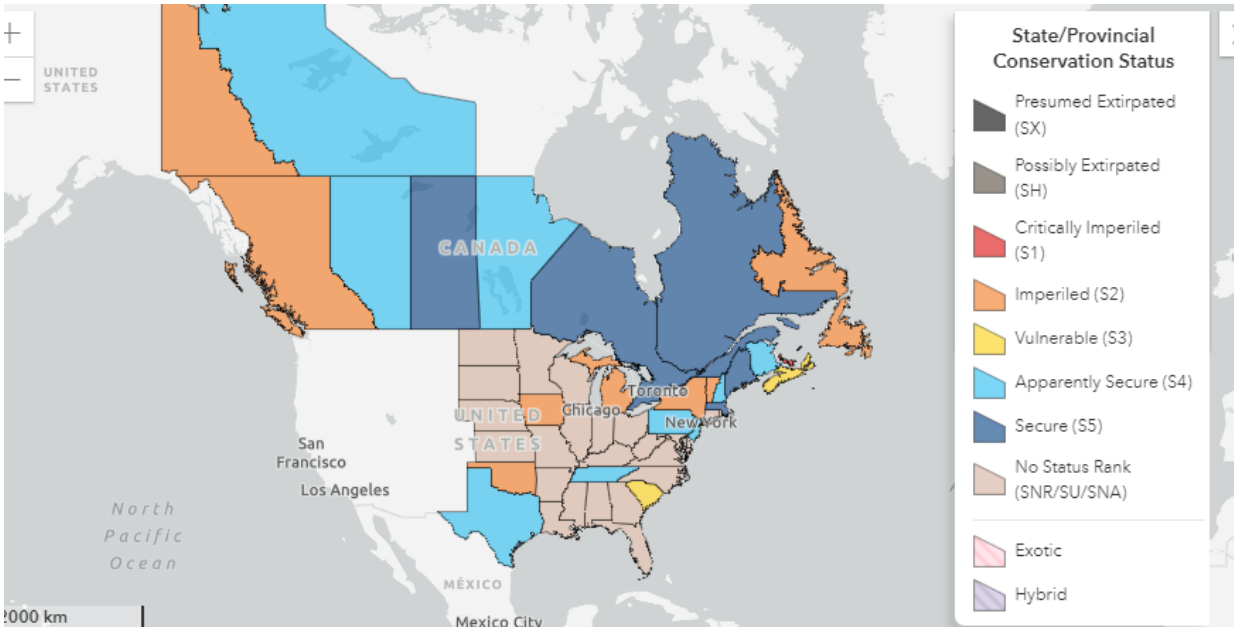

Figure 2. Conservation status of the bay-breasted warbler (*Setophaga castanea*) in North America (NatureServe).

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

There were no observations of bay-breasted warblers breeding in NY from 2020-2023 in the most recent bird atlas; however, there remain two additional years of breeding bird atlas data collection as of the updating of this document.

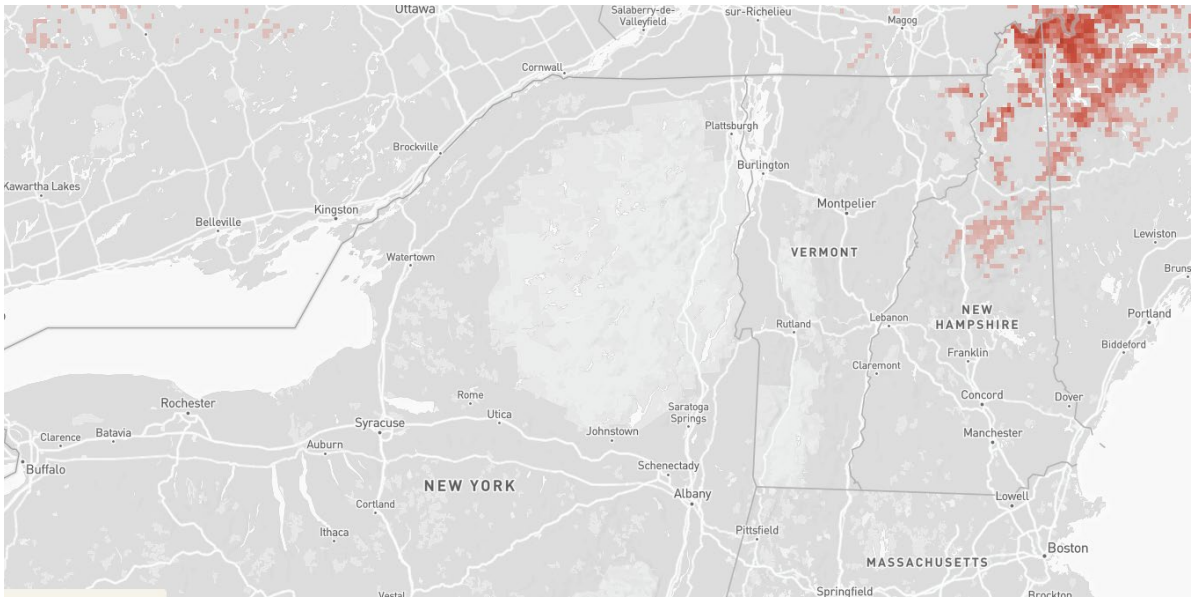

Figure 3. There are no confirmed records of the bay-breasted warbler breeding in New York (breeding range shown in red). The nearest breeding records are located in Vermont and Quebec (Source: BBA).

Years	# of Records	# of BBA Blocks	% of State
Pre-1980			
1980-1985		6	<1
2000-2005		4	<1
2020-2023		0	0

Table 1. Records of bay-breasted warblers (*Setophaga castanea*) in New York.

Details of historic and current occurrence:

The bay-breasted warbler was established as breeding species in New York in 1926 with a female feeding young in Essex County (Levine 1998). Bull (1974) noted just 11 nests. The first breeding bird atlas (1980-85) documented probable occupancy in 32 survey blocks (confirmed in 2 and probable in 4), which represents less than 1% of the state. It is possible that the species no longer breeds in New York.

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
Choose an item.	Choose an item.	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

The bay-breasted warbler occurs in the Northern Appalachian – Boreal Forest ecoregion.

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
Yes	Yes	Unknown	1980-2023

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

The bay-breasted warbler nests in mature conifer forest, especially spruce-fir dominated forests with only a small percentage of deciduous trees and often near water, but it appears to use young and intermediate-aged stands in response to spruce budworm outbreaks. Peterson (1988) summarized the habitat use to include Norway spruce (*Picea abies*) plantations—one near a large open bog—and a variety of tree species including balsam fir (*Abis balsamifera*), hemlock (*Tsuga* spp.), pine (*Pinus* spp.), birch (*Betula* spp.), willow (*Salix* spp.), and shrubs. Peterson (1988) also noted that breeding frequently occurred in these forest types along rivers, open water courses, sluggish streams, and beaver ponds.

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Unknown	Choose an item.	Unknown	Choose an item.	Choose an item.	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

There is no information on age at first breeding, intervals between breeding, reproductive success, and little data on predation or competition. However, it is believed that the species has the potential to rebound and colonize areas depending on spruce budworm abundance.

VI. Threats *(from NY 2015 SWAP or newly described):*

Illinois and Wisconsin have documented mortality of bay-breasted warblers from collisions with towers during fall migration. In Illinois, 237 birds were killed on one night (Seets and Bohlen 1977).

Arnold and Zink (2011) classified bay-breasted warbler as the North American landbird species that most frequently collides with towers.

Warming temperatures could result in the eventual loss of boreal forest in New York. In an assessment of vulnerability to predicted climate change conducted by the New York Natural Heritage Program, bay-breasted warbler was identified as a second-priority species whose sensitivity should be assessed in the future (Schlesinger et al. 2011).

Acid deposition can reduce the vitality or outright kill conifer speices, can reduce prey quantity, and could be reducing populations of land snails, which are an important source of calcium during the breeding season. Osborne et al. (2011) showed that the effects of mercury can be exacerbated in boreal species that use high-acid habitats such as peatlands.

In eastern Canada, shorter forest-cutting cycles, which reduce the area of mature forests, and planting of black spruce and jack pine (*Pinus banksiana*), which are more resistant to spruce budworm, will both contribute to creating less attractive breeding habitat for this warbler (Erskine 1992). There is also evidence that bay-breasted warblers are sensitive to landscape-level changes in forest composition. Drolet et al. (1999) found that bay-breasted warblers were absent from landscapes with <55% forest cover, and Hobson and Bayne (2000a) found that bay-breasted warblers were virtually absent from a fragmented landscape while being common in nearby contiguous forest. The species has also been found to avoid riparian and upland leave strips of width 32-132m (Meiklejohn and Hughes 1999, Potvin and Bertrand 2004).

Their wintering habitat in Central and South America is in a relatively restricted area that is subject to habitat loss through development and deforestation (Morton 1992). Neotropical migrants face additional threats on wintering grounds and during migration including loss and degradation of wintering habitat, exposure to unregulated contaminants, and collision with various structures such as powerlines, towers, and turbines. In some areas of their distribution, hunting remains a problem.

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

Migratory Bird Treaty Act. Forested wetlands in the Adirondack Park are not allowed to be clearcut; however, many forestry activities are not restricted that could impacts the bay-breasted warbler if present.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

The NY State Wildlife Action Plan (NYSDEC 2005) states the need for a management plan for high-altitude conifer forest birds that draws actions from the results of the Glennon (2010). Conservation actions following IUCN taxonomy are categorized in the table below.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated

subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Table 2. Recommended conservation actions for the bay-breasted warbler (*Setophaga castanea*) by action category identified in the IUCN conservation actions taxonomy.

Conservation Actions	
Action Category	**Action**
Land/water protection	Resource & habitat protection (secure easements)
Land/water management	Site/area management (manage forests, control acid rain) Invasive/problematic species control (West Nile Virus, reduce spraying chemicals that control spruce budworm outbreaks)
Livelihood, economic & other incentives	Conservation payments (where habitat management would otherwise not take place)

Habitat monitoring: Conduct field studies to determine causes for declines of species known to be declining.
Habitat research: Complete an inventory and analysis of the distribution and abundance of boreal species.
Population monitoring: Develop a long-term monitoring program to determine population trends of boreal forest birds.
State land unit management plan: Review Department wildfire management for Forest Preserve lands.

VII. References

American Ornithologists' Union (AOU). Chesser, R.T., R.C. Banks, F.K. Barker, C. Cicero, J.L. Dunn, A.W. Kratter, I.J. Lovette, P.C. Rasmussen, J.V. Remsen, Jr., J.D. Rising, D.F. Stotz, and K. Winker. 2011. Fifty-second supplement to the American Ornithologists' Union Check-list of North American Birds. The Auk 128(3):600-613.

Arnold T. W. and R.M. Zink. 2011. Collision Mortality Has No Discernible Effect on Population Trends of North American Birds. PLoS ONE 6(9): e24708. doi:10.1371/journal.pone.0024708

Bull, J. 1974. Birds of New York State. Doubleday/Natural History Press, Garden City, NY. [Reprinted by Cornell University Press, Ithaca, NY, 1985.]

Drolet, B., A. Desrochers, and M.J. Fortin. 1999. Effects of Landscape Structure on Nesting Songbird Distribution in a Harvested Boreal Forest. The Condor 101(3):699-704. https://doi.org/10.2307/1370205.

Erskine, A. J. 1992. Atlas of breeding birds of the maritime provinces. Nimbus Publ. Ltd. and Nova Scotia Mus. Halifax, NS.

Glennon, M. 2010. Distribution and abundance of boreal birds in the Adirondack Park. Final Report to the New York State Department of Environmental Conservation. Wildlife Conservation Society, Saranac Lake, NY.

Glennon, M. 2014. Dynamics of Boreal Birds at the Edge of their Range in the Adirondack Park, NY. Northeastern Naturalist 21(1):51-71.

Glennon, M. S. F. Langdon, M. A. Rubenstein, and M. S. Cross. 2019. Temporal changes in avian community composition in lowland conifer habitats at the southern edge of the boreal zone in the Adirondack Park, NY. PLoS ONE 14(8): e0220927. https://doi.org/10.1371/journal.pone.0220927.

Hobson, K. A. and E. Bayne. 2000a. Effects of forest fragmentation by agriculture on avian communities in the southern boreal mixedwoods of western Canada. The Wilson Bulletin 112(3): 373-387.

Hobson, K. A. and E. Bayne. 2000b. The effects of stand age on avian communities in aspen-dominated forests of central Saskatchewan, Canada. Forest Ecology and Management 136(1-3):121-134.

Levine, E. 1998. Bull's birds of New York State. Comstock Publishing Associates, Ithaca, NY.

McGowan, K.J. and K. Corwin, eds. 2008. The second Atlas of breeding birds in New York State. Cornell University Press, Ithaca, NY.

Meiklejohn, B. A., and J. W. Hughes. 1999. Bird Communities in Riparian Buffer Strips of Industrial Forests. The American Midland Naturalist 141(1):172-184.

Morton, E. S. 1992. What do we know about the future of migrant landbirds? pp. 579-589. In: Ecology and Conservation of Neotropical Migrant Landbirds. Hagan III, J.M. and D.W. Johnston, Eds. Smithsonian Institution Press, Washington, D.C.

NatureServe. 2024. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available http://www.natureserve.org/explorer. (Accessed: 10 January 2024).

New York State Department of Environmental Conservation (NYSDEC). 2005. New York State Comprehensive Wildlife Conservation Strategy. http://www.dec.ny.gov/index.html

Osborne, C. E, D. C. Evers, M. Duron, N. Schoch, D. Yates, D. Buck, O. P. Lane, and J. Franklin. 2011. Mercury Contamination within Terrestrial Ecosystems in New England and Mid-Atlantic States: Profiles of Soil, Invertebrates, Songbirds, and Bats. Report BRI 2011-09. Submitted to The Nature Conservancy – Eastern New York Chapter. Biodiversity Research Institute, Gorham, Maine.

Peterson, J.M.C. 1988. Bay-breasted warbler, Dendroica castanea. Pages 392-93 in The Atlas of Breeding Birds in New York State (R.F. Andrle and J.R. Carroll, eds.). Cornell University Press, Ithaca, NY.

Potvin, F., and N. Bertrand. 2004. Leaving forest strips in large clearcut landscapes of boreal forest: A management scenario suitable for wildlife? The Forestry Chronicle 80(1):44-53. https://doi.org/10.5558/tfc80044-1.

Royama, T., W. E. MacKinnon, E. G. Kettela, N. E. Carter, and L. Harting. 2005. Analysis of spruce budworm outbreak cycles in New Brunswick, Canada, since 1952. Ecology 86: 1212–1224.

Sauer, J. R., J. E. Hines, J. E. Fallon, K. L. Pardieck, D. J. Ziolkowski, Jr., and W. A. Link. 2012. The North American Breeding Bird Survey, Results and Analysis 1966 - 2011. Version 07.03.2013 USGS Patuxent Wildlife Research Center, Laurel, MD.

Sauer, J. R., J. E. Hines, J. E. Fallon, K. L. Pardieck, D. J. Ziolkowski, Jr., and W. A. Link. 2014. The North American Breeding Bird Survey, Results and Analysis 1966 - 2012. Version 02.19.2014. USGS Patuxent Wildlife Research Center, Laurel, MD. http://www.pwrc.usgs.gov/.

Seets, J. W. and H. D. Bohlen. 1977. Comparative mortality of birds at television towers in central Illinois. Wilson Bull. 89:422-433.

Schlesinger, M.D., J.D. Corser, K.A. Perkins, and E.L. White. 2011. Vulnerability of at-risk species to climate change in New York. New York Natural Heritage Program, Albany, NY.

Venier, L. A., J. L. Pearce, D. R. Fillman, D. K. McNicol and D.A. Welsh. 2009. Effects of Spruce Budworm (*Choristoneura fumiferana* (Clem.)) Outbreaks on Boreal Mixed-Wood Bird Communities. Avian Conservation and Ecology - Écologie et conservation des oiseaux 4(1):3.

Originally prepared by	Kimberley Corwin
Date first prepared	November 17, 2011
First revision	July 2014 (Jenny Murtaugh)
Latest revision	January 10, 2024 (Angelena Ross)

Species Status Assessment

Common Name: Bicknell's thrush **Date Updated:** February 2024

Scientific Name: *Catharus bicknelli* **Updated By:** Jed Hayden

Class: Aves

Family: Alaudidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

Formerly known as a subspecies of the gray-cheeked thrush, the Bicknell's thrush was classified as a distinct species in 1995 (AOU 1995), a designation that has heightened conservation interest. This species occurs in montane fir forest in the northeastern United States and adjacent Canadian provinces. Following the narrow habitat preferences, populations are localized and disjunct. In New York, breeding occurs only in the Adirondack Mountains and Catskill Mountains; other U.S. populations occur in Vermont, Maine and New Hampshire.

Bicknell's thrush is considered vulnerable due to its restricted breeding range in high elevation forests and climate change (Hill 2013). The Mountain Birdwatch (MBW) program has conducted species-specific monitoring of Bicknell's thrush in New York, Vermont, New Hampshire, and Maine since 2000. The trend analysis of observed abundance in MBW data from 2001-2020 indicate significant decreases in the Adirondack and Catskill mountains, and across the five survey regions including New York (Catskills), New York (Adirondacks), Vermont, New Hampshire, and Maine (Hill 2023). In addition, populations in Nova Scotia and New Brunswick are declining severely (Campbell and Stewart 2012). It is likely that Bicknell's thrush has one of the lowest populations of birds that occur in the United States and Canada (Hill 2023).

I. Status

a. Current legal protected Status

i. **Federal:** Not listed **Candidate:** No

ii. **New York:** Special Conern; HPSGCN

b. Natural Heritage Program

i. **Global:** G4

ii. **New York:** S2S3B **Tracked by NYNHP?:** Yes

Other Ranks:

Partners in Flight – Species of Continental Conservation Concern
IUCN Red List – Globally Vulnerable
Audubon Watch List – Red List
Canada – Candidate for Federal Listing
USFWS – Candidate for Federal Listing
COSEWIC – recommended Threatened in 2009
Species of Northeast Regional Conservation Concern

Status Discussion:

Bicknell's thrush is endemic to the northeastern U.S. and nearby Canadian provinces; it is ranked as vulnerable, imperiled, or critically imperiled in each state and province. A population on Mount Greylock in Massachusetts was extirpated during the early 1900s. The population went from 10 pairs in 1950s to 0 in 1973 (Veit and Petersen 1993). Bicknell's thrush is an uncommon breeder at high elevations (above 3,000 feet) in the Adirondack and Catskill mountains. It is an uncommon migrant in eastern and coastal portions of the state. The Catskill Mountains population represents the southernmost edge of the breeding range.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Declining	Declining	2000-2023		Yes
Northeastern US	Yes	Declining	Declining	2000-2023		Yes
New York	Yes	Declining	Declining	2000-2023	SC	Yes
Connecticut	No	Choose an item.	Choose an item.			No
Massachusetts	No	Choose an item.	Choose an item.			No
New Jersey	No	Choose an item.	Choose an item.			No
Pennsylvania	No	Choose an item.	Choose an item.			No
Vermont	Yes	Declining	Declining	2000-2023		Yes
Ontario	No	Choose an item.	Choose an item.			No
Quebec	Yes	Declining	Declining		Vulnerable	No

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

Mountain Birdwatch surveys are conducted annually throughout the Northeastern United States, including the Catskills and Adirondacks. Monitoring through the Breeding Bird Atlas has also been used, although it is not as effective as targeted surveys.

Trends Discussion *(insert map of North American/regional distribution and status):*

Hill (2023) summarizes Mountain Birdwatch (MBW) data from 2001-2023 for five regions where Bicknell's thrush breed: Catskill Mountains, Adirondack Mountains, Green Mountains, White Mountains, Maine high peaks. In all five regions combined, the observed abundance decreased significantly by 4.53% annually. The observed abundance decreased significantly in the Adirondack Mountains by 3.26% annually and a decrease in population of 35% throughout the study period (2001-2023). Populations in the Catskills declined 9.03% per year, with a population loss of 70.79%. This population is predicted to be extirpated around 2050.

The High Elevation Landbird Program (HELP) monitors long-term trends in Bicknell's thrush populations in Nova Scotia and New Brunswick. From 2002-2011, the number of Bicknell's thrush

reported on survey routes declined by 11.5% annually in New Brunswick and by 7.4% annually in Nova Scotia (Campbell and Stewart 2012).

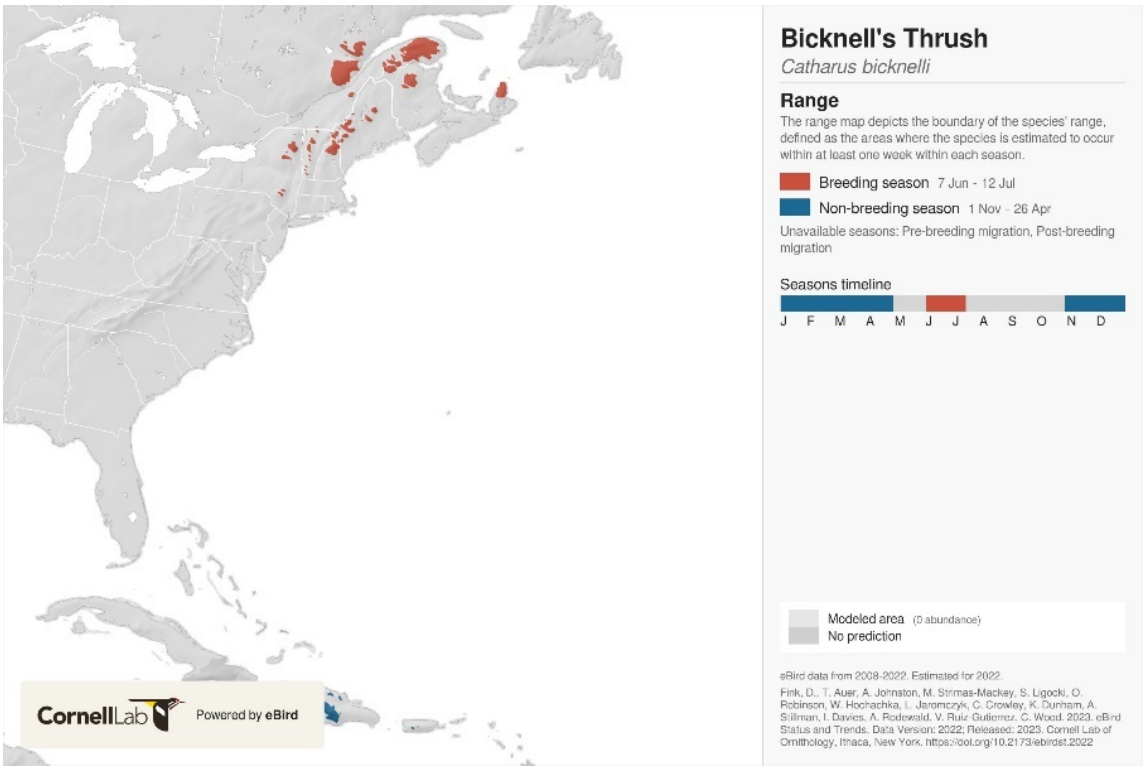

Figure 1. Bicknell's thrush distribution in North America (eBird)

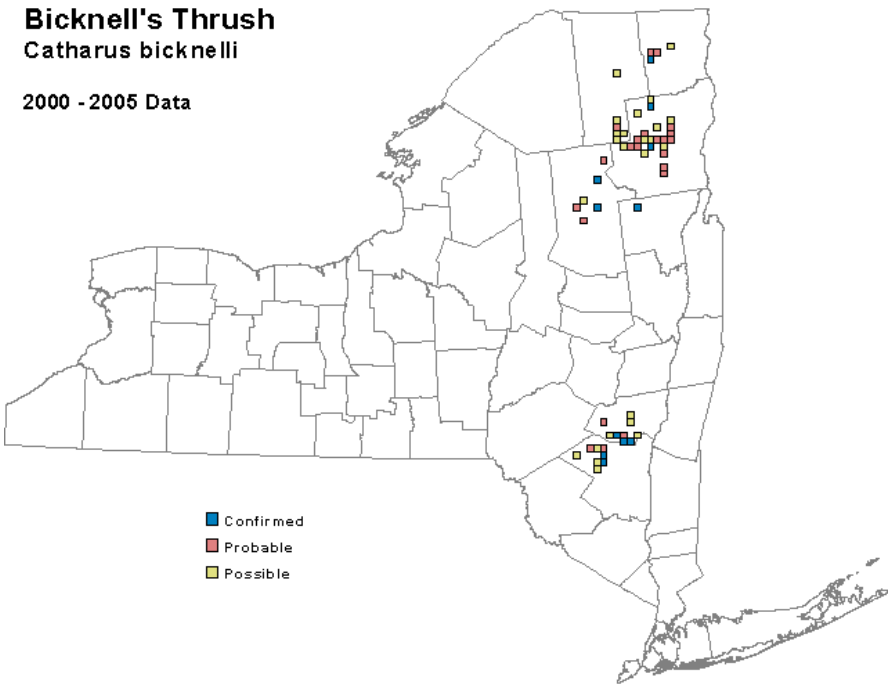

Figure 2. Bicknell's thrush occurrence in New York State during the second Breeding Bird Atlas (McGowan and Corwin 2008).

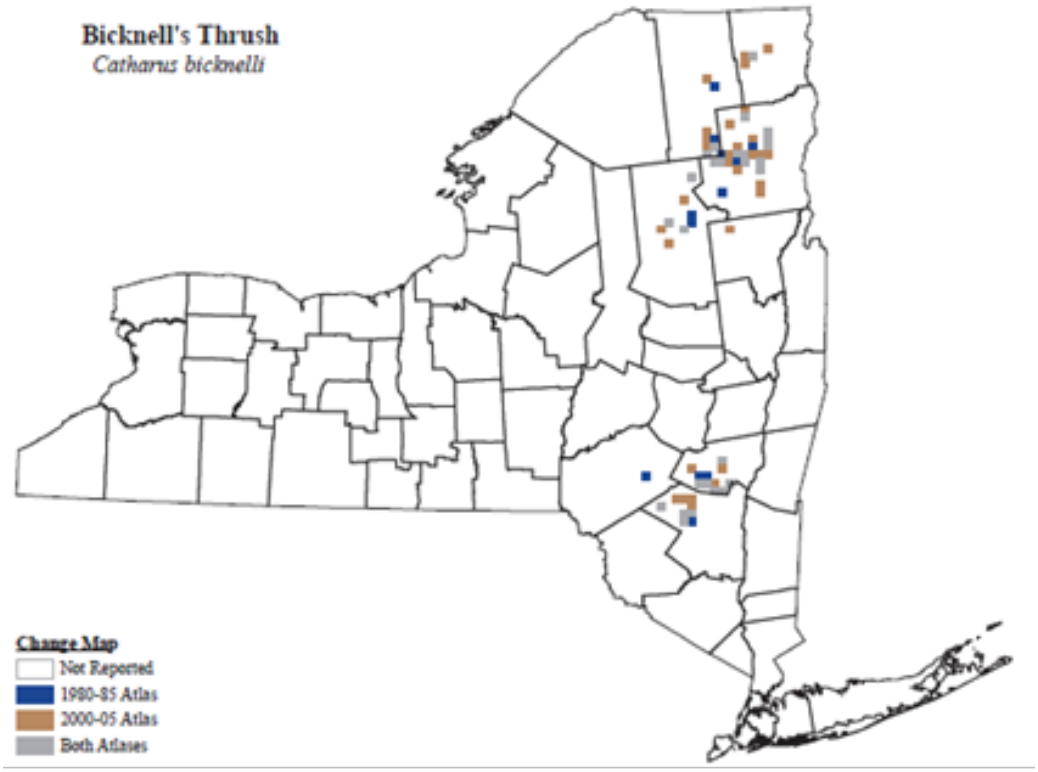

Figure 3. Change in Bicknell's thrush occurrence in New York State between the first Breeding Bird Atlas and the second Breeding Bird Atlas (McGowan and Corwin 2008).

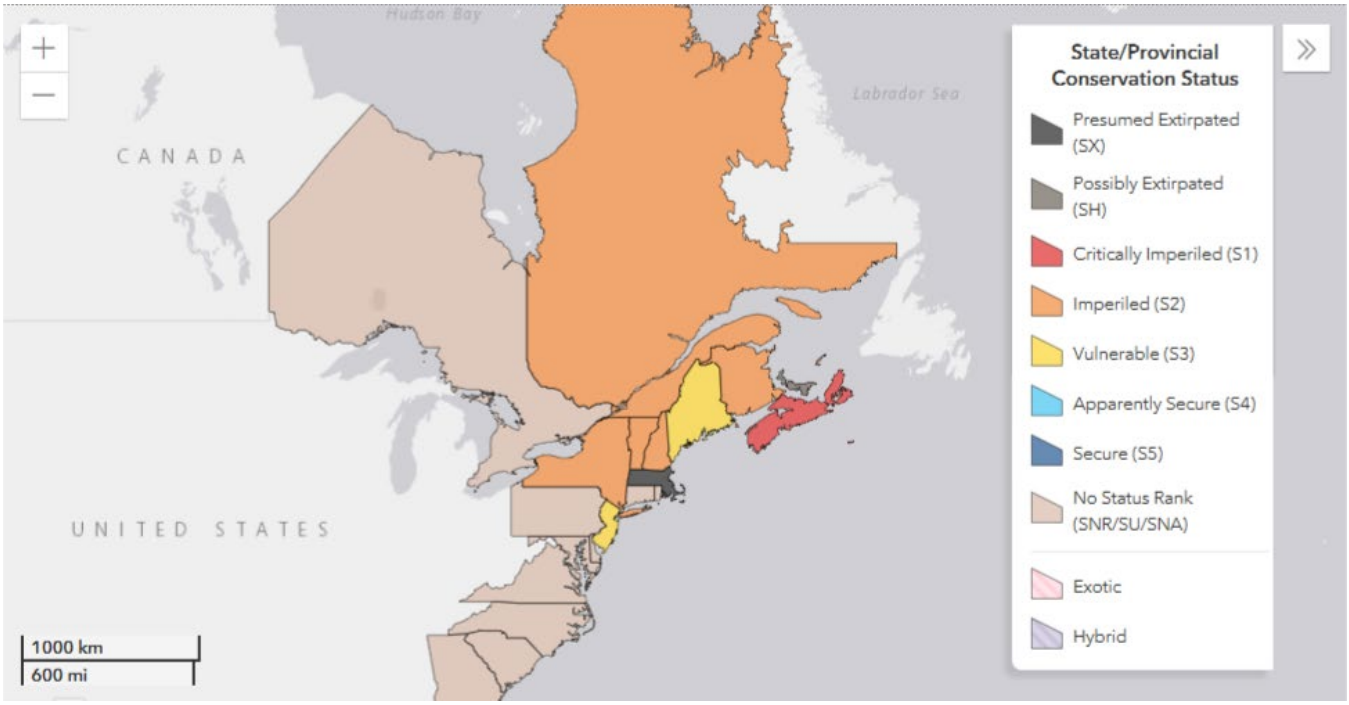

Figure 4. Bicknell's thrush status in North America (NatureServe 2023).

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

Years	# of Records	# of BBA Blocks	% of State
Pre-1980	_____	39	0.7
1980-1985	_____	40	0.7
2000-2005	_____	52	0.9
2020-2023	_____	32	0.5

Table 1. Records of Bicknell's thrush in New York.

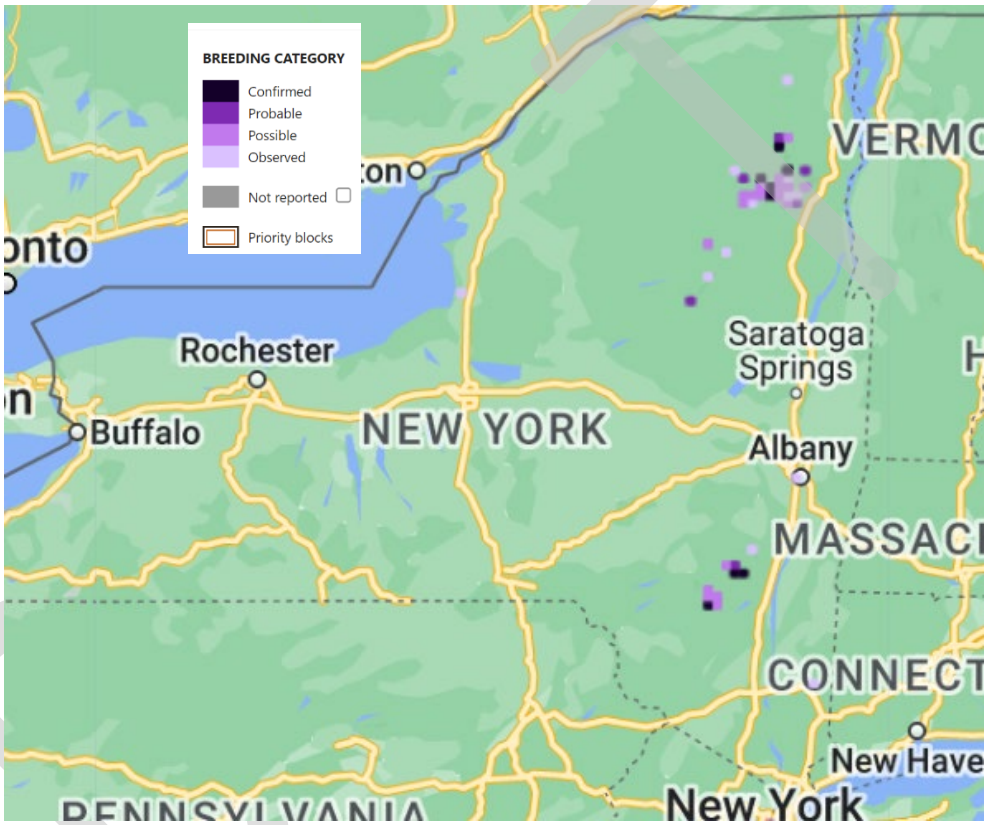

Figure 5. Breeding Bird Atlas 3 records of Bicknell's thrush in New York (BBA/ebird)

Details of historic and current occurrence:

The first Breeding Bird Atlas (BBA) (1980-85) documented occupancy in 40 blocks, 0.7005% of the survey blocks statewide (Anderle and Carroll 1988). The second BBA (2000-2005) documented occupancy in 52 blocks, 0.91070% of the survey blocks statewide, not a significant change since the first atlas (McGowan and Corwin 2008).

The third BBA (2020-2025) is currently underway and utilizes a number and layout of survey blocks across New York, making direct comparison with the first two Atlases difficult. There were 5,333 blocks in the first and second BBAs, and there are 5,710 blocks in the current BBA. To date, Bicknell's thrush has been documented in 32 blocks, 0.56040% of survey blocks statewide during the third BBA (NYS BBA III Overview, 2023).

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Disjunct	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

1. Spruce-Fir Forest and Flats
2. Mountain Spruce-Fir Forests

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
Yes	Yes	Unknown	

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

Lambert et al. (2005) estimated that 24% of Bicknell's thrush habitat in the U.S. is found in New York; 93% of those known lands are conserved in some manner. This thrush nests in dense montane forests dominated by balsam fir with lesser amounts of red and black spruce, white birch, and mountain-ash. Regenerating spruce/fir "waves" (trees of progressing ages) are preferred habitat. In a statewide survey in 1992-94, Rimmer (2013) reports that the lowest elevation where Bicknell's thrush was reported was 3,780 feet.

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	Choose an item.	Choose an item.	Yes	Choose an item.	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

The polygynandrous breeding ecology of Bicknell's Thrush is unusual for a neotropical migrant (but see Halley & Heckscher 2012 on Veery, *C. fuscescens*). Most broods have two sires and two or more male

feeders (range 1-4). Some males feed at two nests concurrently or consecutively (Goetz et al. 2003). Bicknell's thrush produce one brood per season, but will renest after nest failure. Rates of predation on eggs and nestlings are strongly linked to biennial masting cycle in montane coniferous forest in which alternating years of high cone crops result in high red squirrel populations the following spring and summer, who are the main nest predators. Annual survival estimate of adult birds at survey sites in VT is 65%.

In Vermont, annual reproductive success among males is skewed but generally low. Of 21 males with known paternity at nests in 1998 and 1999, 13 (62%) sired only 1 chick, 4 (19%) sired 2 chicks, 3 (14%) sired 3 chicks, and 1 (5%) sired 4 chicks; these are minimum estimates. Percentage of females that raise one brood to independence each year in Vermont: Stratton Mtn. 1997 = 85.7%, 1998 = 88.8%, 1999 = 0%, 2000 = 90.9%; Mt. Mansfield 1999 = 62.5%, 2000 = 62.5% (See Rimmer et al. 2001).

VI. Threats *(from NY 2015 SWAP or newly described):*

While most mountain peaks where breeding is known in New York are within Forest Preserve lands (93% of suitable habitat in New York is protected in some manner), habitat loss and degradation remain a concern. Although threats to habitat are most severe in Canada and on wintering grounds, breeding habitat in New York may be removed, fragmented, or altered by construction and operation of wind power, telecommunication facilities, and recreational skiing.

Acid deposition can reduce the vitality or outright kill conifer forests, can reduce prey quantity, and could be reducing populations of land snails, which are an important source of calcium during the breeding season. Hames et al. (2002) found that acid deposition and resulting calcium depletion are linked to wood thrush declines; this may be problematic for Bicknell's thrush as well (Rimmer et al. 2005). Bicknell's thrush are exposed to high levels of mercury at in their montane breeding habitat (Osborne et al. 2011). Townsend et al. (2013) found that thrushes wintering in cloud forest habitats on Hispaniola had surprisingly high blood mercury concentrations. The effects of mercury bioaccumulation are unknown for Bicknell's thrush.

Loss of habitat in New York has not been proven to be a threat in large part because almost all the peaks with known breeding occurrence are on state land and protected by forest preserve regulations. However, Bicknell's thrush is vulnerable to habitat loss from ongoing effects of climate change. Boreal forests are expected to decrease in area, with major changes occurring along the southern boundaries as ranges of tree species shift northward (North American Bird Conservation Initiative (2010). Climate warming models predict an upward shift in the elevational distribution of Bicknell's thrush habitat. Warming of as little as 1˚C is predicted to reduce potential habitat by more than half, while an increase of 2˚C may eliminate habitat in the Catskill Mountains and most of Vermont (Rodenhouse et al. 2008). Climate change could also cause disruption of the cone-red squirrel cycle; change the timing of the prey base emergence; and increase interspecific competition (IBTCG 2010).

Threats to NY Populations	
Threat Category	**Threat**
1. Climate Change & Severe Weather	Habitat Shifting & Alteration; Competition with generalist species
2. Climate Change & Severe Weather	Storms & Flooding
3. Residential & Commercial Development	Tourism & Recreation Areas (skiing)
4. Transportation & Service Corridors	Utility & Service Lines (cell towers)

5. Pollution	Air-borne Pollutants (acid rain)
6. Pollution	Industrial & Military Effluents (mercury)
7. Pollution	Excess Energy (migration, esp. NYC)

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

Over 90% of the Bicknell's thrush habitat in New York State is protected. This is mainly due to being in the State Forest Preserve System. In addition, the species itself is protected by the Migratory Bird Treaty Act.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

Recommended conservation actions are described in the Conservation Action Plan for Bicknell's Thrush and are listed below (IBTCG 2017). The Plan states the goal, "to increase the global population of Bicknell's Thrush by 25% over the next fifty years (2011–2060), with no further net loss of distribution."

Recommended actions on breeding grounds:

- Partner with management agencies to develop and implement Best Management Practices (BMPs) for Bicknell's Thrush.
- Maintain a target amount of Bicknell's thrush habitat in industrial forests.
- Reduce acid precipitation through policy and regulation.
- Reduce mercury pollution through pollution policy and regulation.

Recommended actions on wintering grounds:

- Improve protection of current winter habitat
- Expand Bicknell's Thrush Habitat Protection Fund
- Develop habitat management plans and secure implementation funding
- Pilot winter habitat restoration projects
- Develop strong links with Caribbean partners

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
1. Land/Water Protection	Site/Area Protection
2. Land/Water Protection	Resource/Habitat Protection

3. Land/Water Management	Site/Area Management
4. Land/Water Management	Invasive/Problematic Species Control
5. Human Intrusions and Disturbance	Education and Awareness
6. Climate Change and Severe Weather	Mitigate for Climate Change

Table 2. Recommended conservation actions for Bicknell's thrush.

VII. References

American Ornithologists' Union. 1995. Fortieth supplement to the American Ornithologists' Union checklist of North American birds. Auk 112:819-830.

Andrle, R.F. and J.R. Carroll, eds. 1988. The Atlas of breeding birds in New York State. Cornell University Press, Ithaca, NY.

Campbell, G. and Stewart, B. 2012. High Elevation Landbird Program 10-year Report. Unpublished report by Bird Studies Canada (Atlantic Region), Sackville NB.

Goetz, J. E., K. P. McFarland, and C. C. Rimmer. 2003. Multiple paternity and multiple male feeders in Bicknell's thrush (Catharus bicknelli). Auk 120: 1044–1053.

Hames, R.S., K.V. Rosenberg, J.D. Lowe, S.E. Barker, and A.A. Dhondt. 2002. Adverse effects of acid rain on the distribution of the Wood Thrush (Hylocichla mustelina) in North America. Proceedings of the National Academy of Sciences.

Hill, J.M. 2023. The State of the Mountain Birds Report: 2023. Vermont Center for Ecostudies, White River Junction, VT. https://mountainbirds.vtecostudies.org/. Accessed 1/3/2024.

IBTCG. 2017. A conservation action plan for Bicknell's thrush (Catharus bicknelli). J.D. LLoyd and K.P. McFarland, eds. International Bicknell's Thrush Conservation Group. Available at www.bicknellsthrush.org.

Lambert, J.D., K.P. McFarland, C.C. Rimmer, S.D. Faccio, and J.L. Atwood. 2005. A practical model of Bicknell's thrush distribution in the northeastern United States. Wilson Bulletin 117:1-11.

MBW. 2020. Mountain Bird Watch. Vermont Center for Ecosystem Studies. Norwich, Vermont. <vtecostudies.org/projects/mountains/mountain-birdwatch/explore-data-map>. Accessed 23 December 2020

McGowan, K.J. and K. Corwin, eds. 2008. The second Atlas of breeding birds in New York State. Cornell University Press, Ithaca, NY.

North American Bird Conservation Initiative U.S. Committee. 2010. The State of the Birds 2010 Report on Climate Change, United States of America. Washington, DC: U.S. Department of the Interior.

Rimmer, C.C. and K.P. McFarland. 2013. Bicknell's Thrush: a twenty-year retrospective on the Northeast's most vulnerable songbird. Bird Observer 41:9-16.

Rimmer, C. C., K. P. McFarland, W.G. Ellison and J. E. Goetz. 2001. Bicknell's Thrush (Catharus bicknelli). The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/592

Rimmer, C.C., K. P. McFarland, D. C. Evers, E. K. Miller, Y. Aubry, D. Busby, and R. J. Taylor. 2005. Mercury levels in Bicknell's thrush and other insectivorous passerine birds in montane forests of the northeastern United States and Canada. Ecotoxicology 14:223-240.

Rodenhouse, N.L., S.N. Matthews, K.P. McFarland, J.D. Lambert, L.R. Iverson, A. Prasad, T.S. Sillett, and R.T. Holmes. 2008. Potential Effects of Climate Change on Birds of the Northeast. Mitigation and Adaptation Strategies for Global Change 13: 517–540.

Scarl, J. C. 2011. Mountain Birdwatch 2010-2011: Annual report to the United States Fish and Wildlife Service. Unpublished report. Vermont Center for Ecostudies, Norwich, VT. 18 pp.

Schlesinger, M.D., J.D. Corser, K.A. Perkins, and E.L. White. 2011. Vulnerability of at-risk species to climate change in New York. New York Natural Heritage Program, Albany, NY.

Therres, G.D. 1999. Wildlife species of regional conservation concern in the northeastern United States. Northeast Wildlife 54:93-100.

Townsend, J.M., C.C. Rimmer, C.T. Driscoll, K.P. McFarland, and E.E. Iñigo-Elias. 2013. Mercury concentrations in tropical resident and migrant songbirds on Hispaniola. Ecotoxicology Volume 22 (1): 86-93.

Originally prepared by	Kimberly Corwin
Date first prepared	November 21, 2011
First revision	July, 2014
Latest revision	January 3, 2024

Species Status Assessment

Common Name: Black rail **Date Updated:** December 5, 2023

Scientific Name: *Laterallus jamaicensis* **Updated By:** Chip Hamilton

Class: Aves

Family: Rallidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

Two of five black rail subspecies breed in North America: the eastern black rail (*L. j. jamaicensis*) breeds in the eastern United States and southward into Central America. The northern edge of the distribution is in Long Island, NY and along the Connecticut shore. Black rails inhabit tidal marshes and freshwater wetlands. The breeding range of eastern black rail has contracted since the early 1930s and its population has declined by as much as 75% over the past 10 to 20 years. It is not abundant anywhere but occurs in higher densities south of New Jersey.

One of New York's rarest birds and the smallest of the rail family, this state-endangered species was documented in only one Atlas block in both survey periods—the location in that survey block was Oak Beach, Suffolk County—and was not confirmed breeding during either Atlas survey. Medler (2008) summarized the history of the species in New York: confirmed breeding has not been documented since 1940, though breeding was suspected in 1969 (Post and Enders 1969).

I. Status

a. Current legal protected Status

i. **Federal:** Threatened **Candidate:** Yes

ii. **New York:** Endangered

b. Natural Heritage Program

i. **Global:** G3

ii. **New York:** S1B **Tracked by NYNHP?:** Yes

Other Ranks:
-IUCN Red List:

Status Discussion:

New York represents the northern limit of the eastern population. Black rail is a rare and local breeder in New York, with records limited to the south shore of Long Island. Breeding has not been confirmed in the state since 1937, more than 70 years ago (see Medler 2008). Only one breeding season location was documented during each Breeding Bird Atlas—both were at Oak Beach, Suffolk County. Single records in coastal Westchester County (June 1986) and in Jefferson County (June 1996) were accepted by the New York State Avian Records Committee (NYSARC 1987, 1999).

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Declining	Declining			Choose an item.
Northeastern US	Yes	Declining	Declining			Choose an item.
New York	Yes	Declining	Declining			Choose an item.
Connecticut	No data	Unknown	Choose an item.			Choose an item.
Massachusetts	No	Choose an item.	Choose an item.			Choose an item.
New Jersey	Yes	Declining	Declining		Endangered	Yes
Pennsylvania	No	Choose an item.	Choose an item.			Choose an item.
Vermont	No	Choose an item.	Choose an item.			Choose an item.
Ontario	No	Choose an item.	Choose an item.			Choose an item.
Quebec	No	Choose an item.	Choose an item.			Choose an item.

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

Starting in 2017 Region 1 wildlife staff established a survey route designed to best detect black rail in historical breeding areas. These surveys have continued through to the 2023 breeding season. In 2019 passive acoustic survey methods were also employed by department staff and state parks staff in the area.

Trends Discussion *(insert map of North American/regional distribution and status):*
Consistent detection remains difficult, combined with little baseline information it is difficult to estimate population trends of black rail accurately. Nearly all U.S. populations appear to have declined drastically in this century and have only recently stabilized with the enactment of laws protecting wetlands in the last 25 years.

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

Years	# of Records	# of BBA Blocks	% of State
Pre-1980	_____	_____	_____
1980-1985	_____	_____	_____
2000-2005	_____	_____	_____
2020-2023	_____	_____	_____

Table 1. Records of black rail in New York.

Details of historic and current occurrence:

Eaton (1910) was aware of only five specimens from New York. The first breeding bird atlas (1980-85) documented only one record: Oak Beach, Suffolk County. Two other records are known away from Long Island between atlas surveys: Westchester Co. in June 1986, and Jefferson Co. in June 1996 (see Medler 2008).

The second breeding bird atlas (2000-05) documented only one record—Oak Beach, Suffolk County—the same location of the single record during NY's first atlas. A territorial black rail was documented on three dates in June and July 2009 at Napeague, Suffolk County (Lindsay and Mitra 2009).

A territorial black rail was documented on July 9th in 2019 at Oak Beach, Suffolk County (Hamilton and Ermak 2020).

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Peripheral	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

1. Freshwater Marsh
2. Great Lakes Freshwater Estuary Marsh
3. Estuarine, Brackish Intertidal, Tidal Wetland, High Marsh
4. Coastal Plain Pond
5. Wet Meadow/Shrub Swamp

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
Yes	No	Unknown	

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item

Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

Black rail occur in salt marshes, shallow freshwater marshes, wet meadows, and flooded grassy areas. Confirmed breeding occurred in saltmeadow cordgrass in New York and breeding was suspected in saltwater cordgrass (see Medler 2008).

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	Choose an item.	Choose an item.	Yes	Choose an item.	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

The age at first breeding is unknown, but presumed to be one year. Little is known of their life span and survival; one male in Arizona was at least 2.5 yr old. Adult survival appears to be high in stable habitats, despite predation by herons and other avian predators during extreme high tides—a primary source of mortality for populations in tidal marshes. Juveniles disperse widely from breeding areas and may appear in atypical habitat. Black rails are probably capable of quickly colonizing new habitats.

VI. Threats *(from NY 2015 SWAP or newly described):*

Loss and degradation of suitable wetland habitat pose greatest threats to black rails (McMullen 1944, Todd 1977, Kerlinger and Sutton 1989, Evens et al. 1991). Because it prefers shallow-water environments, the black rail faces numerous threats to its habitat. About half of coastal wetlands in many eastern states have been lost to dredging and filling (Tiner 1984). Ditching of salt marshes to eliminate habitat for breeding mosquitos may cause declines in prey populations and therefore loss of habitat (Post and Enders 1969, Kerlinger and Sutton 1989). Alteration of water regimes on the East Coast can allow common reed (*Phragmites australis*) to invade higher sections of salt marshes and degrade habitat.

As a coastal breeding species, black rail is threatened by future sea level rise caused by climate change. Because their salt marsh habitat is subject to inundation by sea level rise, black rails may not have habitat to disperse to. This species was classified as “moderately vulnerable” to predicted climate change in an assessment of vulnerability conducted by the New York Natural Heritage Program (Schlesinger et al. 2011).

Collisions with human-made structures, such as lighthouses, towers, buildings, and wires, are a well-documented mortality source. Humans have also directly increased mortality levels through various other means, including hunting, automobile strikes, trampling by birdwatchers, decapitation by mowers, and possibly trapping.

Chemical contamination is another potential limiting factor. Ingestion of lead shot by soras (*Porzana carolina*), a close relative of the black rail, has been documented in Maryland, and lead residues at levels lethal to waterfowl were discovered in the tissues of some of these birds (Stendell et al. 1980). Although undetermined, black rails may also be contaminated by pesticides which are applied to saltmarshes or leached into wetlands from nearby agricultural fields.

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

The black rail is listed as an endangered species in New York and is protected by Environmental Conservation Law (ECL) section 11-0535 and the New York Code of Rules and Regulations (6 NYCRR Part 182). A permit is required for any proposed project that may result in a take of a species listed as Threatened or Endangered, including, but not limited to, actions that may kill or harm individual animals or result in the adverse modification, degradation or destruction of habitat occupied by the listed species.

Black rail is protected under the Migratory Bird Treaty Act of 1918. The Freshwater Wetlands Act provides protection for wetlands greater than 12.4 acres in size under Article 24 of the NYS Conservation Law. The Tidal Wetlands Act provides protection for all tidal wetlands under Article 25 of the NYS Conservation Law.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

The federal ban on the use of lead shot by waterfowl hunters in 1991 likely benefitted black rails (Tranel and Kimmel 2009). Conservation actions following IUCN taxonomy are categorized in the table below.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
1. Land / Water Protection	Site / Area Protection
2. Land / Water Protection	Resource / Habitat Protection
3. Land / Water Management	Site / Area Management
4. Land / Water Management	Invasive / Problematic Species Control

5. Land/Water Management	Habitat/Natural Process Restoration
6. Law/Policy Actions	Legislation Change/Implementation- formal government sector legislation or policies at all levels
7. Law/Policy Actions	Legislation Change/Implementation- affecting implementation of laws at all levels
8. Livelihood/Economic/Other Incentives	Promote Alternative Products/Services
9. Livelihood/Economic/Other Incentives	Market Forces to Change Behaviors
10. Livelihood/Economic/Other Incentives	Conservation Payments to Change Behaviors
11. External Capacity Building	Institutional & Civil Society Development
12. External Capacity Building	Conservation Finance Raising/Providing Funds

Table 2. Recommended conservation actions for black rail

VII. References

Eddleman, W. R., R. E. Flores and M. Legare. 1994. Black Rail (*Laterallus jamaicensis*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/123

Evens, J. G., G. W. Page, S. A. Laymon, and R. W. Stallcup. 1991. Distribution, relative abundance, and status of the California Black Rail in western North America. Condor 93:952-966.

Kerlinger, P. and C. Sutton. 1989. Black Rail in New Jersey. Records of New Jersey Birds 15:22-26.

Lindsay, P.J. and S.S. Mitra. 2009. Region 10 – Marine. Kingbird 59(4):390-98.

McMullen, T. E. 1944. The Black Rail. Cassinia 34:20-21.

Medler, M. D. 2008. Black Rail, *Laterallus jamaicensis*. The Second Atlas of Breeding Birds in New York State (McGowan, K. J., Corwin, K. J., Eds.). Cornell University Press, Ithaca, NY.

Post, W. and F. Enders. 1960. Reappearance of the black rail on Long Island. Kingbird 19:189-191.

Post, W. and F. Enders. 1969. Reappearance of the Black Rail on Long Island. Kingbird 19:189-191.

Schlesinger, M.D., J.D. Corser, K.A. Perkins, and E.L. White. 2011. Vulnerability of at-risk species to climate change in New York. New York Natural Heritage Program, Albany, NY.

Tiner, Jr., R. W. 1984. Wetlands of the United States: current status and recent trends. Nat. Wetlands Inventory, Washington, D.C.

Todd, R. L. 1977. Black Rail, Little Black Rail, Black Crake, Farallon Rail (*Laterallus jamaicensis*). Pages 71-83 *in* Management of migratory shore and upland game birds in North America. (Sanderson, G. C., Ed.) Intl. Assoc. Fish and Wildl. Agen. Washington, D.C.

Tranel, M. A. and R. O. Kimmel. 2009. Impacts of lead ammunition on wildlife, the environment, and human health—A literature review and implications for Minnesota. In R. T. Watson, M. Fuller, M. Pokras, and W. G. Hunt (Eds.). Ingestion of Lead from Spent Ammunition: Implications for Wildlife and Humans. The Peregrine Fund, Boise, Idaho, USA. DOI 10.4080/ilsa.2009.030

Originally prepared by	Kimberley Corwin
Date first prepared	November 28, 2011
First revision	July 2014 (Jenny Murtaugh)
Latest revision	December 14, 2023 (Frederick Hamilton)

Species Status Assessment

Common Name: Black scoter **Date Updated:** January 19, 2024

Scientific Name: *Melanitta americana* **Updated By:** C. Hoh

Class: Aves

Family: Anatidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

Black scoter is a sea duck that breeds in subarctic North America and winters off coastal New York and on the Great Lakes. Small numbers (fewer than 50) of migrants are occasionally seen on Adirondack lakes. Population trends are difficult to ascertain because aerial surveys combine all three scoter species: black, white-winged, and surf. North American populations appear to be declining, though wintering populations in the Northeast appear to be increasing. Winter counts in New York have been increasing over the past five years and average 5,800 individuals.

I. Status

a. Current legal protected Status

i. **Federal:** Not listed **Candidate:** No

ii. **New York:** SGCN

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** SNRN **Tracked by NYNHP?:** No

Other Ranks:
-IUCN Red List: Near Threatened

Status Discussion:

This species has a large global population with very large and widely dispersed continental subpopulations, and a fairly low degree of threat, particularly on the breeding grounds. The North American breeding population is estimated at somewhere between 51,000 pairs and more than 1 million individuals. In New York, black scoter is a common to abundant migrant and winter visitor on the coast.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Choose an item.	Choose an item.	Choose an item.			Choose an item.
Northeastern US	Choose an item.	Choose an item.	Choose an item.			Choose an item.
New York	Choose an item.	Choose an item.	Choose an item.			Choose an item.

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
Connecticut	Choose an item.	Choose an item.	Choose an item.			Choose an item.
Massachusetts	Choose an item.	Choose an item.	Choose an item.			Choose an item.
New Jersey	Choose an item.	Choose an item.	Choose an item.			Choose an item.
Pennsylvania	Choose an item.	Choose an item.	Choose an item.			Choose an item.
Vermont	Choose an item.	Choose an item.	Choose an item.			Choose an item.
Ontario	Choose an item.	Choose an item.	Choose an item.			Choose an item.
Quebec	Choose an item.	Choose an item.	Choose an item.			Choose an item.

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

A Mid-Winter Waterfowl Survey is conducted annually on Long Island and Lake Champlain and the New York State Ornithological Association has conducted an annual January Waterfowl Count since 1955; these surveys do not include the open ocean. A Sea Duck Survey had been conducted in the Atlantic Flyway, including New York, in the 1990s and early 2000s.

Trends Discussion *(insert map of North American/regional distribution and status):*

The January Waterfowl Count for New York in 2008 reported 12,000 birds, the highest count since the survey began in 1973; numbers had been high and building each of the four years prior. In December 2008, 27,000 birds were reported at NYC Audubon (Mitra 2009).
From 1955 to 1992 in eastern North America, the breeding population estimates of scoters (data not available for individual species) declined significantly at approximately 1% annually (U.S. Fish Wildl. Serv. 1993). Midwinter surveys (1973–1992) provided no evidence for trends in wintering populations of scoters in the U.S. portion of Atlantic Flyway (USFWS 1993). Although current surveys do not adequately monitor black scoter populations, it is estimated that about 250,000 individuals winter along the Atlantic Coast. No data exist on the number of birds wintering on the Great Lakes. There are no current breeding population estimates as the remote nature of the breeding habitat makes them difficult to survey.

The U.S. Fish and Wildlife Service conducted The Sea Duck Survey in the Atlantic Flyway in the 1990s and early 2000s. This mid-winter survey was conducted over the open ocean about 3 miles offshore from Nova Scotia to Florida. The number of black scoters recorded in New York waters during the survey varied greatly, from a high of 5,175 to a low of 88; along the entire length of the survey route there was a high of 15,798 and low of 2,707. No statistically significant population trend is apparent in the results of these surveys (Sea Duck Joint Venture 2003).

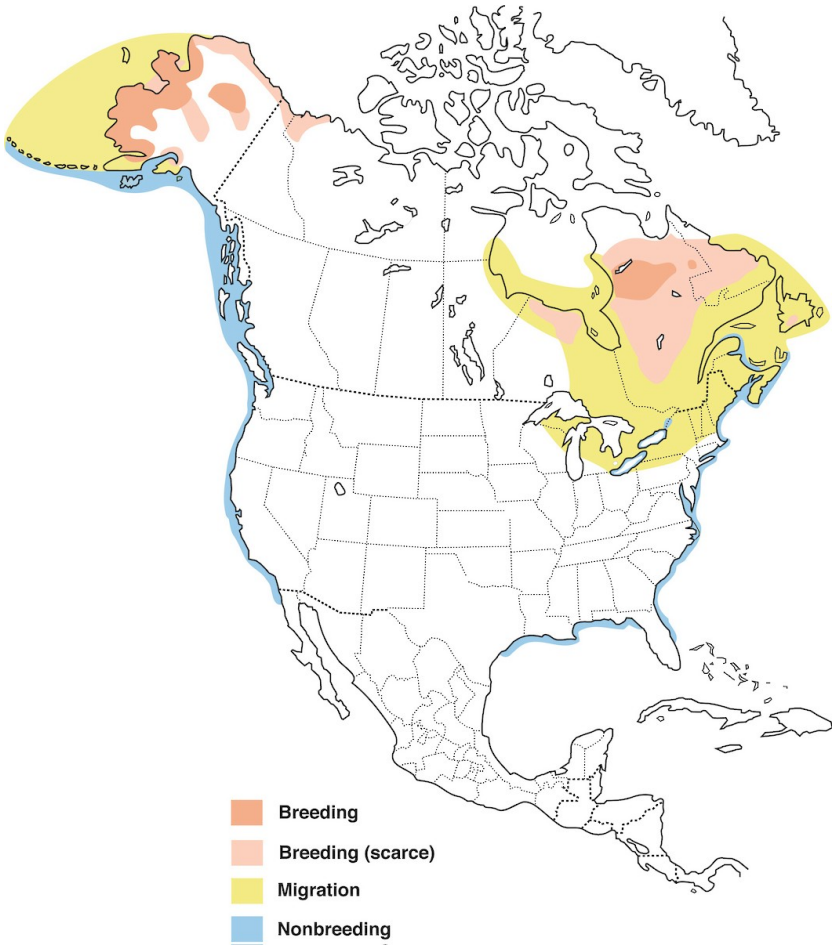

Figure 1. Black scoter distribution in North America (Birds of North America Online, 2024)

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

Years	# of Records	# of BBA Blocks	% of State
Pre-1980	_____	_____	_____
1980-1985	_____	_____	_____
2000-2005	_____	_____	_____
2020-2023	_____	_____	_____

Table 1. Records of black scoter in New York.

Details of historic and current occurrence:

Maximum winter count for New York's coast is 10,000 individuals off Montauk on 3 January and 16 March 1930 (Sweet 1998). Inland counts from the Great Lakes with 5,200 on Lake Erie at Dunkirk, Chautauqua County on 7 February 1969 and 3,300 on Lake Ontario at Derby Hill, Oswego County on 23 October 1965. Sweet (1998) notes, "…there are no high counts of recent vintage."

The average count in New York during the January Waterfowl Survey from 1973 to 1998 was 561 individuals.

New York's January Waterfowl Count in 2008 documented 12,589 wintering individuals. The average count from 1999 to 2008 was 3,370 individuals.

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Peripheral	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

a.

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
No	No	Unknown	

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

Along New Hampshire and Massachusetts coasts, white-winged, surf, and black scoters prefer sandy beaches (50.8 birds/km censused) to rocky headlands (0.62 birds/km) (Stott and Olson 1973). Black scoter occur mostly on coastal waters, less commonly on large inland lakes and rivers when not breeding. It nests near lakes and pools on grassy or bushy tundra and in northern taiga.

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Choose an item.	Yes	Choose an item.	Choose an item.	Yes	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

The breeding ecology of this species remains poorly known, based on only a few initial studies. Only a few nests have been found to date, and most data on breeding come from studies of its European congener, the common scoter (*Melanitta nigra)* of Eurasia. Reproductive success of this species can vary significantly between years, making adult survival crucial to its population dynamics; thus, this species is particularly sensitive to hunting mortality. There is no data on lifespan and survivorship.

VI. Threats *(from NY 2015 SWAP or newly described):*

Threats to NY Populations	
Threat Category	**Threat**
1. Biological Resource Use	Hunting & Collecting Terrestrial Animals (hunting)
2. Invasive & Other Problematic Species & Genes	Invasive Non-Native/Alien Species (problems associated with zebra and quagga mussels)
3. Pollution	Industrial & Military Effluents (oil spills)
4. Energy Production & Mining	Renewable Energy (offshore wind towers)

This species is particularly sensitive to hunting mortality because reproductive success can vary significantly between years, making adult survival crucial to its population dynamics. On average for 1961–1993, approximately 9,500 birds are shot each year in the U.S., but these surveys are conservative; maximum estimate of > 24,000 birds in 1974 (Bartonek 1994). On average, about 85% of U.S. harvest occurs in Atlantic Flyway. There is concern that hunting of sea ducks in the Atlantic Flyway has increased recently as other waterfowl seasons have become more restrictive.

Recent invasion of Great Lakes by zebra mussel (*Dreissena polymorpha*), a potential food item, could influence staging and wintering distributions. Zebra mussels have been found to have high concentrations of contaminants and have been linked to high contaminant levels in other diving ducks. So far, a positive link between zebra mussels and declining populations of diving ducks has not been identified, so it is not known what the impacts to black scoters would be from feeding heavily on zebra mussels. It is not currently known how many black scoters winter on the Great Lakes, and there are not any mid-winter surveys covering the Great Lakes, so a shift in scoter wintering areas from the coast to the Great Lakes may likely go unnoticed for a period of time.

In general, wintering waterbirds face threats from loss of habitat to coastal wetlands, activities that result in large scale alteration of bay or ocean substrates (dredging, sand mining, development of barrier islands, etc.), direct mortality from collisions with structures, various contaminants, or intensive human disturbance.

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

Black scoter is a game species with an open hunting season. The hunting season length and daily bag limit could be modified or the season could be closed. Currently, there is not a specific harvest strategy in place for black scoter, and all species of scoter are managed together as "scoters." In the Atlantic Flyway, "sea ducks" (scoters, eiders, and long-tailed ducks) are managed as underutilized species with a potential of additional harvest opportunity, where within designated special sea duck hunting areas a 107 day hunting season may be allowed with a daily bag limit of 7 ducks (but only 4 may be scoters). In all other areas, sea ducks may be harvested during the regular duck hunting season with a bag limit of 6 per day (but only 4 may be scoters). Even with this abundant hunting opportunity, harvest of black scoter is relatively low, when compared to other species of ducks. Since 1999, black scoter harvest has averaged 800 in New York and about 9,000 for the Atlantic Flyway. Estimated harvest of all species of scoters in the United States was 46,187 in 2010 and 62,086 in 2011; estimated scoter harvest in Canada was 12,330 in 2010 and 9,030 in 2011 (Raftovich et al. 2012).

In New York, the 2012 hunting season for "scoters" includes a 60 day season with a 4 per day bag limit for all of upstate New York and inland waters of Long Island, and a 107 day season with a 4 per day bag limit for the coastal waters of Long Island in the Special Sea Duck Hunting Area. While most of the scoter harvest in New York occurs in the special sea duck hunting area, between a quarter and a third of the annual harvest comes from inland locations such as the Great Lakes, Niagara River, St. Lawrence River, and Lake Champlain.

Figure 5. (need estimated black scoter harvest in New York and the Atlantic Flyway (USFWS))

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

Reliable techniques for monitoring population size and trends across its range need to be developed and implemented. Continued support of the Sea Duck Joint Venture should lead to improved knowledge and management of the species. Conservation actions following IUCN taxonomy are categorized in the table below.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) -
https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
1. Land/Water Protection	Site/Area Protection
2. Land/Water Protection	Resource/Habitat Protection
3. Land/Water Management	Site/Area Management
4. Land/Water Management	Habitat and Natural Process Restoration (pollution control)

5. Law/Policy Action	Policy/Regulation Changes (hunting regulations, ocean dumping practices)
6. External Capacity Building	Alliance & Partnership Development

Table 2. Recommended conservation actions for black scoter

VII. References

Bartonek, J. C. 1994. Waterfowl harvests and status, hunter participation and success, and certain hunting regulations in the Pacific flyway and United States. 1994 Pacific flyway data book, U.S. Fish Wildl. Serv. Portland, OR.

Klimstra, J.D. et al., compiler. 2012. Atlantic Flyway harvest and population survey data book. U.S Fish and Wildlife Service, Laurel, MD.

Mitra, M.M. 2009. Region 10 – Winter 2008-2009. Kingbird 59(2):217-222.

NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available http://www.natureserve.org/explorer. (Accessed: November 28, 2011).

Raftovich, R.V., K.A. Wilkins, S.S. Williams, and H.L. Spriggs. 2012. Migratory Bird Hunting Activity and Harvest during the 2010 and 2011 Hunting Seasons. U.S. Fish and Wildlife Service, Laurel, Maryland.

Sea Duck Joint Venture. 2003. Species status reports. Available at http://seaduckjv.org/meetseaduck/bs.html (Accessed February 14, 2012).

Stott, R. S. and D. P. Olson. 1973. Food-habitat relationship of sea ducks on the New Hampshire coastline. Ecology 54:996-1007.

U.S. Fish and Wildlife Service. 1993. Status of sea ducks in eastern North America. U.S. Fish Wildl. Serv., Office of Migratory Bird Management, Laurel, MD.

Veit, R. R. and W. R. Petersen. 1993. Birds of Massachusetts. Mass. Audubon Soc. Lincoln.

Originally prepared by	Kimberley Corwin
Date first prepared	November 29, 2011
First revision	July 2014 (Jenny Murtaugh)
Latest revision	

Species Status Assessment

Common Name: Black-billed cuckoo **Date Updated:** January 22, 2024

Scientific Name: *Coccyzus erythropthalmus* **Updated By:** Jed Hayden

Class: Aves

Family: Cuculidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

The black-billed cuckoo has a more northern distribution than the yellow-billed cuckoo, which also occurs in New York. Black-billed cuckoos breed in early successional forests and in shrublands. They are found everywhere in the state but are noticeably less common in the high elevations of the Adirondack Mountains. The second breeding bird atlas shows no change in occupancy in the past 20 years and breeding bird survey data show no significant long-term trend. Short-term trends can be skewed by the cuckoo's tendency to follow caterpillar outbreaks.

I. Status

a. Current legal protected Status

i. **Federal:** None **Candidate:** No

ii. **New York:** None

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** S5B **Tracked by NYNHP?:** No

Other Ranks:
-IUCN Red List: G5

-Partners in Flight: Priority species

Status Discussion:

The black-billed cuckoo is a fairly common breeder in New York. It is an uncommon migrant.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Declining	Declining	1999-2009	None	No
Northeastern US	Yes	Declining	Declining	1999-2009	None	No
New York	Yes	Stable	Stable	1976-2007	None	Yes
Connecticut	Yes	Declining	Declining	1999-2009	None	Yes
Massachusetts	Yes	Stable	Stable	1999-2009	None	Yes
New Jersey	Yes	Declining	Declining	1999-2009	None	Yes
Pennsylvania	Yes	Declining	Declining	1983-2008	None	Yes
Vermont	Yes	Declining	Declining	1976-2007	None	Yes
Ontario	Yes	Increasing	Increasing	1999-2009	None	Yes

Quebec	Yes	Declining	Declining	1999-2009	None	No

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

Breeding Bird Atlas and North American Breeding Bird Surveys

Trends Discussion *(insert map of North American/regional distribution and status):*

Populations may be highly variable locally, depending on food availability, with large localized influxes during insect outbreaks. Peak numbers often correlated with irruptions of caterpillars (Jauvin and Bombardier 1996) and cicadas (Nolan and Thompson 1975). Trends difficult to ascertain because numbers vary greatly from year to year; however, BBS data indicate general declines throughout range, with greatest decreases during 1980s and 1990s.

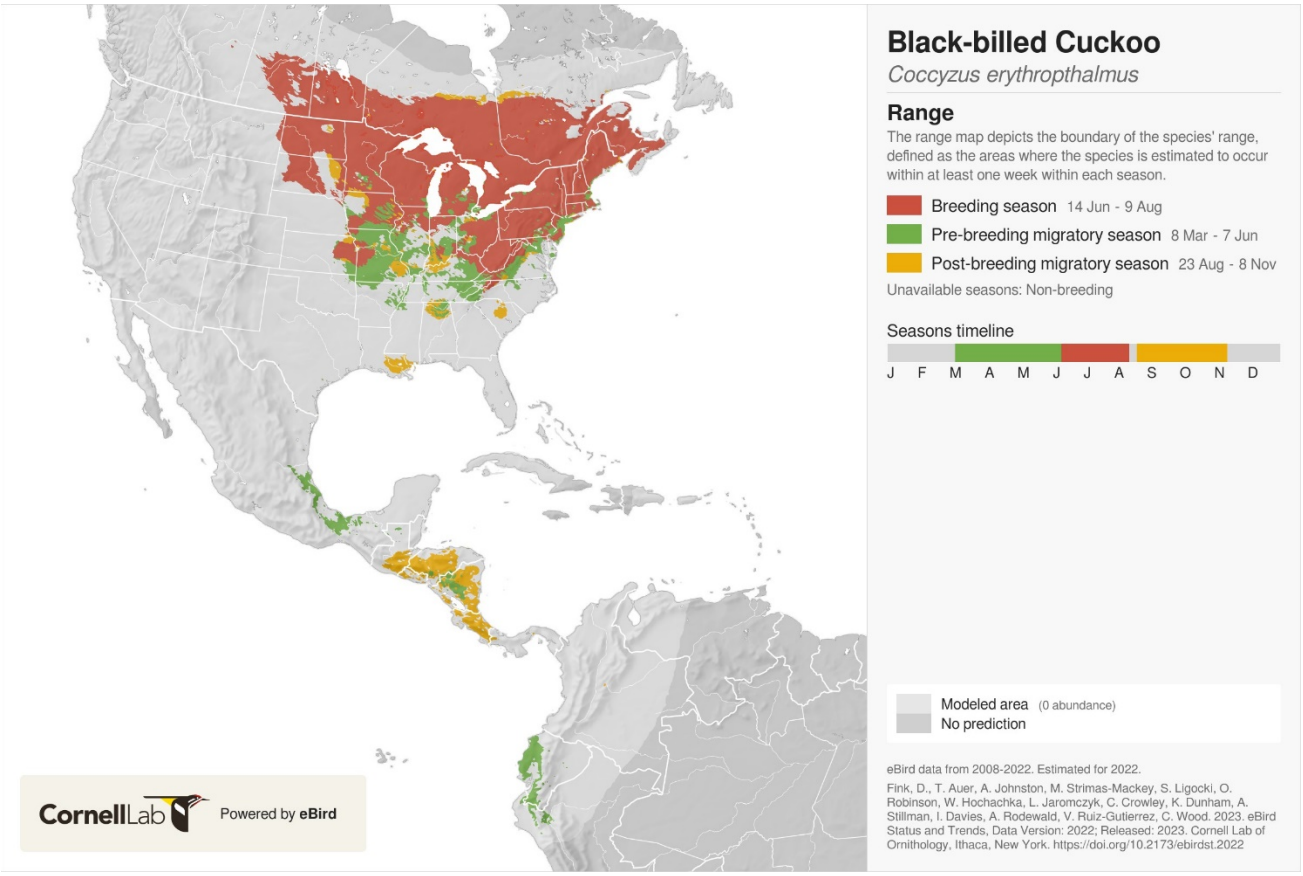

Figure 1. Black-billed cuckoo distribution in North America (eBird).

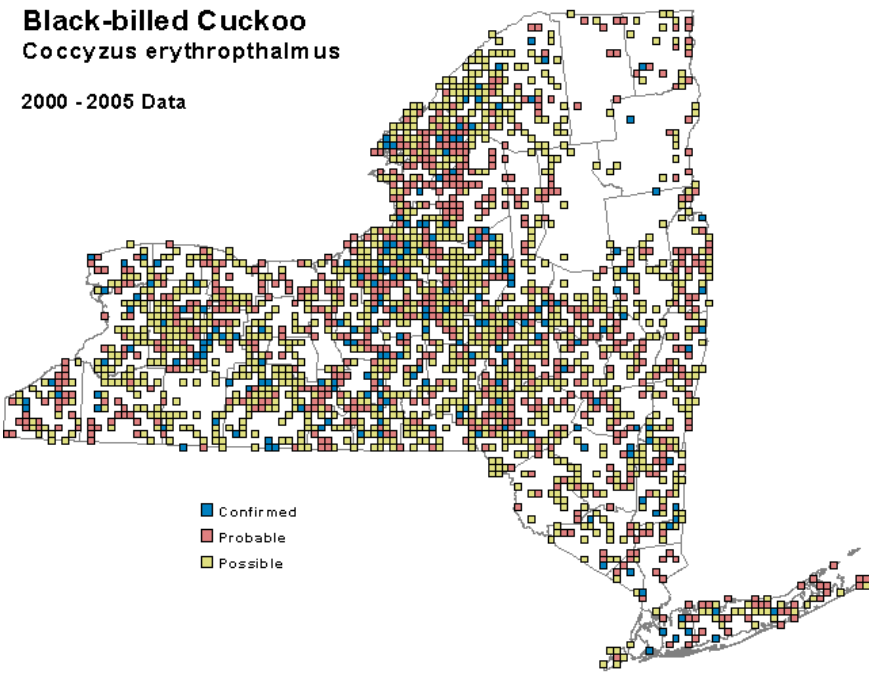

Figure 2. Black-billed cuckoo occurrence in New York State during the second Breeding Bird Atlas (McGowan and Corwin 2008).

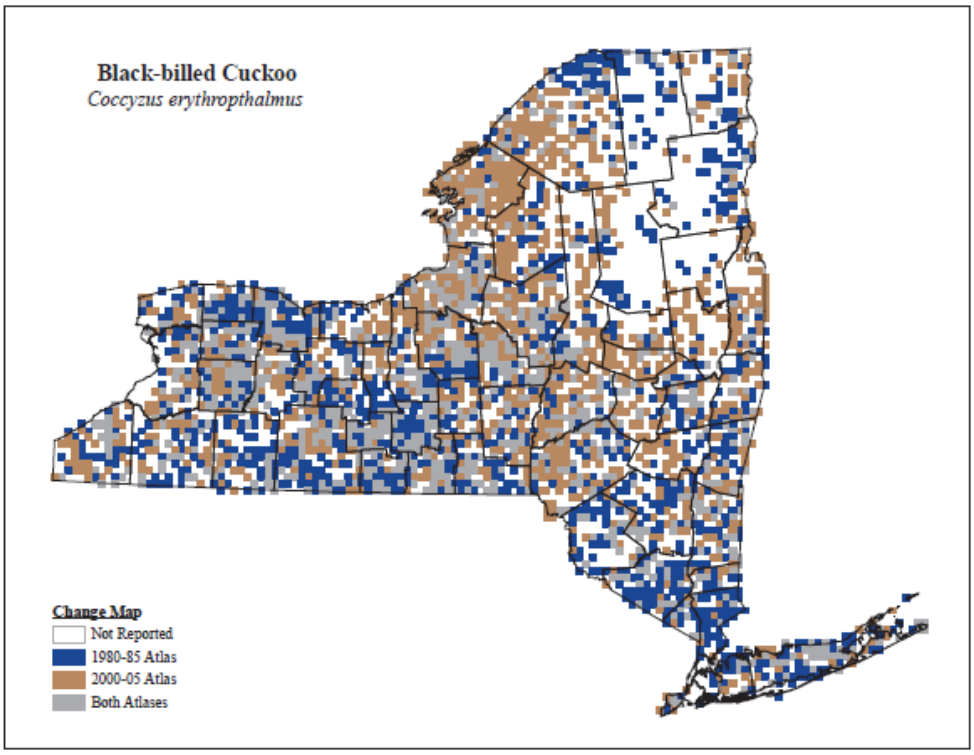

Figure 3. Change in black-billed cuckoo occurrence in New York State between the first Breeding Bird Atlas and the second Breeding Bird Atlas (McGowan and Corwin 2008).

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

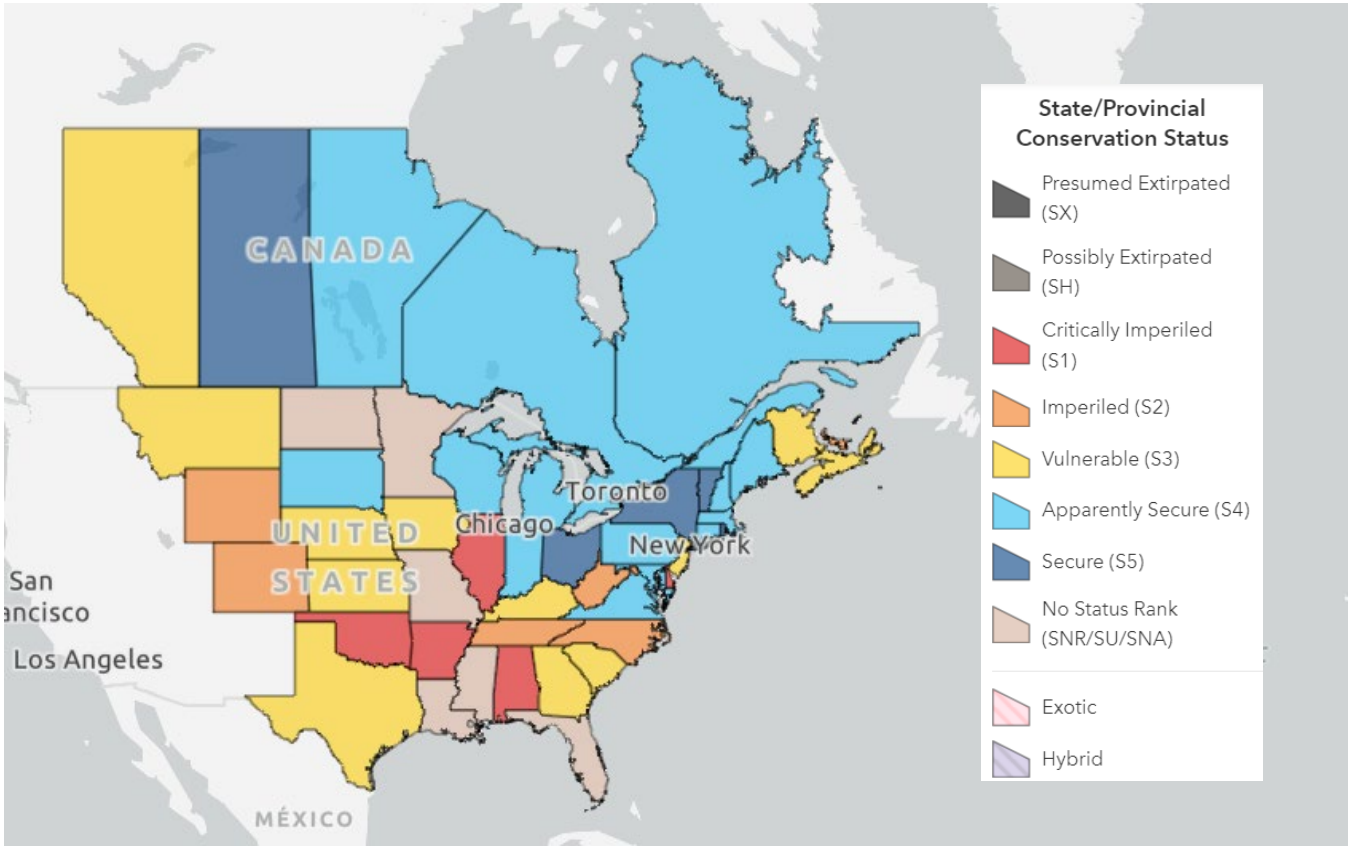

Figure 4. Conservation status of the Black-billed cuckoo in North America.

Years	# of Records	# of BBA Blocks	% of State
Pre-1980	_____	_____	_____
1980-1985	_____	1963	37
2000-2005	_____	2034	38
2020-2023	_____	1028	18

Table 1. Records of Black-billed cuckoo in New York.

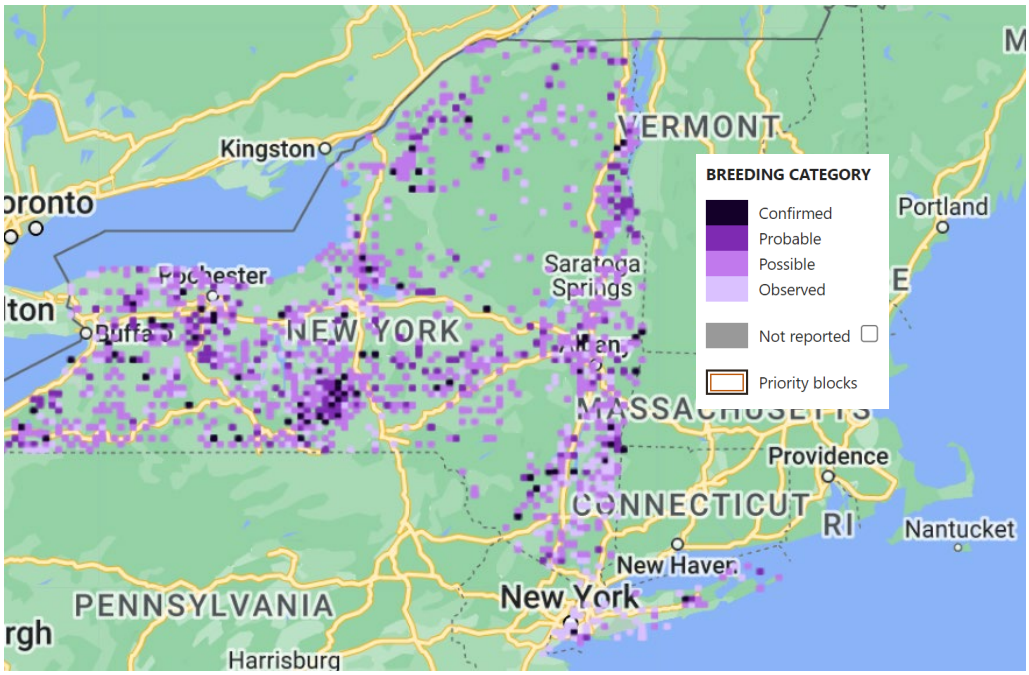

Figure 5. Breeding Bird Atlas 3 records of Black-billed cuckoo in New York (BBA-eBird).

Details of historic and current occurrence:

The first BBA (1980-85) documented occupancy in 1963 blocks, 37% of the survey blocks statewide (Andrle and Carroll 1988). The second BBA (2000-2005) documented occupancy in 2034 blocks, 38% of the survey blocks statewide, not a significant change since the first atlas.

The third BBA (2020-2025) is currently underway and utilizes a different number and layout of survey blocks across New York, making direct comparison with the first two Atlases difficult. There were 5,333 blocks in the first and second BBA's and there are 5,710 blocks in the current BBA. To date, Black-billed cuckoos have been documented in 1028 blocks, 18% of survey blocks statewide during the third BBA (NYS BBA III Overview, 2023).

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
26-50%	Core	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

1. Mixed Northern Hardwood Forest
2. Plantation and Disturbed Land Pioneer Forest
3. Riparian

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
No	No	Declining	Since the 1970s

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

The black-billed cuckoo nests in shrublands and forest edges. Habitats include thickets, orchards, abandoned farmlands, brushy hillsides, and along forest edges, often near water.

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	Choose an item.	Choose an item.	Yes	Choose an item.	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

It is thought that both sexes of black-billed cuckoo breed at about 1 year of age (first spring following birth), as do other cuckoos. The annual reproductive success is highly variable; black-billed cuckoos may be able to raise more young birds during years of high caterpillar abundance (Nolan and Thompson 1975, Sealy 1978). No information is available on lifetime reproductive success. Both life span and survivorship is difficult to determine because few banded cuckoos (*n* = 6,028 since 1955) have been recovered (*n* = 26). Four banded individuals have been recovered at 4 years old, and 1 at least 5 years old.

VI. Threats *(from NY 2015 SWAP or newly described):*

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

Black-billed cuckoo is protected by the Migratory Bird Treaty Act of 1918.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

General threats to the early successional forest/shrubland bird suite in New York include reversion of shrublands to forest; loss of small dairy farms; fire suppression; more intensive agriculture that results in loss of hedgerows, shrubs, and shrub wetlands; reversion of young forest habitat to mature forest; inadequate amounts of forest management that includes even aged and heavy partial removal; and the erroneous public perception that forest management is harmful to birds (NYSDEC 2005).

Threats to NY Populations	
Threat Category	**Threat**
1. Residential & Commercial	Housing & Urban Areas (habitat loss to development)
2. Agriculture & Aquaculture	Perennial & Non-Timber Crops (habitat loss to agriculture)
3. Natural System Modifications	Other Ecosystem Modifications (succession)
4. Invasive & Other Problematic Species	Problematic Native Species (increased predation from urbanization)
5. Transportation & Service Corridors	Roads & Railroads (fragmentation)
6. Pollution	Agriculture & Forestry Effluents (pesticides)

Table 2. Threats to New York State population of black-billed cuckoos.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
Land/Water Protection	Site/Area Protection
Land/Water Protection	Resource/Habitat Protection
Land/Water Management	Site/Area Management
Land/Water Management	Invasive/Problematic Species Control
Land/Water Management	Habitat and Natural Process Restoration

Education and Awareness	Training
Education and Awareness	Awareness & Communications
Law and Policy	Policies and Regulations

Table 2. Recommended conservation actions for black-billed cuckoo

VII. References

Andrle, R.F. and J.R. Carroll, eds. 1988. The atlas of breeding birds in New York State. Cornell University Press, Ithaca, NY.

Eaton, S. W. 1988. Black-billed Cuckoo. Pages 196-197 in The atlas of breeding birds in New York State. (Andrle, R. F. and J. R. Carroll, Eds.) Cornell Univ. Press, Ithaca, NY.

Hughes, Janice M. 2001. Black-billed Cuckoo (Coccyzus erythropthalmus), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/587

Jauvin, D. and M. Bombardier. 1996. Black-billed Cuckoo. Pages 578-581 in The breeding birds of Quebec: atlas of breeding birds of southern Quebec. (Gauthier, J. and Y. Aubry, Eds.) Assoc. québecoise des groupes d'ornithologues, Prov. of Quebec Soc. for the protection of birds, Can. Wildl. Serv., Environ. Canada, Québec Region, Montréal.

McGowan, K.J. and K. Corwin, eds. 2008. The second atlas of breeding birds in New York State. Cornell University Press, Ithaca, NY.

NatureServe. 2012. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. <http://www.natureserve.org/explorer>. Accessed 2 July 2013.

New York State Department of Environmental Conservation (NYSDEC). 2005. New York State

Comprehensive Wildlife Conservation Strategy. <http://www.dec.ny.gov/index.html>. Accessed 2 July 2013.

Nolan, Jr., V. and C. F. Thompson. 1975. The occurrence and significance of anomalous reproductive activities in two North American nonparasitic cuckoos Coccyzus spp. Ibis 117:496-503.

Post, T.J. 2004. Analysis of breeding bird survey trends for landbirds by species suite. NYSDEC unpublished report.

Sealy, S. G. 1978. Possible influence of food on egg-laying and clutch size in the Black-billed Cuckoo. Condor 80:103-104.

Originally prepared by	Kimberley Corwin
Date first prepared	November 29, 2011
First revision	July 2014 (Jenny Murtaugh)
Latest revision	January 22, 2024 (Jed Hayden)

Species Status Assessment

Common Name: Black-crowned night-heron **Date Updated:** December 20, 2023

Scientific Name: *Nycticorax nycticorax* **Updated By:** M. Oberkircher

Class: Aves

Family: Ardeidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

The black-crowned night-heron is the most widespread heron in the world, breeding on every continent except Antarctica and Australia. In New York it occurs primarily on the Coastal Lowlands and the Great Lakes Plain; other records are scattered throughout the state. It is found in coastal, estuarine, and freshwater habitats including swamps, streams, and rivers, the edges of ponds, lakes, lagoons, tidal mudflats, salt marsh, canals and reservoirs, as well as in wet farm fields (see McCrimmon 2008). Breeding Bird Atlas data show no change in the number of occupied blocks in the past 20 years, though some local shifts occurred. Range-wide, both increases and decreases have been documented but when comparisons are made to historical abundance, declines are noted everywhere the species occurs.

I. Status

a. Current legal protected Status

i. **Federal:** Not Listed **Candidate:** No

ii. **New York:** SGCN

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** S3 **Tracked by NYNHP?:** No

Other Ranks:

-IUCN Red List: Least Concern

-Partners in Flight: 11 out of 20

Status Discussion:

The black-crowned night heron is a locally common to abundant breeder on the Coastal Lowlands and has become more abundant on the Great Lakes Plain in the last 20 years. New York is on the northeastern edge of the North American range. Declines have been noted in black-crowned night heron populations on surveys conducted in NYC Harbor since 1995. Declines have also occurred on colonies on Lake Champlain and Gull Island and Bass Island on Lake Ontario. The colony on Big Murphy Island on the St. Lawrence River.

This night heron is state-listed as Endangered in Indiana and Pennsylvania, Threatened in Kentucky, Maine, Ohio, and New Jersey; a Species of Greatest Conservation Need in Connecticut and Maryland, and a Species of Special Concern in Michigan and Wisconsin. It is ranked as Imperiled in Pennsylvania, New Jersey, Connecticut, and Massachusetts, and as Critically Imperiled in Vermont.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Choose an item.	Choose an item.			Choose an item.
Northeastern US	Yes	Unknown	Unknown		Watchlist (Assessment Priority)	No
New York	Yes	Declining	Stable			Yes
Connecticut	Yes	Unknown	Unknown			No
Massachusetts	Yes	Declining	Stable	1993-2021		Yes
New Jersey	Yes	Declining	Declining	1993-2021	Threatened	Yes
Pennsylvania	Yes	Declining	Declining	1993-2021	Endangered	Yes
Vermont	Yes	Declining	Declining			Yes
Ontario	Yes	Stable	Stable			No
Quebec	Yes	Stable	Stable			No

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

Herons are surveyed every three years by the Long Island Colonial Waterbird Survey. The Harbor Herons Project conducts an interim survey in colonies in the New York/New Jersey Harbor annually and a full survey every three years. A coordinated regional survey (Maine through Virginia) was conducted in 2013.

Trends Discussion *(insert map of North American/regional distribution and status):*

Populations in the northeastern U.S. have declined by approximately 50% since the 1970s. BBS data from 1993-2021 shows declining trends in the northeast, Midwest and west coasts and increasing trends in the southeastern US. The trend map from eBird shows a median trend of -30.2% for breeding night herons in NY with an upper confidence interval of -26.4% and a lower interval of -44% from 2012-2022.

The Long Island population declined by 75% from the mid-1930s to the 1960s but was increasing by the 1970s (Buckley and Buckley 1980). The second Atlas showed a 19% increase in Confirmed breeding statewide, but a 12% decline in Confirmed breeding on the Coastal Lowlands. Upstate, there was an almost doubling of the number of blocks with Confirmed breeding from 16 to 30 including records in Tompkins and Schuyler counties where breeding was not confirmed during the first Atlas (McCrimmon 2008).

The Long Island Colonial Waterbird survey data show an increase since 2004 when 1,450 pairs were reported; in 2010 the survey reported 1,316 pairs. However, the average number of nesting pairs on Long Island has declined from 1,500 in 1984-95 to slightly over 1,000 in 1995-2004 (McCrimmon 2008). Since then, the number of nesting pairs has decreased to 643 in 2022. The number of pairs found in the NY Harbor by NYC Audubon's Harbor Heron Survey has declined by 52% during that time, from 817 pairs in 2011 to 421 in 2022.

The largest nesting colony in Lake Ontario has decreased from a high of 151 black-crowned night heron nests in 2011 to 9 in 2022. The largest colony in the Saint Lawrence River has increased from 50 to 171 nests in the same time period. Night heron nest numbers were down by 50% in 2022 on Lake Champlain compared to pre-2020 nest counts.

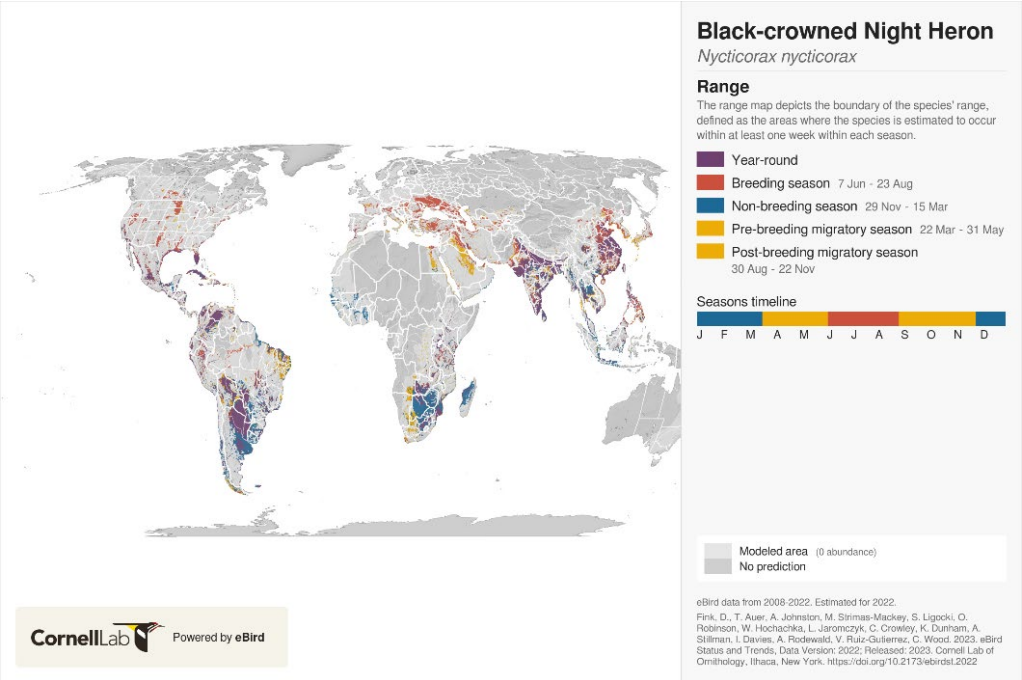

Figure 1. Global distribution of black-crowned night heron (eBird)

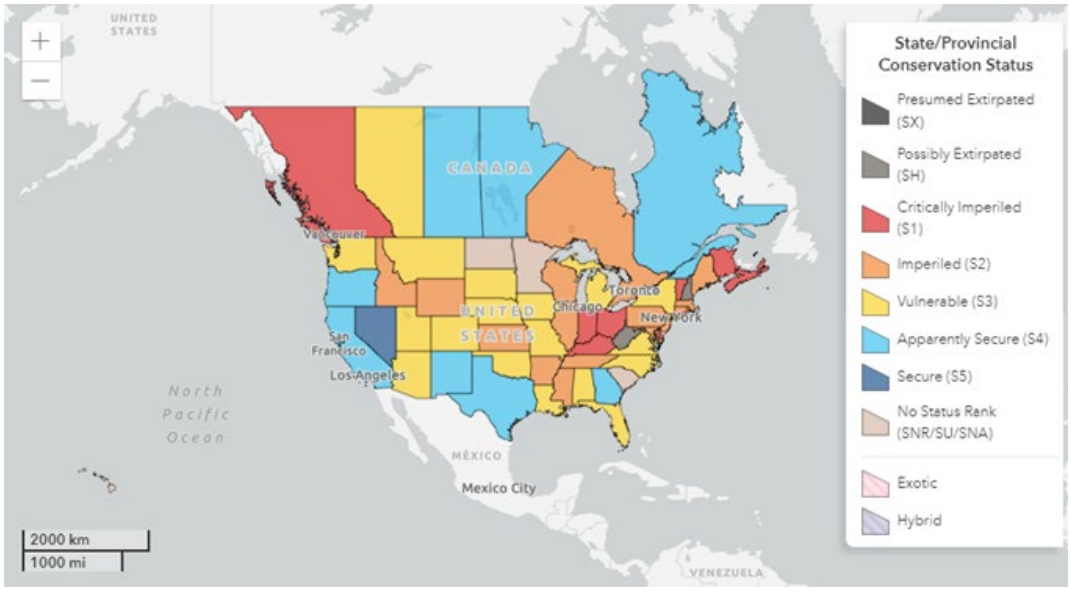

Figure 2. Conservation status of black-crowned night-heron in North America (NatureServe)

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

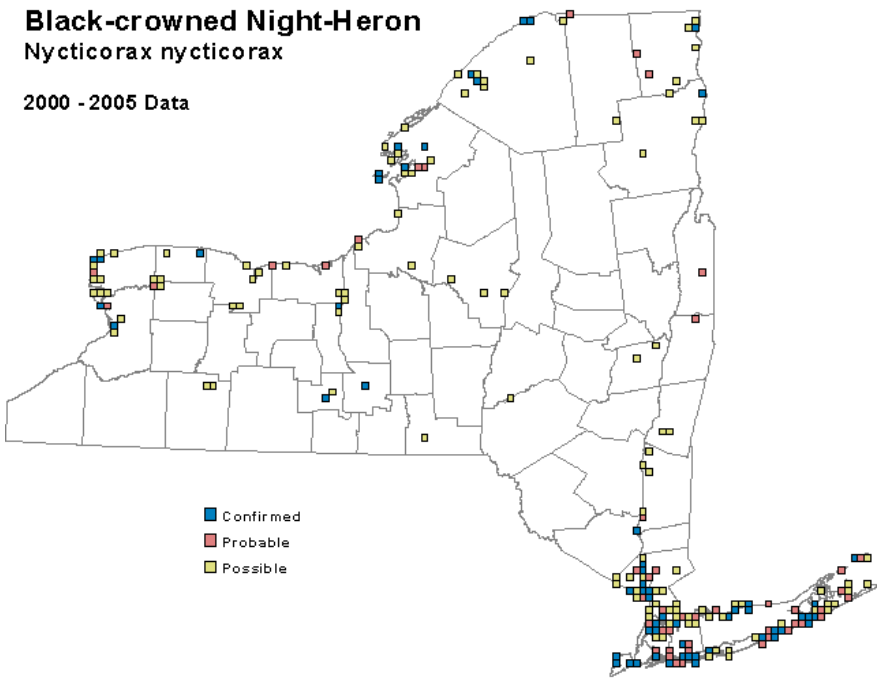

Figure 3. Black-crowned night heron occurrence in New York State during the second Breeding Bird Atlas (McGowan and Corwin 2008).

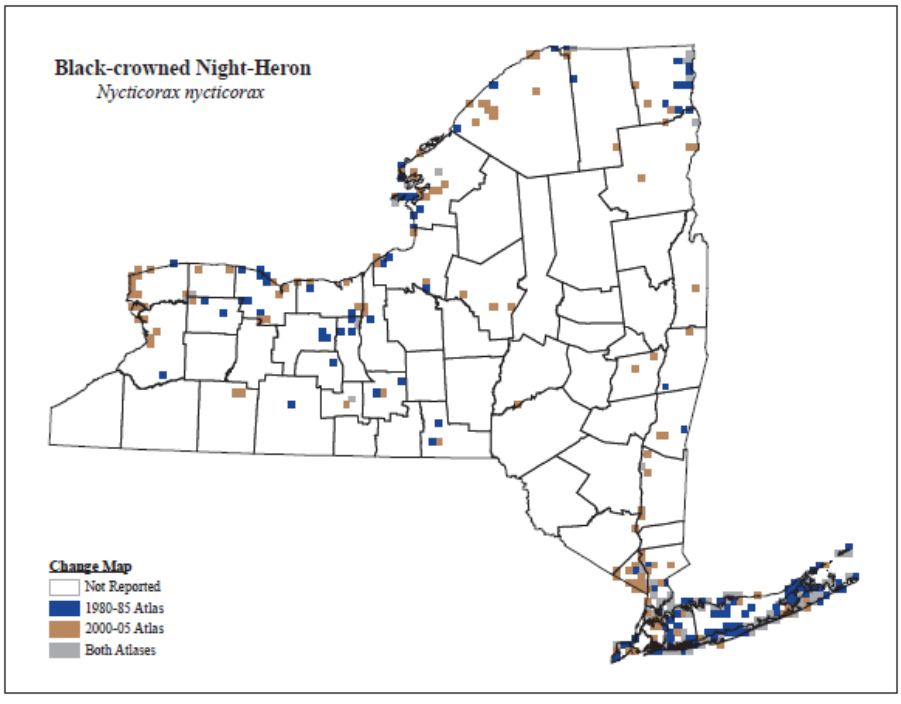

Figure 4. Change in occurrence of black-crowned night-heron in New York since the first Breeding Bird Atlas (McGowan and Corwin 2008)

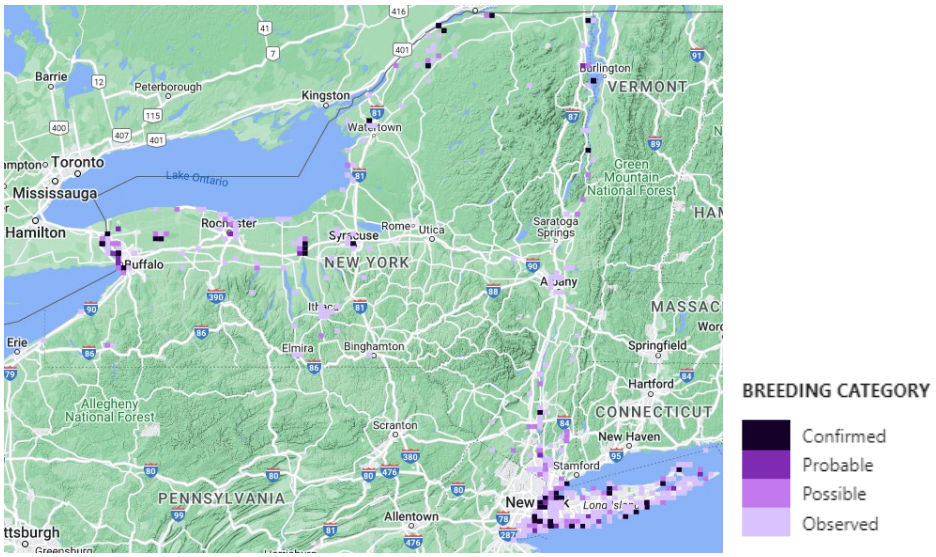

Figure 5. Records of black-crowned night heron in New York (NYS BBA III Map, 2023)

Years	# of Records	# of BBA Blocks	% of State
Pre-1980	_____	_____	_____
1980-1985	_____	211	_____
2000-2005	_____	213	_____
2020-2023	_____	36	_____

Table 1. Records of black-crowned night heron in New York.

Details of historic and current occurrence:

Cruickshank (1942) estimated the breeding population on Long Island to be about 3,000 pairs. The first breeding bird atlas (1980-85) documented occupancy in 211 survey blocks statewide, 4% of the survey blocks statewide (Andrle and Carroll 1988). The second BBA (2000-05) documented occupancy in 213 blocks, 4% of the survey blocks statewide, not a significant change since the first atlas.

The third BBA (2020-25) is currently underway and utilizes a different number and layout of survey blocks across New York, making direct comparison with the first two Atlases difficult. There were 5,333 blocks in the first and second BBAs, and there are 5,710 blocks in the current BBA. To date, black-crowned night heron has been documented in 36 blocks, less than 1% of survey blocks statewide during the third BBA (NYS BBA III Overview, 2023).

The Long Island Colonial Waterbird survey in 2010 reported 1,316 breeding pairs. The second breeding bird atlas (2000-05) documented occupancy in 213 survey blocks statewide (McGowan and Corwin 2008). Black-crowned night herons were found nesting at 10 sites during the Long Island Colonial Waterbird survey in 2022.

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Peripheral	

Column options

Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

1. Great Lakes Freshwater Estuary Marsh
2. Wet Meadow/Shrub Swamp
3. Freshwater Marsh
4. Estuarine, Brackish Intertidal, Tidal Wetland, High Marsh
5. Coastal Red Maple-Black Gum Swamp
6. Estuarine, Brackish Intertidal, Benthic Geomorphology, Tidal Flat
7. Coastal Plain Pond

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
No	No	Stable	

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

Black-crowned night herons are found in marshes, swamps, wooded streams, mangroves, shores of lakes, ponds, lagoons, salt water, brackish, and freshwater situations. Roosts by day in mangroves or swampy woodland. Eggs are laid in a platform nest in groves of trees near coastal marshes or on marine islands, swamps, marsh vegetation, clumps of grass on dry ground, orchards, and in many other situations. Usually nests with other heron species.

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	Yes	No	Yes	No	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

Black-crowned night herons usually breed at 2-3 years of age. One brood is produced per season, but renesting will occur, especially if nest fails early. Major causes of egg and chick failure are weather, predation, and insufficient food (often weather-related) (Burger 1982). When sites are free from predators and harassment, breeding colonies can last for 30–50 years (Bailey 1915, Allen 1938, Nickell 1966). Colonies may move, however, if disturbed. A study done on two islands in the St. Lawrence Estuary found a mean clutch size of 4 eggs and that the number of young fledged per active nest varied between 0.5 to 2.1 (Trembley 1980). Few data on factors affecting

adult survival, or on ability to disperse and form new colonies. This species is extremely adaptable and eats whatever is most plentiful at the time and place. It is also known to take young birds, amphibians, and small mammals.

VI. Threats *(from NY 2015 SWAP or newly described):*

Habitat destruction, including drainage of wetlands for development and agriculture, development along coastal marshes, and increased human disturbance and use of islands, continues to be a problem for this species, although in some urban areas where isolated island nesting colony sites are available, it breeds successfully (e. g., near New York City). In 2013 an entire colony on Goose Island (western Long Island Sound) was abandoned the day before the nesting survey was conducted. Human disturbance and predators (raccoons) were probably the cause (S. Elbin, pers. comm.). Double-crested cormorant damage to nesting trees may decrease the number of black-crowned night herons in shared colony sites.

DDT appears to have caused reproductive failure in some populations and may have contributed to subsequent local population declines in the 1960s. Since then, extensive sampling has shown that while some populations continue to accumulate contaminants, these appear to have had minimal effect on breeding success and population levels. Black-crowned night herons are highly susceptible to organochlorine pesticides, PCBs, and heavy metals.

Black-crowned night herons may be vulnerable to changes in climate. Of major concern are sea-level rise and the potential for increased temperature and changes in precipitation, which would reduce shallow marsh foraging areas, modify the availability and the timing of prey, and shift the distribution of predators.

Tremblay and Ellison (1979) documented investigator-induced abandonment just before or during the egg-laying period. To prevent nest abandonment in studies at Alcatraz Island, CA during 1990-2009, entry into the nesting colonies was delayed until nest-laying and incubation were well underway. Also, breeding colonies near human populations may create nuisance issues. Fish hatcheries may obtain permits to shoot or harass black-crowned night herons.

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

Protected under the Migratory Bird Treaty Act.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

Control of predators and double-crested cormorants at black-crowned night heron colonies where there is an identified problem. Continue to survey nesting colonies to track population numbers. Reduce water pollution and fish overexploitation and minimize disturbance from human activities at breeding sites.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated

subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
1. Land/Water Protection	Site/Area Protection
2. Land/Water Protection	Resource/Habitat Protection
3. Land/Water Management	Site/Area Management
4. External Capacity Building	Alliance & Partnership Development

Table 2. Recommended conservation actions for black-crowned night-heron

VII. References

Allen, R. P. 1938. Black-crowned Night-Heron colonies on Long Island. Proc. Linn. Soc. New York 49(1937):43-51.

Andrle, R.F. and J.R. Carroll, eds. 1988. The Atlas of breeding birds in New York State. Cornell University Press, Ithaca, NY.

Bailey, W. 1915. The Plum Island night herons. Auk 32:424-441.

BirdLife International. 2019. *Nycticorax nycticorax* (amended version of 2016 assessment). *The IUCN Red List of Threatened Species* 2019: e.T22697211A155515762. https://dx.doi.org/10.2305/IUCN.UK.2016-3.RLTS.T22697211A155515762.en. Accessed on 02 January 2024.

Buckley, P. A. and F. G. Buckley. 1980. Population and colony-site trends of Long Island waterbirds for five years in the mid 1970s. Trans. Linn. Soc. NY 9:23-56.

Burger, J. 1982. An overview of proximate factors affecting reproductive success in colonial birds: concluding remarks and summary of panel discussion. Colon. Waterbirds 5:58-65.

Corwin, K. 2011. NYSDEC SWAP 2015 Species Status Assessment for *Nycticorax nycticorax*. Prepared on November 28, 2011. Revised December 2014.

Craig, E. 2012. New York City Audubon's Harbor Herons Project: 2012 Interim Nesting Survey Report. New York City Audubon, New York, NY.

Cruickshank, A.D. 1942. Birds around New York City. American Museum of Natural History Handbook. No. 13. American Museum Press, New York.

Curley, S.R., 2022. New York City Audubon's Harbor Herons Project: 2022 Nesting Survey Report. New York City Audubon, New York, NY.

Custer, T. W., R. G. Osborn, and W. F. Stout. 1980b. Distribution, species abundance, and nesting site use of Atlantic coast colonies of herons and their allies. Auk 97:591-600.

eBird data from 2008-2022. Estimated for 2022. Fink, D., T. Auer, A. Johnston, M. Strimas-Mackey, S. Ligocki, O. Robinson, W. Hochachka, L. Jaromczyk, C. Crowley, K. Dunham, A. Stillman, I. Davies, A. Rodewald, V. Ruiz-Gutierrez, C. Wood. 2023. eBird Status and Trends, Data Version: 2022; Released: 2023. Cornell Lab of Ornithology, Ithaca, New York. https://doi.org/10.2173/ebirdst.2022

Hothem, R.L., B.E. Brussee and W.E. Davis, Jr. 2010. Black-crowned Night-Heron (Nycticorax nycticorax), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/074

McCrimmon, D.A. 2008. Black-crowned Night-Heron, Nycticorax nycticorax. Pages 174-75 in The second Atlas of Breeding Birds in New York State (K.J. McGowan and K. Corwin, eds.). Cornell University Press, Ithaca, NY.

McGowan, K.J. and K. Corwin, eds. 2008. The second Atlas of breeding birds in New York State. Cornell University Press, Ithaca, NY.

NatureServe. 2023. NatureServe Explorer. Page last published 12/1/2023. https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.104974/Nycticorax_nyticorax. Accessed 1/2/2024.

New York State Breeding Bird Atlas III Map (NYS BBA III Map). 2023. https://ebird.org/atlasny/explore. Accessed 1/2/2024.

Nickell, W. P. 1966. The nesting of the Black-crowned Night Heron and its associates. Jack-Pine Warbler 44:130-139.

Spendelow, J. A. and S. R. Patton. 1988. National atlas of coastal waterbird colonies in the contiguous United States: 1976-82. U.S. Fish Wildl. Serv. Biol. Rep. No. 88(5).

Tremblay, J. and L. N. Ellison. 1979. Effects of human disturbance on breeding of Black-Crowned Night Herons. Auk 96:364-369.

Tremblay, J. and L. N. Ellison.1980. Breeding success of the black-crowned night heron in the St. Lawrence Estuary. Canadian Journal of Zoology 58.7: 1259-1263.

Originally prepared by	Kimberly Corwin
Date first prepared	November 28, 2011
First revision	December 2014 (K. Corwin)
Latest revision	December 20, 2023 (M. Oberkircher)

Species Status Assessment

Common Name: Black-throated blue warbler **Date Updated:** January 17, 2024

Scientific Name: *Setophaga caerulescens* **Updated By:** Jed Hayden

Class: Aves

Family: Parulidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

The black-throated blue warbler is a common breeder at high elevations throughout the state, with centers of abundance in the Adirondacks, Catskills, and Appalachian Plateau. It prefers large tracts of relatively undisturbed hardwood and mixed forest with a closed canopy and dense undergrowth. The second Breeding Bird Atlas (2000-05) showed an increase of 10% in the number of occupied survey blocks since the early 1980s (McGowan and Corwin 2008). Breeding Bird Survey data for New York show an increasing short-term trend of 1% per year for the period 1999-2009 and a long-term declining trend of 0.8% per year for the period 1966-2009 (Sauer et al. 2014).

I. Status

a. Current legal protected Status

i. **Federal:** Not listed **Candidate:** No

ii. **New York:** SGCN

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** S5 **Tracked by NYNHP?:** No

Other Ranks:
-IUCN Red List: Least Concern.

-Partners in Flight- Priority species in the Adirondacks.

Status Discussion:

The black-throated blue warbler is a widespread breeder at high elevations in New York, generally above 1,000 feet. The black-throated blue warbler is ranked as Secure or Apparently Secure in all northeastern states and provinces except New Jersey, where it is ranked as Vulnerable.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Increasing	Increasing	1999-2012	None	No
Northeastern US	Yes	Increasing	Increasing	1999-2012	None	Yes
New York	Yes	Declining	Increasing	1980-2012	None	Yes
Connecticut	Yes	Stable	Stable	2002-2012	None	Yes
Massachusetts	Yes	Stable	Stable	2002-2012	None	No
New Jersey	No	Choose an item.	Choose an item.			No

Pennsylvania	Yes	Stable	Increasing	1999-2009	None	Yes
Vermont	Yes	Stable	Stable	2002-2012	None	Yes
Ontario	Yes	Stable	Increasing	2002-2012	None	No
Quebec	Yes	Increasing	Increasing	2002-2012	None	No

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

The Wildlife Conservation Society has conducted surveys for boreal breeding birds at as many as 80 sites across the Adirondack Park since 2003. Breeding Bird Survey efforts and the Birds in Forested Landscape program both provide data on black-throated blue warbler.

Trends Discussion *(insert map of North American/regional distribution and status):*

BBS data show significantly increasing long-term (1966-2012) and short-term (2002-2012) trends in the Eastern region and survey-wide. In New York, BBS data show a short-term declining trend of -1.78% per year for the period 2002-2012 and a long-term declining trend of -1.2% per year for the period 1966-2012 (Sauer et al. 2014). Breeding bird atlas data (1980-85 to 2000-05) show an increase in occupancy of 10% (McGowan and Corwin 2008).

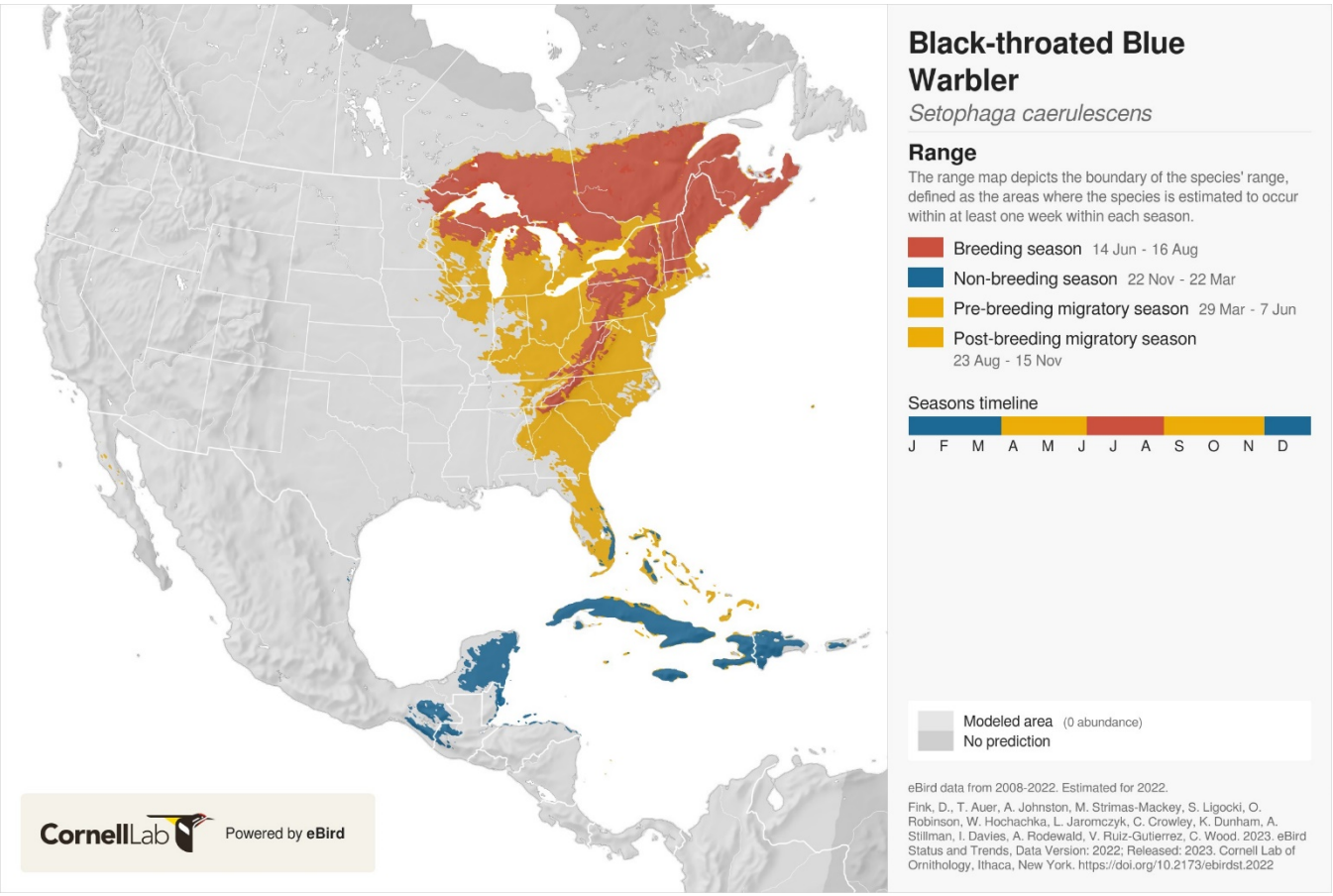

Figure 1. Black-throated blue warbler range in North America (eBird)

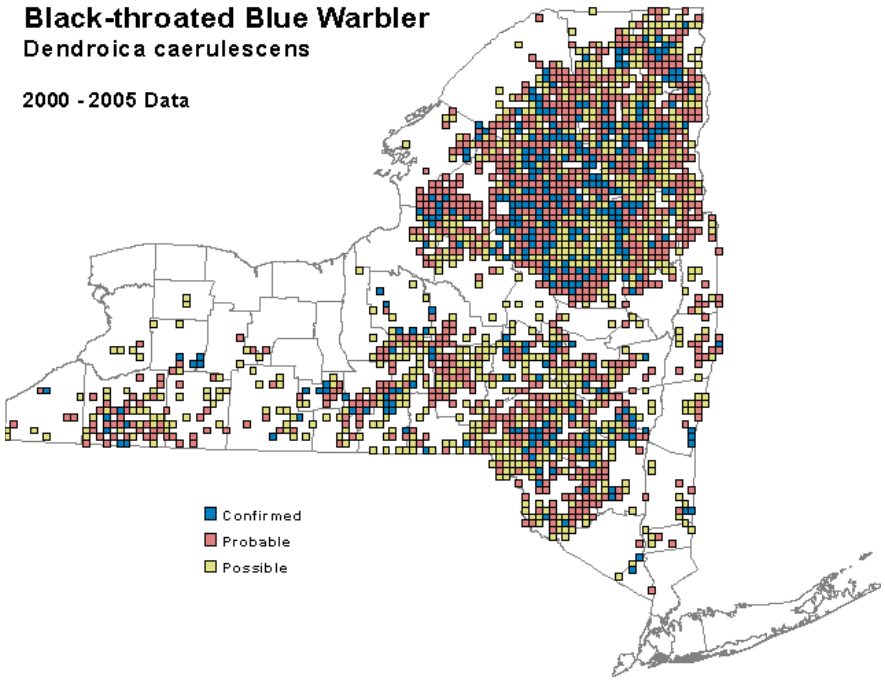

Figure 2. Black-throated blue warbler occurrence in New York State during the second Breeding Bird Atlas (McGowan and Corwin 2008).

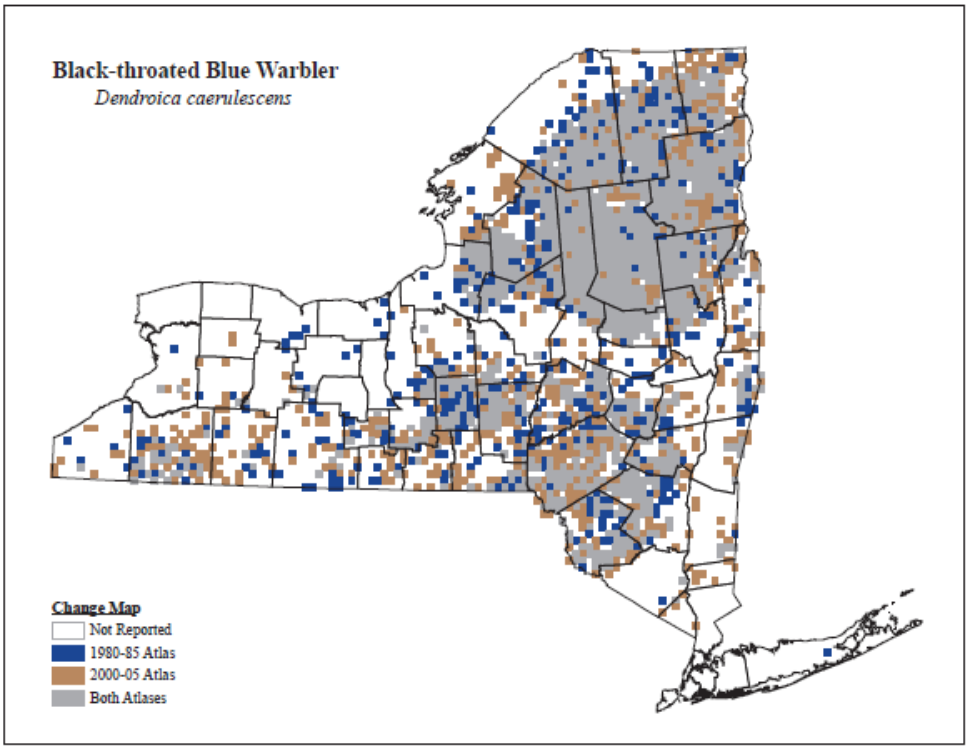

Figure 3. Change in black-throated blue warbler occurrence in New York State between the first Breeding Bird Atlas and the second Breeding Bird Atlas (McGowan and Corwin 2008).

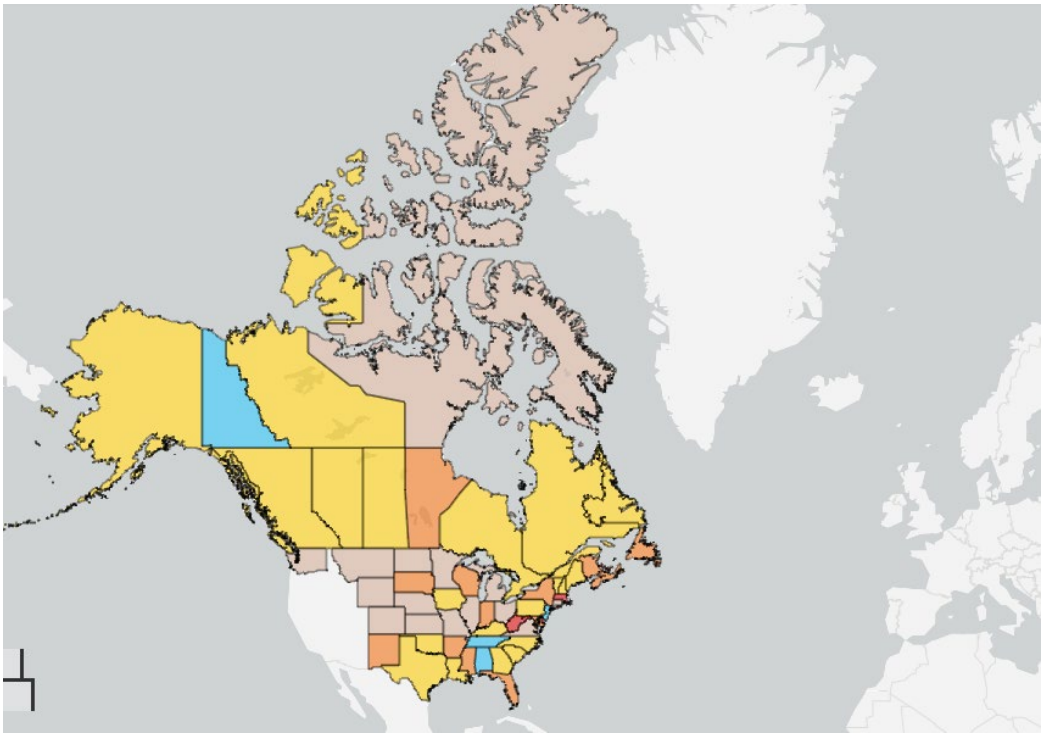

Figure 4. Conservation status of the Rusty blackbird in North America (NatureServe 2023).

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

Years	# of Records	# of BBA Blocks	% of State
Pre-1980	_____	_____	_____
1980-1985	_____	1738	33%
2000-2005	_____	1919	36%
2020-2023	_____	1586	28%

Table 1. Records of Black-throated blue warbler in New York.

Details of historic and current occurrence:

The first Breeding Bird Atlas (BBA) (1980-85) documented occupancy in 1,738 blocks, 33% of the survey blocks statewide (Anderle and Carroll 1988). The second BBA (2000-05) documented occupancy in 1,919 blocks, 36% of the survey blocks statewide, an increase of 3% since the first Atlas (McGowan and Corwin 2008).

The third BBA (2020-25) is currently underway and utilizes a different number and layout of survey blocks across New York, making direct comparison with the first two atlases difficult. There were 5,333 blocks in the first and second BBAs, and there are 5,710 blocks in the current BBA. To date, Black-throated blue warbler has been documented in 1,586 blocks, 28% of survey blocks statewide during the third BBA (NYS BBA III Overview, 2023).

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
26-50%	Core	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

1. Riparian
2. Conifer Forest Swamp
3. Mixed Hardwood Swamp
4. Open Acidic Peatlands
5. Wet Meadow / Shrub Swamp

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
No	No	Stable	

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

Black-throated blue warblers occur in large tracts of relatively undisturbed hardwood and mixed forests with a closed tree canopy and dense undergrowth that often contains hobblebush (Holmes et al. 2005, Collins 2008). It is an area-sensitive species, occurring mainly in forest tracts >100 ha. Yet, black-throated blue warbler is just as common in managed and unmanaged forests as long as canopy cover is relatively complete (Holmes et al. 2005).

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	Choose an item.	Choose an item.	Yes	No	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

Both male and female black-throated blue warblers breed in their first year, but some (< 20%), usually first-year males, remain unmated in their first breeding season. Unmated males are more frequent in marginal habitats (Holmes et al. 1992). Based on four years of an intensive study in New Hampshire (Holmes et al. 1992), females laid an average of 6.6 eggs per season and fledged an average of 4.3 young per female per season, with generally one brood per season. Lifetime

reproductive success is unknown. The oldest record from band recoveries is a ten-year-old female.

VI. Threats *(from NY 2015 SWAP or newly described):*

Threats to NY Populations	
Threat Category	**Threat**
1. Residential & Commercial Development	Housing & Urban Areas
2. Biological Resource Use	Logging & Wood Harvesting
3. Invasive & Other Problematic Species & Genes	Problematic Native Species (nest site competition, deer)
4. Pollution	Air-Borne Pollutants (mercury)
5. Climate Change & Severe Weather	Habitat Shifting & Alteration
6. Energy Production & Mining	Renewable Energy
7. Energy Production & Mining	Oil & Gas Drilling (fracking)
8. Pollution (migration, esp. NYC)	Excess Energy
9. Natural System Modifications	Other Ecosystem Management (insect spraying)

Table 2. Threats to Black-throated blue warbler throughout its range.

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

Black-throated blue warblers are protected under the Migratory Bird Treaty Act of 1918.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

There is evidence that forest breeding birds benefit from the use of regenerating clear cuts during the post-breeding period (Stoleson 2011). Low levels of forest management that include patches of light harvesting will benefit ground and shrub nesting species. Some areas of moderate or even aged management would also be beneficial to many species by providing food and cover, although the majority of the forest needs to be in a relatively mature state. Efforts should also include minimizing the effects of fragmentation on habitats due to development, and on implementing population control of white-tailed deer in areas where deer populations are affecting forest regeneration and species composition (NYSDEC 2005).

Research is needed on area-sensitivity and habitat requirements of some species in this suite, and further research should be conducted on the effects of logging on forest interior birds. The public should be educated on the benefits and need for forest management to enhance populations of ground and shrub nesting forest breeding birds on public and private lands (NYSDEC 2005). Conservation actions following IUCN taxonomy are categorized in the table below.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated

subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
Land/Water Protection	Site/Area Protection
Land/Water Protection	Resource/Habitat Protection
Land/Water Management	Site/Area Management
Land/Water Management	Invasive/Problematic Species Control
Education & Awareness	Awareness & Communications

Table 3. Recommended conservation actions for black-throated blue warbler.

VII. References

Andrle, R.F. and J.R. Carroll, eds. 1988. The atlas of breeding birds in New York State. Cornell University Press, Ithaca, NY.

Arnold T. W. and R.M. Zink. 2011. Collision Mortality Has No Discernible Effect on Population Trends of North American Birds. PLoS ONE 6(9): e24708. doi:10.1371/journal.pone.0024708

Collins, J. 2008. Black-throated blue warbler, *Dendroica caerulescens*. Pages 488-89 in The second Atlas of breeding birds of New York State. Cornell University Press, Ithaca, NY.

Dicostanzo, J. 1998. Black-throated Blue Warbler. Pages 464-465 *in* Bull's Bird's of New York State. Comstock Publishing/Cornell U. Press, Ithaca, NY.

Glennon, M.J., and H.E. Kretser. 2013. Size of the ecological effect zone associated with exurban development in the Adirondack Park, N.Y. Landscape and Urban Planning 112:10-17.

Holmes, R. T. and T. W. Sherry. 1992. Site fidelity of migratory warblers in temperate breeding and neotropical wintering areas: implications for population dynamics, habitat selection, and conservation. Pages 563-575 *in* Ecology and conservation of neotropical migrant landbirds. (Hagan III, J. M. and D. W. Johnston, Eds.) Smithson. Inst. Press, Washington, D.C.

Holmes, R. T., N. L. Rodenhouse and T. S. Sillett. 2005. Black-throated Blue Warbler (*Setophaga caerulescens*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online http://bna.birds.cornell.edu/bna/species/087

McGowan, K.J. and K. Corwin, eds. 2008. The second atlas of breeding birds in New York State. Cornell University Press, Ithaca, NY.

NatureServe. 2012. NatureServe Explorer: An online encyclopedia of life [web application]. Version7.1. NatureServe, Arlington, Virginia. <http://www.natureserve.org/explorer>. Accessed 27 June 2013.

New York State Department of Environmental Conservation (NYSDEC). 2005. New York State Comprehensive Wildlife Conservation Strategy. <http://www.dec.ny.gov/index.html>. Accessed 27 June 2013.

Reed, S.E., H.E. Kretser, M.J. Glennon, L. Pejchar, and A.M. Merenlender. 2013. Faunal biodiversity at the urban-rural interface: current knowledge, research priorities, and planning strategies. Invited submission to: B.G. Lockaby, W. Zipperer, and D.N. Laband, editors. Urban-Rural Interfaces: Linking People and Nature. Pages 99-114.

Rodenhouse, N. L. 1992. Potential effects of climatic change on migrant land birds: a simulation model. Conserv. Biol. 6:263-272.

Sauer, J. R., J. E. Hines, J. E. Fallon, K. L. Pardieck, D. J. Ziolkowski, Jr., and W. A. Link. 2014. The North American Breeding Bird Survey, Results and Analysis 1966 - 2012. Version 02.19.2014 USGS Patuxent Wildlife Research Center, Laurel, MD.

Stoleson, S. H. 2011. Incidence and condition consequences of habitat choice by late-successional birds in the post-breeding season. Meeting Abstract: 129th Stated Meeting of the American Ornithologists Union, Jacksonville, FL. Available at www.aou.org/meetings/.../AOU_Meeting_Program_129_2011.pdf

Originally prepared by	Kimberley Corwin
Date first prepared	December 1, 2011
First revision	December 2014 (K. Corwin)
Latest revision	January 17, 2024 (Jed Hayden)

Species Status Assessment

Common Name: Blue-winged teal **Date Updated:** 1/29/24

Scientific Name: *Anas discors* **Updated By:** J. O'Connor and C. Hoh

Class: Aves

Family: Anatidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

Blue-winged teal breed in grasslands and open fields along shallow ponds and larger wetlands. Its occupancy in New York has declined by 63% over the past 20 years (McGowan and Corwin 2008). Threats include agricultural practices that affect the availability and use of grasslands, as well as predation during the breeding season (NYSDEC 2005). The second Breeding Bird Atlas (2000-05) showed that blue-winged teal disappeared from the Hudson Valley and the Coastal Lowlands since 1980-85 but still occurs sparsely across the rest of the state with a concentration in the St. Lawrence Valley and Great Lakes Plain. Blue-winged teal may hybridize in the wild with cinnamon teal, *A. cyanoptera* (AOU 1983).

I. Status

a. Current legal protected Status

i. **Federal:** Not listed/ Game Species **Candidate:** No

ii. **New York:** SGCN/ Game Species

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** S2S3B **Tracked by NYNHP?:** Watch list

Other Ranks:
-IUCN Red List: Least Concern

Status Discussion:

Blue-winged teal is a local breeder in small numbers in New York, occurring primarily in the St. Lawrence Valley and the Great Lakes Plains. It is a game bird with an open season. The daily bag limit in New York is 6 with a season length of 60 days. Blue-winged teal are considered an "under-utilized" species for which additional harvest opportunity is afforded through special seasons. A September Teal Season is open in parts of the Atlantic, Mississippi, and Central Flyways for 16 days with a daily limit of 4 teal, prior to the opening of the regular duck season. This special season is not allowed in New York or other "production states," however for many years hunters could take 2 bonus teal in addition to the regular season daily limit, even in New York. Harvest assessments have shown that about 36% of the blue-winged teal harvested in the Atlantic Flyway are derived from the eastern reference area where reliable breeding population estimates and trend data do not exist.

Blue-winged teal harvest in New York is relatively consistent at approximately 1,000 birds. Estimated harvest in the Atlantic Flyway has also been stable, increasing slightly since 2009. An estimated 13% of the total flyway harvest occurs during the special September season, though about 53% of the harvest in the states participating in the special season occurs in September.

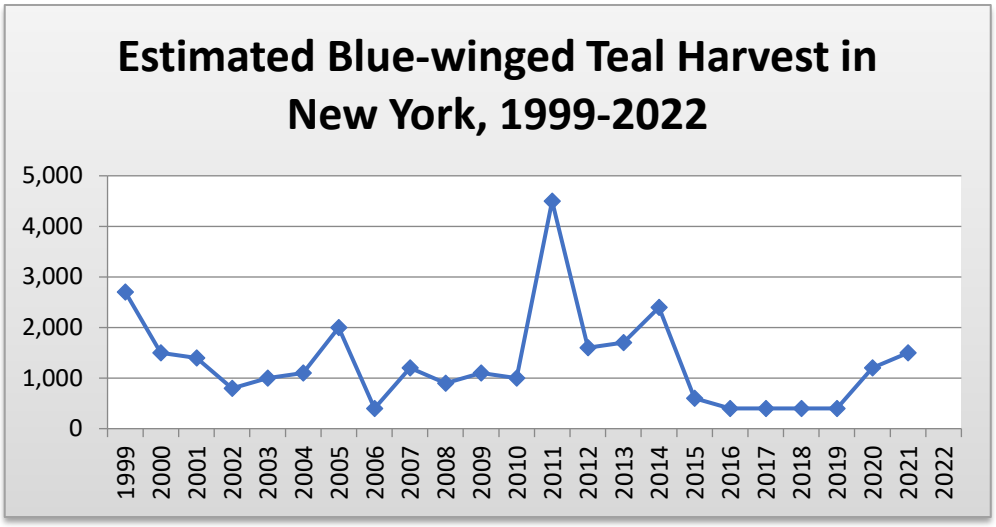

Figure 1. Estimated annual harvest of blue-winged teal in New York, 1999-2022 (USFWS)

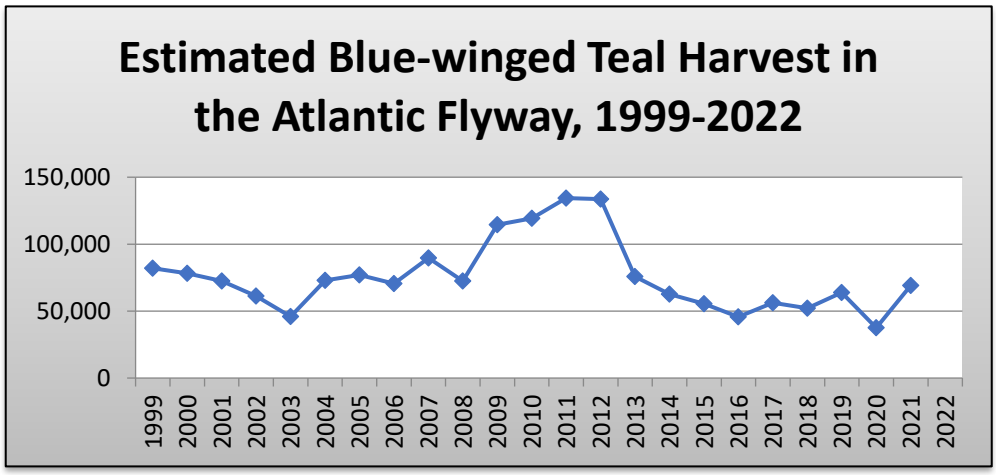

Figure 2. Estimated annual harvest of blue-winged teal in the Atlantic Flyway, 1999-2022 (USFWS)

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Stable	Stable	1955-2000		No
Northeastern US	Yes	Declining	Declining	1999-2009		No
New York	Yes	Declining	Declining	1980-2005		Yes
Connecticut	Yes	Unknown	Unknown			Yes
Massachusetts	Yes	Declining	Declining	1974-2011		No
New Jersey	Yes	Unknown	Unknown			No
Pennsylvania	Yes	Declining	Declining	1983-2008		No
Vermont	Yes	Declining	Declining	1976-2007		Yes
Ontario	Yes	Declining	Declining	1981-2005		No
Quebec	Yes	Declining	Declining	1984-2012		No

Column options

Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

Breeding Waterfowl Plot Surveys have been conducted annually in New York since 1989, however population estimates for blue-winged teal have only been calculated since 2003.

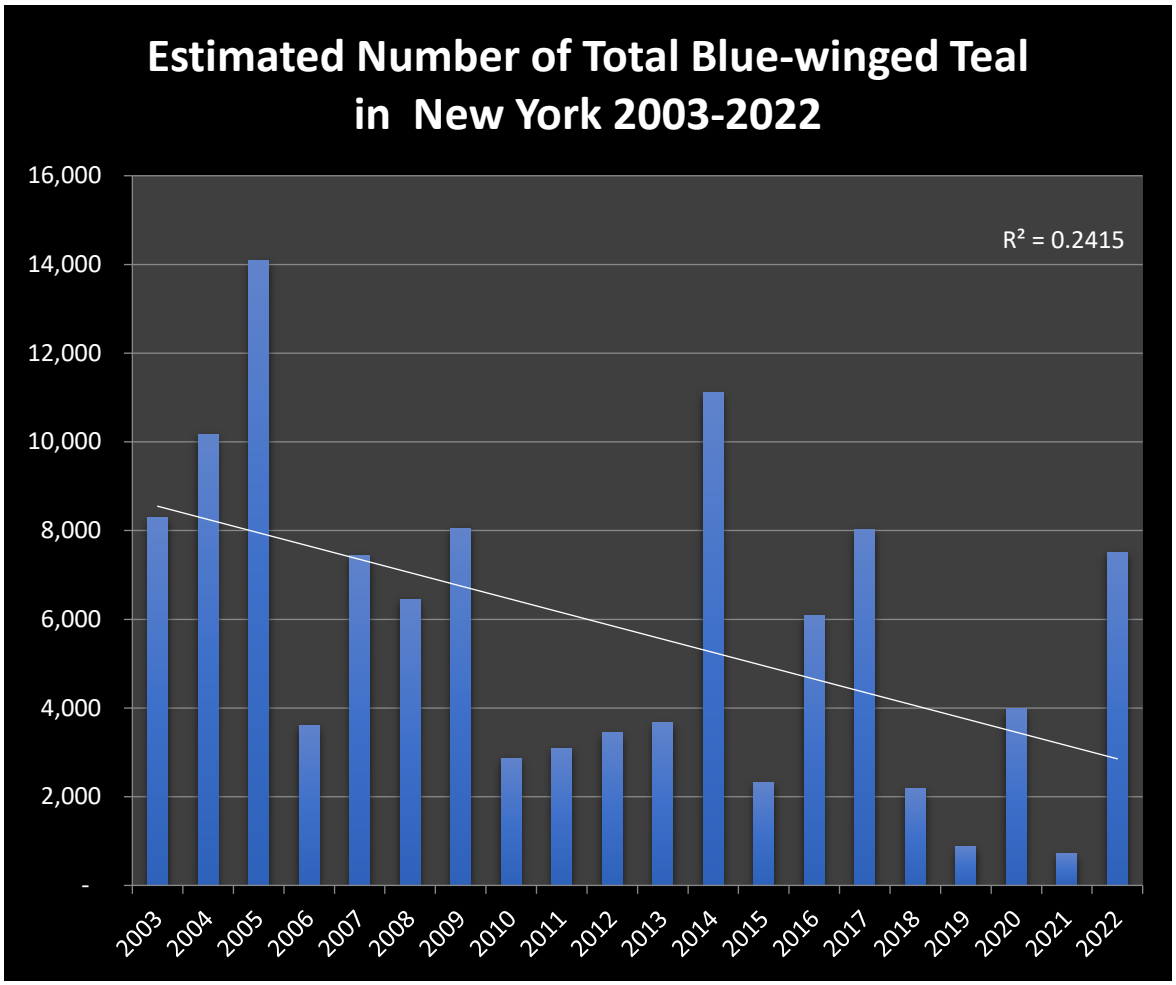

Figure 3. Estimated number of blue-winged teal in New York, 2003-2022

Trends Discussion *(insert map of North American/regional distribution and status):*

The population status of the blue-winged teal mirrors wetland conditions on the prairie breeding grounds. Populations dropped to a 40-year low (2.8 million) in 1990 after several dry years, but in the decade following, numbers more than doubled (6.4 million in 1996) after a series of excellent water years in northern prairies. The population estimate in May 2012 of 9.2 million is highest count ever recorded for this species. This suggests that long-term wetland degradation on the prairies had not irreversibly damaged teal breeding habitat. The 2023 population estimate is 5.2 million.

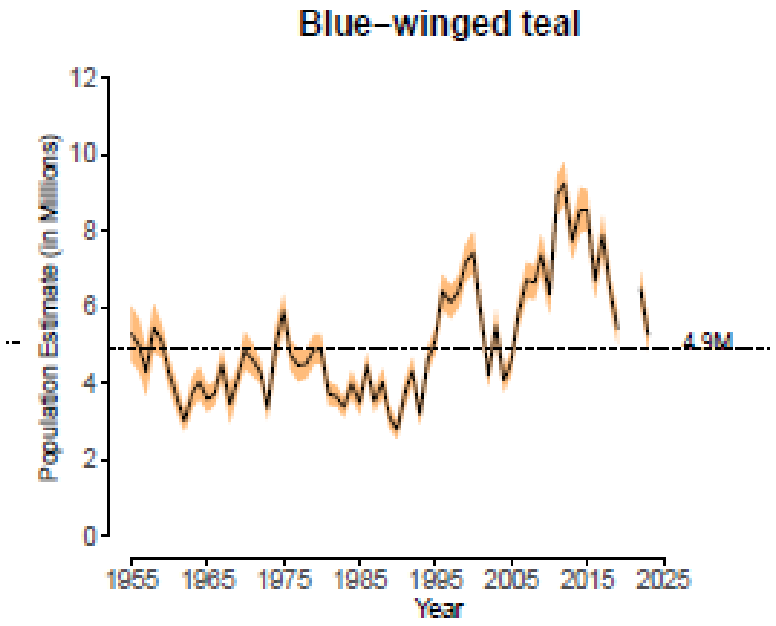

Figure 4. Breeding population estimates for blue-winged teal from the traditional survey area.

The eastern breeding population shows much greater annual variation than does the midcontinent population. Eastern numbers started at 138,000 in 1990, dropped to 44,000 the next year, jumped to a high of 289,000 in 1993, but were <20,000 in 1997 and 1998. The Eastern breeding population has since stabilized at <50,000. Unfortunately, the breeding population data from the Eastern Survey Area does not provide reliable trend data. Since the late 1990s, the survey has been run in late April and is designed primarily to detect early-nesting waterfowl. However, blue-winged teal are a mid-nesting species and it is likely the survey fails to detect many of these birds. In the early 1990s, the survey was run in early May, and may account for the higher population estimates calculated.

As an alternative to the unreliable breeding population data from the Eastern Survey Area, the U.S. Fish and Wildlife Service calculated Lincoln-Petersen fall population estimates using harvest data. Using this data set, the blue-winged teal population in the eastern reference area appears stable with an average fall flight population of 636,262 teal (range = 284,248 to 1,400,428 birds).

Breeding Waterfowl Plot Survey data have been used to calculate New York State and Atlantic Flyway breeding population estimates for blue-winged teal since 2003. Average population estimates from this data indicate their relative abundance in general terms, but the estimates are quite variable and no trends are evident at this time (Swift 2012). A high of 14,089 was estimated in 2005 and a low of 2,870 was estimated in 2010. The population estimate for 2012 in New York is 3,440 and 13,224 for the Atlantic Flyway. East Coast populations may have increased locally due to the creation of freshwater impoundments at refuges and management areas (Parnell and Quay 1962).

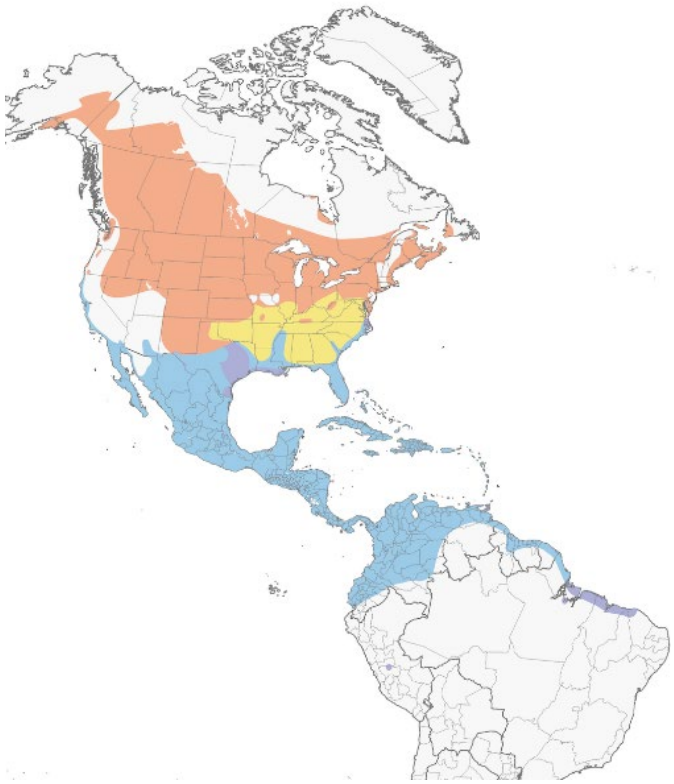

Figure 5. Distribution of the blue-winged teal (Birds of the World, 2024)

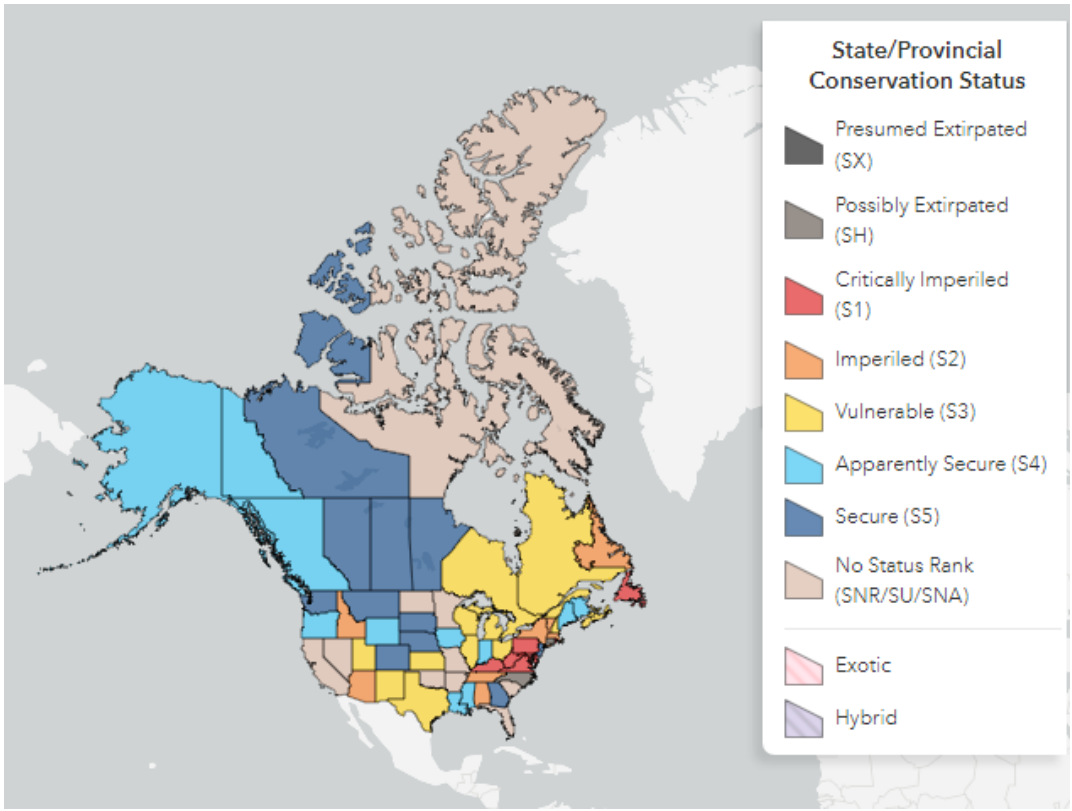

Figure 6. Conservation status of blue-winged teal in North America (NatureServe)

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

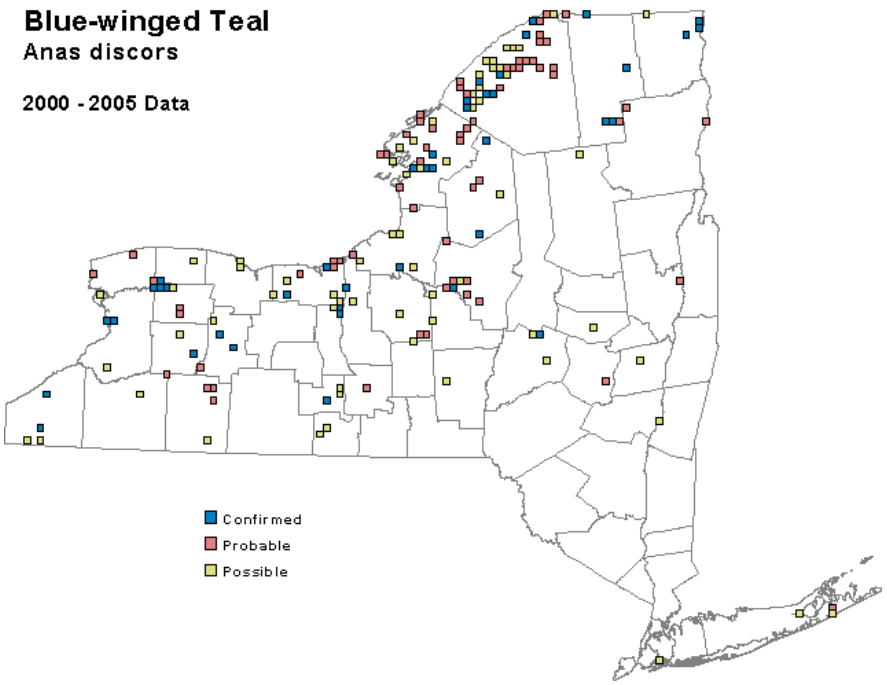

Figure 7. Records of blue-winged teal during the second New York Breeding Bird Atlas, 2000-2005 (NYBBA2)

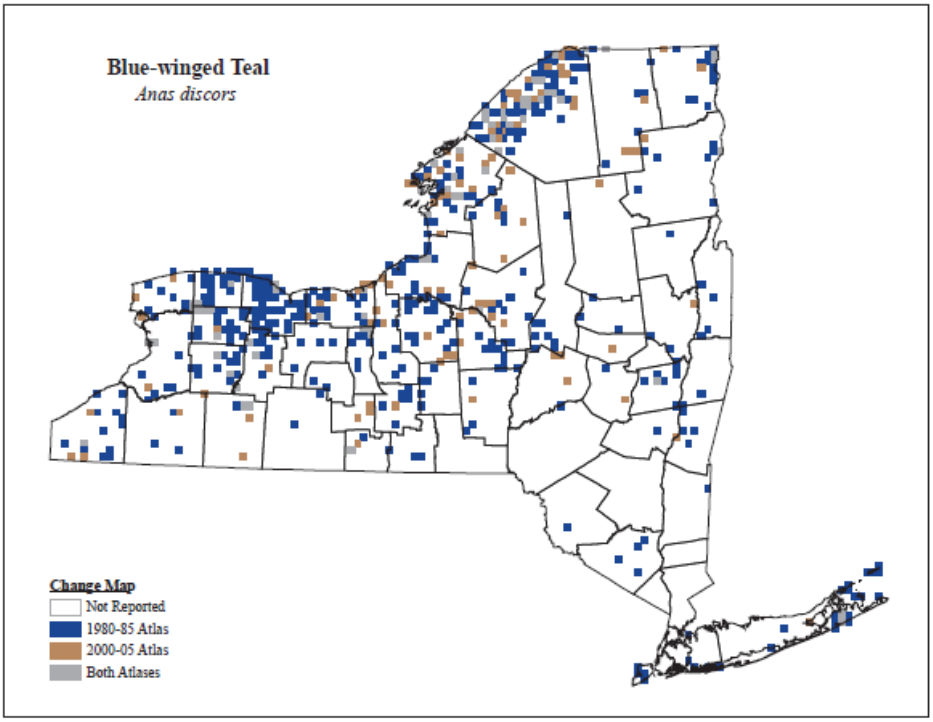

Figure 8. Change in occurrences of blue-winged teal between the first and second New York Breeding Bird Atlases (NYBBA2)

Years	# of Records	# of BBA Blocks	% of State
Pre-1980			
1980-1985		460	9%
2000-2005		170	3%
2020-2023			

Table 1. Records of blue-winged teal in New York.

Details of historic and current occurrence:

New York is at the southeastern edge of the breeding range. The population in New York is estimated at about 1,500 pairs.

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Peripheral	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

1. Freshwater Marsh
2. Old Field Managed Grasslands
3. Wet Meadow Shrub/Swamp
4. Great Lakes Freshwater Estuary Marsh
5. Eutrophic Pond

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
No	No	Unknown	

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

Blue-winged teal nest along shallow ponds with abundant invertebrates and will use seasonal ponds and larger wetlands. Optimal nesting habitats include semi-permanent wetlands, ponds, and seasonal wetlands surrounded by grassland (Brewer et al. 1991).

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	Choose an item.	Choose an item.	Yes	Yes	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

Females first breed as 1-year-olds (Lokemoen et al. 1990), and very likely breed every year afterward. Nest failure, due primarily to mammalian predation, often exceeds 90%; re-nesting, however, is surprisingly rare given the short life span. Arnold's (1988) corrections predict a maximum life span of 12.7 years for a sample of 1,000, which is lower than for most dabbling ducks. Blue-winged teal has the highest annual mortality rate (reaching 65%) of all the dabbling ducks; this probably is due to hunting and the long over-ocean migration that most individuals experience. There is no information on lifetime reproductive success.

Blue-winged teal commonly colonizes newly available habitats; the species shows considerably greater dispersal overall than most other dabbling ducks, being rather opportunistic and sometimes breeding in abundance outside their typical range.

VI. Threats *(from NY 2015 SWAP or newly described):*

Agricultural practices that affect availability and use of grasslands for nesting is likely the principal factor affecting the species in New York. Harvest is typically low because of the early fall migration—most individuals have migrated when the season opens (NYSDEC 2005).

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

Blue-winged teal are protected by the Migratory Bird Treaty Act of 1918. The hunting season length and daily bag limit could be modified or the season could be closed. For 2013, the hunting season length in New York is 60 days and 6 blue-winged teal may be harvested per day.

Wetland habitats larger than 12.4 acres and their adjacent areas are provided some protection under the Freshwater Wetlands Act, although most agricultural activities are exempt from regulation under the Act.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

Delayed mowing could improve nesting productivity. Blue-winged teal would benefit from grassland conservation programs such as the Landowner Incentive Program. Conservation actions following IUCN taxonomy are categorized in the table below.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
1. Land/Water Protection	Site/Area Protection
2. Land/Water Protection	Resource/Habitat Protection
3. Land/Water Management	Site/Area Management
4. Law & Policy	Policies & Regulations

Table 2. Recommended conservation actions for blue-winged teal.

VII. References

Andrle, R.F. and J.R. Carroll, eds. 1988. The atlas of breeding birds in New York State. Cornell University Press, Ithaca, NY.

Arnold, T. W. 1988. Life histories of North American game birds: a reanalysis. Can. J. Zool. 66:1906-1912.

Brewer, R., G.A. McPeek, and R.J. Adams, Jr. 1991. The Atlas of Breeding Birds of Michigan. Michigan State University Press, East Lansing, Michigan.

Lokemoen, J. T., H. F. Duebbert, and D. E. Sharp. 1990. Homing and reproductive habits of Mallards, Gadwalls, and Blue-winged Teal. Wildl. Monogr. no. 106.

McGowan, K. J. and K. Corwin, eds. 2008. The second atlas of breeding birds in New York State. Cornell University Press, Ithaca, NY.

New York State Department of Environmental Conservation (NYSDEC). 2005. New York State Comprehensive Wildlife Conservation Strategy. <http://www.dec.ny.gov/index.html>.

Parnell, J. F. and T. L. Quay. 1962. The populations, breeding biology, and environmental relations of the Black Duck, Gadwall, and Blue-winged Teal at Pea and Bodie Islands, North Carolina. Proc. Annu. Conf. Southeast. Assoc. Game Fish Comm. 16:53-67.

Swift, B.L. 2012. Wildlife Restoration Progress Report and Evaluation, Gran WE-173-G-19. Unpublished Report. New York State Department of Environmental Conservation, Albany, NY.

U.S. Fish and Wildlife Service. 2023. Waterfowl population status, 2023. U.S. Department of the Interior, Washington, D.C. USA.

Originally prepared by	Kimberley Corwin
Date first prepared	December 2, 2011
First revision	July 2014 (Jenny Murtaugh)
Latest revision	

Species Status Assessment

Common Name: Blue-winged warbler **Date Updated:** December 28, 2023

Scientific Name: *Vermivora cyanoptera* **Updated By:** Beth Cooper

Class: Aves

Family: Parulidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

The blue-winged warbler has expanded northward in the past century with the abandonment of farmlands. In the past 20 years it has increased its occupancy in New York by 17%. Hybridization and competition with the golden-winged warbler is suspected of contributing to the decline/local extirpation of that species. Both warblers occur in early- to mid-successional habitats.

I. Status

a. Current legal protected Status

i. **Federal:** Not Listed **Candidate:** No

ii. **New York:** SGCN

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** S5B **Tracked by NYNHP?:** No

Other Ranks:
IUCN Red List: LC (Least Concern)

Partners in Flight: Yellow Watch List (Range Restricted)

USFWS: Species of Conservation Concern in Bird Conservation Regions 13, 30

Status Discussion:

The blue-winged warbler is widespread across southern and central New York and has become more common in the eastern Lake Ontario Plains since the completion of the first Breeding Bird Atlas (1980-85). It is generally absent from the central Adirondacks and is still only occasionally encountered in the eastern St. Lawrence Valley and the northern Lake Champlain Valley.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Declining	Stable	1993-2022		Choose an item.
Northeastern US	Yes	Declining	Stable	1993-2022		Choose an item.
New York	Yes	Declining	Stable	1993-2022		Yes

Connecticut	Yes	Declining	Declining	1993-2022		Yes
Massachusetts	Yes	Declining	Stable	1993-2022		Yes
New Jersey	Yes	Declining	Declining	1993-2022		Yes
Pennsylvania	Yes	Declining	Declining	1993-2022		Yes
Vermont	Yes	Increasing	Increasing	1976-81 to 2003-07		Yes
Ontario	Yes	Stable	Unknown	1993-2022		Choose an item.
Quebec	No data	Unknown	Unknown			Choose an item.

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

None.

Trends Discussion *(insert map of North American/regional distribution and status):*

Blue-winged warbler experienced a northward expansion in the east during the last century following abandonment of farmlands. Continued northward expansion within New York evident in second Atlas results, which documented 17% more occupied survey blocks than in 1980-85. BBS data show a -3.63% annual decline for the period 2002-2012 (Sauer et al. 2014).

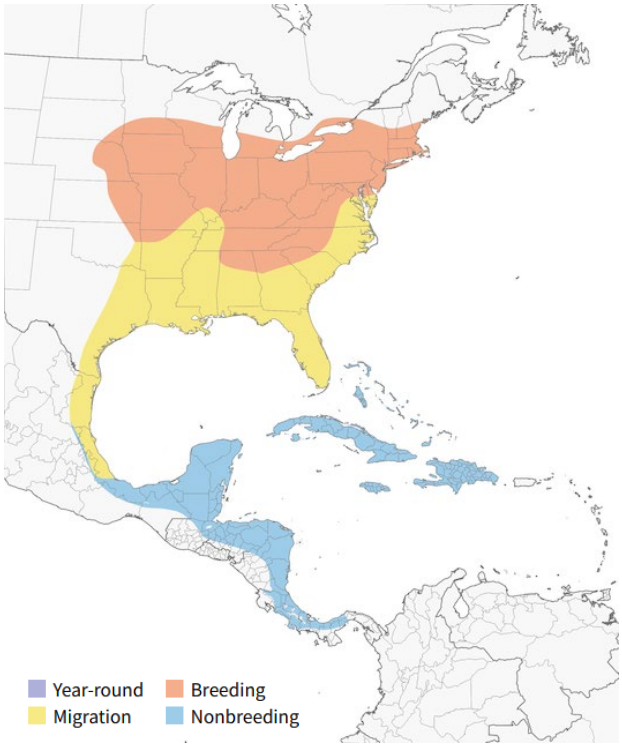

Figure 1. Range of the blue-winged warbler in North America (Birds of the World Online 2023).

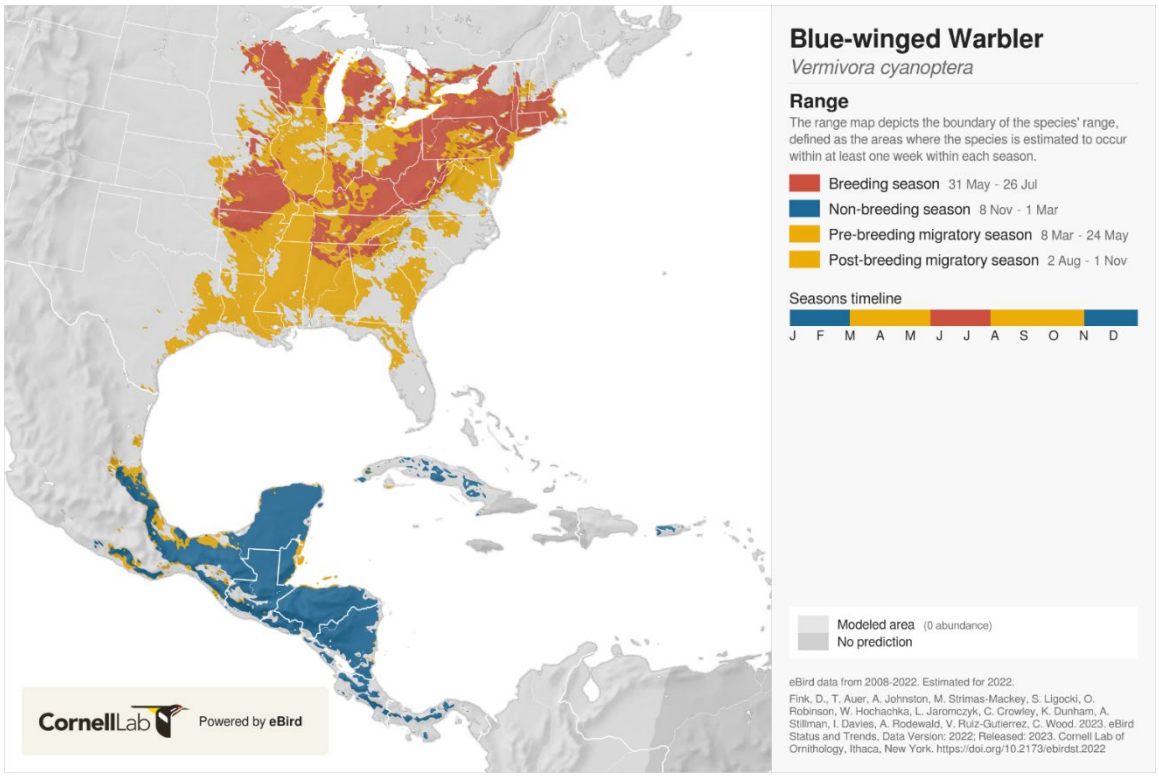

Figure 2. Blue-winged warbler range (eBird www.ebird.org, 11/27/2023)

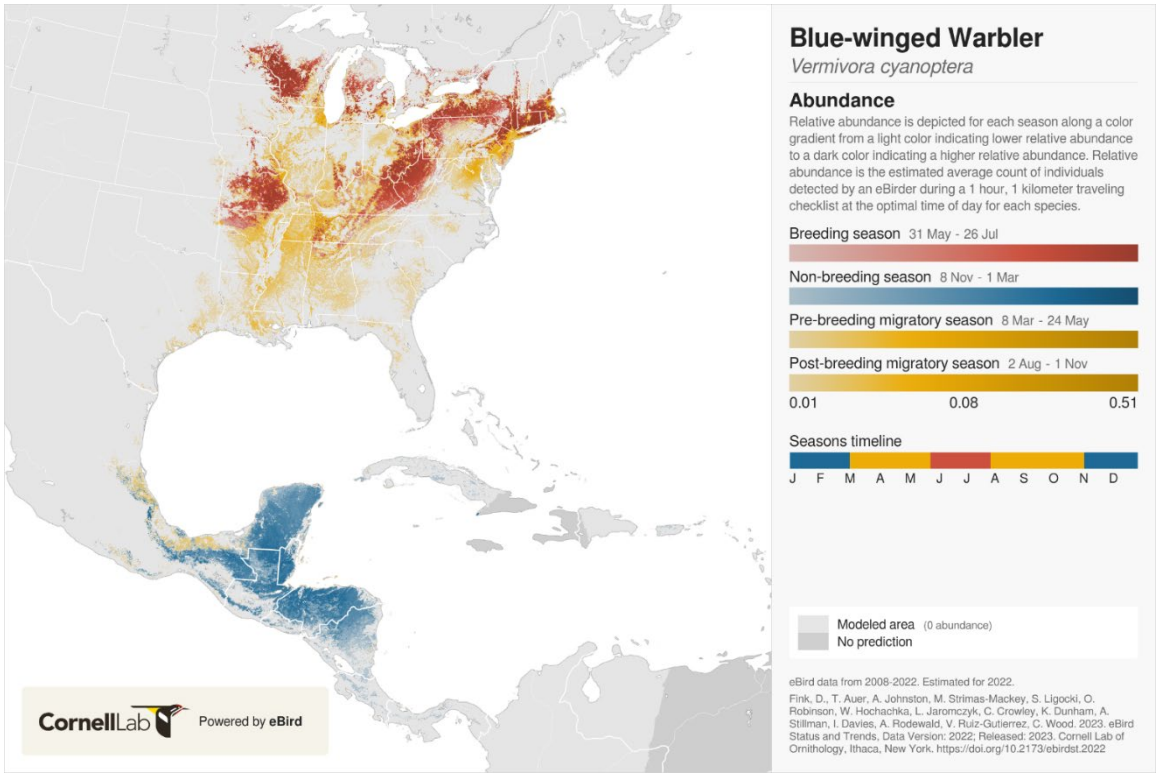

Figure 3. Blue-winged warbler abundance (eBird www.ebird.org, 11/27/2023)

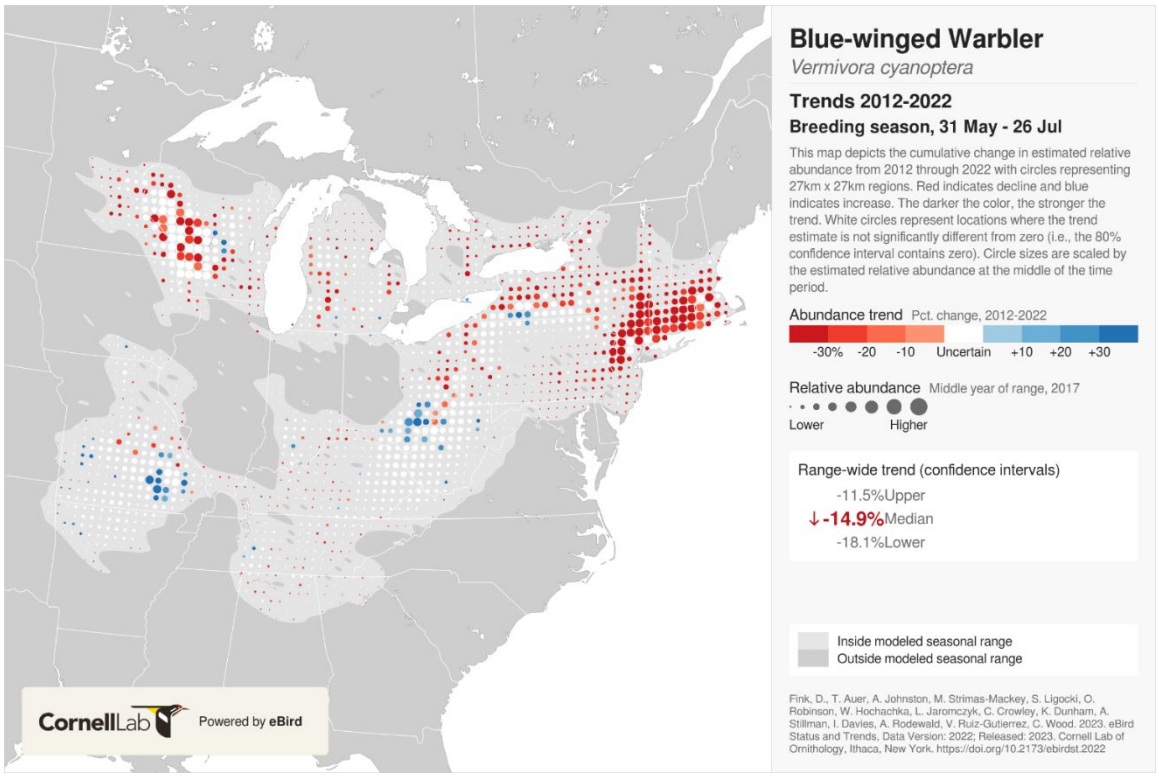

Figure 4. Blue-winged warbler trends (eBird www.ebird.org, 11/27/2023)

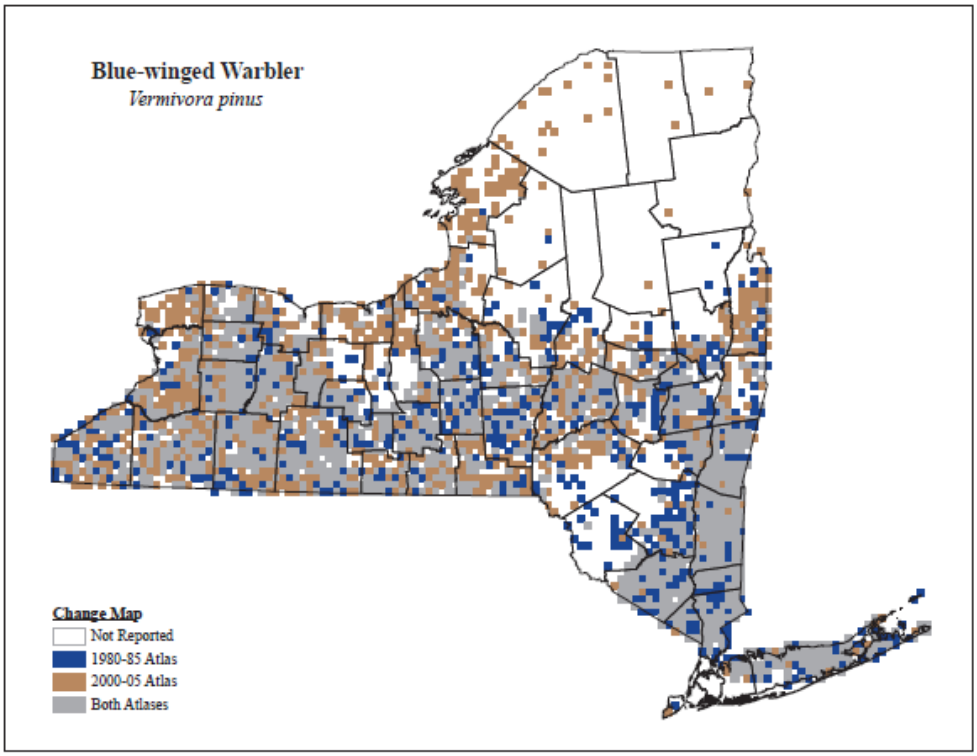

Figure 5. Change in blue-winged warbler occurrence in New York State between the first Breeding Bird Atlas and the second Breeding Bird Atlas (McGowan and Corwin 2008).

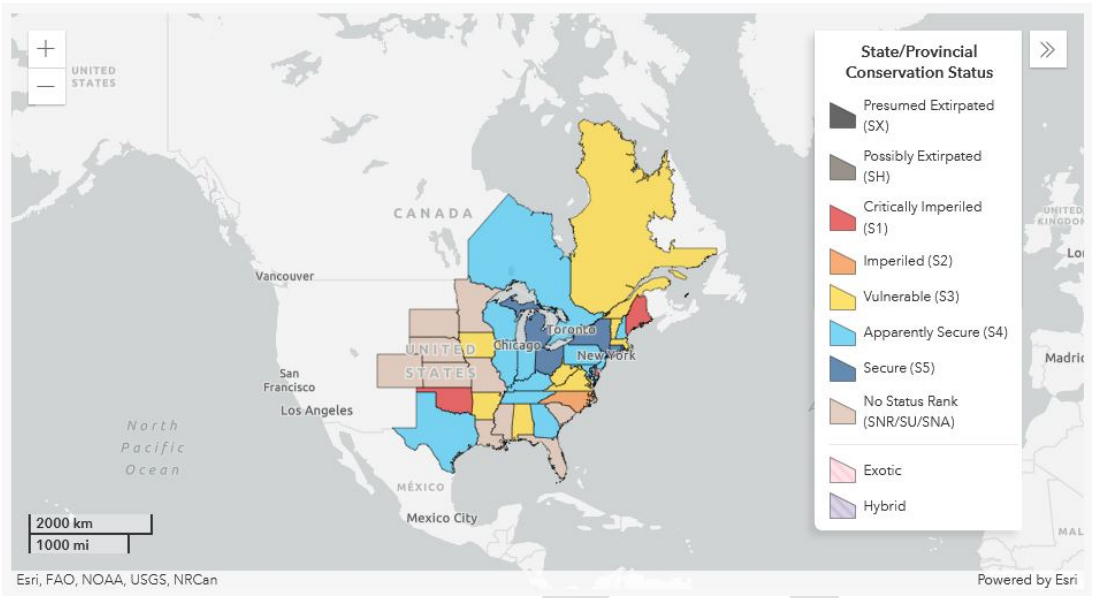

Figure 6. Conservation status of the blue-winged warbler in North America (NatureServe 2023).

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

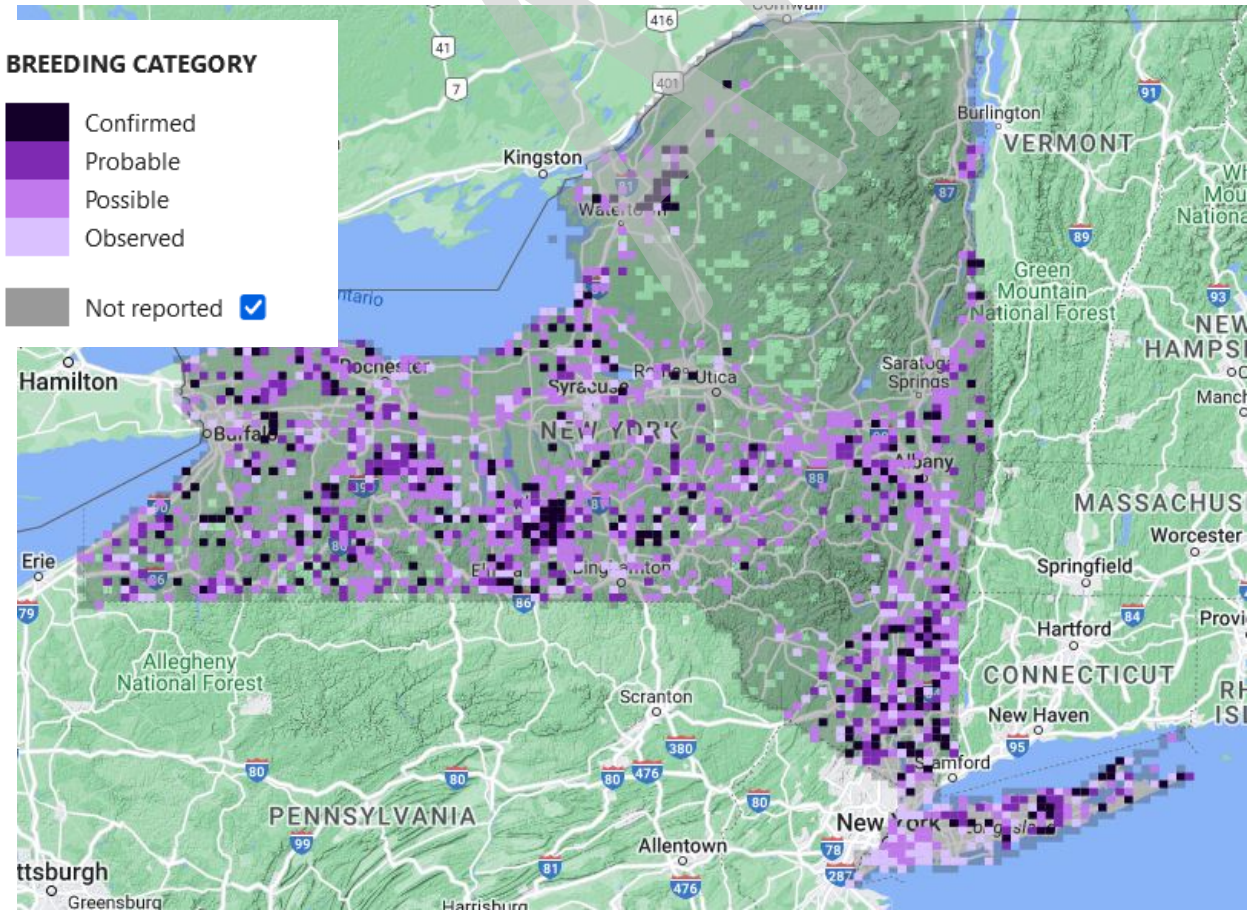

Figure 6. Preliminary blue-winged warbler occurrences from the third year of the third New York State BBA (eBird 2023).

Years	# of Records	# of BBA Blocks	% of State
Pre-1980	_____	_____	_____
1980-1985	_____	1,867	35%
2000-2005	_____	2,189	41%
2020-2023	_____	1,226	21%

Table 1. Records of blue-winged warbler in New York.

Details of historic and current occurrence:

The second breeding bird atlas (2000-05) documented blue-winged warbler in 41% of the survey blocks statewide, an increase of 17% from 1980-85 (McGowan and Corwin 2008).

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
26-50%	Peripheral	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

1. Non-Native Shrublands
2. Powerline
3. Old Field Managed Grasslands
4. Wet Meadow/Shrub Swamp
5. Plantation and Disturbed Land Pioneer Forests
6. Hardwood Swamp
7. Riparian

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
No	No	Declining	Since 1950s

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

The blue-winged warbler breeds in early to mid-successional habitat and in swamps with a high density of shrubs. Brushy hillsides, second growth, partly open situations with saplings, bogs, woodland edge and clearings, stream edges, overgrown pastures, and swamps are favored. Nests are close to or on

ground, in bushes, weeds, or grasses, or under bushes, or between exposed roots of stump (Terres 1980). Blue-winged warbler nests successfully in small clearcuts (less than 5 hectares); large expanses of continuous early successional habitat are not necessary (NatureServe 2012).

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	Choose an item.	Choose an item.	Yes	Choose an item.	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

The blue-winged warbler presumably breeds in its first year, as do other warblers. There are few specific data on intervals between breeding, but some males return to breeding territories for as many as 4 years. There is typically only 1 brood/season of usually 4 or 5 eggs, but with a range of 2–7. Production of a second clutch after a successful first brood has never been observed. There is no data on lifetime reproductive success and no detailed studies on post-fledging survivorship of juveniles exist, because family groups do not stay in nesting territories after young fledge and there is no natal philopatry. Annual survival rate of adults is also poorly known and not well monitored by return rates to breeding territories, as adults may relocate to new territories.

VI. Threats *(from NY 2015 SWAP or newly described):*

Threats to NY Populations	
Threat Category	**Threat**
1. Natural System Modifications	Other Ecosystem Modifications (succession)
2. Residential & Commercial Development	Housing & Urban Areas (habitat loss to development)
3. Invasive & Other Problematic Species & Genes	Problematic Native Species (cowbird parasitism)
4. Agriculture & Aquaculture	Perennial & Non-Timber Crops (habitat loss to agriculture)

Conservation and management of blue-winged warbler populations is a low priority because of relatively stable population size and almost complete replacement of golden-winged warbler in areas of secondary contact. Research on conservation of shrubland birds, however, is critically needed because of advancing succession and suburban sprawl.

This species requires early successional habitats and will quickly disappear as the trees age and the canopy consolidates. A constant supply of newly disturbed habitat is necessary to sustain populations in upland forest sites.

General threats to the early successional forest/shrubland bird suite in New York include reversion of shrublands to forest; loss of small dairy farms; fire suppression; more intensive agriculture that results in loss of hedgerows, shrubs, and shrub wetlands; reversion of young forest habitat to mature forest;

inadequate amounts of forest management that includes even aged and heavy partial removal; and the erroneous public perception that forest management is harmful to birds (NYSDEC 2005).

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

Blue-winged warblers are protected by the Migratory Bird Treaty Act of 1918.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

Conservation actions following IUCN taxonomy are categorized in the table below.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
1. Land/Water Protection	Site/Area Protection
2. Land/Water Protection	Resource/Habitat Protection
3. Land/Water Management	Site/Area Management
4. Land/Water Management	Invasive/Problematic Species Control
5. Land/Water Management	Habitat and Natural Process Restoration
6. Education and Awareness	Training
7. Education and Awareness	Awareness and Communications
8. Law and Policy	Policies and Regulations

Table 3. Recommended conservation actions for blue-winged warbler.

The Comprehensive Wildlife Conservation Strategy (NYSDEC 2005) includes recommendations for early successional forest/shrubland birds, which includes blue-winged warbler.

Curriculum development:

____ Educate public to the benefits and need for early successional habitat including even-aged management.

Habitat management:

____ Work with Utilities to manage ROWs in a manner that will provide for maximum benefit to early successional species.
____ Double the amount of early successional forest and shrub habitat on public and private land through sound planned management.
____ Increase early successional management on public and private lands.
____ Maintain, restore, and enhance fire adapted ecosystems. Increase use of prescribed fire in fire adapted ecosystems.
____ Promote management of Utility ROWs that will provide the maximum benefit to shrub bird species.

Habitat monitoring:

____ Precisely monitor trends of all species, in particular those that are not currently adequately monitored.
____ Monitor status and trends of golden-winged warblers in areas where they are common, and in particular, along the "front" of blue-winged warbler invasion northward.
____ Complete an inventory and analysis for high priority focus species that identifies core habitats (highest abundance) and geographic areas (where appropriate).

Habitat research:

____ Determine effects of viburnum leaf beetle on early successional forest/shrub habitats and species utilizing them.

Population monitoring:

____ Encourage full completion of BBS routes.

Statewide management plan:

____ Develop a management plan that provides guidance on maintaining, enhancing and restoring early successional forest/shrub bird species.

Other actions:

____ Develop better mechanisms for directing federal (NRCS and USFWS) funding programs into early successional forest/shrub habitats.
____ Develop BMPs for forest management in riparian areas that recognize the critical need maintain, enhance and restore early successional forest/shrub habitat in these areas.

VII. References

Andrle, R.F. and J.R. Carroll, eds. 1988. The Atlas of breeding birds in New York State. Cornell University Press, Ithaca, NY.

BirdLife International. 2021. *Vermivora cyanoptera*. *The IUCN Red List of Threatened Species* 2021: e.T22721610A139129165. https://dx.doi.org/10.2305/IUCN.UK.2021-3.RLTS.T22721610A139129165.en. Accessed on 28 December 2023.

Corwin, K. 2013. NYSDEC SWAP 2015 Species Status Assessment for Blue-winged warbler. Prepared on December 2, 2011. Revised December 2014.

Fink, D., T. Auer, A. Johnston, M. Strimas-Mackey, S. Ligocki, O. Robinson, W. Hochachka, L. Jaromczyk, C. Crowley, K. Dunham, A. Stillman, I. Davies, A. Rodewald, V. Ruiz-Gutierrez, C. Wood. 2023. eBird Status and Trends, Data Version: 2022; Released: 2023. Cornell Lab of Ornithology, Ithaca, New York. https://doi.org/10.2173/ebirdst.2022

Gill, F. B., R. A. Canterbury, and J. L. Confer (2020). Blue-winged Warbler (Vermivora cyanoptera), version 1.0. In Birds of the World (A. F. Poole and F. B. Gill, Editors). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.buwwar.01.

Hostetler, J.A., Sauer, J.R., Hines, J.E., Ziolkowski, D., and Lutmerding, M., 2023, The North American Breeding Bird Survey, Analysis Results 1966 - 2022: U.S. Geological Survey data release, https://doi.org/10.5066/P9IU1UZ6.

McGowan, K.J. and K. Corwin, eds. 2008. The second atlas of breeding birds in New York State. Cornell University Press, Ithaca, NY.

NatureServe. 2023. NatureServe Explorer. Page last published 1 December 2023. https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.105701/Vermivora_cyanoptera Accessed 27 December 2023.

New York State Department of Environmental Conservation (NYSDEC). 2005. New York State Comprehensive Wildlife Conservation Strategy. Albany, NY. https://extapps.dec.ny.gov/docs/wildlife_pdf/cwcs2005.pdf

New York State Third Breeding Bird Atlas (NYS BBA III). 2023. New York Overview. https://ebird.org/atlasny/state/US-NY. Accessed 27 December 2023.

Partners in Flight. 2021. Avian Conservation Assessment Database, version 2021. http://pif.birdconservancy.org/ACAD. Accessed on 27 December 2023.

Sauer, J. R., D. K. Niven, J. E. Hines, D. J. Ziolkowski, Jr, K. L. Pardieck, J. E. Fallon, and W. A. Link. 2019. The North American Breeding Bird Survey, Results and Analysis 1966 - 2019. Version 2.07.2019 USGS Patuxent Wildlife Research Center, Laurel, MD

U.S. Fish and Wildlife Service. 2021. Birds of Conservation Concern 2021. United States Department of the Interior, U.S. Fish and Wildlife Service, Migratory Birds, Falls Church, Virginia. https://www.fws.gov/media/birds-conservation-concern-2021.

Originally prepared by	Kimberly Corwin
Date first prepared	2 December 2011
First revision	July 2014, Kimberly Corwin
Last revision	28 December 2023, Beth Cooper

Species Status Assessment

Common Name: Bonaparte's gull **Date Updated:** December 20, 2023

Scientific Name: *Chroicocephalus philadelphia* **Updated By:** M. Oberkircher

Class: Aves

Family: Laridae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

Bonaparte's gull is part of the gull family Laridae. In the summer, Bonaparte's gull breeds in the boreal forest of Canada and Alaska. This gull appears in New York during migration and winter, where it frequents inland lakes and rivers, and coastal bays, estuaries, and inshore waters. The long-term population trend seems to be increasing across its range but there are no data on recent trends (Burger and Gochfeld 2002, BirdLife International 2009).

I. Status

a. Current legal protected Status

i. **Federal:** Not listed **Candidate:** No

ii. **New York:** SGCN

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** SNRN **Tracked by NYNHP?:** No

Other Ranks:

-IUCN Red List: Least Concern

-Partners in Flight: 10 out of 20

Status Discussion:

Bonaparte's gull is a common to very abundant migrant and winter visitant. Smaller numbers of non-breeders occur in New York during the summer.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Choose an item.	Choose an item.			Choose an item.
Northeastern US	Choose an item.	Choose an item.	Choose an item.			Choose an item.
New York	Choose an item.	Choose an item.	Choose an item.			Yes
Connecticut	Choose an item.	Choose an item.	Choose an item.			No
Massachusetts	Choose an item.	Choose an item.	Choose an item.			No

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
New Jersey	Choose an item.	Choose an item.	Choose an item.			No
Pennsylvania	Choose an item.	Choose an item.	Choose an item.			No
Vermont	Choose an item.	Choose an item.	Choose an item.			No
Ontario	Yes	Stable	Stable			No
Quebec	Yes	Stable	Stable			No

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

None.

Trends Discussion *(insert map of North American/regional distribution and status):*

Bonaparte's gull increased greatly in numbers in New York since the early 1900s when it was a rare migrant in Niagara Frontier; the species now regularly numbers 10,000 in one flock, and up to 100,000 in the region (Beardslee and Mitchell 1965, Burger and Brownstein 1968). Christmas Bird Count for New York data suggest that populations appear to be stable if not increasing, though their numbers fluctuate widely from season to season. The Niagara area population has increased significantly since the early 20th century, and more wintering populations were observed at inland locations between 1965 and 2003.

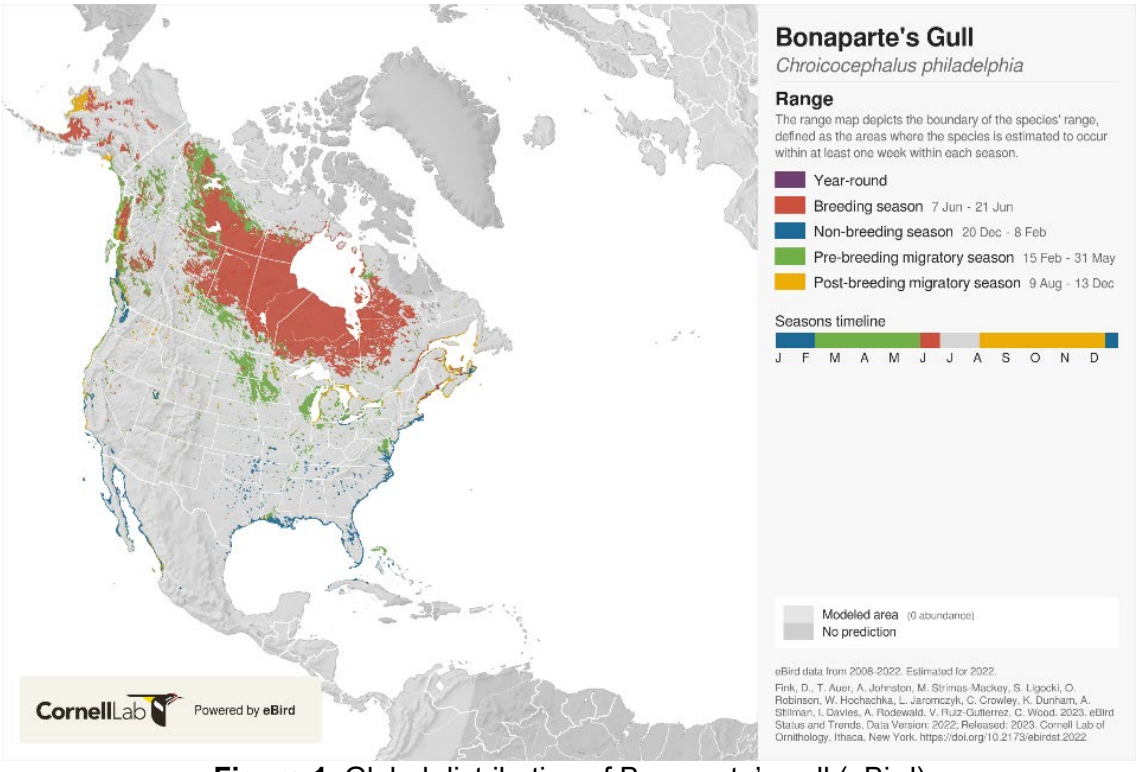

Figure 1. Global distribution of Bonaparte's gull (eBird)

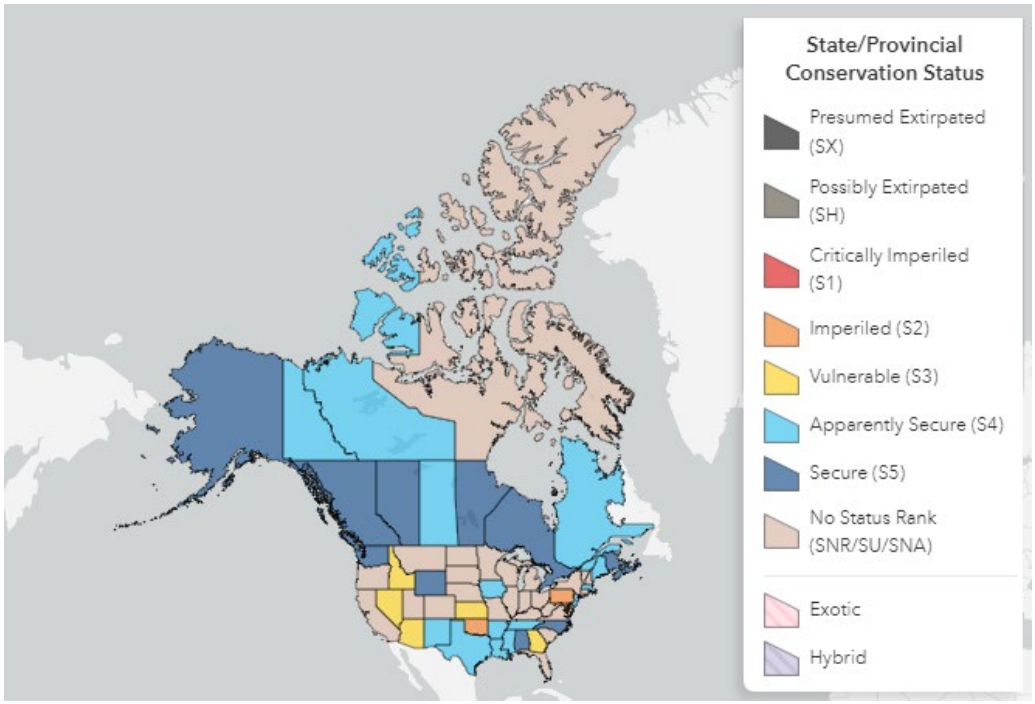

Figure 2. Conservation status of Bonaparte's gull in North America (NatureServe)

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

Years	# of Records	# of BBA Blocks	% of State
Pre-1980	_____	0	_____
1980-1985	_____	0	_____
2000-2005	_____	0	_____
2020-2023	_____	0	_____

Table 1. Records of Bonaparte's gull in New York.

Details of historic and current occurrence:

Brock (1998) summarized high counts of wintering gulls in New York: 10,000 in Gravesend Bay, Kings County in January 1962; 100,000 in Niagara River and nearby reservoirs in November 1959; 60,000 along Niagara River in 1969. Bull (1974) notes that Bonaparte's gull "frequents Long Island waters, the lower Hudson River, and the Great Lake region, but is especially numerous in the Buffalo-Niagara Falls area, and to a lesser extent, New York harbor.

Numbers fluctuate from year to year due to fish abundance and distribution, weather conditions, water levels, and icing of water bodies. Christmas Bird Count Data for 2010-2022 documented an average of 7,774 individuals with a high count of 16,857 in 2013-14 and a low count of 1164 in 2021-22. Recent high counts are summarized by Brock (1998): 40,000 at the mouth of the Niagara River in December 1990. During the winter of 2012-2013, more than 45,000 Bonaparte's gulls were counted in the Buffalo-Niagara Falls area.

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Peripheral	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

1. Large/Great River, Deep Water, Rocky Bottom
2. Marine, Intertidal, Benthic Geomorphology, Tidal Flats
3. Lake and River Shore/Beach
4. Marine Intertidal Gravel/Sand Beach
5. Marine, Intertidal, Benthic Geomorphology, Bar

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
No	No	Stable	

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

This species usually overwinters on lakes, rivers, marshes, coastal bays and harbors, sandbars and mudflats, and beaches along coasts. It often concentrates near convergences, upwellings, sewage outfalls and lagoons and inlets (Lauro 1980, Campbell et al. 1990, Small 1994). Breeding occurs in coniferous woodlands near ponds and lakes.

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
No	Yes	No	Yes	Yes	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

Bonaparte's gull remains among the least studied of any gulls regularly nesting in North America, partly because it nests high in trees at high latitudes, with nests widely dispersed, and is nowhere abundant. Relatively secretive nesting habits make it difficult to observe the breeding behavior of large numbers of pairs. Bonaparte's gulls nest in treed bogs and fens with open water and in areas of black spruce adjacent to lakes, rivers, and ponds. Nests are generally built 3-6 m high in trees

but may also be on the ground in mounds of marsh vegetation or mudflats of dry sloughs. The Bonaparte's gull may nest singly or in colonies of 2-20 pairs. Virtually nothing is known about mate fidelity, age-distribution of breeding adults, measures of reproductive success (and their variations in different regions), recruitment, life span, or survivorship.

No definite information on age at first breeding; some individuals probably breed at 2 years of age. Presumably breeds every year unless tundra lakes are late in thawing. Most clutches contain 2-3 eggs. Few data are available on reproductive success. A British Columbia study reported 6 broods of 1 chick, 49 of 2 chicks, and 4 of 3 chicks (mean 1.86; Campbell et al. 1990), indicating a loss of 0.72 chicks/pair between incubation and fledging. Anecdotal accounts of egg mortality include embryonic death, hatching death, disappearance (possibly predation), and abandonment (Twomey 1934). Mortality of chicks is probably greatest during first week of life, when they leave tree nests and make their way, with parents, to ponds or muskeg pools (Twomey 1934).

VI. Threats *(from NY 2015 SWAP or newly described):*

The greatest potential threat is loss of habitat due to coastal and offshore development or activities that may result in large scale alteration of bay or ocean substrates (e.g. dredging, sand mining, development of barrier islands, scouring of littoral areas by commercial shellfish harvesting, etc.). Collision with structures, spills, or intensive human disturbance are a potential concern. Diseases such as Type E botulism (Great Lakes) has killed large numbers of birds annually since 1999. Waterbirds are also subject to entanglement in fishing gear. Sea level rise and frequent storms and flooding events due to climate change threaten habitat and resources.

In general, wintering waterbirds face threats from loss of habitat to coastal wetlands, activities that result in large scale alteration of bay or ocean substrates (dredging, sand mining, development of barrier islands, etc.), direct mortality from collisions with structures, erosion of habitat, various contaminants, or intensive human disturbance.

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

Bonaparte's gull is protected under the Migratory Bird Treaty Act.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

Protect important foraging areas from development, human disturbance, environmental contaminants, and other potential impacts. Work with regional marine resource managers to identify common interests and potential conflicts (ex- commercial fishing/shell fishing techniques, aquaculture development, entanglement, oil spill response plans) with needs of wintering water birds. More intensive studies are needed of interactions between commercial fisheries and seabirds. Cooperate in development and conduct of baseline surveys or monitoring programs to determine population status of wintering waterfowl/water bird species in New York and/or eastern North America, at 10-year (or more frequent) intervals (NYSDEC 2005).

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated

subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
Land/Water Protection	Site/Area Protection
Land/Water Protection	Resource/Habitat Protection
Land/Water Management	Site/Area Management
Land/Water Management	Habitat and Natural Process Restoration (pollution control)
Law/Policy Actions	Policy/Regulation Changes (hunting regulations, ocean dumping practices)
External Capacity Building	Alliance & Partnership Development

Table 2. Recommended conservation actions for Bonaparte's gull

VII. References

Beardslee, C. S. and H. D. Mitchell. 1965. Birds of the Niagara Frontier region. Bull. Buffalo Soc. Nat. Sci. 22:252-253.

BirdLife International 2009. Larus philadelphia. In: IUCN 2011. IUCN Red List of Threatened Species. Version 2011.2. <www.iucnredlist.org>. Downloaded on 07 December 2011.

Brock, R.W. 1998. Bonaparte's Gull, Larus philadelphia. Pages 279-80 in Bull's Birds of New York State. M. Levine, ed. Cornell University Press, Ithaca, NY.

Burger, J. and R. Brownstein. 1968. The status of Bonaparte's Gull in New York State. Kingbird 18:9-20.

Burger, J. and M. Gochfeld. 2002. Bonaparte's Gull (Chroicocephalus philadelphia), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/634

Campbell, R. W., N. K. Dawe, I. McTaggart-Cowan, J. M. Cooper, G. W. Kaiser, and M. C. E. McNall. 1990. The birds of British Columbia, Vol. 2: diurnal birds of prey through woodpeckers. R. Br. Columbia Mus. Victoria.

Corwin, K. 2011. NYSDEC SWAP 2015 Species Status Assessment for *Agrigomphus cornutus*. Prepared on December 7, 2011. Revised by J. Murtaugh July 2014.

eBird data from 2008-2022. Estimated for 2022. Fink, D., T. Auer, A. Johnston, M. Strimas-Mackey, S. Ligocki, O. Robinson, W. Hochachka, L. Jaromczyk, C. Crowley, K. Dunham, A. Stillman, I. Davies, A. Rodewald, V. Ruiz-Gutierrez, C. Wood. 2023. eBird Status and Trends, Data

Version: 2022; Released: 2023. Cornell Lab of Ornithology, Ithaca, New York. https://doi.org/10.2173/ebirdst.2022

Lauro, A. J. 1980. The winter ecology of Bonaparte's Gull on the south shore of Long Island. Linn. News Letter 34(Mar):1-3.

NatureServe. 2023. NatureServe Explorer. Page last published (12/1/2023). https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.106311/Chroicocephalus_philadelphia. Accessed 1/2/2024.

NYSDEC. 2005. New York State Comprehensive Wildlife Conservation Strategy.

Pons, J. M., A. Hassanin, and P. A. Crochet. 2005. Phylogenetic relationships within the Laridae (Charadriiformes: Aves) inferred from mitochondrial markers. Molecular Phylogenetics and Evolution 37:686-699.

Small, A. 1994. California birds: their status and distribution. Ibis Publ. Co. Vista, CA.

Twomey, A. D. 1934. Breeding habits of Bonaparte's Gull. Auk 51:291-296.

Originally prepared by	Kimberley Corwin
Date first prepared	December 7, 2011
First revision	July 2014 (Jenny Murtaugh)
Latest revision	December 20, 2023 (M. Oberkircher)

Species Status Assessment

Common Name: Atlantic Brant **Date Updated:**

Scientific Name: *Branta bernicla* **Updated By:** Kelly Hamilton

Class: Birds

Family: Anatidae

Species Synopsis

Brant are found wintering on the Atlantic Coast including coastal New York. Population status and habitat requirements for migratory waterfowl that winter in New York are poorly understood. Brant populations fluctuated from about 45,000 in 1978–1979 and 1979–1980 to 185,000 in 1991–1992. From 2000-2022, population estimates have fluctuated anywhere between 120,000-182,000. The 2022 midwinter population estimate for brant was 109,194, 21.9% lower than the 2020 estimate (no survey flown in 2021). The population estimates have shown no trend during the past decade (USFWS 2011).

I. Status

a. Current legal protected Status

i. **Federal:** Game species **Candidate:** No

ii. **New York:** Game species, SGCN

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** SNRN **Tracked by NYNHP?:** No

Other Ranks:

-IUCN Red List: LC- Least concern

-Audubon Watch List

Status Discussion:

In New York, Brant is considered to be an “abundant to very abundant” migrant and winter visitant on western Long Island. It is less numerous elsewhere on the coast. It is locally common to very abundant inland, particularly in the Great Lakes littoral and the Hudson Valley (Griffith 1998).

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Stable	Stable	1999-2008		No
Northeastern US	Yes	Stable	Stable	1999-2008		No
New York	Yes	Stable	Stable	1970s-present	GS	No
Connecticut	Yes	Stable	Stable	1999-2008	GS	No
Massachusetts	Yes	Stable	Stable	1999-2008	GS	No

New Jersey	Yes	Stable	Stable	1999-2008	GS	Yes
Pennsylvania	No	Choose an item.	Choose an item.			Choose an item.
Vermont	No	Choose an item.	Choose an item.			Choose an item.
Ontario	No	Choose an item.	Choose an item.			Choose an item.
Quebec	No	Choose an item.	Choose an item.			Choose an item.

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

An annual January Waterfowl Count has been conducted annually since 1955 (except for 1968-72) by the NYS Ornithological Association. A Mid-Winter Waterfowl Survey is conducted each January in New York and other parts of the Atlantic Flyway. The Fall Brant Productivity Survey is also conducted annually in New York and the Atlantic Flyway.

Trends Discussion *(insert map of North American/regional distribution and status):*

Brant breed in the eastern, high arctic with most of the population breeding in the Foxe Basin. Wintering occurs on the Atlantic Coast of the United States between Massachusetts and North Carolina. Approximately 85% of the population winters between Cape May, New Jersey and northwestern Long Island, New York. Two important spring staging areas have been identified; one in western Long Island and the other in James Bay.

In New York, brant were known as rare winter migrants on the south shore of Long Island prior to the 1930s. In the 1930s and 40s, a die-off of eel grass—the primary food source of brant—caused the population to crash. Brant shifted their diet to rely on sea lettuce and upland grasses and the population rebounded to unprecedented levels (Griffith 1998).

Brant populations have been estimated annually on their wintering grounds through the Mid-Winter Waterfowl Survey since 1955. Populations fluctuated from about 45,000 individuals in 1978–1979 and 1979–1980 to 185,000 in 1991–1992. Brant have recovered from dramatic population decline caused by two severe winters during the 1970s and by overshooting on the U.S. Atlantic Coast (Kirby et al. 1985). The January 2008 estimate of brant was 161,600, which is 7% higher than the 2007 estimate, and 6% higher than the 10-year average. The 2011 midwinter population estimate for brant was 148,900, 7% higher than the 2010 estimate. The population estimates have shown no trend during the past decade (USFWS 2011).

Since the 1960s, numbers have increased along the coasts of New England, New York, Delaware, and Virginia and have decreased in New Jersey and Maryland.

New York and other Atlantic Flyway States participate annually in the Fall Brant Productivity Survey. Conducted since 1972, this survey records the age ratios and family sizes on the wintering grounds. Typically, between 5,000 to 20,000 brant are observed in New York during this survey with productivity ranging from 2% to 40% young (Swift 2012). Since 1976, the fall population in the Atlantic Flyway has contained an average of approximately 19% young (Atlantic Flyway Council 2011).

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

Years	# of Records	# of BBA Blocks	% of State
Pre-1980	9400		
1980-1985			
2000-2005			
2020-2023			

Table 1. Records of brant in New York.

Details of historic and current occurrence:

New York winter waterfowl surveys from 1973 to 1979 averaged 9,400 birds. Griffith (1998) reported a high number of 48,000 individuals in southern Nassau County in 1988.

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Core	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

a. Marine, Intertidal, Benthic Geomorphology, Tidal Flat

b. Marine, Shallow Subtidal, Aquatic Bed

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
No	No	Stable	

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

Wintering locations are usually characterized by an abundance of sea grasses and certain marine algae. Brant traditionally have fed almost exclusively on marine plants and short native grasses, sedges, mosses, and forbs, but now also use fertilized grassland during winter in western Europe and eastern North America. On Long Island, large green spaces such as urban and suburban parks, school athletic fields, and commercial recreational areas like golf courses are used heavily by wintering brant.

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Choose an item.	Yes	Choose an item.	Choose an item.	Yes	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

Nest success (percentage of nests in which ≥1 egg hatches) is highly variable; it is sometimes dramatically reduced by severe spring weather, flood tides, or predation by arctic fox. From field appraisals of reproductive output, proportion of juveniles in fall flights of brant (U.S. Atlantic Coast) varied from <1 to 59% (1969–1993), averaging 22% (Kirby and Obrecht 1982, Kirby et al. 1985, U.S. Fish and Wildlife Service [USFWS] Migratory Bird Management Office unpubl. data).

This is a long-lived species. From band recoveries, the longevity record for Atlantic Brant is ≥21 years 7 months (a female; Klimkiewicz and Futcher 1989). Predation does not appear to be a major factor limiting survival of adult and juvenile brant.

VI. Threats *(from NY 2015 SWAP or newly described):*

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

Brant is a game bird with an open season. Season length and bag limits can be adjusted or the season can be closed. The Atlantic Brant Management Plan contains a Harvest Strategy used to annually set hunting season length and daily bag limits based on the Mid-Winter Waterfowl Survey index and predicted productivity. For 2012, the hunting season for brant in New York is 50 days with a bag limit of 2 per day.

The Tidal Wetlands Act, Article 25 of the Environmental Conservation Law, protects tidal wetland habitats including coastal shoals, bars, flats, and littoral zones up to 6’ deep at mean low water. This affords some protections to portions of seagrass beds that brant rely on but does not adequately protect this important habitat. The Act does limit shoreline hardening and development in the estuarine environment.

Sea grass habitat is protected under the Seagrass Protection Act, established through the Environmental Conservation Law in 2012, requiring the New York State Department of Environmental Conservation (NYSDEC) to designate seagrass management areas and to regulate marine and coastal activities that threaten these areas. The DEC can restrict types of mechanically powered fishing gear in seagrass areas that may be harmful to the grass and they may also develop a seagrass management plan, after consulting with stakeholders, to protect beds while preserving traditional recreational activities.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

Greater protection of seagrass beds in New York is needed. Conservation actions following IUCN taxonomy are categorized in the table below.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
1. Land/Water Protection	Site/Area Protection
2. Land/Water Protection	Resource/Habitat Protection
3. Land/Water Management	Site/Area Management
4. Land/Water Management	Habitat and Natural Process Restoration (pollution control)
5. Law/Policy Actions	Policy/Regulation Changes (hunting regulations, ocean dumping practices)
6. External Capacity Building	Alliance & Partnership Development

Table 2. Recommended conservation actions for brant

The Comprehensive Wildlife Conservation Strategy (NYSDEC 2005) includes recommendations for the following actions for wintering water birds, which includes brant.

Habitat Management:

____ Protect important waterfowl/water bird foraging areas from long-term destruction or development, excessive human disturbance, oil spills, environmental contaminants, and other potential impacts, through environmental permit reviews, etc.

Habitat Research:

____ Characterize and map important foraging areas (submerged aquatic vegetation, mussel beds) for waterfowl/water birds wintering on Long Island.

____ Document habitats used by northern pintails during spring migration and staging in the St. Lawrence Valley and Lake Plains regions of New York.

Life History Research:

____ Determine contaminant levels (mercury, other metals, PCBs, other organochlorines) in samples above waterfowl/water birds wintering in New York to assess potential impacts on reproduction and survival. Obtain samples as opportunities arise.

____ Document and estimate annual mortality of waterfowl/water birds in New York associated with Type E botulism and other major mortality factors, as opportunities arise.

Modify Regulation:

____ Establish hunting regulations that will ensure long-term conservation of waterfowl populations migrating through or wintering in New York.

____ Reduce or modify ocean dumping and disposal practices that may damage important water bird habitats or result in debris (ex- lead, plastics) that can cause waterbird mortality.

Other Action:

____ Because most of the species in this group are non-breeding visitors to the eastern U.S., NY should provide technical, financial, or political support as needed, to further international waterfowl/water bird conservation efforts.

Regional Management Plan:

____ Work with regional marine resource managers to identify common interests and potential conflicts (ex- commercial fishing/shell fishing techniques, aquaculture development, entanglement, oil spill response plans) with needs of wintering water birds. More intensive studies are needed of interactions between commercial fisheries and seabirds.

Statewide Baseline Survey:

____ Cooperate in development and conduct of baseline surveys or monitoring programs to determine population status of wintering waterfowl/water bird species in New York and/or eastern North America, at 10-year (or more frequent) intervals.

VII. References

Atlantic Flyway Council. 2011. Atlantic Brant Management Plan, Revised 2011. Snow Goose, Brant, and Swan Committee, Atlantic Flyway Council. U.S. Fish and Wildlife Service, Laurel, Maryland.

Barnhart, R. A., M. J. Boyd, and J. E. Prequegnat. 1992. The ecology of Humboldt Bay, California: an estuarine profile. U.S. Fish Wildl. Serv. Biol. Rep. 1.

Griffith, K.C. 1998. Brant, Branta bernicla. Pages 145-46 in Bull's birds of New York State (E. Levine, ed.). Cornell University Press, Ithaca, NY.

Kirby, R. E. and H. H. Obrecht. 1982. Recent changes in the North American distribution and abundance of wintering Atlantic brant. J. Field Ornithol. 53:333-341.

Kirby, R. E., T. W. Barry, R. H. Kerbes, and H. H. Obrecht. 1985. Population dynamics of North American Light-bellied Brent Geese as determined by productivity and harvest surveys. Wildfowl 36:49-52.

Klimkiewicz, M. K. and A. G. Futcher. 1989. Longevity records of North American birds. Supplement 1. J. Field Ornithol. 60:469-494.

Klimstra, J.D. et al., compiler. 2012. Atlantic Flyway harvest and population survey data book. U.S Fish and Wildlife Service, Laurel, MD.

Reed, A., D. H. Ward, D. V. Derksen and J. S. Sedinger. 1998. Brant (*Branta bernicla*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/337.

Swift, B.L. 2012. Wildlife Restoration Progress Report and Evaluation, Grant WE-173-G-19. Unpublished Report. New York State Department of Environmental Conservation, Albany, NY.

U.S. Fish and Wildlife Service. 2011. Waterfowl Population Status, 2011. U.S. Department of the Interior, Washington, D.C. USA.

Originally prepared by	Kimberley Corwin
Date first prepared	November 16, 2011
First revision	July 2014 (Jenny Murtaugh)
Latest revision	January 2024 (Kelly Hamilton)

Species Status Assessment

Common Name: Brown thrasher **Date Updated:**

Scientific Name: *Toxostoma rufum* **Updated By:**

Class: Aves

Family: Mimidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

Brown thrashers breed across the eastern two-thirds of the United States. They can be found in brushy open country, forest clearings, thickets, shelter belts, riparian areas, and suburbs. In New York, they occur statewide with the exception of the Adirondack Mountains, where records are sparse. Breeding occurs in thickets, hedgerows and open countryside; this is an early-successional species. Significant declines have been noted in New York by the Breeding Bird Survey (BBS) since 1966. The second Breeding Bird Atlas (BBA) in New York documented a decline in occupancy of 30% since the 1980s. Declines have been documented in all adjacent states and in the Eastern BBS Region.

I. Status

a. Current legal protected Status

i. **Federal:** Not listed **Candidate:** No

ii. **New York:** Not listed; SGCN

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** S3S4B **Tracked by NYNHP?:** No

Other Ranks:
IUCN Red List: Least Concern

New York Natural Heritage Program Watch List

Partners in Flight-Continental Stewardship Species

Status Discussion:

Brown thrasher is a widespread and fairly common breeder in New York except at higher elevations. It is ranked as Vulnerable in New York and New Jersey. Other surrounding states and provinces rank brown thrasher as Secure or Apparently Secure.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Declining	Declining	1999-2009		(blank)
Northeastern US	Yes	Declining	Declining	1999-2009		(blank)
New York	Yes	Declining	Declining	1980-85 and 2000-05		Yes
Connecticut	Yes	Declining	Declining	1999-2009	Special Concern	Yes
Massachusetts	Yes	Declining	Declining	1999-2009	Not listed	Yes
New Jersey	Yes	Declining	Declining	1999-2009	Not listed	Yes
Pennsylvania	Yes	Increasing	Increasing	1999-2009	Not listed	Yes
Vermont	Yes	Declining	Declining	1976-81 and 2003-07	Not listed	Yes
Ontario	Yes	Declining	Declining	1999-2009	Not listed	(blank)
Quebec	Yes	Declining	Declining	1999-2009	Not listed	(blank)

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

The Albany Pine Bush Preserve (Albany County) conducts regular, shrubland/early successional bird species monitoring (Bried et al. in press).

Trends Discussion *(insert map of North American/regional distribution and status):*

The second Breeding Bird Atlas in New York showed a 30% decline in occupancy from 1980-85 and 2000-05. Losses were documented in all areas of the state, but were particularly notable in the Adirondack Mountains, where the loss was 60%. BBS data for New York show a significant decline of 4.7% annually for the period 1966-2009 and a significant decline of 3.9% for the period 1999-2009. BBS data show significant declines for the period 1999-2009 in surrounding states: Massachusetts (-9.1%), Connecticut (-9.9%), New Jersey (-5.1%), Vermont (-4.4%).

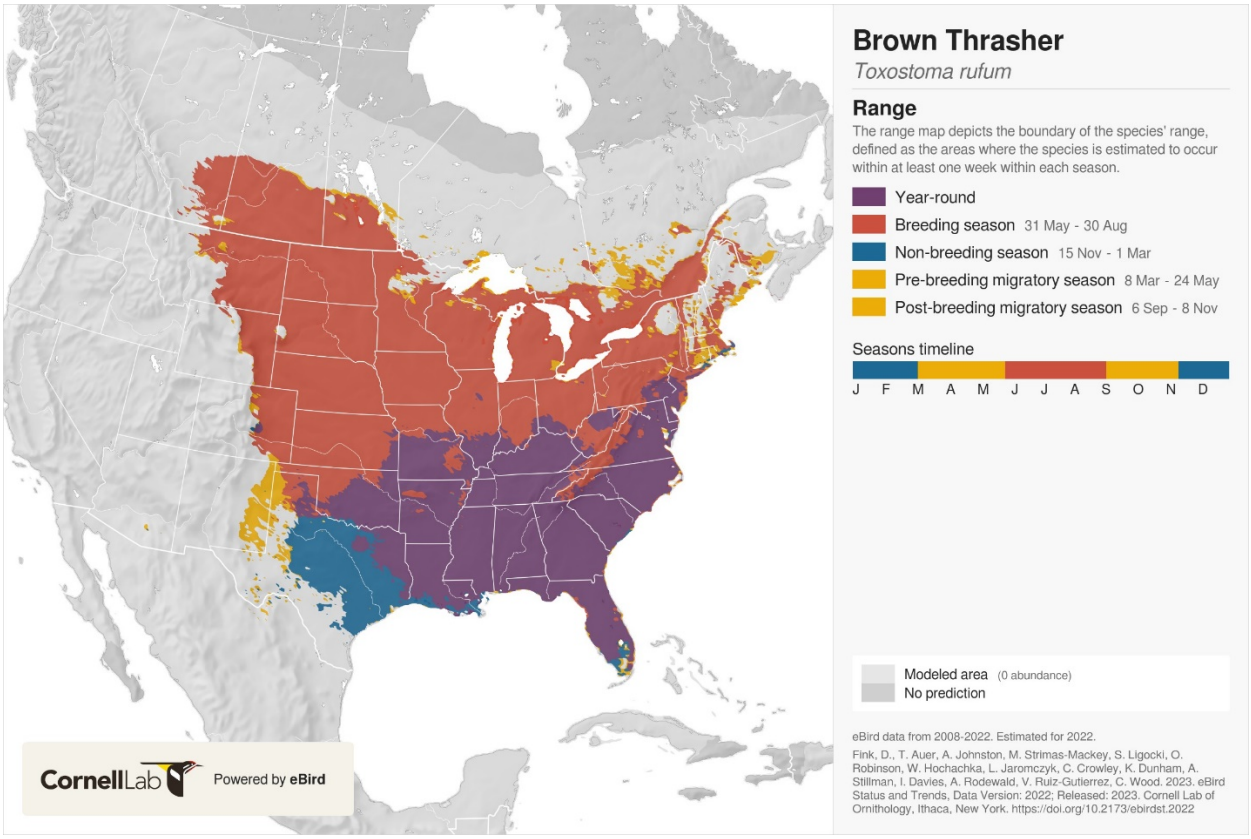

Figure 1. Brown thrasher distribution in North America (eBird 2022)

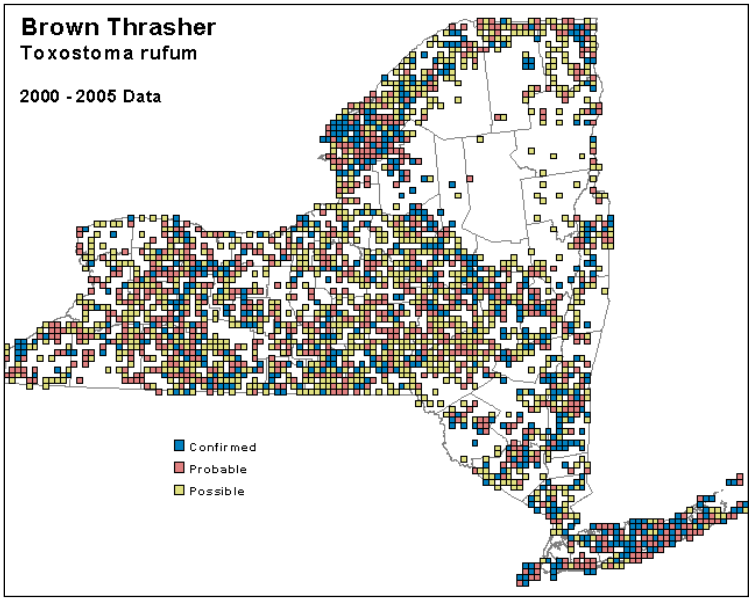

Figure 2. Brown thrasher occurrence in New York during the second Breeding Bird Atlas (McGowan and Corwin 2008)

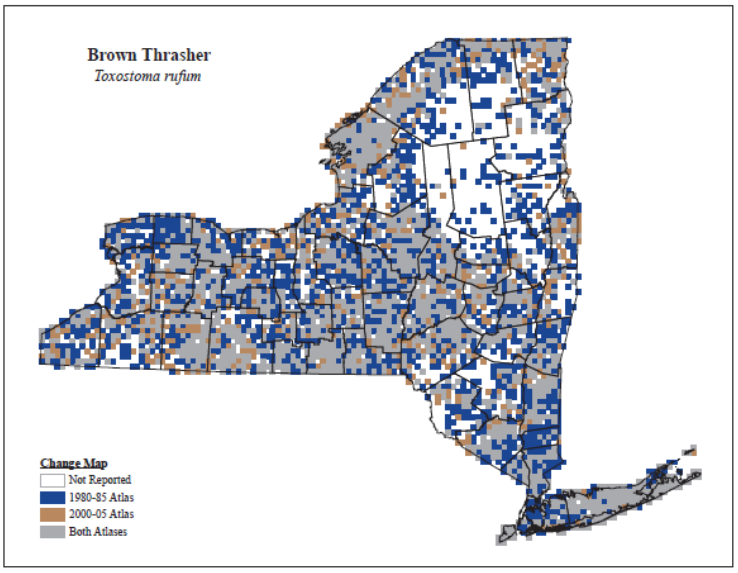

Figure 3. Change in brown thrasher occurrence in New York between the first Breeding Bird Atlas and the second Breeding Bird Atlas (McGowan and Corwin 2008)

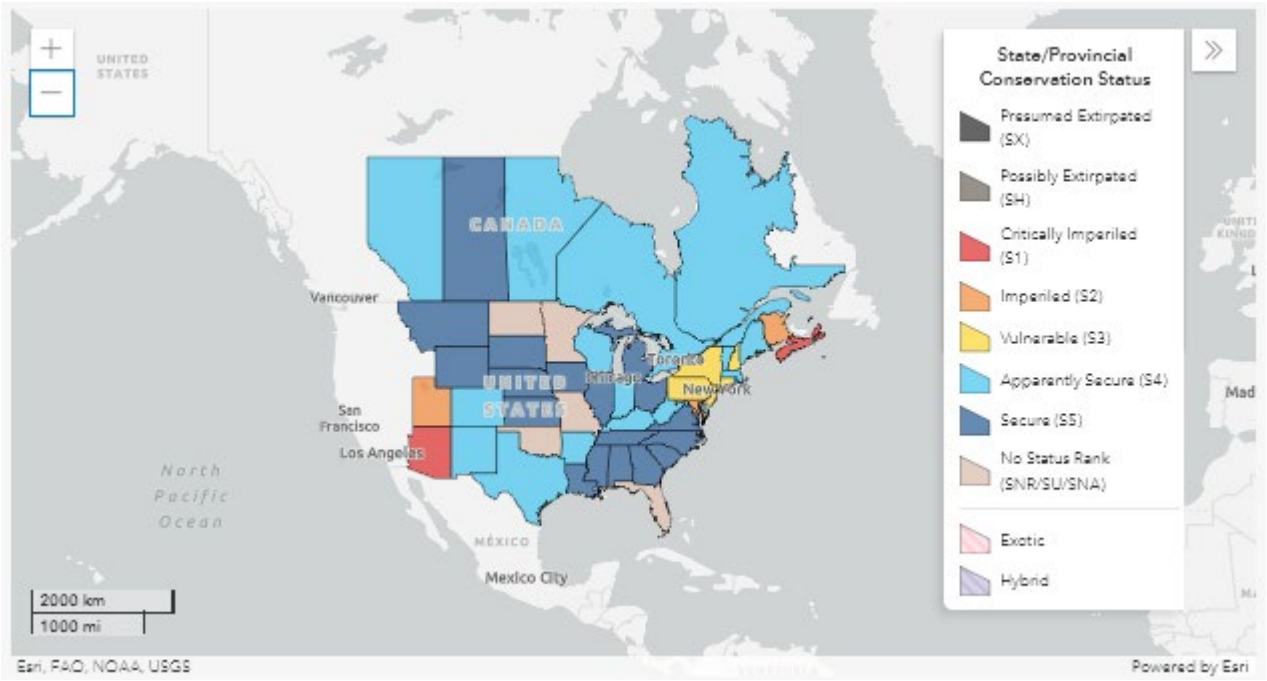

Figure 4. Conservation status of brown thrasher in North America (NatureServe 2023).

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

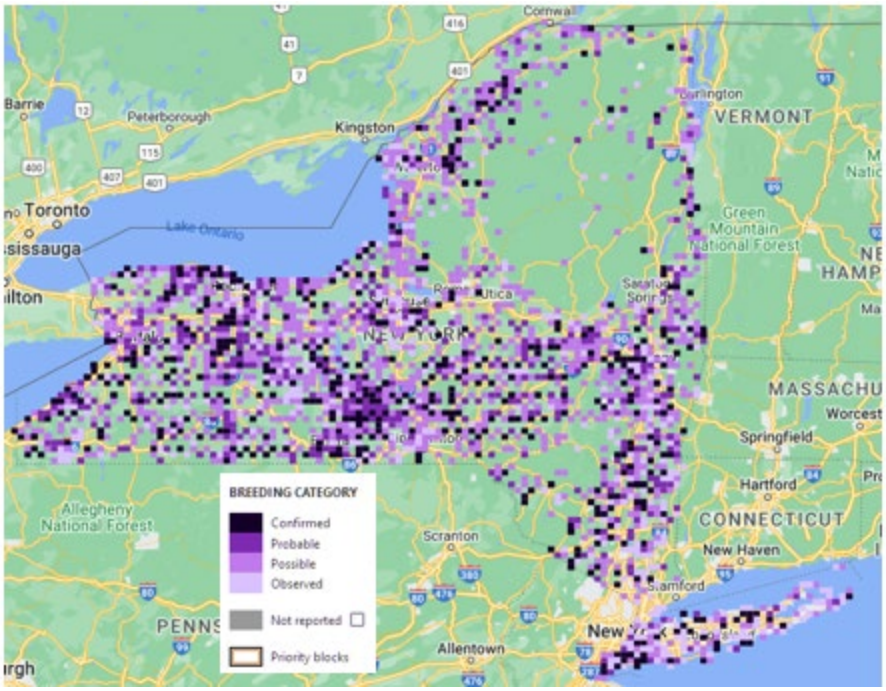

Figure 5. Records of brown thrasher in New York (NYS BBA III Map, 2023)

Years	# of Records	# of BBA Blocks	% of State
Pre-1980	_____	_____	_____
1980-1985	_____	3,341	63%
2000-2005	_____	2,337	44%
2020-2023	_____	1,875	33%

Table 1. Records of brown thrasher in New York.

Details of historic and current occurrence:

The first Breeding Bird Atlas (BBA) (1980-85) documented occupancy in 3,341 blocks, 63% of the survey blocks statewide (Andrle and Carroll 1988). The second BBA (2000-05) documented occupancy in 2,337 blocks, 44% of the survey blocks statewide, a decline of 30% since the first atlas (McGowan and Corwin 2008).

The third BBA (2020-25) is currently underway, and utilizes a different number and layout of survey blocks across New York, making direct comparison with the first two Atlases difficult. There were 5,333 blocks in the first and second BBAs, and there are 5,710 blocks in the current BBA. To date, brown thrasher has been documented in 1,875 blocks, 33% of survey blocks statewide during the third BBA (NYS BBA III Overview, 2023).

New York is in the northeastern part of the extensive breeding range. Brown thrashers are easily-detectable, well documented on Breeding Bird Survey routes, and well-studied.

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Core	
Column options **Percent of North American Range in NY**: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item **Classification of NY Range**: Core; Peripheral; Disjunct; (blank) or Choose an item		

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

1. Non-Native Shrublands
2. Powerline
3. Old Field Managed Grasslands
4. Native Barrens and Savanna
5. Pine Barrens
6. Coastal Coniferous Barrens

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
No	No	Declining	Since the 1950s
Column options **Habitat Specialist and Indicator Species**: Yes; No; Unknown; (blank) or Choose an item **Habitat/Community Trend**: Declining; Stable; Increasing; Unknown; (blank) or Choose an item			

Habitat Discussion:

Brown thrashers breed in thickets and bushy areas in deciduous forest clearings and forest edge, in shrubby areas and gardens, as well as overgrown pastures, hedgerows, and barren habitats. During migration and winter they also use scrub habitats. Cade (1986) summarized the literature reporting thrasher density in several habitats and found highest densities in Illinois hedgerows and North Dakota woody draws, and lowest density in Iowa herbaceous fields, Michigan coniferous/deciduous forest, and North Dakota floodplain forest.

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	No	No	Yes	No	(blank)
Column options **First 5 fields**: Yes; No; Unknown; (blank) or Choose an item **Anadromous/Catadromous**: Anadromous; Catadromous; (blank) or Choose an item					

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

Brown thrashers breed in the first spring after hatching year (age 8–10 mo). Pairs re-nest throughout a season (up to 4 times) if earlier attempts fail (Erwin 1935, Murphy and Fleischer

1986, Cavitt and Haas 2000). Survivorship from fledging to reproductive age is not known from comprehensive studies. Banding returns of adults suggest year-to-year survival appears to be age-dependent over most of life span; survival rate is approximately 35% between the first and second year, 50% between the second and third years, and 75% between third and fourth years. Fledgling brown thrashers appear to remain near the natal site, even up to 45 days after fledging (Haas 1990, 1995). The oldest record is 12 years and 10 months from a bird banded and recovered in North Carolina (Klimkiewicz et al. 1983). Brown thrashers are the largest common host of brown-headed cowbirds (*Molothrus ater*), although they often reject the eggs of this parasite.

VI. Threats *(from NY 2015 SWAP or newly described):*

Threats to NY Populations	
Threat Category	**Threat**
1. Residential & Commercial	Housing & Urban Areas (habitat loss to development)
2. Agriculture & Aquaculture	Perennial & Non-Timber Crops (habitat loss to agriculture)
3. Natural System Modifications	Other Ecosystem Modifications (succession)
4. Invasive & Other Problematic Species	Problematic Native Species (increased predation from urbanization)
5. Transportation & Service Corridors	Roads & Railroads (roadkill, fragmentation)
6. Invasive & Other Problematic Species & Genes	Problematic Native Species (competition with mockingbirds)
7. Invasive & Other Problematic Species & Genes	Problematic Native Species (brown-headed cowbird parasitism)
8. Invasive & Other Problematic Species & Genes	Invasive Non-native/Alien Species
9. Energy Production & Mining	Renewable Energy (collisions with communication towers similar to wind turbines)

Brown thrashers may be sensitive to habitat fragmentation (Forman et al. 1976). Species apparently declined with habitat degradation of New Jersey pine barrens. Degraded barrens are those that have been fragmented by development or roads, reduced in size, and subjected to fire suppression (Kerlinger and Doremus 1981).

Rangewide declines are likely the result of maturation of shrub and forested areas in the East and elimination of fencerows and shelterbelts in the Great Plains. Shrubby, edge habitats used by this

species are uncommon and declining throughout East as forests mature and farms clear for mechanization (Graber et al. 1970, Askins 1993). Brown thrashers may increase in shrubby habitat created along power-line corridors (Anderson 1979).

Brown thrashers are one of eight most common bird species hit by cars around Peoria, IL (Starrett 1938), and the fifth most frequently hit songbird near Urbana, IL (Flint 1934). Migrants routinely found dead after collisions with television towers (Brewer and Ellis 1958, Crawford 1981). The decline observed in the northern part of range may be partly a result of competition with northern mockingbird (Raynor 1976).

General threats to the early successional forest/shrubland bird suite in New York include reversion of shrublands to forest; loss of small dairy farms; fire suppression; more intensive agriculture that results in loss of hedgerows, shrubs, and shrub wetlands; reversion of young forest habitat to mature forest; inadequate amounts of forest management that includes even aged and heavy partial removal; and the erroneous public perception that forest management is harmful to birds (NYSDEC 2005).

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

Brown thrashers are protected under the Migratory Bird Treaty Act.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) -
https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
1. Land/Water Protection	Site/Area Protection
2. Land/Water Protection	Resource/Habitat Protection
3. Land/Water Management	Site/Area Management
4. Land/Water Management	Invasive/Problematic Species Control
5. Land/Water Management	Habitat and Natural Process Restoration
6. Education and Awareness	Training

7. Education and Awareness	Awareness & Communications
8. Law and Policy	Policies and Regulations

Table 3. Recommended conservation actions for brown thrasher

The Comprehensive Wildlife Conservation Strategy (NYSDEC 2005) includes recommendations for early successional/shrubland birds, which includes brown thrasher.

Curriculum development:

____ Educate public to the benefits and need for early successional habitat including even-aged management.

Easement acquisition:

____ Implement a Landowner Incentive Project for early successional birds that will direct $600,000 per year at conserving and creating habitat for early successional forest/shrub birds.

Habitat management:

____ Work with Utilities to manage ROWs in a manner that will provide for maximum benefit to early successional species.

____ Double the amount of early successional forest and shrub habitat on public and private land through sound planned management.

____ Increase early successional management on public and private lands.

____ Maintain, restore, and enhance fire adapted ecosystems. Increase use of prescribed fire in fire adapted ecosystems.

____ Promote management of Utility ROWs that will provide the maximum benefit to shrub bird species.

Habitat monitoring:

____ Precisely monitor trends of all species, in particular those that are not currently adequately monitored.

____ Complete an inventory and analysis for high priority focus species that identifies core habitats (highest abundance) and geographic areas (where appropriate).

Habitat research:

____ Determine effects of viburnum leaf beetle on early successional forest/shrub habitats and species utilizing them.

Population monitoring:

____ Encourage full completion of BBS routes.

Statewide management plan:

____ Develop a management plan that provides guidance on maintaining, enhancing and restoring early successional forest/shrub bird species.

Other actions:

____ Develop better mechanisms for directing federal (NRCS and USFWS) funding programs into early successional forest/shrub habitats.

____ Develop BMPs for forest management in riparian areas that recognize the critical need maintain, enhance and restore early successional forest/shrub habitat in these areas.

VII. References

Anderson, S. H. 1979. Changes in forest bird species composition caused by transmission-line corridor cuts. Am. Birds 33:3-6.

Andrle, R.F. and J.R. Carroll, eds. 1988. The atlas of breeding birds in New York State. Cornell University Press, Ithaca, NY.

Askins, R. A. 1993. Population trends in grassland, shrubland, and forest birds in eastern North America. Curr. Ornithol. 11:1-34.

Brewer, R. and J. A. Ellis. 1958. An analysis of migrating birds killed at a television tower in east-central Illinois, Sep 1955-May 1957. Auk 75:400-414.

Bried, J.T., K.E. Langwig, A.A. DeWan, and N. A. Gifford. In press. Habitat associations and survey effort for shrubland birds in an urban pine barrens preserve. Landscape Urban Plan. (2010). doi:10.1016/j.landurbplan.2010.10.003.

Cade, B. S. 1986. Habitat suitability index models: Brown Thrasher. Biol. Rep. 82 (10.118). U.S. Dep. of Agric., U.S. For. Wildl. Serv.

Cavitt, John F. and Carola A. Haas. 2000. Brown Thrasher (Toxostoma rufum), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/557

Crawford, R. L. 1981. Bird casualties at a Leon, County, Florida, TV tower: a 25 year migration study. Bull. Tall Timbers Res. Stn. no. 21.

eBird Status and Trends. 2022. Fink, D., T. Auer, A. Johnston, M. Strimas-Mackey, S. Ligocki, O. Robinson, W. Hochachka, L. Jaromczyk, C. Crowley, K. Dunham, A. Stillman, I. Davies, A. Rodewald, V. Ruiz-Gutierrez, C. Wood. 2023. eBird Status and Trends, Data Version: 2022; Released: 2023. Cornell Lab of Ornithology, Ithaca, New York. https://doi.org/10.2173/ebirdst.2022

Erwin, W. G. 1935. Some nesting habits of the Brown Thrasher. J. Tenn. Acad. Sci. 10:179-204.

Flint, W. P. 1934. The automobile and wildlife. Trans. Ill. State Acad. Sci. 27:150-153.

Forman, R. T. T., A. E. Galli, and C. F. Leck. 1976. Forest size and avian diversity in New Jersey woodlots with some land use implications. Oecologia 26:1-8.

Graber, R. R., J. W. Graber, and E. L. Kirk. 1970. Illinois birds: Mimidae. Ill. Nat. Hist. Surv. Biol. Notes 68:3-38.

Kerlinger, P. and C. Doremus. 1981. Habitat disturbance and the decline of dominant avian species in pine barrens of the northeastern United States. Am. Birds 35:16-20.

Klimkiewicz, M. K., R. B. Clapp, and A. G. Futcher. 1983. Longevity records of North American birds: Remizidae through Parulidae. J. Field Ornithol. 54:287-294.

Haas, C. A. 1990. Breeding ecology and site fidelity of American Robins, Brown Thrashers, and Loggerhead Shrikes in shelterbelts in North Dakota. Phd Thesis. Cornell Univ. Ithaca, NY.

Haas, C. A. 1995. Dispersal and use of corridors by birds in wooded patches on an agricultural landscape. Conserv. Biol. 9:845-854.

McGowan, K.J. and K. Corwin, eds. 2008. The second atlas of breeding birds in New York State. Cornell University Press, Ithaca, NY.

Murphy, M. T. and R. C. Fleischer. 1986. Body size, nest predation, and reproductive patterns in Brown Thrashers and other mimids. Condor 88:446-455.

NatureServe. 2023. NatureServe Explorer: Page last published 12/1/2023. https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.103922/Toxostoma_rufum. Accessed December 21, 2023.

New York State Breeding Bird Atlas III Map (NYS BBA III Map). 2023. https://ebird.org/atlasny/explore. Accessed December 21, 2023.

New York State Breeding Bird Atlas III Overview (NYS BBA III Overview). 2023. New York Checklist Overview. https://ebird.org/atlasny/state/US-NY. Accessed December 21, 2023.

New York State Department of Environmental Conservation (NYSDEC). 2005. New York State Comprehensive Wildlife Conservation Strategy. Albany, NY. https://extapps.dec.ny.gov/docs/wildlife_pdf/cwcs2005.pdf

Raynor, G. S. 1976. Decrease in breeding Brown Thrashers and Rufous-sided Towhees on central Long Island. Kingbird 26:190-193.

Starrett, W. C. 1938. Highway casualties in central Illinois during 1937. Wilson Bull. 50:193-196.

Originally prepared by	Kimberley Corwin
Date first prepared	December 8, 2011
First revision	July 2014 (Jenny Murtaugh)
Last revision	Transcribed with minor updates December 21, 2023

Species Status Assessment

Common Name: Canada jay **Date Updated:** January 10, 2024

Scientific Name: *Perisoreus canadensis* **Updated By:** Jed Hayden

Class: Aves

Family: Corvidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

In 1957, the American Ornithologists' Union listed *Perisoreus canadensis* as gray jay in its Checklist of North and Middle American Birds. Although some people never stopped calling it the Canada jay, it was officially gray jay until the middle of last year, when it was changed back to Canada jay.

The Canada jay is a species found across North America in boreal and sub-alpine coniferous habitat, where it is considered emblematic of such habitat. In New York State, it is restricted to mature spruce forest in the Adirondack Mountains. The gray jay is considered G5 (globally secure), but it is classified as S3 (vulnerable) in New York, S1 (critically endangered) in Vermont (NatureServe 2013), and an S3 in both Nova Scotia and Prince Edward Island. Blancher (2003) suggested that the species is declining across its continental range. Peripheral populations in Algonquin Park, Ontario are experiencing significant population declines, which have been attributed to spoiling of food supplies due to a changing climate (Waite and Strickland 2006). In New York, the species was confirmed to breed at one more atlas block in the 1980-1985 Breeding Bird Atlas than in the 2000-2005 Atlas. Moreover, there was a similar number of blocks in which gray jays were observed, but not confirmed to breed. However, atlas data results should be considered with caution as survey effort is not standardized. Results of Glennon (2023) suggest that the Canada jay's population was stable from the 2007-2023 surveys. Given that NY is at the southern edge of the boreal habitat and that climate change may negatively affect both food caches and boreal habitat alike, the gray jay may experience range-wide declines in NY in the future.

I. Status

1. Current legal protected Status

i. **Federal:** None **Candidate:** No

ii. **New York:** Special Concern

2. Natural Heritage Program

i. **Global:** G5

ii. **New York:** S3 **Tracked by NYNHP?:** No

Other Ranks:

Status Discussion:

The Canada jay is common throughout most of its continental range. It is regarded as a G5 or globally secure species throughout the main portion of its range in northern Canada (NatureServe 2013). Populations are more restricted in New York, Nova Scotia and Prince Edward Island, where it is categorized as an S3 species. The IUCN lists the gray jay as a species of least concern; however, Waite and Strickland (2006) suggest that a warmer autumn would lead to decreased populations from (1) spoiling food caches (2) earlier breeding, which in turn leads to

longer periods of low food supply during severe late winters, a phenomenon already manifesting in neighboring Algonquin Provincial Park populations. The gray jay is a resident of New York boreal forests, and populations appear to be stable (Glennon 2023).

Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Declining	Declining	199-2009	None	Yes
Northeastern US	Yes	Declining	Declining	1999-2009	None	Yes
New York	Yes	Stable	Stable	2007-2022	Special Conern	Yes
Connecticut	No	Choose an item.	Choose an item.		None	No
Massachusetts	No	Choose an item.	Choose an item.		None	No
New Jersey	No	Choose an item.	Choose an item.		None	No
Pennsylvania	No	Choose an item.	Choose an item.		None	No
Vermont	Yes	Declining	Declining		None	Yes
Ontario	Yes	Declining	Declining	1980-2018	None	No
Quebec	Yes	Unknown	Unknown		None	No

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

In 2007, a study by the Wildlife Conservation Society (WCS) was begun to monitor boreal bird species (Glennon 2010). In 2013, NYSDEC partnered with WCS and began a continuation of these surveys at Glennon's (2010) sites and will continue monitoring of these sites and some additional sites through 2023 to quantify boreal bird trends.

Trends Discussion *(insert map of North American/regional distribution and status):*

Range-wide Canada jay Christmas Bird Count results suggest that the species is declining across its continental range (Blancher 2003). Peripheral populations in Algonquin Park, Ontario are also experiencing significant population declines, presumably due to warming climate (Waite and Strickland 2006).

In the New York Breeding Bird Atlases, the Canada jay was confirmed to breed in a similar number of atlas blocks during the 1980-1985 and the 2000-2005 surveys. In addition, recent and more extensive target species surveys have indicated that Canada jay occurrence has been stable in the Adirondack Park between 2007 and 2023 (M. Glennon, 2013). When results of playback recordings and an extra 3 minute listening period are incorporated into the data set, a rough estimate of occupancy was 42 ($\pm$ 25)% (A. Ross, unpubl. data). Caution should be advised when comparing the 2013 occupancy estimate to those of previous studies because including playbacks and the extra listening period may alter occupancy estimates, making a direct comparison impossible. Moreover, the data from 2013 are preliminary and do not include covariates (habitat

quality measures and other survey conditions) in the analysis. Also of note is that the 2013 occupancy estimate has high variability, likely due to few replicate observations of the species at each site.

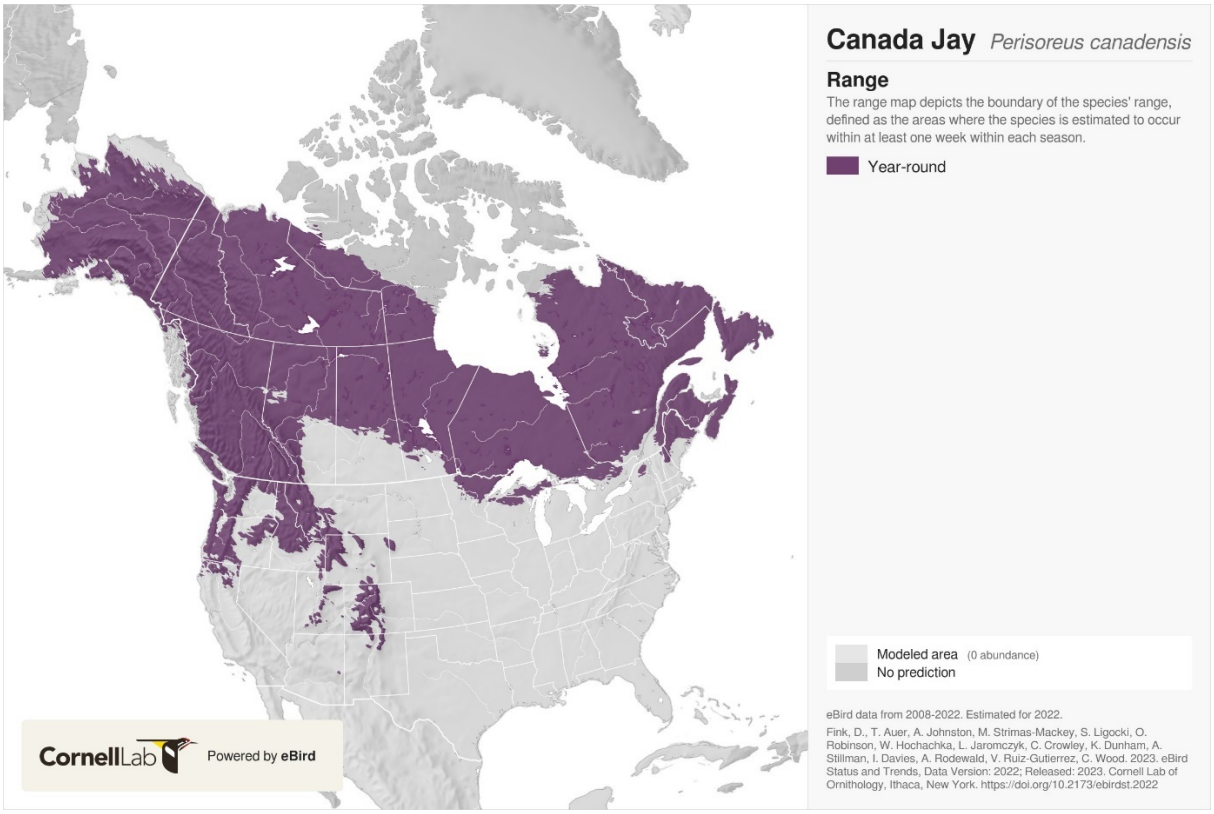

Figure 1. Canada jay distribution in North America (eBird)

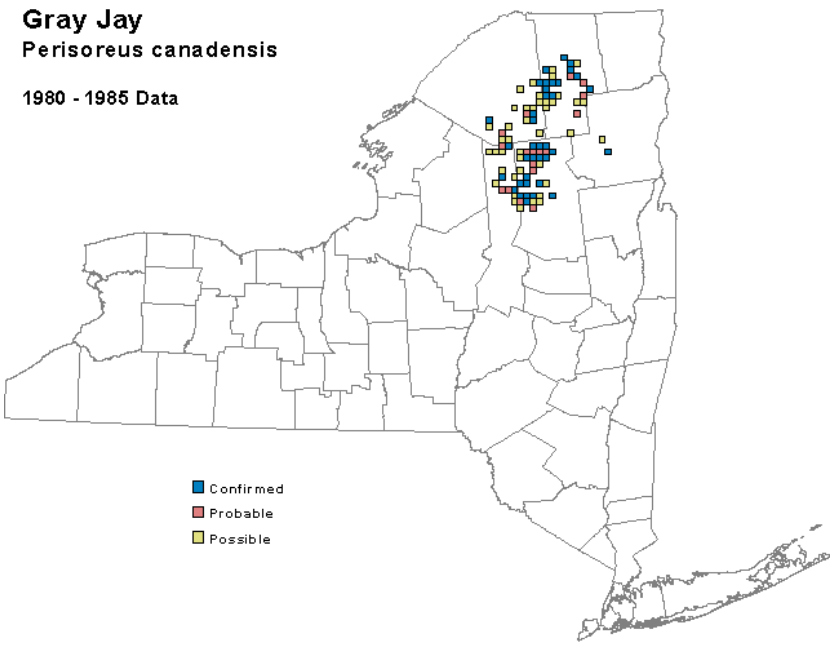

Figure 2. Canada jay occurrence in New York State during the first Breeding Bird Atlas (1980-1985) (NY BBA).

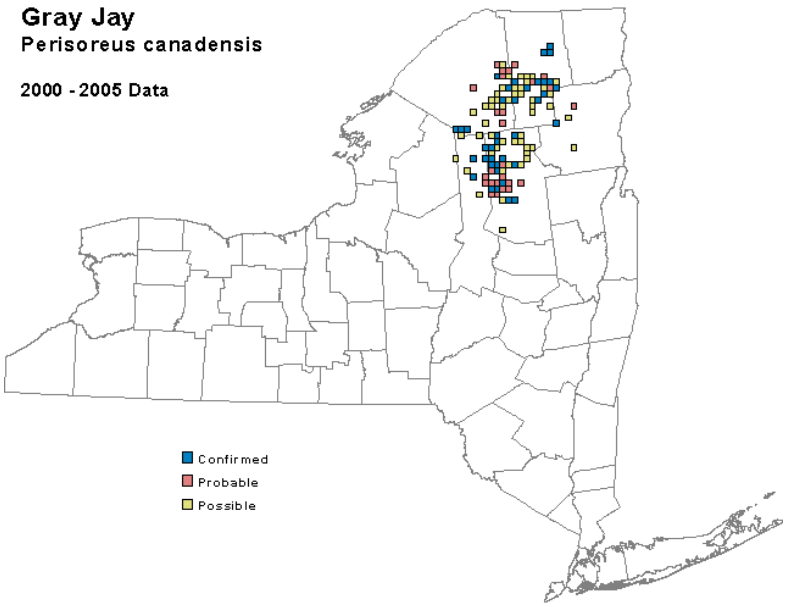

Figure 3. Canada jay occurrence in New York State during the second Breeding Bird Atlas (2000-2005).

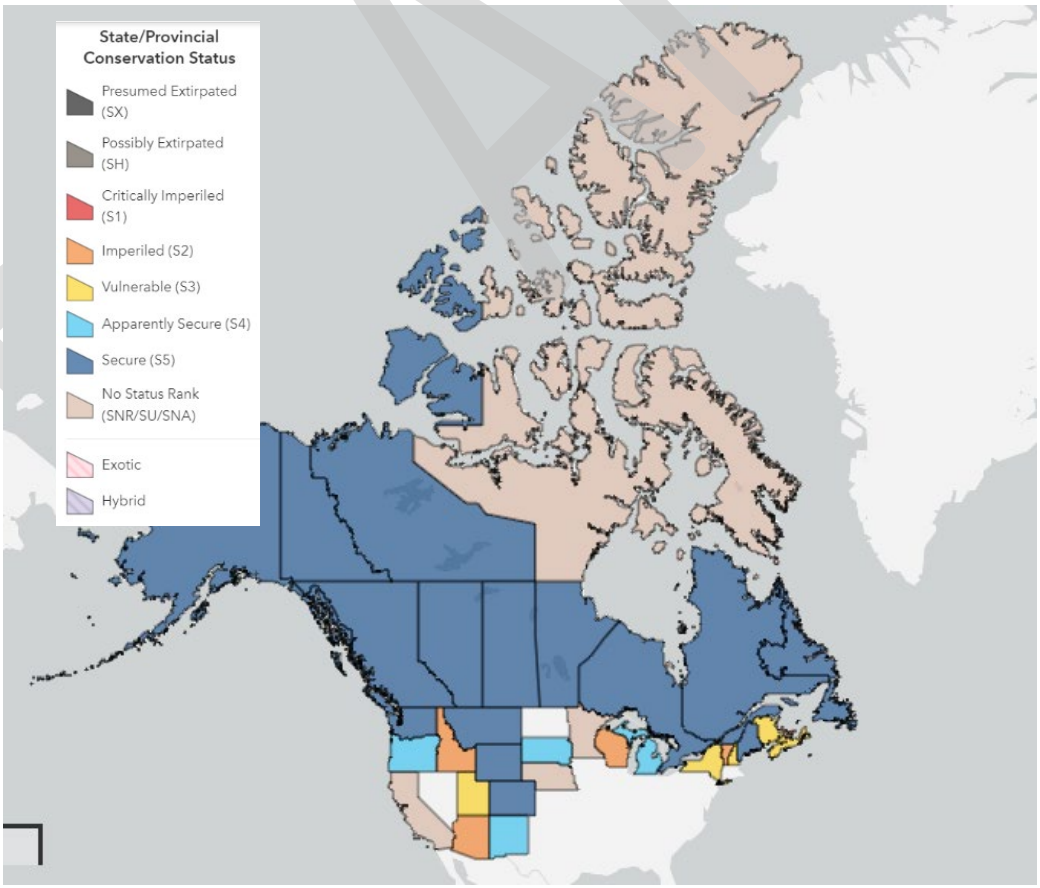

Figure 4. Conservation status of the Canada jay in North America (NatureServe 2023).

II. New York Rarity *(provide map, numbers, and percent of state occupied)*

Years	# of Records	# of BBA Blocks	% of State
Pre-1980	_____	_____	_____
1980-1985	_____	_____	_____
2000-2005	_____	_____	_____
2020-2023	_____	50	0.875

Table 1. Records of Canada jays in New York.

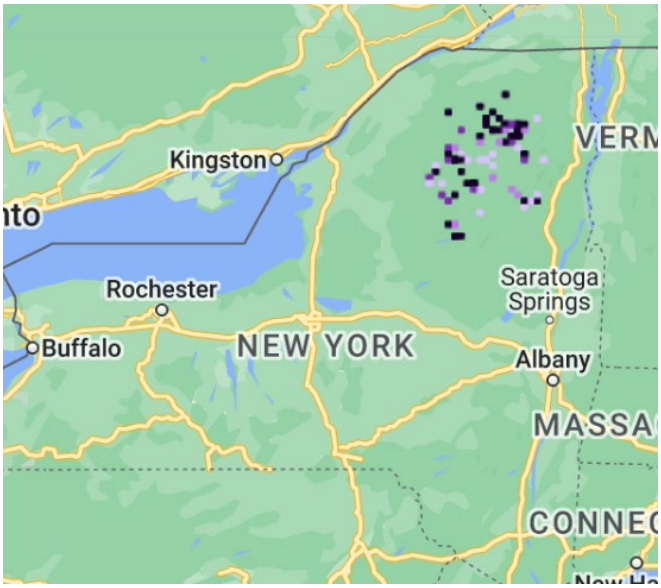

Figure 5. Breeding Bird Atlas 3 records of Canada jays in New York (BBA-eBird).

Details of historic and current occurrence:

The first Breeding Bird Atlas (BBA) (1980-85) documented occupancy in X blocks, X% of the survey blocks statewide (Andrle and Carroll 1988). The second BBA (2000-05) documented occupancy in X blocks, X% of the survey blocks statewide, not a significant change since the first atlas (McGowan and Corwin 2008).

The third BBA (2020-25) is currently underway and utilizes a different number and layout of survey blocks across New York, making direct comparison with the first two atlases difficult. There were 5,333 blocks in the first and second BBAs, and there are 5,710 blocks in the current BBA. To date, Canada jays have been documented in 50 blocks, 0.875% of survey blocks statewide during the third BBA (NYS BBA III Overview, 2023).

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Disjunct	Approx. 260 miles

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item

Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

III. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

1. Boreal Forest Peatland
2. Spruce-Fir Forests and Flats
3. Mountain Spruce-Forests

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
Yes	Yes	Unknown	

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

The gray jay lives in boreal coniferous forest, which occurs in isolated patches in New York, disjunct from the neighboring boreal to the north. These isolated patches of habitat occur at fringes of bogs and water courses and tend to be associated with peatlands. Loss and fragmentation of boreal habitat occurred in the late 1800s and early 1900s due to widespread softwood logging (i.e., clearcutting) and increasing development that took place at that time. After timber in these clearcut areas regenerated, softwood species tended to give way to the more prolific hardwood species, and in many cases, these areas became hardwood-dominated and therefore no longer suitable for boreal species' occupancy (McCarthy 1919, McMartin 1994, Jenkins 2004). Another contributing factor adding to spruce tree declines was a blight caused by the spruce beetle (*Dendroctonus rufipennis*), which is thought to have killed an estimated one-third to one-half of spruce trees in the Adirondack Region from 1870-1885, potentially contributing to further habitat fragmentation and population reductions (Fox 1895, Pinchot 1899). In addition, timber harvesting was often accompanied by the damming of rivers to transport softwoods downstream to mills, which resulted in the flooding and additional loss of boreal habitat (Bouta 1991).

IV. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	Choose an item.	Choose an item.	Yes	Yes	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

The gray jay is a resident of the boreal forest. The gray jay eats a variety of foods such as nuts, fruits, nestling birds, carrion and small mammals. The species collects large quantities of food items during the summer for use during periods of scarce food. Gray jays form their food into a bolus with their sticky saliva and hide the bolus by attaching it within a bark crevice or underneath other items such as clumps of needles or lichens. The species has a monogamous breeding system and begins nesting in late winter, taking advantage of its food caches during the cold winter months when little other food is available. It is an open-cup nester that prefers spruce, especially on south-facing edges.

Age of first breeding can be as young as one year, but is usually older. Mean number of fledglings per year is around 2. First year survivorship is 0.5 or as low as 0.15 depending on when dispersal occurs. Annual adult survivorship (at Algonquin Park) is about 0.82 for females, and 0.88 for females away from roads; males are slightly higher. The maximum lifespan is over 14 years.

Adults are permanent residents on territory. Non-breeders tend to remain in the neighborhood of the natal territory. Dispersal distances of 10 km are known, but long-distance dispersal or wandering is rare. Spring population densities in southeastern Canada are 3 per km or less than 2 per km.

Natural sources of mortality include predation (accipiters, owls, mustelids, lynx/bobcat) and starvation, especially in winter. Winter warm spells can spoil food caches, resulting starvation; this is a putative cause of population declines in Algonquin Park. Significant human caused sources of mortality include vehicle collision at roads, and bycatch from fur-trapping (jays raid trap bait).

V. Threats *(from NY 2015 SWAP or newly described):*

Threats to NY Populations	
Threat Category	**Threat**
1. Biological Resource Use	Logging & Wood Harvesting
2. Climate Change & Severe Weather	Habitat Shifting & Alteration
3. Invasive & Other Problematic Species & Genes	Problematic Native Species (spruce budworm outbreaks)
4. Invasive & Other Problematic Species & Genes	Problematic Native Species (West Nile Virus)
5. Pollution	Air-Borne Pollutants (acid rain)
6. Pollution	Industrial & Military Effluents (mercury)

Table 2. Threats to New York State Population of Canada jays.

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

Migratory Bird Treaty Act.

Many occupied sites are within the Adirondack Park state lands.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

The Comprehensive Wildlife Conservation Strategy (CWCS; NYSDEC 2005) states the need for a management plan for high-altitude conifer forest birds that incorporates the results of the 2004 State Wildlife Grant study on boreal forest birds (Glennon 2010). Conservation actions following IUCN taxonomy are categorized in the table below.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
1. Land/Water Management	Site/Area Management
2. External Capacity Building	Alliance and Partnership Development

Table 2. Recommended conservation actions for Canada jay.

VI. References

Blancher, P. 2003. Importance of Canada's boreal forest to landbirds. Canadian Boreal Initiative and the Boreal Songbird Initiative Report. 43pp.

Bouta, R.P. 1991. Population status, historical decline, and habitat relationships of spruce grouse in the Adirondacks of New York. M.S. Thesis, SUNY College of Environmental Science and Forestry, Syracuse, New York. 117pp.

Glennon, M.J. 2010. Distribution and abundance of boreal birds in the Adirondack Park: Final report to the New York State Department of Environmental Conservation. State Wildlife Grant T-2-2.

Glennon, M.J. 2023. Conservation of Boreal Birds in the Adirondack Park: Report to the New York State Department of Environmental Conservation. Federal Aid Grant W-173-G

Fox, W. F. 1895. The Adirondack black spruce. For. Comm., State of New York, Albany, New York. 82pp.

Jenkins, J. 2004. The Adirondack atlas: a geographic portrait of the Adirondack Park. Syracuse Univ. Press, Syracuse, New York. 275pp.

McCarthy, E.F. 1919. Observations on unburned cut-over lands in the Adirondacks. J. of Forestry 17:386-397.

McMartin, B. 1994. The great forest of the Adirondacks. North Country Books, Utica, New York. 240pp.

NatureServe. 2013. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available from http://www.natureserve.org/explorer (accessed: September 29, 2009).

New York State Breeding Bird Atlas III Overview (NYS BBA III Overview). 2023. New York Checklist Overview. https://ebird.org/atlasny/state/US-NY. Accessed (January 10, 2024).

Pinchot, G. 1899. A primer of forestry, Part I. Bull. 24 U.S. Department of Agriculture., Washington D.C. 89pp.

Waite, T.A., and D. Strickland. 2006. Climate change and the demographic demise of a bird living on the edge. Proc. R. Soc. Biol. Sci. 273(1603):2809-2813.

Originally prepared by	Angelena Ross, Tom Langen and Michale Glennon
Date first prepared	October 17, 2013
First revision	July 2014 (Jenny Murtaugh)
Latest revision	January 10, 2024 (Jed Hayden)

Species Status Assessment

Common Name: Caspian Tern **Date Updated:** January 4, 2024

Scientific Name: *Hydroprogne caspia* **Updated By:** M. Oberkircher

Class: Aves

Family: Laridae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

Formerly *Sterna caspia*, Caspian tern was recently classified in the genus *Hydroprogne* (Banks et al. 2006). Breeding occurs in six small and widely separated regions in North America: the Pacific, Atlantic, and Gulf coasts, inland in the western interior, the Prairie Provinces of Canada, and along the Great Lakes. The Great Lakes population occurs in parts of Lake Michigan, Lake Ontario, Lake Huron, and the Thousand Islands of the upper St. Lawrence River (Cuthbert and Wires 1999).

Breeding was first confirmed in New York in 1986, a likely result of an eastward expansion of the Great Lakes population (Smith 2008). Prior to this, Caspian tern was only a migrant in New York. Breeding now occurs regularly on Little Galloo Island in Lake Ontario (Jefferson County) and Four Brothers Islands in Lake Champlain (Essex County). Populations have increased at both locations, but the species' susceptibility to large die-offs from type E botulism is a concern.

I. Status

a. Current legal protected Status

i. **Federal:** Not Listed **Candidate:** No

ii. **New York:** SGCN

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** S1 **Tracked by NYNHP?:** Yes

Other Ranks:

-IUCN Red List: Least Concern

-Partners in Flight: 10 out of 20

Status Discussion:

Caspian tern is a common breeder at two locations in New York: Little Galloo Island (Jefferson County), and Four Brothers Island in Lake Champlain (Essex County). It does not breed elsewhere in the state. Caspian tern is also a new breeder in Vermont, where breeding was first confirmed on islands in Lake Champlain in 2000. It is ranked as Imperiled in Vermont despite a ten-fold increase in nesting pairs since. Caspian tern is ranked as Critically Imperiled in Ontario where they are found in about 20 breeding colonies.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?

North America	Yes	Increasing	Increasing			Choose an item.
Northeastern US	Yes	Unknown	Unknown			No
New York	Yes	Increasing	Stable			Yes
Connecticut	No	Choose an item.	Choose an item.			No
Massachusetts	No	Choose an item.	Choose an item.			No
New Jersey	Yes	Stable	Stable			Yes
Pennsylvania	No	Choose an item.	Choose an item.			No
Vermont	Yes	Unknown	Unknown			No
Ontario	Yes	Stable	Stable			No
Quebec	Yes	Declining	Unknown		Threatened	No

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

NYSDEC conducts annual surveys at Little Galloo Island and at Four Brothers Island.

Trends Discussion *(insert map of North American/regional distribution and status):*

Populations of this tern have increased in most parts of its North American range, owing to protection of the species and its traditional nesting sites, and to human alterations in habitat. Unlike most other tern species that breed in North America, the Caspian tern has benefitted from anthropogenic environmental changes. The ability to shift colony sites and rapidly colonize dredge spoil islands and other artificial habitats probably contributed to population increases and range expansions (Wires and Cuthbert 2000).

Although Caspian terns occur in widely separated populations in North America, this population is largest of all continental populations. Counts have varied greatly in method and extent, but an estimated 33,000–35,000 pairs nested at locations across North America in 1980s and 1990s. In late 1970s–early 1980s, U.S. breeding population was estimated at about 9,500 pairs (Spendelow and Patton 1988); estimates in the 1980s and 1990s show that the population has doubled.

In the Great Lakes, where legislation has protected pristine habitat, numbers have increased steadily since 1960s, nearly tripling since 1963; the greatest increases are on Lake Ontario (Neuman and Blokpoel 1997). Morris et al. (2010) reported an increase for Caspian terns in the Great Lakes in three survey periods from 1976 to 2000; nest numbers increased by 66% and colony sites increase by 50%. Most colonies in Great Lakes are on remote, inaccessible islands, and few have been impacted by contaminants. From late 1930s–1950s dramatic declines occurred in large predatory fish populations and by the late 1950s smaller fish species, such as alewife and smelt became an abundant and steady food source (Ludwig 1965).

The two breeding locations in New York—Little Galloo Island and Four Brothers Islands—are both increasing in number. Nesting terns on Little Galloo hit a record high of 2700 nests in 2018 and the number of nesting pairs on Four Islands has increased by 520% between 2008 and 2022.

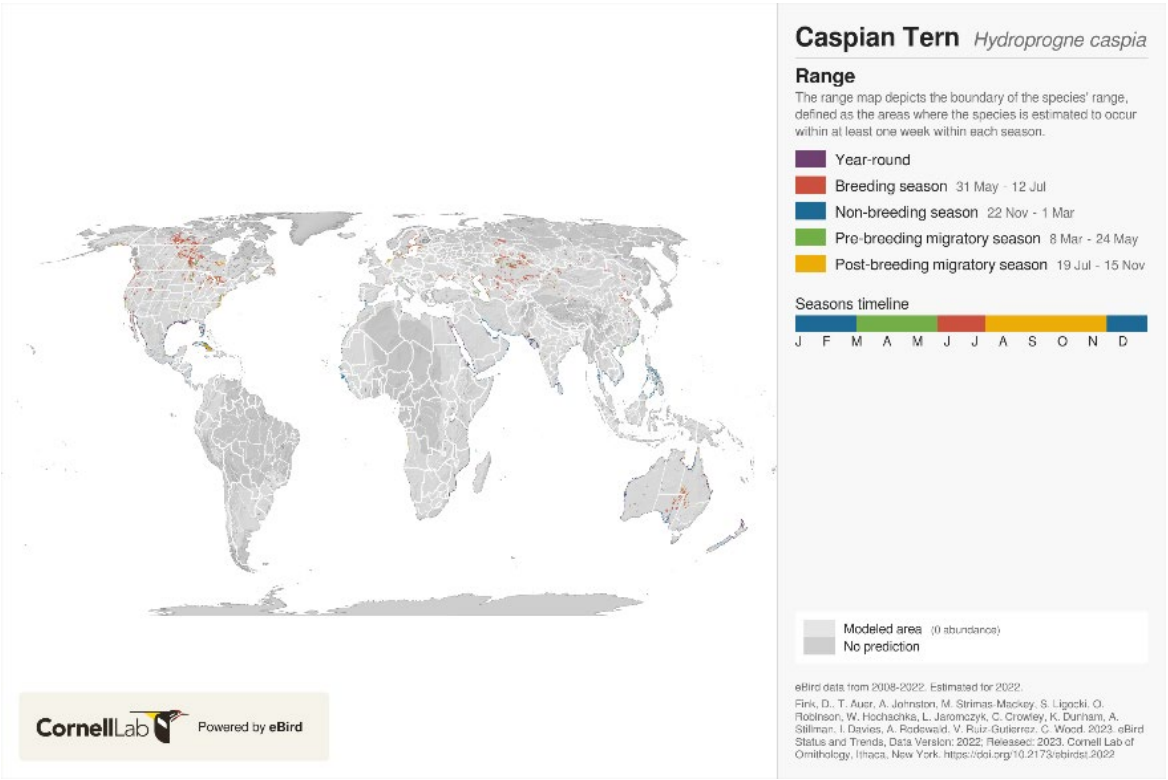

Figure 1. Global distribution of caspian tern (eBird)

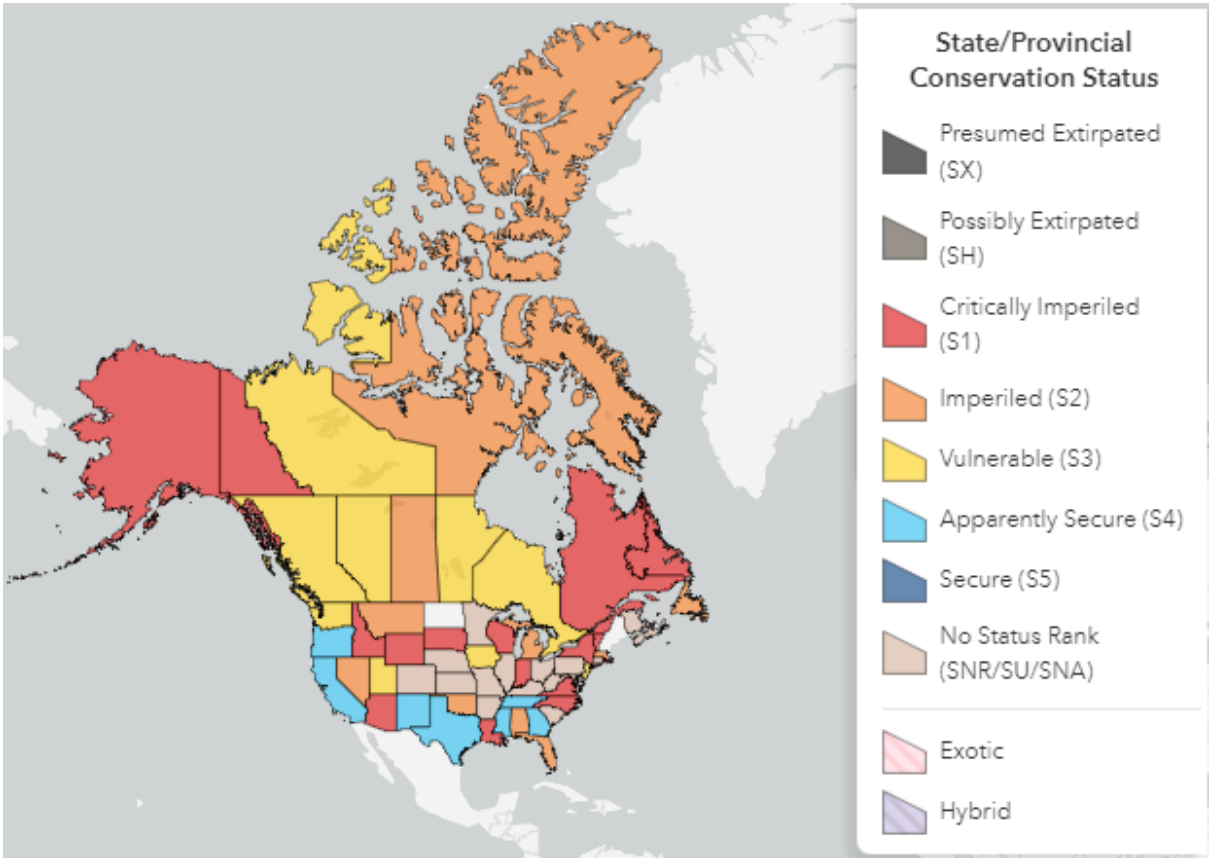

Figure 2. Conservation status of caspian tern in North America (NatureServe)

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

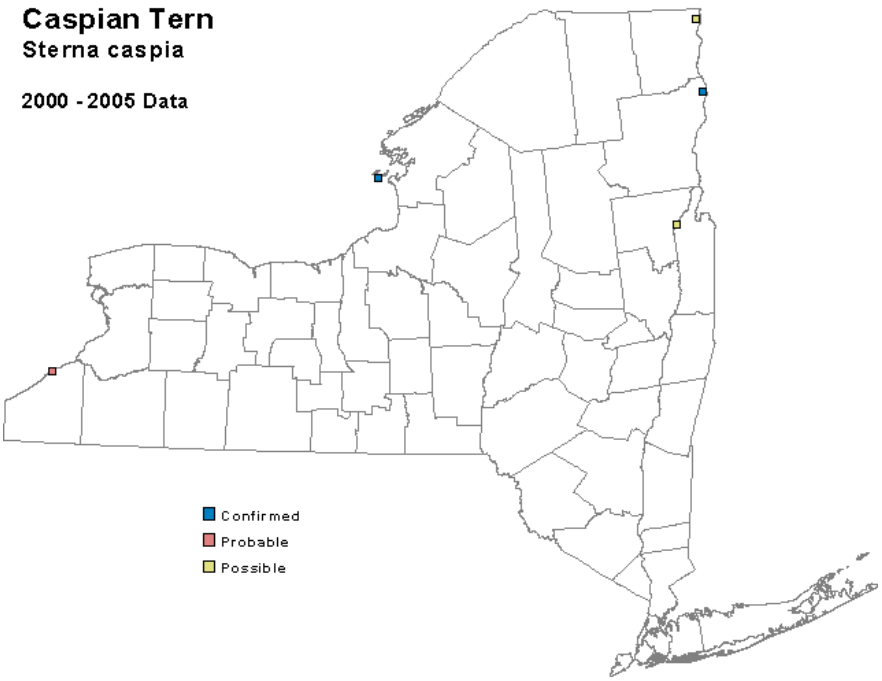

Figure 3. Caspian tern occurrence in New York State during the second Breeding Bird Atlas (McGowan and Corwin 2008).

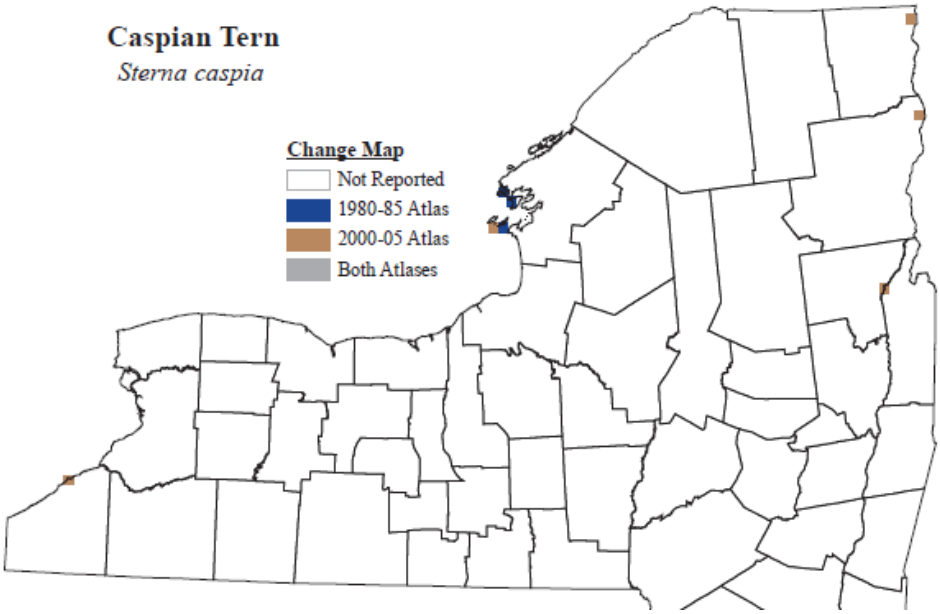

Figure 4. Change in occurrence of caspian tern in New York since the first Breeding Bird Atlas (McGowan and Corwin 2008)

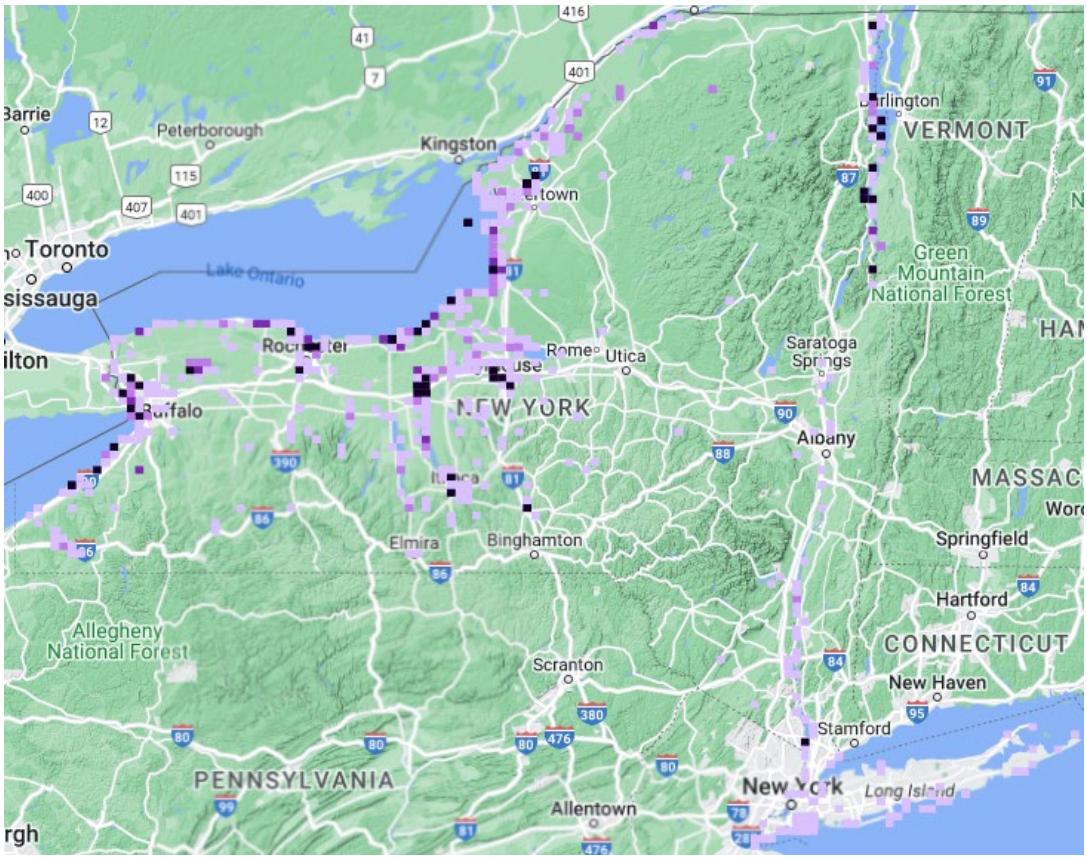

Figure 5. Records of caspian tern in New York (NYS BBA III Map, 2023)

Years	# of Records	# of BBA Blocks	% of State
Pre-1980	_____	_____	_____
1980-1985	_____	73	1
2000-2005	_____	44	<1
2020-2023	_____	108	<1

Table 1. Records of caspian tern in New York.

Details of historic and current occurrence:

The first confirmed breeding in New York occurred in 1986 on Little Galloo Island, Lake Ontario, with a colony of 112 nests (Peterson 1988, Weseloh and Blokpoel 1993). Numbers of breeding birds there increased in subsequent years: 640 adults in 1990, 576 adults in 1991, 896 nests in 1993, 682 nests in 1994.

Breeding currently occurs on Little Galloo Island in Lake Ontario and on Four Brothers Islands in Lake Champlain. There were 2,700 nests on Little Galloo Island in 2018, the highest number ever and a continuing increase since 2008.

Breeding was first confirmed in 2004 at Four Brothers Islands. In 2006, 56 birds were reported breeding there (see Smith 2008). In 2022, 422 breeding terns were documented at Four Brothers. The second Breeding Bird Atlas documented a probable record (a territorial bird documented in

July) near Dunkirk in Chautauqua County. Smith (2008) suggested that breeding is not unlikely in the area, as both the breakwater wall and the lake shoreline provide suitable habitat.

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Peripheral	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

1. Lake and River Shore/Beach
2. Summer-stratified Monomictic Lake

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
No	No	Stable	

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

In North America, Caspian terns breed in various types of habitats including estuaries, salt marshes, islands (coastal and freshwater), bays, and beaches. Both nesting colonies in New York are on islands in large lakes. Populations along the Great Lakes typically nest on islands and beaches with a substrate consisting of sand, pebbles, or fine gravel with very little vegetation (New York Natural Heritage Program 2011). In western Lake Ontario, Caspian terns nest on man-made islands and peninsulas.

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	Yes	No	Yes	No	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

Based on band recovery data, most individuals do not breed until at least 3 years of age (in their fourth summer); a few may attempt to breed as 2-year-olds (in their third summer; Ludwig 1942, Gill and Mewaldt 1983). Breeding usually occurs every year thereafter.

One successful brood per season is produced. Annual reproductive success varies widely. Hatching success in 5 well-studied colonies across North America ranged from 70 to 85%, and the number of young hatched per nest ranged from 1.4 to 1.7. Fledging success (chicks fledged per eggs hatched) ranged from 52 to 66%, and adult reproductive success (chicks fledged per nest) ranged from 0.6 to 1.6 (Cuthbert and Wires 1999).

Reproductive success is heavily influenced by several factors, especially predation and human disturbance. No information is available on lifetime reproductive success but mean breeding-life expectancy of birds from Great Lakes and Pacific Coast is estimated at 8.8 and 8.6 years, respectively (Ludwig 1965, Gill and Mewaldt 1983). In the Great Lakes population, 3- to 15-yr-olds made up the nucleus of the breeding population (Ludwig 1965).

The greatest mortality occurs during the first 6 months of life (Ludwig 1942, Soikkeli 1970). In the Great Lakes, based on 260 band recoveries, birds attaining adulthood had an average life span of 11.9 years; 16 lived >15 years (Ludwig 1965). The maximum age recorded is 32 years 1 months; 4 birds banded in Great Lakes all lived minimum of 26 years (Bergstrom 1952, Ludwig 1965, Clapp et al. 1983).

Caspian terns can exploit human-modified habitats and respond quickly to habitat changes (Gill and Mewaldt 1983, Quinn et al. 1996).

VI. Threats *(from NY 2015 SWAP or newly described):*

Caspian terns are sensitive to disturbance during the early stages of nesting and incubation. Intrusion by researchers, recreational boaters, and anglers can cause abandonment of entire colonies (Cuthbert and Wires 1999). Changing water levels can also lower nesting success, as does competition with gulls and harassment by predators.

In 2006, 672 carcasses were collected on Little Galloo Island as a result of type E botulism. The disease outbreak subsided in the following years with lower numbers of carcasses in 2007 and 2008. Environmental contaminants including PCBs, TCDD, DDE, mirex, and HCB have been detected in Caspian tern eggs and chicks in the Great Lakes (Struger and Weseloh 1985, Grasman et al. 1996). Contaminants in herring gulls on the Great Lakes have declined by 90% or more since monitoring began in 1974 (State of the Great Lakes 2009).

With only two nesting locations in New York, Caspian terns are vulnerable to extirpation from a severe storm event or another major disturbance/predator event (NYSDEC 2005).

Highly pathogenic avian influenza (HPAI) resulted in high mortality of Caspian terns at large colonies in Wisconsin in 2022, 1,221 were found dead and killed 80% of a population of 1,500 terns on Rat Island in Washington in 2023. No large die-offs have been seen in New York colonies so far.

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

Caspian tern is protected under the Migratory Bird Treaty Act of 1918. Both locations where breeding occurs in New York are protected and managed for colonial waterbirds.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

Protect nesting areas from human disturbance through fencing and signage and remove predators that threaten colonies. Control vegetation density and composition at breeding sites.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
1. Land/Water Protection	Site/Area Protection
2. Land/Water Protection	Resource & Habitat Protection
3. Land/Water Management	Site/Area Management
4. Land/Water Management	Invasive/Problematic Species Control
5. Land/Water Management	Habitat & Natural Process Restoration
6. Education & Awareness	Awareness & Communications
7. Species Management	Species Recovery (nesting platforms)
8. External Capacity Building	Alliance & Partnership Development

Table 2. Recommended conservation actions for caspian tern

VII. References

Banks, R.C., C. Cicero, J.L. Dunn, A.W. Kratter, P.C. Rasmussen, J.V. Remsen, J.D. Rising, and D.F. Stotz. 2006. Forty-seventh supplement to the American Ornithologists' Union *Checklist of North American Birds*. Auk 123(3):926-936.

Bergstrom, E. A. 1952. Extreme old age in terns. Bird Band 23:72-73.

BirdLife International. 2019. *Hydroprogne caspia* (amended version of 2018 assessment). *The IUCN Red List of Threatened Species* 2019: e.T22694524A155509311. https://dx.doi.org/10.2305/IUCN.UK.2019-3.RLTS.T22694524A155509311.en. Accessed on 10 January 2024.

Chesser, R. Terry, Richard C. Banks, F. Keith Barker, Carla Cicero, Jon L. Dunn, Andrew W. Kratter, Irby J. Lovette, Pamela C. Rasmussen, J. V. Remsen, James D. Rising, Douglas F. Stotz, Kevin Winker. 2011. Fifty-second supplement to the American Ornithologists' Union Check-List of North American Birds. Auk 128(3):600-613.

Clapp, R. D., D. Morgan-Jacobs, and R. C. Banks. 1983. Marine birds of the southeastern United States and Gulf of Mexico, pt 3: Charadriiformes. FWS/OBS-83/30. U.S.Fish and Wildl. Serv., Div. Biol. Serv. Washington, D.C.

Corwin, K. 2012. NYSDEC SWAP 2015 Species Status Assessment for Caspian Tern. Prepared on February 23, 2012. Revised by J. Murtaugh July 2014.

Cuthbert, F. J. and L. R. Wires. 1999. Caspian Tern (*Hydroprogne caspia*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/403

eBird data from 2008-2022. Estimated for 2022. Fink, D., T. Auer, A. Johnston, M. Strimas-Mackey, S. Ligocki, O. Robinson, W. Hochachka, L. Jaromczyk, C. Crowley, K. Dunham, A. Stillman, I. Davies, A. Rodewald, V. Ruiz-Gutierrez, C. Wood. 2023. eBird Status and Trends, Data Version: 2022; Released: 2023. Cornell Lab of Ornithology, Ithaca, New York. https://doi.org/10.2173/ebirdst.2022

Gill, Jr., R. and L. R. Mewaldt. 1983. Pacific coast Caspian Terns: Dynamics of an expanding population. Auk 100:369-381.

Kress, S. W., and C. S. Hall. 2004. Tern Management Handbook - Coastal Northeastern United States and Atlantic Canada. U.S. Department of Interior, Fish and Wildlife Service, Hadley, MA.

Ludwig, F. E. 1942. Migration of Caspian Terns banded in the Great Lakes area. Bird-Banding 13:1-9.

Ludwig, J. P. 1965. Biology and structure of the Caspian Tern (*Hydroprogne caspia*) population of the Great Lakes from 1896-1964. Bird-Banding 36:217-233.

Morris, R.D., D.V. Weseloh, F.J. Cuthbert, C. Pekarik, L.R. Wires and L. Harper. 2010. Distribution and Abundance of Nesting Common and Caspian Terns on the North American Great Lakes, 1976 to 1999. J. Great Lakes Research 36:44-56.

Neuman, J. and H. Blokpoel. 1997. Great Lakes Fact Sheet: The Terns of the Canadian Great Lakes. Environment Canada (Can. Wildl. Serv.) Ontario.

NatureServe. 2023. NatureServe Explorer. Page last published 1/5/2024. https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.104635/Hydroprogne_caspia. Accessed 1/10/2024.

New York State Breeding Bird Atlas III Overview (NYS BBA III Overview). 2023. New York Checklist Overview. https://ebird.org/atlasny/state/US-NY. Accessed 1/4/2024.

New York Natural Heritage Program. 2011. Online Conservation Guide for *Hydroprogne caspia*. Available from: http://www.acris.nynhp.org/guide.php?id=6914. Accessed December 14th, 2011.

New York Natural Heritage Program. 2024. Online Conservation Guide for *Hydroprogne caspia*. Available from: https://guides.nynhp.org/caspian-tern/. Accessed January 10, 2024.

Peterson, J.M.C. 1988. Caspian tern, (*Hydroprogne caspia*). Pages 174-75 in The Atlas of Breeding Birds in New York State (R.F. Andrle and J.R. Carroll, eds.). Cornell University Press, Ithaca, NY.

Quinn, J.S., R.D. Morris, H. Blokpoel, D.V. Weseloh and P.J. Ewins. 1996. Design and management of bird nesting habitat: tactics for conserving colonial waterbird biodiversity on artificial islands in Hamilton Harbour, Ontario. Can. J. Fish. Aquatic Sci. 53(Suppl. 1): 43-57.

Soikkeli, M. 1970. Mortality rate of Finnish Caspian Terns (*Hydroprogne caspia*). Ornis Fenn. 47:177-179.

Smith, G. 2008. Caspian tern, *Hydroprogne caspia*. Pages 264-65 in The second atlas of breeding birds in New York State (K.J. McGowan and K. Corwin, eds.). Cornell University Press, Ithaca, NY.

Spendelow, J. A. and S. R. Patton. 1988. National atlas of coastal waterbird colonies in the contiguous United States: 1976-1982. U.S. Fish Wildl. Serv. Biol. Rept. 88(5).

Weseloh, D.V.C. and H. Blokpoel. 1993. Caspian tern nesting at Little Galloo Island: a new nesting species for New York State. Kingbird 43(1):6-12.

Wires, L.R. and F.J. Cuthbert. 2000. Trends in Caspian Tern Numbers and Distribution in North America: A Review. Waterbirds: The International Journal of Waterbird Biology. 23(3):388-404.

Weseloh, D.V., R. Joos, C. Pekarik, J. Farquhar, L. Shutt, T. Havelka, I. Mazzocchi, G. Barrett, R. McCollough, R.L. Miller and A. Mathers. 2003. Monitoring Lake Ontario's waterbirds: contaminants in Herring Gull eggs and population changes in the Lake's nearly 1,000,000 colonial waterbirds. Book Chapter *In:* Munawar, M. (ed.) State of Lake Ontario (SOLO) – Past, Present and Future, Aquatic Ecosystem Health & Management (AEHM), Ecovision World Monograph Series. Backhuys Publishers, Leiden, The Netherlands: 597-631.

Weseloh, D.V.C. and J.L. Shutt. 2008. Studies of colonial waterbirds in the Kingston area by the Canadian Wildlife Service. Pp 545-571. In: R.D. Weir. 2008. Birds of the Kingston Region. 2nd Ed. Kingston Field naturalists. Kingston, Ontario.

Originally prepared by	Kimberley Corwin
Date first prepared	February 23, 2012
First revision	July 2014 (Jenny Murtaugh)
Latest revision	January 4, 2024 (M. Oberkircher)

Species Status Assessment

Common Name: Common eider **Date Updated:** 1/29/24

Scientific Name: *Somateria mollissima* **Updated By:** C. Hoh

Class: Aves

Family: Anatidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

Four subspecies of common eider are recognized in North America; three have been recorded in New York. *Somateria mollissima dresseri* is presumed predominant in New York. Populations have been expanding in the Northeast since the 1970s when the species was simultaneously spreading southward from Maine and being introduced to islands off the coast of Massachusetts. In New York, breeding was first documented in 2000 on Fishers Island off eastern Long Island following increasing numbers of wintering birds and summering birds. Breeding continues in New York with annual increases in the number of nests. The entire population is currently healthy but is under increasing harvest pressure.

I. Status

a. Current legal protected Status

i. **Federal:** Not listed **Candidate:** No

ii. **New York:** SGCN

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** S1B, S3?N **Tracked by NYNHP?:** Yes

Other Ranks:
-IUCN Red List: Near Threatened

Status Discussion:

Common eider is a fairly common to abundant winter visitant to the Montauk area (eastern Long Island) and rare to uncommon elsewhere on Long Island. It is very rare inland, though occasionally observed and harvested on the Great Lakes and the Niagara River.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Choose an item.	Choose an item.	Choose an item.			Choose an item.
Northeastern US	Choose an item.	Choose an item.	Choose an item.			Choose an item.
New York	Choose an item.	Choose an item.	Choose an item.			Choose an item.

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
Connecticut	Choose an item.	Choose an item.	Choose an item.			Choose an item.
Massachusetts	Choose an item.	Choose an item.	Choose an item.			Choose an item.
New Jersey	Choose an item.	Choose an item.	Choose an item.			Choose an item.
Pennsylvania	Choose an item.	Choose an item.	Choose an item.			Choose an item.
Vermont	Choose an item.	Choose an item.	Choose an item.			Choose an item.
Ontario	Choose an item.	Choose an item.	Choose an item.			Choose an item.
Quebec	Choose an item.	Choose an item.	Choose an item.			Choose an item.

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

A Mid-Winter Waterfowl Survey is conducted annually on Long Island and Lake Champlain and the New York State Ornithological Association has conducted an annual January Waterfowl Count since 1955, however these surveys do not include the open ocean. A Sea Duck Survey had been conducted in the Atlantic Flyway, including New York, in the 1990s and early 2000s.

Trends Discussion *(insert map of North American/regional distribution and status):*

With some notable exceptions, common eider in North America lacks sufficient monitoring coverage for trend analyses. The overall population trend is uncertain, as some populations are decreasing, while others are increasing, stable, or have unknown trends. Population estimates are highly variable and based on insufficient data. The common eider's breeding and wintering habitats make them difficult to survey. The subspecies breeding and wintering along the coast of eastern Canada and the northeastern United States is estimated at about 340,000 birds.

In New York, numbers of individuals wintering and summering increased during the 1990s. The first nesting in New York was documented in 2000 on Fishers Island, Suffolk County (Horning and Williamson 2001). Breeding at South Dumpling Island, also in Suffolk County, followed in 2004 (Guthrie 2004). Breeding has continued at both islands, which are located off the eastern end of Long Island. The number of common eiders recorded during the January Waterfowl Count was generally less than 500 annually until 1996 when 7,071 were recorded, followed by 18,095 in 1997 and 1,884 in 1998. The numbers observed returned to a more normal level for several years before increasing moderately in the mid through late 2000s. The reasons for the dramatic increase in wintering common eiders in 1996 and 1997 are not known.

The U.S. Fish and Wildlife Service conducted The Sea Duck Survey in the Atlantic Flyway in the 1990s and early 2000s. This mid-winter survey was conducted over the open ocean about 3 miles offshore from Nova Scotia to Florida. Very few common eiders were recorded in New York waters during the survey and a high of 76,555 eiders and low of 27,482 were observed along the length of the survey route.

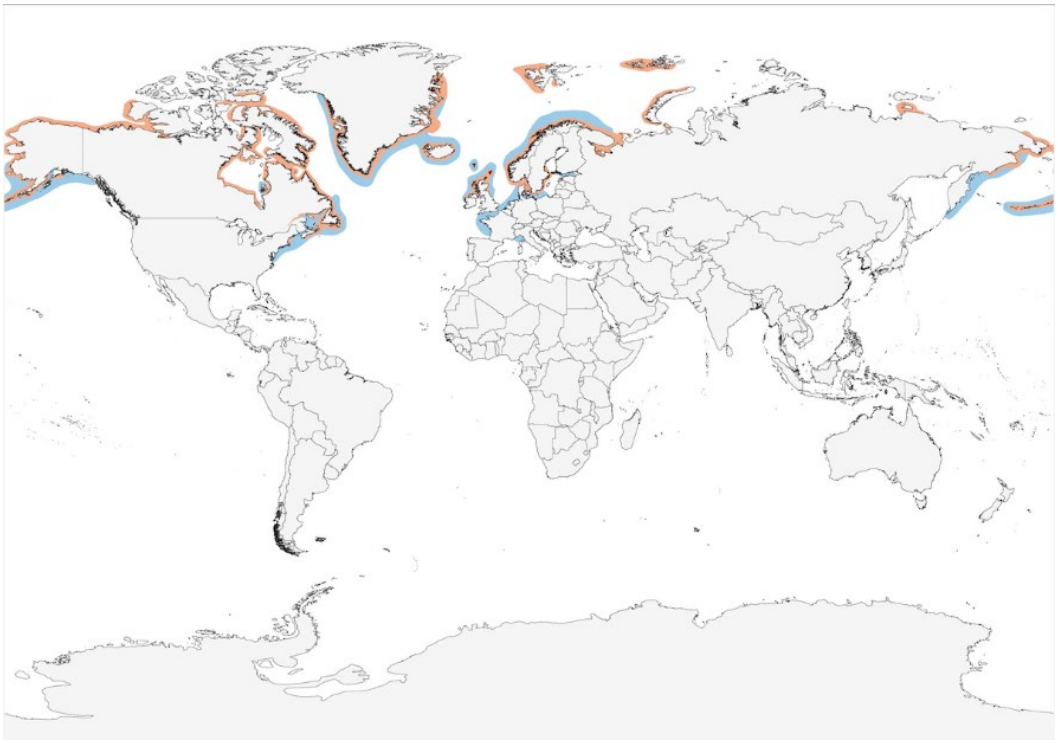

Figure 1. Distribution of the common eider (Birds of the World, 2024)

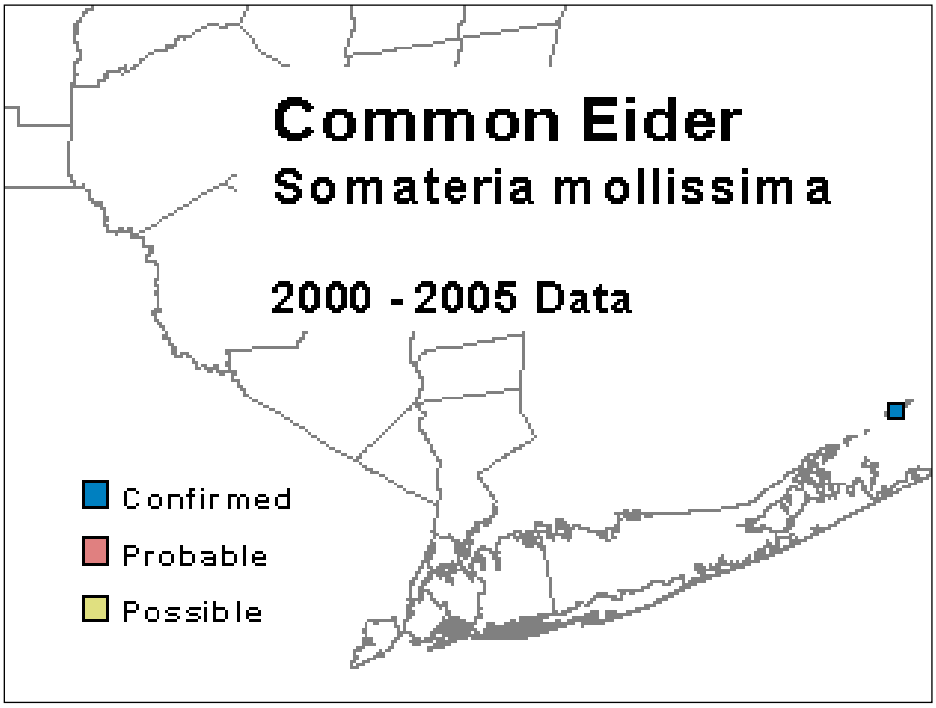

Figure 2. Breeding occurrences of common eider recorded in New York, 2000-2005 (NYBBA2)

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

Years	# of Records	# of BBA Blocks	% of State

Pre-1980	_____	_____	_____
1980-1985	_____	_____	_____
2000-2005	_____	_____	_____
2020-2023	_____	_____	_____

Table 1. Records of common eider in New York.

Details of historic and current occurrence:

From 1973 to 1980, the January Waterfowl Count recorded an average of only 83 common eider, with the highest count of 372 in 1978 and the lowest of 8 in 1975. From 1981 to 1990, the average was only 24 wintering individuals. Four summer records of common eider in New York exist for Jamaica Bay Wildlife Refuge and the Montauk-Orient area between 1974 and 1994; each was a single bird with no breeding evidence (Spahn 1988).

Numbers of wintering birds increased through the 1990s with counts ranging from 2,000-5,000 in 1995-96 to 12,000+ in 1996-97. These record highs were followed by 11-14 birds summering in 1996 and 200 birds summering in 1997 (Schiff and Wollin 1997).

The state's first documented breeding occurred at Fishers Island (Suffolk County) in 2000; breeding was documented at South Dumpling Island (Suffolk County) in 2004 (Guthrie 2004). Breeding has continued at both islands. Twelve nests with two to five eggs each were found on South Dumpling Island in 2008 (Williams 2008).

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Peripheral	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

a.

b.

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
Choose an item.	Choose an item.	Choose an item.	

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

Common eiders use marine coasts and offshore islands for nesting. Nests are on the ground in grass or brush, usually close to salt water, often on an island or rocky headland or along the shore of a pond or lagoon. Nests often but not always are concealed by plants (forest, shrub, or herbaceous), rocks, logs, driftwood. Often nests are in the same site in successive years.

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

The longest life span so far recorded for common eider is 21 years 4 months for a female from St. Lawrence estuary (Klimkiewicz and Futcher 1989). Females are faithful to their natal and breeding areas and frequently reuse the same nest site. As with most sea ducks, annual reproductive success can be low. Many adult females do not breed in some years, and, for those that do, nesting success varies widely among locations. Nesting success (number of nests that successfully hatch at least 1 egg) is sensitive to human disturbance, and many reported results are circumspect due to observer effects. No data exists on lifetime reproductive success. In general, this species experiences high losses of young in most years, near disaster in some years, and occasional years of high survival.

Hunting is an important source of mortality; common eider is a key component of native subsistence hunts in the north and coastal sport hunting farther south.

VI. Threats *(from NY 2015 SWAP or newly described):*

This population is currently healthy but is under increasing harvest pressure. In northeastern North America, potential threats include increased hunting, coastal development, and commercial harvesting of eider foods (Krohn et al. 1992, Kehoe 1994, Kehoe 1996). In recent decades, annual harvest in eastern North America averaged 48,600 (46% in eastern Canada); in the eastern U.S., harvest levels averaged 24,000 a year in the 1980s and 1990s but have shown a declining trend since the mid-2000s.

Predation by herring gull and great black-backed gull causes most nesting failures on islands in Maine, but eider nesting success may be enhanced in nests close to a gull colony (gulls defend the area against other avian predators). Chronic oil contamination is a problem in areas near shipping lanes and entanglement in fishing gear may also threaten this coastal species. Rising sea levels and more frequent and intense storms and flooding events due to climate change threaten coastal habitat. This species is very susceptible to disturbance during nesting and brood-rearing; females will leave nests, giving predators time to take eggs.

In general, wintering waterbirds face threats from loss of habitat to coastal wetlands, activities that result in large scale alteration of bay or ocean substrates (dredging, sand mining, development of barrier islands, etc.), direct mortality from collisions with structures, various contaminants, or intensive human disturbance.

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

Common eider is protected under the Migratory Bird Treaty Act of 1918 and is a game species with an open season. The hunting season length and daily bag limit could be modified or the season could be closed. Currently, there is not a specific harvest strategy in place for eider. In the Atlantic Flyway, "sea ducks" (scoters, eiders, and long-tailed ducks) are managed as underutilized species capable of additional harvest opportunity where, within designated special sea duck hunting areas, a 107 day hunting season may be allowed with a daily bag limit of 7 ducks (only 4 may be scoters). In all other areas, sea ducks may be harvested during the regular duck hunting season with a bag limit of 6 per day (only 4 may be scoters). Even with this abundant hunting opportunity, harvest of common eider is relatively low, when compared to other species of ducks. Since 1999, "eider" harvest in New York has averaged 300 and about 22,000 for the Atlantic Flyway, though declining recently. Estimated harvest of all species of eiders in the United States was 13,648 in 2010 and 13,498 in 2011; and 9,330 in 2010 and 16,820 in 2011in Canada (Raftovich et al. 2012).

In New York, the 2012 hunting season for "eiders" includes a 60 day season with a 6 per day bag limit for all of upstate New York and inland waters of Long Island, and a 107 day season with a 7 per day bag limit for the coastal waters of Long Island in the Special Sea Duck Hunting Area.

The Tidal Wetlands Act, Article 25 of the Environmental Conservation Law, protects some of the near-shore intertidal habitats used by sea ducks but does not protect any habitats beyond 6 feet deep measured at mean low water. This does not adequately protect sea duck habitat but does restrict shoreline development and may protect common eider breeding habitat on Fishers Island, South Dumpling Island, and other islands eiders may use in the future.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

Reliable techniques for monitoring population size and trends across its range need to be developed and implemented. Continued support of the Sea Duck Joint Venture should lead to improved knowledge and management of the species. Conservation actions following IUCN taxonomy are categorized in the table below.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) -
https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
1. Land/Water Protection	Site/Area Protection
2. Land/Water Protection	Resource/Habitat Protection

3. Land/Water Management	Site/Area Management
4. Land/Water Management	Habitat and Natural Process Restoration (pollution control)
5. Law/Policy Actions	Policy/Regulation Changes (hunting regulations, ocean dumping practices)
6. External Capacity Building	Alliance & Partnership Development

Table 2. Recommended conservation actions for the common eider

VII. References

Goudie, R. I., G.J. Robertson and A. Reed. 2000. Common Eider (*Somateria mollissima*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/546

Guthrie, A. 2004. Highlights of the Season – 2004. Kingbird 54(4):320-25.

Horning, E. and J. Williamson. 2001. First breeding record of common eider (*Somateria mollissima*) in New York State. Kingbird 51(2):583-85.

Kehoe, F.P. 1996. Trends in sea duck numbers in eastern North America. Bird Trends 5:13-15.

Kehoe, P., compiler and editor. 1994. Status and information needs of sea ducks in the Atlantic Flyway. Prepared by the Ad Hoc Sea Duck Committee. 71+ pp.

Klimkiewicz, M. K. and A. G. Futcher. 1989. Longevity records of North American birds supplement 1. J. Field Ornithol. 60:469-494.

Klimstra, J.D. et al., compiler. 2012. Atlantic Flyway harvest and population survey data book. U.S Fish and Wildlife Service, Laurel, MD.

Krohn, W. B., P. O. Corr, and A. E. Hutchinson. 1992. Status of the American eider with special reference to northern New England. U.S. Fish and Wildlife Service, Fish and Wildlife Research. 12 pp.

McGowan, K. J. and K. Corwin, eds. 2008. The second Atlas of breeding birds in New York State. Cornell University Press, Ithaca, NY.

Raftovich, R.V., K.A. Wilkins, S.S. Williams, and H.L. Spriggs. 2012. Migratory Bird Hunting Activity and Harvest during the 2010 and 2011 Hunting Seasons. U.S. Fish and Wildlife Service, Laurel, MD.

Schiff, S. and A. Wollin. 1997. Region 10 – Marine. Kingbird 47:333-336.

Williams, G. 2008. At least 12 common eider nests on South Dumpling Island, Suffolk County. Kingbird 58(3):233.

Originally prepared by	Kimberley Corwin
Date first prepared	December 20, 2011
First revision	July 2014 (Jenny Murtaugh)
Latest revision	

Species Status Assessment

Common Name: Common goldeneye **Date Updated:** January 29, 2024

Scientific Name: *Bucephala clangula* **Updated By:** J. O'Connor and C. Hoh

Class: Aves

Family: Anatidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

The common goldeneye is a boreal species that nests in secondary cavities or nest boxes typically near water bodies. New York is at the southern edge of the breeding range and most records of nesting are in the Adirondack region and northern Lake Champlain. Common goldeneye populations are relatively stable. In New York, the distribution has shifted in the past 20 years and occurrence has increased. Populations may have benefited from increased lake acidification which provides clear, fishless lakes (Eadie et al. 1995).

I. Status

a. Current legal protected Status

i. **Federal:** Not Listed/Game species **Candidate:** No

ii. **New York:** SGCN/Game species

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** S3, SNRN **Tracked by NYNHP?:** No

Other Ranks:
-IUCN Red List: Least Concern

Status Discussion:

Common goldeneye are rare to uncommon breeder in the Adirondacks Mountains and the Lake Champlain Valley.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Stable	Stable	1970-2023		No
Northeastern US	Yes	Stable	Stable	1970-2023		No
New York	Yes	Increasing	Increasing	1980-2005		Yes
Connecticut	Yes	Stable	Stable	1970-2023		No
Massachusetts	Yes	Stable	Stable	2000-2009		No
New Jersey	Yes	Stable	Stable			No
Pennsylvania	Yes	Stable	Stable	1998-2008		No

Vermont	Yes	Stable	Stable	1976-2007		No
Ontario	Yes	Increasing	Increasing	1981-2005		No
Quebec	Yes	Stable	Stable	2000-2009		No

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

New York State Ornithological Association has conducted an annual January Waterfowl Count since 1955.

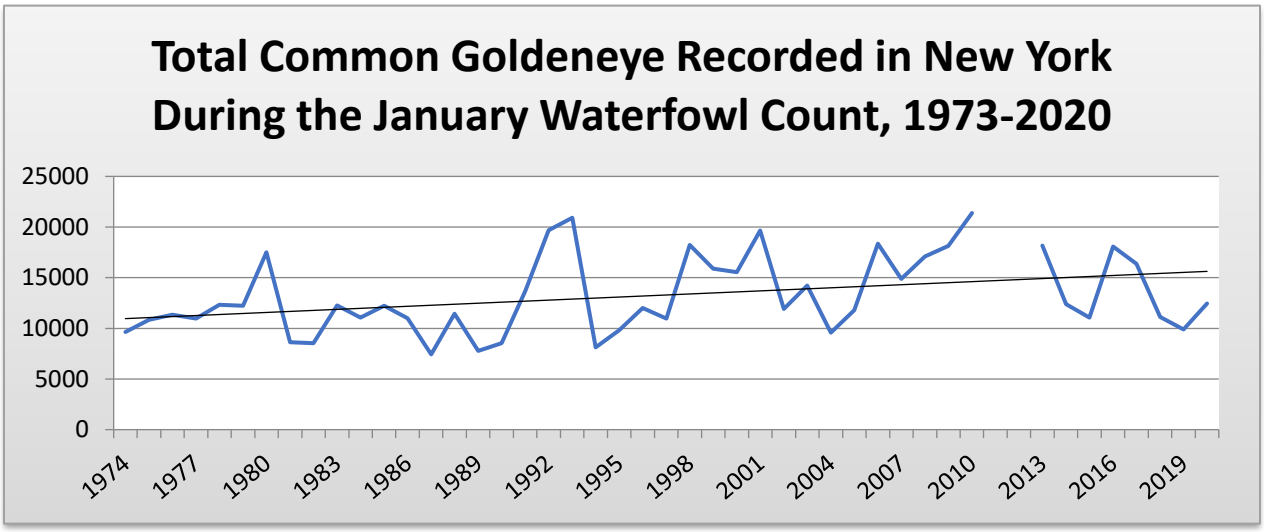

Figure 1. Number of common goldeneye observed during the January waterfowl count in New York 1974-2020 (NYSOA Waterfowl Count www.nybirds.org/projwaterfowl.htm)

Trends Discussion *(insert map of North American/regional distribution and status):*
The second Breeding Bird Atlas showed an increase in occurrence of 29% from 1980-85 to 2000-05. The distribution in northern New York shifted slightly westward, with a concentration documented during the first atlas disappearing from southern Franklin county and a new concentration appearing in Herkimer County and Hamilton County in the second atlas (Peterson 2008).

Most information on common goldeneyes suggests that populations are presently stable. Breeding Bird Surveys (1966–1992), Christmas Bird Counts (1959–1988), and USFWS May Aerial Waterfowl Population Surveys (1955–1993) all suggest no overall significant trend in population size. Their wintering abundance is common but their breeding population abundance status is rare.

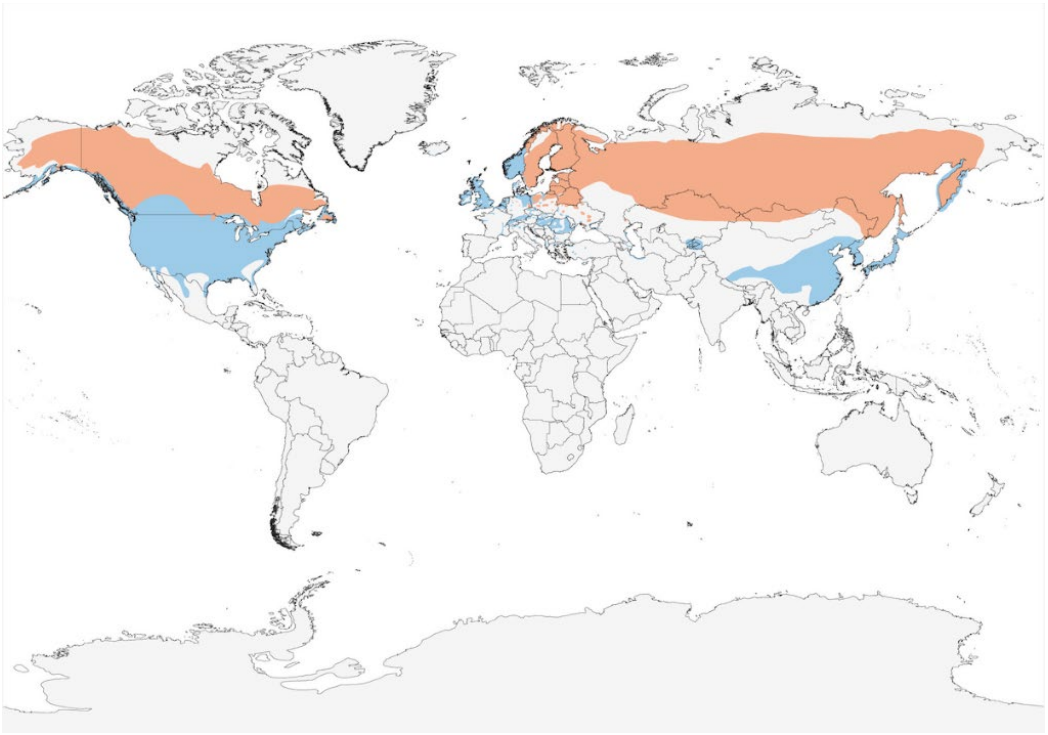

Figure 2. Distribution of common goldeneye (Birds of the World, 2024)

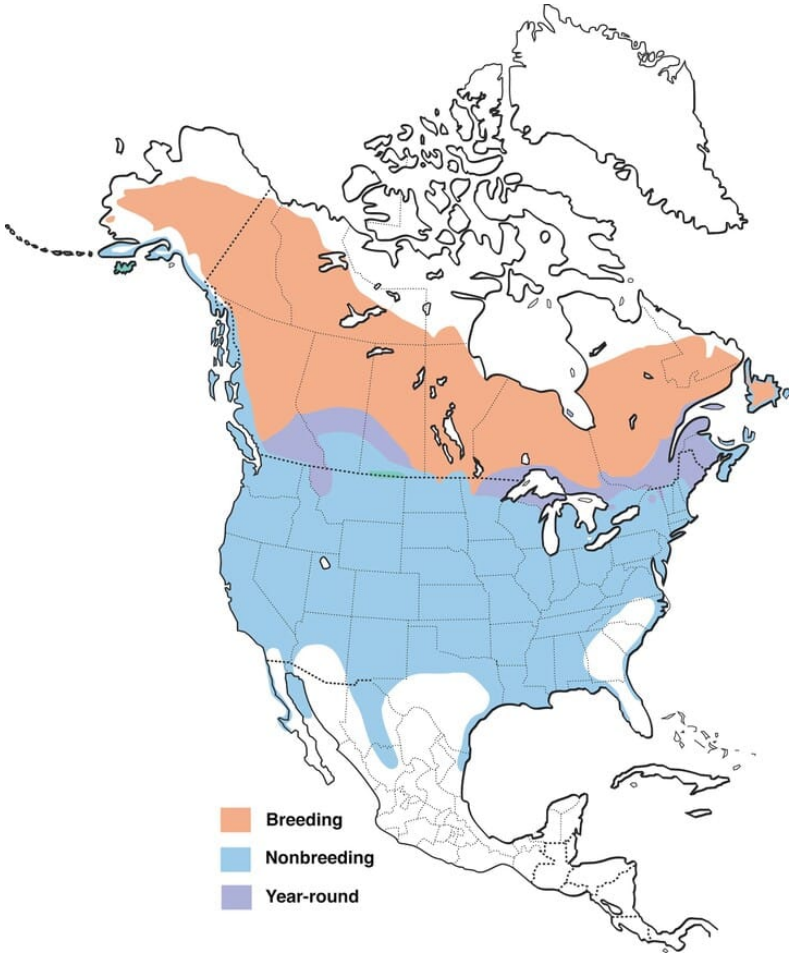

Figure 3. Distribution of common goldeneye in North America (www.allaboutbirds.org)

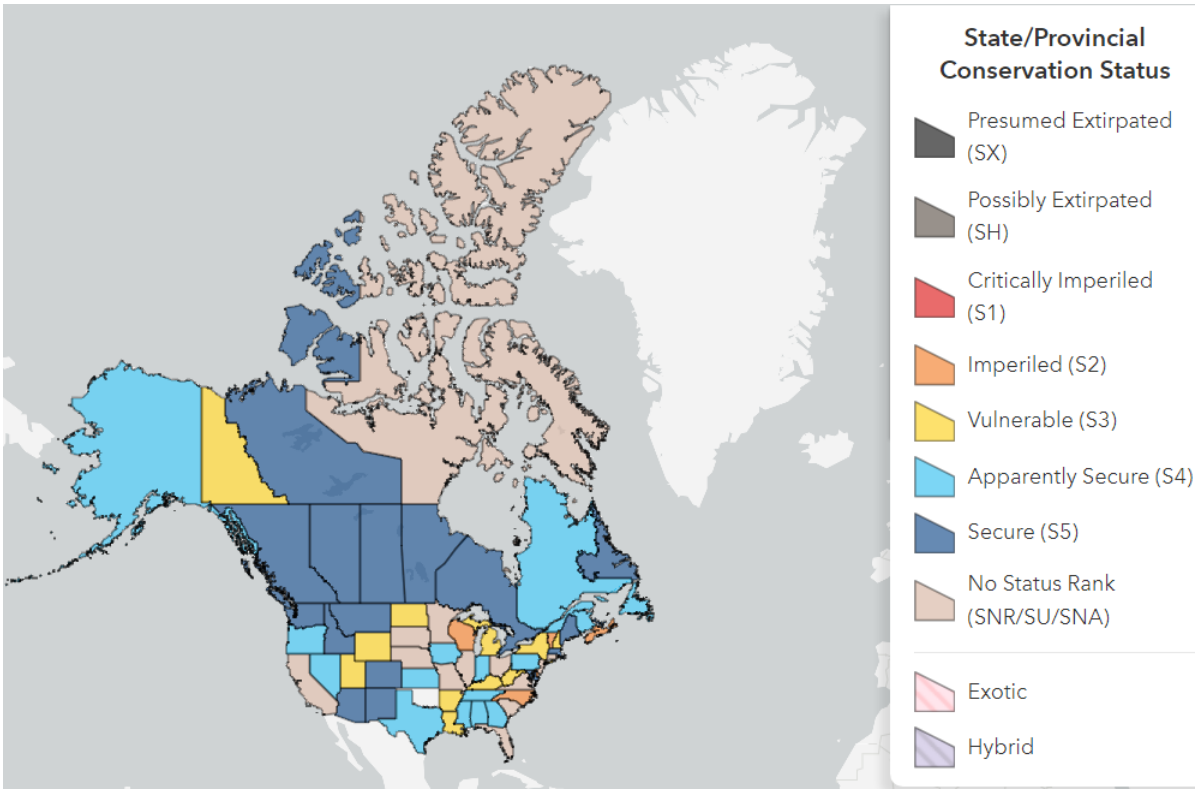

Figure 4. Conservation status of common goldeneye in North America (NatureServe)

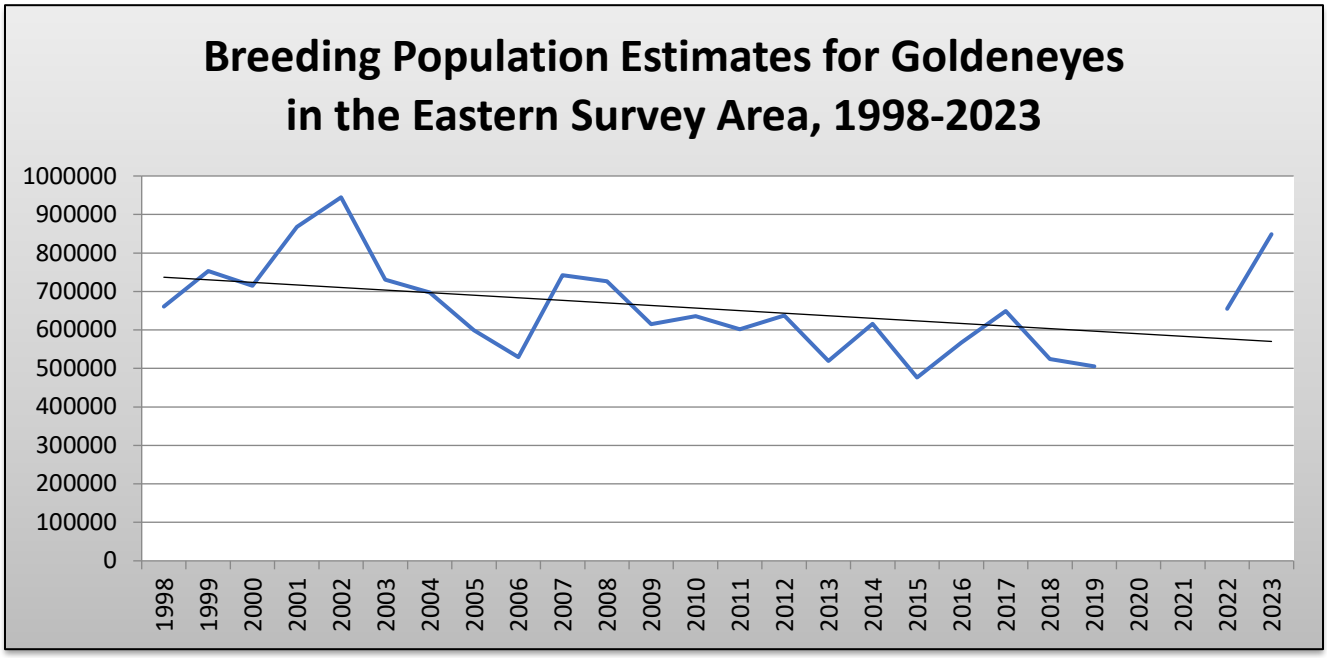

Figure 5. Common goldeneye population estimates (U.S. F&W Service 2023)

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

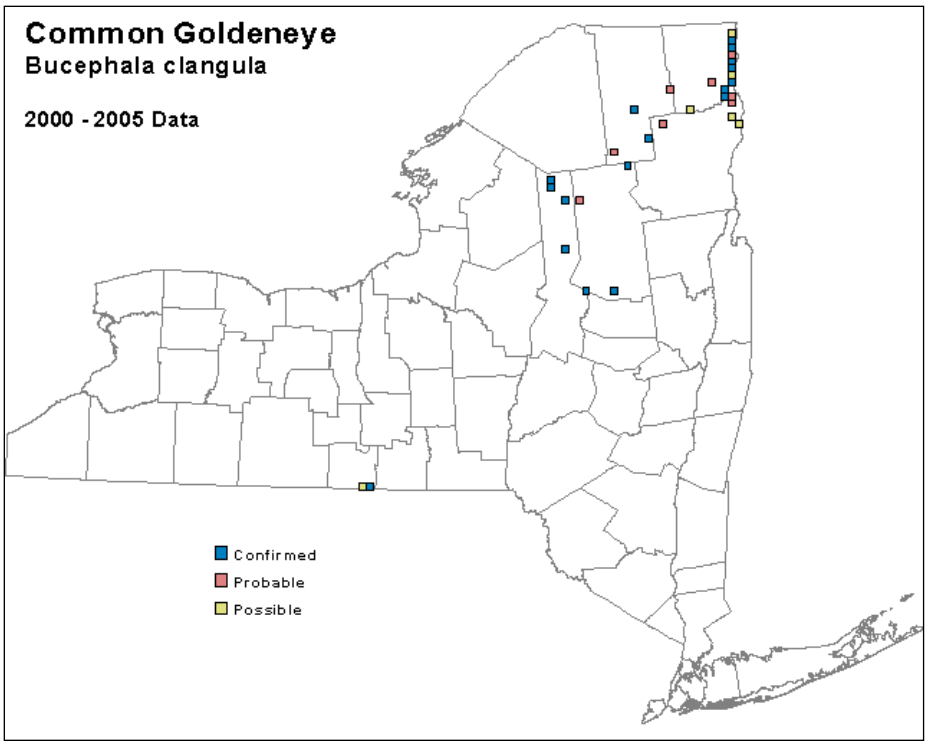

Figure 6. Breeding observations of common goldeneye in New York, 2000-2005 (NYBBA2)

Years	# of Records	# of BBA Blocks	% of State
Pre-1980	_____	_____	_____
1980-1985	_____	24	<1%
2000-2005	_____	31	<1%
2020-2023	_____	_____	_____

Table 1. Records of common goldeneye in New York.

Details of historic and current occurrence:

The first Breeding Bird Atlas (1980-85) documented occurrence in 24 survey blocks statewide (Andrle and Carroll 1988).

The second Breeding Bird Atlas (2000-05) documented occurrence in 31 survey blocks statewide, still less than 1% of the state, but an increase of 29% in the last 20 years. The distribution has continued to expand, with breeding documented in 2008 in Jefferson County.

New York is at the southernmost edge of the breeding range but wintering occurs well to the south. Breeding records are concentrated in the Adirondack region and northern Lake Champlain. One confirmed breeding was documented in Chemung County in 2003. Goldeneye eggs are routinely found in wood duck nest boxes by DEC staff at Wickham Marsh and Ausable Marsh Wildlife Management Areas (WMA) and occasionally at Kings Bay WMA, all of which are northern Lake Champlain marshes. Breeding abundance is rare but their wintering abundance is common.

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Peripheral	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

1. Spruce-Fir Forest and Flats
2. Floodplain Forests
3. Lake and River Shore/Beach
4. Oligotrophic Pond
5. Large/Great River
6. Summer-stratified Monomictic Lake

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
No	No	Unknown	

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

Common goldeneye nests in tree cavities in mature boreal forests. They will also use nest boxes, and in northern areas of the range, rock crevices are used. Nests are usually placed near a pond, lake, or river with clear water and abundant invertebrates. Waterbodies with no fish, and those that are isolated from other waterbodies are preferred (Mallory et al. 1993). Although not as frequently, nests may be placed up to a mile away from water (Eadie et al. 1995).

In an unusual breeding event, a confirmed breeding record was obtained on the Chemung River (Chemung County) in 2003 during the second Breeding Bird Atlas. Migratory habitats may be used only briefly and appear to focus on feeding areas on large lakes and rivers (Great Lakes-St. Lawrence system).

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	Choose an item.	Choose an item.	Yes	Yes	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

Females breed in their second year and make one annual nesting attempt. They usually return year after year to the same nest site. Canadian Wildlife Service banding records (for common goldeneyes banded in Canada) indicate that maximum male age is 11 yr and maximum female age 12 yr (measured as the maximum number of hunting seasons survived). There are records of a 14- and a 15-yr-old, but sex was not recorded for either. Causes of mortality are poorly known; hunting, predation, and disease are principal causes. Predation occurs predominantly on incubating females and broods. This species readily nests in boxes, facilitating studies of its reproductive biology and management (Eadie et al. 1995).

VI. Threats *(from NY 2015 SWAP or newly described):*

Despite increasing numbers, in eastern North America there is concern over the loss of unaltered, natural environments (e.g., Great Lakes-St. Lawrence lowlands and the boreal forest) and the effect of habitat alteration on common goldeneye populations is being expressed (Canadian Wildlife Service 1994). Goldeneyes may be affected by intensive recreational activity near nesting areas, by clearing of mature forests near lakes and ponds in the Adirondacks, or by contaminants such as mercury (NYSDEC 2005).

The most important factor limiting populations is probably nest-cavity availability, particularly in recently or historically logged regions. Nest-box programs and subsequent local population increases support this hypothesis (Coulter 1979). The role of hunting in population regulation is unknown, largely due to poor population estimates. Most data indicate that populations are presently stable but numbers of common goldeneyes shot are declining, suggesting that the effect of hunting may be small (Eadie et al. 1995).

Swift et al. (1993) found organochlorine contamination in the fatty tissue of common goldeneyes wintering in New York, but determined that contamination in the breast muscle was low enough to be of no concern for consumption. Eggshell thinning was attributed to DDE contamination in common goldeneye in Minnesota (Zicus et al. 1988).

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

Common goldeneye is a game bird with an open season. The hunting season length and daily bag limit could be modified or the season could be closed. In 2022, the season length was 60 days and the bag limit was 6 ducks per day. Goldeneye have had a restricted bag limit in the past.

Currently, the spring breeding population is estimated annually, however there is not a specific harvest strategy in place. Goldeneye harvest appears to be quite low in the Atlantic Flyway, averaging about 11,500 a year. New York hunters harvest an average of 6,400 goldeneye each year, five times more than Maine, which has the second highest harvest of goldeneye in the Atlantic Flyway.

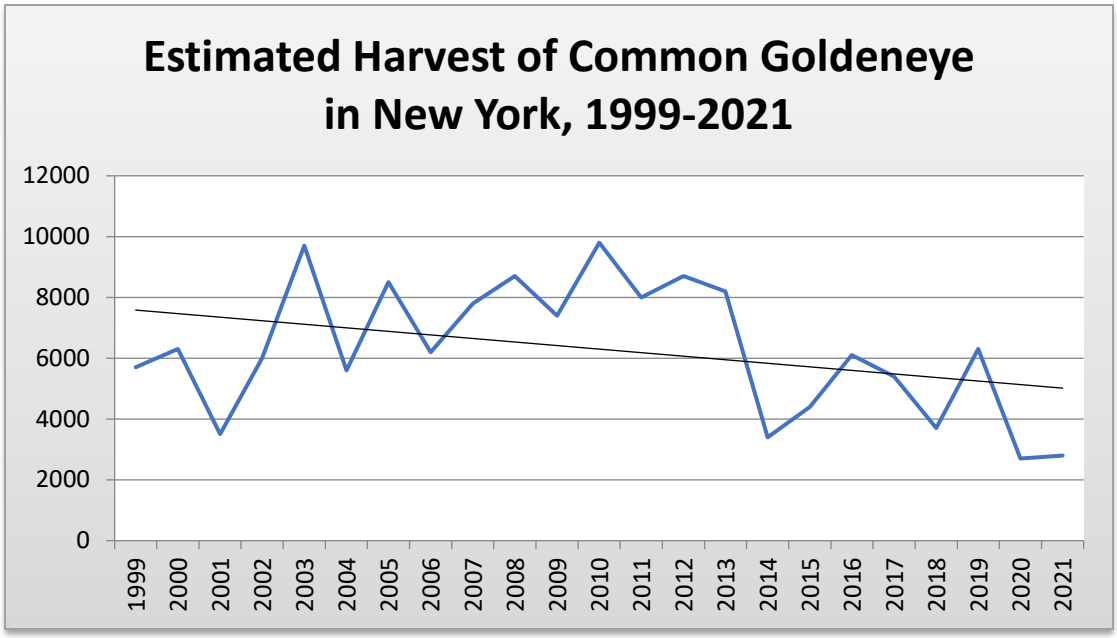

Figure 7. Estimated harvest of common goldeneye in New York 1999-2021 (NYSDEC)

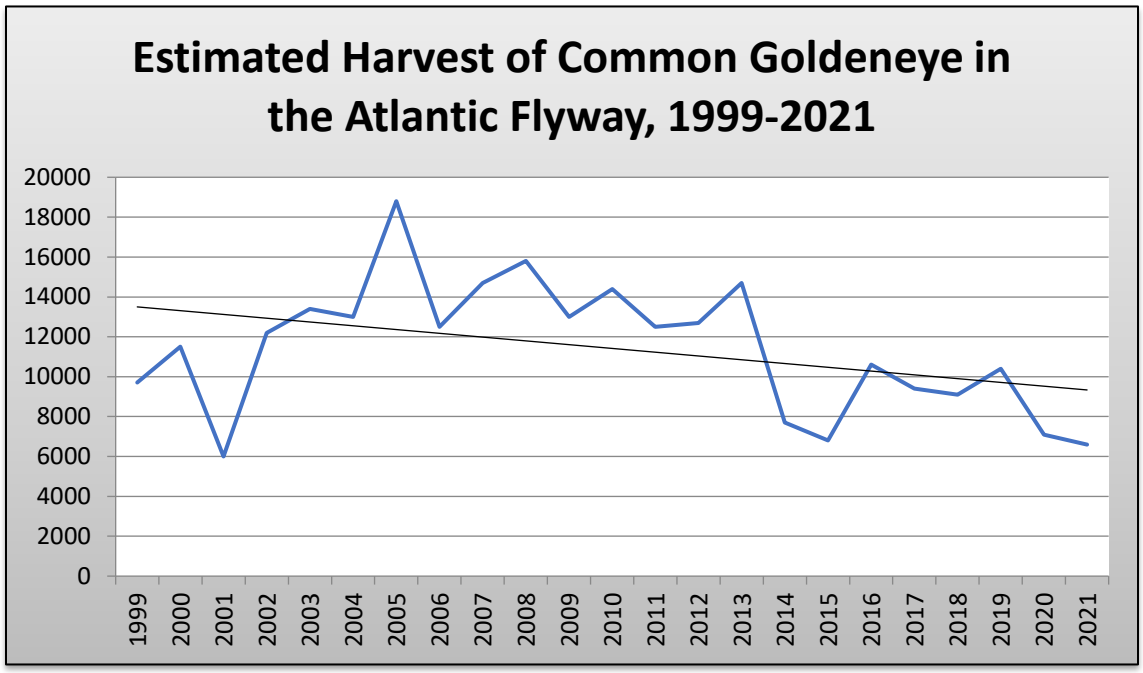

Figure 8. Estimated harvest of common goldeneye in the Atlantic Flyway 1999-2021 (NYSDEC)

Wetland habitats in New York are protected by the Freshwater Wetlands Act, Article 24 of the Environmental Conservation Law. However, this law only protects wetlands larger than 12.4 acres in size and mostly exempts timber harvesting activities occurring in and adjacent to wetlands. It does not adequately protect the forested wetland and floodplain habitat goldeneye rely on for nest cavities.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

The Comprehensive Wildlife Conservation Strategy (NYSDEC 2005) includes recommendations for the following actions for breeding waterfowl, and for common goldeneye in particular.

Habitat management:
____ Install nest boxes to increase populations or productivity of common goldeneye in appropriate locations in the Adirondacks or Champlain Valley.

Modify regulation:
____ Establish hunting regulations that will not adversely affect long-term status of waterfowl species breeding in New York.

Statewide baseline survey:
____ Conduct more intensive surveys for common goldeneye in the Adirondacks and Champlain Valley to estimate overall abundance, document habitat use and design a long-term monitoring program (e.g., every 5 years).

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
1. Land/Water Protection	Site/Area Protection
2. Land/Water Protection	Resource/Habitat Protection
3. Land/Water Management	Site/Area Management
4. Species Management	Species Recovery
5. Law & Policy	Policies & Regulations

Table 2. Recommended conservation actions for common goldeneye

VII. References

Andrle, R.F. and J.R. Carroll, eds.1988. The atlas of breeding birds in New York State. Cornell University Press, Ithaca, NY.

Canadian Wildlife Service. 1994. 1994 Update to the North American waterfowl management plan. Can. Wildl. Serv. Ottawa, ON.

Coulter, M. W. 1979. An experiment to establish a goldeneye population. Wildl. Soc. Bull. 7:116-118.

Eadie, J. M., M. L. Mallory and H. G. Lumsden. 1995. Common Goldeneye (*Bucephala clangula*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/170

Klimstra, J.D. et al., compiler. 2012. Atlantic Flyway harvest and population survey data book. U.S Fish and Wildlife Service, Laurel, MD.

Mallory, M.L., P.J. Weatherhead, D.K. McNicol, and M.E. Wayland. 1993. Nest site selection by Common Goldeneyes in response to habitat features influenced by acid precipitation. Ornis Scand. 24:59-64.

McGowan, K.J. and K. Corwin, eds. 2008. The second atlas of breeding birds in New York State. Cornell University Press, Ithaca, NY.

New York State Department of Environmental Conservation (NYSDEC). 2005. New York State Comprehensive Wildlife Conservation Strategy. http://www.dec.ny.gov/index.html

Peterson, J.M.C. 2008. Common goldeneye, *Bucephala clangula*. Pages 122-23 *in* The second atlas of breeding birds in New York State (K.J. McGowan and K. Corwin., eds.). Cornell University Press, Ithaca, NY.

Roberts, A.J. et al., compiler. 2022. Atlantic Flyway harvest and population survey data book. U.S Fish and Wildlife Service, Laurel, MD.

U.S. Fish and Wildlife Service. 2012. Waterfowl population status, 2012. U.S. Department of the Interior, Washington, D.C. USA.

Zicus, M. C., M. A. Briggs, and R. M. Pace III. 1988. DDE, PCB, and mercury residues on Minnesota common goldeneye and hooded merganser eggs, 1981. Canadian Journal of Zoology 66: 1871-1876.

Originally prepared by	Kimberley Corwin
Date first prepared	December 21, 2011
First revision	July 2014 (Jenny Murtaugh)
Latest revision	

Species Status Assessment

Common Name: Eastern meadowlark **Date Updated:** December 2023

Scientific Name: *Sturnella magna* **Updated By:** Abigail Valachovic

Class: Aves

Family: Icteridae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

The eastern meadowlark is not a lark (Family Alaudidae) but is related instead to New World blackbirds (Family Emberizidae). This is a bird of farmland and open country, occurring in this habitat across the eastern United States. Numbers have declined drastically since the 1960s throughout much of its North American range because of changes in land use and human encroachment.

In New York, the second Breeding Bird Atlas documented a 25% decline in occupancy from 1980-85 to 2000-05. Breeding Bird Survey data for New York show significant short-term (1999-2009) and long-term (1966-2009) declines. These declines correspond with the disappearance of suitable nesting habitat resulting from the succession of open lands to forest and suburban development (Smith 2008). In New York, the cumulative change in estimated relative abundance from 2012 through 2022 of Eastern meadowlarks during the breeding season has decreased by 11.5% with confidence intervals of –3.1% to –20.4%.

I. Status

a. Current legal protected Status

i. **Federal:** Not listed **Candidate:** No

ii. **New York:** SGCN

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** S5B **Tracked by NYNHP?:** No

Other Ranks:

IUCN Red List: Near threatened (NT)

Audubon's Top 20 Common Birds in Decline

Partners in Flight – Regional Concern in BCR 13 and 28

Nature Serve lists the Eastern meadowlark as secure.

Status Discussion:

The eastern meadowlark is a widespread breeder in New York, sedentary and migratory. It is a common to locally abundant migrant and is common at some inland and coastal areas in winter. The meadowlark is ranked as Secure or Apparently Secure in New York and in surrounding states and provinces except in New Jersey, Ontario, and Quebec where it is ranked as Threatened/Special Concern.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Declining	Declining	1999-2009		Yes
Northeastern US	Yes	Declining	Declining	1999-2009		Yes
New York	Yes	Declining	Declining	1980-85 to 2000-05		Yes
Connecticut	Yes	Declining	Declining	1999-2009	T	Yes
Massachusetts	Yes	Declining	Declining	1999-2009	NL	Yes
New Jersey	Yes	Declining	Declining	1999-2009	SC	Yes
Pennsylvania	Yes	Declining	Declining	1999-2009	NL	Yes
Vermont	Yes	Declining	Declining	1999-2009	NL	Yes
Ontario	Yes	Declining	Declining	1999-2009	T	Yes
Quebec	Yes	Declining	Declining	1999-2009	T	Yes

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

New York's Landowner Incentive Program (LIP) monitors grassland birds at eight Grassland Focus Areas in the state. Eastern meadowlark is one of the focal species in point counts that are conducted annually. Grassland bird surveys are also conducted at some Wildlife Management Areas.
In addition, in 2005, Audubon NY conducted grassland bird surveys within the NY state grassland bird focus areas to help identify target species for each focus area. As a follow up to these surveys, in 2006 NYSDEC did targeted surveys for species that were not well represented in the 2005 survey. Although Eastern meadowlarks were not one of the target species in the 2006 surveys, data on Eastern meadowlarks was collected during both survey efforts.

Trends Discussion *(insert map of North American/regional distribution and status):*

BBS data for New York show a significant decline of 5.0% per year from 2001-2011 and a significant decline of 5.5% per year from 1966-2011. BBS data for the eastern region show a significant 3.4% per year decline from 2001-2011 and a significant 3.7% annual decline from 1966-2011 (Sauer et al. 2012).

Recently, BBS data for the United States showed a significant 2.96% decline from 1996-2019, and a 6.18% decline in New York. Partners in Flight (2019) currently estimate that *S. magma* is undergoing annual population declines of ~3.26% throughout its range, which equates to a ~24.2% decline across the stipulated ten-year period. Such trends are supported by data from the Breeding Bird Survey, that estimates annual declines of ~3.31%, a ~28.6% decline over ten years (Sauer et al. 2017), and the Christmas Bird Count, that suggests a 3.24% rate of annual decline in the USA, ~28.1% across ten years (Meehan et al. 2018). In New York, the cumulative change in estimated relative abundance from 2012 through 2022 of Eastern meadowlarks has decreased by 11.5% with confidence intervals of –3.1% to –20.4%.

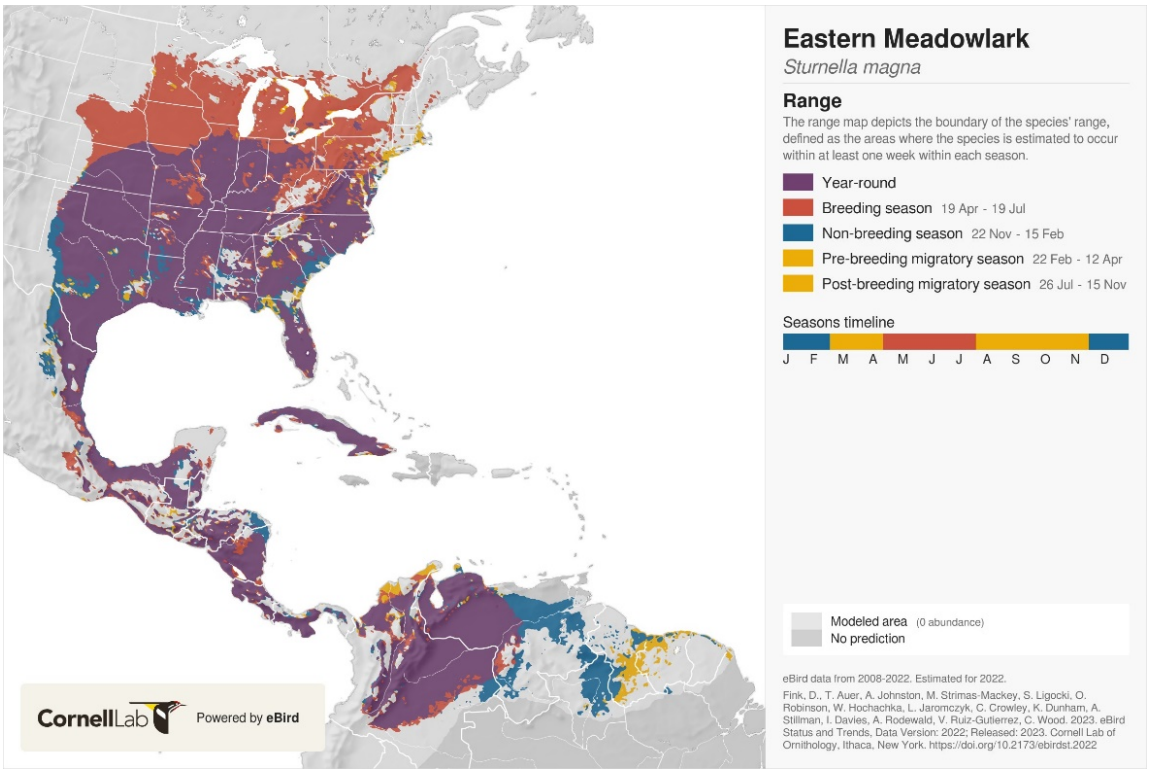

Figure 1. Eastern meadowlark distribution in North America (eBird).

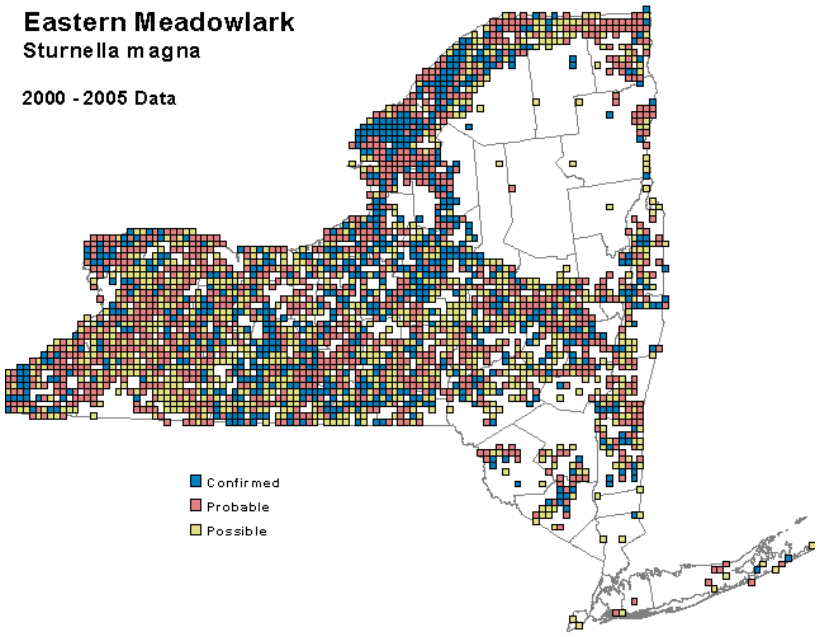

Figure 2. Eastern meadowlark occurrence in New York State during the second Breeding Bird Atlas (McGowan and Corwin 2008).

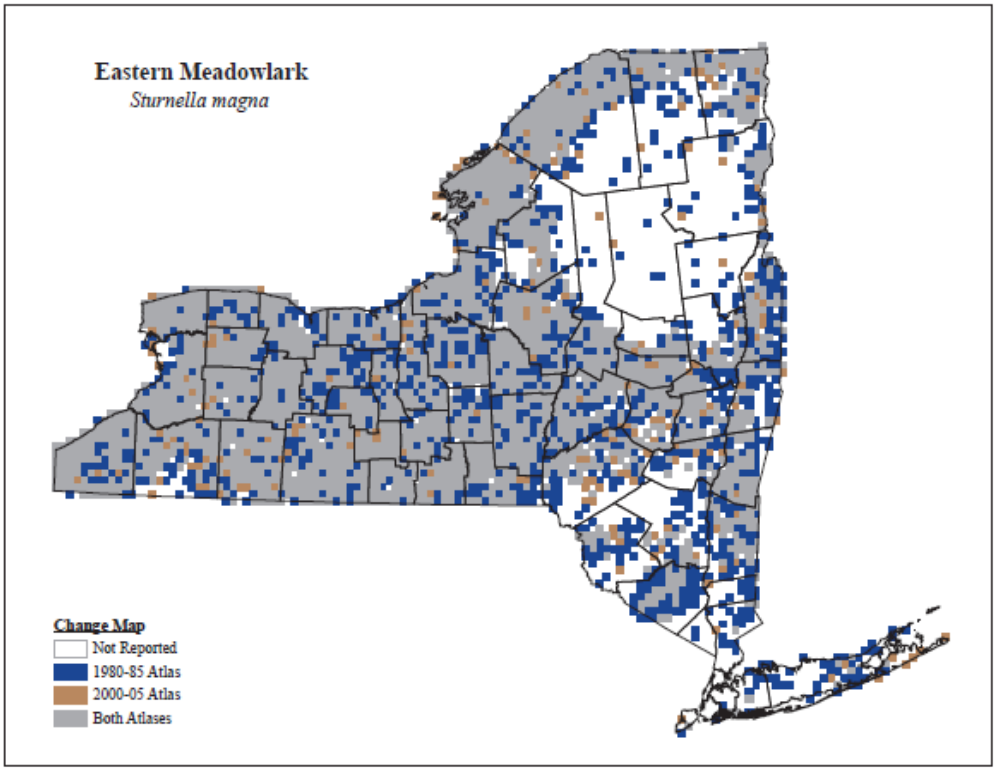

Figure 3. Change in eastern meadowlark occurrence in New York State between the first Breeding Bird Atlas and the second Breeding Bird Atlas (McGowan and Corwin 2008).

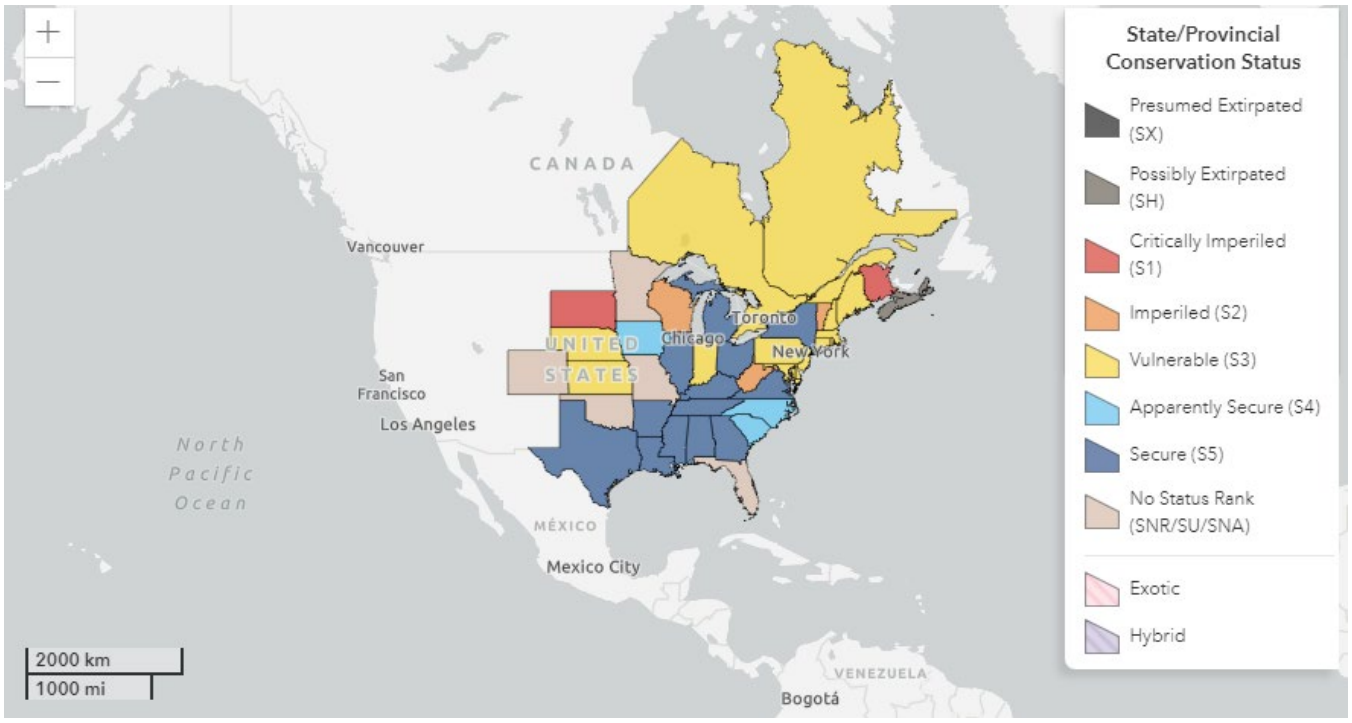

Figure 4. Conservation status of the eastern meadowlark in North America (NatureServe 2008).

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

New York is well within the eastern meadowlark's North American breeding distribution. It occurs statewide, but with obvious absences in the Adirondack region and other forested, high-elevation areas. The southeastern part of the state and the coastal lowlands show a sparse distribution.

Years	# of Records	# of BBA Blocks	% of State
Pre-1980	_____	_____	_____
1980-1985	_____	3,506	66%
2000-2005	_____	2,635	49%
2020-2023	_____	1,251	22%

Table 1. Records of eastern meadowlark in New York.

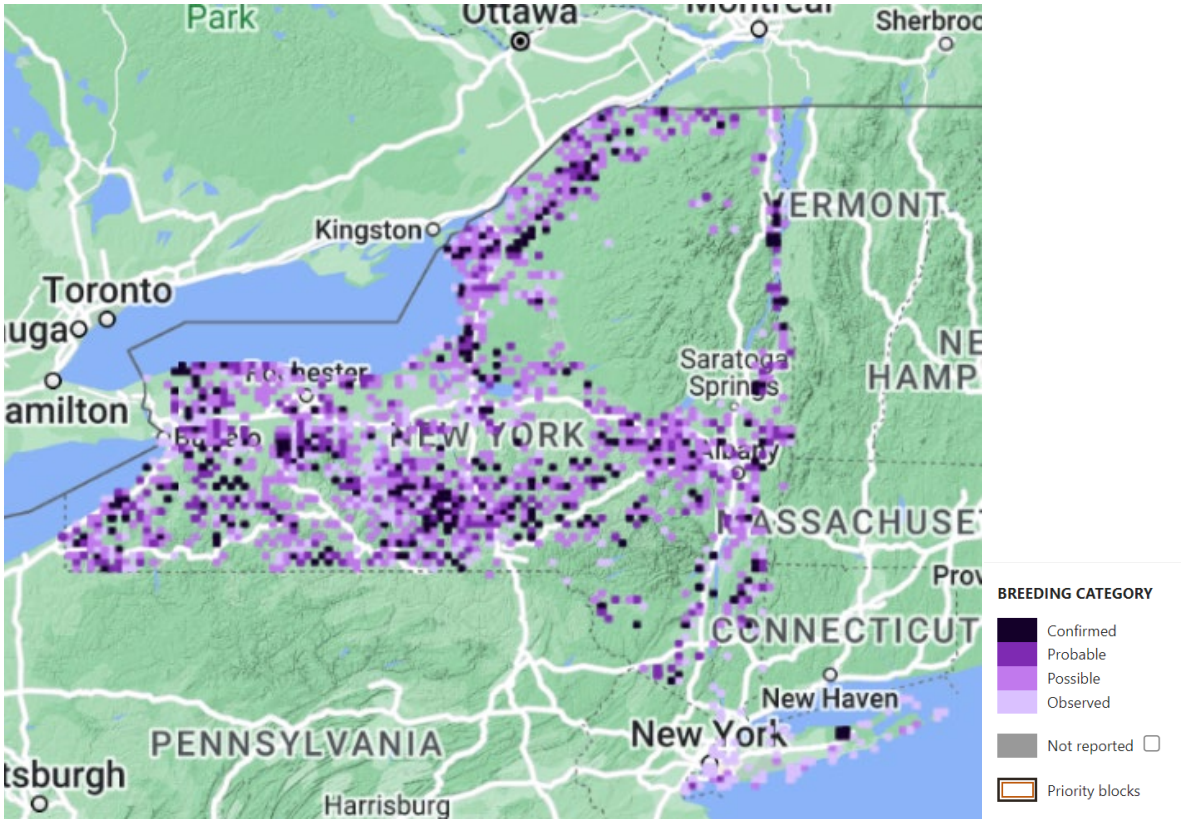

Figure 5. Breeding Bird Atlas 3 records of eastern meadowlark in New York BBA (eBird).

Details of historic and current occurrence:

The first Breeding Bird Atlas (1980-85) documented occupancy in 66% of the survey blocks statewide, with an obvious absence in the Adirondack Mountains (Andrle and Carroll 1988).

The second Breeding Bird Atlas (2000-05) documented occupancy in 49% of the survey blocks statewide, a decline of 25% (McGowan and Corwin 2008).

The third BBA, which is currently underway, utilizes a different number and layout of survey blocks across New York, making direct comparison with the first two Atlases difficult. There were 5,333 blocks in the first and second BBAs and 5,710 blocks in the current BBA.
New York is in the northeastern part of the extensive breeding range.

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Core	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

1. Pasture/Hay
2. Old Field Managed Grasslands
3. Native Barrens and Savanna
4. Cultivated Crops
5. Urban and Recreational Grasses
6. Estuarine, Brackish Intertidal, Tidal Wetland, High Salt Marsh

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
No	No	Declining	Since 1960s

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

This is a species of agricultural and somewhat developed landscapes including hay meadows and grassy pastures, as well as the grassy areas of airports and golf courses. It is absent from higher elevations and developed areas in the state.

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	Choose an item.	No	Yes	No	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item

Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

Both male and female Eastern meadowlarks breed during the first year following their natal year. Females may have several clutches per year because of nesting failures, but not more than two successful broods per year. It is difficult to determine life span and survivorship in wild populations because of low incidence of return to natal area. The maximum recorded life span in the wild is at least 5 years.

Griffin (1959) reported deaths from eating grain poisoned for rodent or insect control, exposure to deep snow and ice storms (Krutzsch 1950) and mowing in hay fields (*in* Lanyon 1995). Adults are taken by various hawk species. Eggs and nestlings are often deserted because of human activity (irrigation, mowing), frequently trampled by livestock, or eaten by foxes, domestic cats and dogs, coyotes, snakes, skunks, raccoons, and other small mammals (Lanyon 1957, Bent 1958, Vickery et al. 1992).

VI. Threats *(from NY 2015 SWAP or newly described):*

Land-use changes are a significant threat to grassland bird populations on regional and continental scales. From 1940 to 1986 in 18 northeastern states, the area in hay fields declined from 12.6 to 7.1 million ha. During the same period, hay fields planted to alfalfa and alfalfa mixtures, a vegetation type not typically used by many species of grassland birds, increased from 20% to 60% (Bollinger and Gavin 1992).

Since the mid-1940s, the eastward expansion of grassland birds has reversed in northeastern U.S. and southern Ontario as agricultural lands have been abandoned, reverting to deciduous forest (Robbins et al. 1986, Hussell 1987). Sibley (1988) noted that declines had resulted from the replacement of grain crops by corn and alfalfa, despite the use of corn fields for breeding noted by other authors.

Declines in some areas have been attributed to decrease in hayfield area, earlier and more frequent hay-cropping, and shift from timothy and clover to alfalfa; earlier, agricultural practices that converted wooded land to open land resulted in an increase in range (Bollinger et al. 1990, Bollinger and Gavin 1992). In New York, primary disturbance to nesting is hay-cropping; 100% of nests with eggs and young nestlings affected by mowing were abandoned or destroyed, but proportion of young lost declined with age of nestlings (Bollinger et al. 1990). A threat to the grasslands in New York is a failure to address the viability of dairy farming, especially smaller family farms (NYSDEC 2005). Fire-dependent pine barren type communities also support grassland species. Fire suppression can make them less suitable.

Losses are due to disappearing grassland habitat. Prairie is scarce in the eastern United States, and the kinds of farms that once hosted meadowlarks—small, family farms with pastureland and grassy fields—are being replaced by larger, row-cropping agricultural operations or by development. Early mowing, overgrazing by livestock, and the use of pesticides can also harm meadowlarks nesting on private lands. Farmland conservation practices are vital to the survival of this species.

A study led by a Canadian toxicologist identified acutely toxic pesticides as the most likely leading cause of the widespread decline in grassland bird numbers in the United States. The 23-year assessment, which looked at five other causes of grassland bird decline besides lethal pesticide risk, including change in cropped pasture such as hay or alfalfa production, farming intensity or the proportion of agricultural land that is actively cropped, herbicide use, overall insecticide use, and change in permanent pasture and rangeland, concluded that lethal pesticides were nearly four times

more likely to be associated with population declines than the next most likely contributor, changes in cropped pasture (Mineau and Whiteside 2013).

Threats to NY Populations	
Threat Category	**Threat**
1. Residential & Commercial Development	Housing & Urban Areas (habitat loss)
2. Agriculture & Aquaculture	Annual & Perennial Non-timber Crops (intensification & changes in agriculture)
3. Transportation & Service Corridor	Flight Paths (plane strikes)
4. Pollution	Agriculture & Forestry Effluents (pesticides, rodenticides)
5. Natural System Modifications	Other Ecosystem Modifications (succession)
6. Energy Production & Mining	Renewable Energy (sensitive to disturbance from turbines)
7. Invasive & Non-Native Species & Genes	Invasive/Alien Species
8. Energy Production & Mining	Oil & Gas Drilling (fracking)

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

The eastern meadowlark is protected under the Migratory Bird Treaty Act of 1918.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

The NYSDEC's Strategy for Grassland Bird Conservation Best Management Practices (BMPs) for should be used to guide habitat management on grassland habitat or habitat to be converted into grassland. The management goal of these BMPs is to maintain the open, grassy conditions necessary for successful breeding by grassland birds and to avoid disturbance to nesting birds. Techniques may include seeding, mowing, and removal of trees and shrubs including invasive species. Typically, land should be managed for a minimum of 5 years to begin showing benefits for grassland birds. These BMPs form the basis for specific 5-year Site Management Plans for landowners selected to receive technical and financial assistance through LIP (NYSDEC 2022-2027).

Some general recommendations:

•Target management for grassland bird species known to be in the vicinity and consider the needs of both breeding and wintering grassland bird species.
• Consider the surrounding landscape when making management decisions.
• Conduct baseline grassland bird surveys on newly acquired fields or fields targeted for management changes to determine which species are present.
• Increase field size by hedgerow removal, removing trees, etc. to benefit species that require large, open fields.
• Control invasive plant species (glossy buckthorn, pale and black swallowwort, Canada thistle, Phragmites, etc.) to improve habitat quality.
• When developing grassland planting or habitat restoration projects, consider a variety of factors including the targeted grassland bird species, pollinators, seed mix (warm versus cool season grasses, forbs, wildflower mixes, grass height and density), timing of planting, existing site conditions, and vegetation removal techniques (including herbicide and intensive disking).
• Utilize mowing, haying, burning, and grazing for maintaining grassland habitat, after evaluating the appropriateness of these methods relative to site conditions and management objectives. In particular, burning cool season grasses is not advisable in most situations in New York.

Conservation actions following IUCN taxonomy are categorized in the table below.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
1. Land/Water Protection	Site/Area Protection
2. Land/Water Protection	Resource/Habitat Protection
3. Land/Water Management	Site/Area Management
4. Land/Water Management	Invasive/Problematic Species Control
5. Land/Water Management	Habitat and Natural Process Restoration
6. Education and awareness	Training
7. Education and awareness	Awareness & Communications
8. Land and Policy	Policies and Regulations

Table 3. Recommended conservation actions for eastern meadowlark

VII. References

Andrle, R.F. and J.R. Carroll, eds. 1988. The Atlas of breeding birds in New York State. Cornell University Press, Ithaca, NY.

Bent, A. C. 1958. Life histories of North American blackbirds, orioles, tanagers, and allies. Dover, New York.

Griffin, D. N. 1959. The poisoning of meadowlarks with insecticides. Wilson Bull. 71:193.

Krutzsch, P. H. 1950. Mortality in meadowlarks as a result of severe winter weather. Wilson Bull. 62:40.

Lanyon, W. E. 1957. The comparative biology of the meadowlarks (*Sturnella*) in Wisconsin. Publ. Nuttall Ornithol. Club no. 1, Cambridge, MA.

Lanyon, Wesley E. 1995. Eastern Meadowlark (*Sturnella magna*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology. <http://bna.birds.cornell.edu/bna/species/160>.

McGowan, K.J. and K. Corwin, eds. 2008. The second Atlas of breeding birds in New York State. Cornell University Press, Ithaca, NY.

Meehan, T. D.; LeBaron, G. S.; Dale, K.; Michel, N. L.; Verutes, G. M.; Langham, G. M. 2018. Abundance trends of birds wintering in the USA and Canada, from Audubon Christmas Bird Counts, 1966-2017, version 2.1. New York, New York, USA.

Mineau, P. and M. Whiteside. 2013. Pesticide acute toxicity is a better correlate of U.S. grassland bird declines than agricultural intensification. PloS ONE 8: 1-8.

Morgan, M. R. and M. F. Burger. 2008. A plan for conserving grassland birds in New York: Final report to the New York State Department of Environmental Conservation under contract #C005137. Audubon New York, Ithaca, NY. <http://ny.audubon.org/PDFs/ConservationPlan-GrasslandBirds-NY.pdf>. Accessed 6 June 2013.

New York State Department of Environmental Conservation (NYSDEC). 2005. New York State Comprehensive Wildlife Conservation Strategy. <http://www.dec.ny.gov/index.html>. Accessed 6 June 2013.

New York State Department of Environmental Conservation (NYSDEC). 2013. Best management practices for grassland birds. < http://www.dec.ny.gov/pubs/86582.html>. Accessed 6 June 2013.

NYSDEC Strategy for Grassland Bird Habitat Management and Conservation 2022-2027.

New York State Third Breeding Bird Atlas. New York Overview. https://ebird.org/atlasny/state/US-NY. Accessed (21 December 2023).

Partners in Flight. 2019. Avian Conservation Assessment Database, version 2019. Available at: http://pif.birdconservancy.org/ACAD.

Rosenberg, K. V., Kennedy, J. A., Dettmers, R., Ford, R. P., Reynolds, D., Alexander, J. D., Beardmore, C. J., Blancher, P. J., Bogart, R. E., Butcher, G. S., Camfield, A. F., Couturier, A., Demarest, D. W., Easton, W. E., Giocomo, J. J., Keller, R. H., Mini, A. E., Panjabi, A. O., Pashley, D. N., Rich, T. D., Ruth, J. M., Stabins, H., Stanton, J., & Will, T. 2016. Partners in Flight Landbird Conservation Plan: 2016 Revision for Canada and Continental United States. Partners in Flight Science Committee.

Sauer, J. R., J. E. Hines, J. E. Fallon, K. L. Pardieck, D. J. Ziolkowski, Jr., and W. A. Link. 2012. The North American Breeding Bird Survey, Results and Analysis 1966 - 2011. Version 07.03.2013 USGS Patuxent Wildlife Research Center, Laurel, MD.

Sauer, J.R.; Niven, D.K.; Hines, J.E.; Ziolkowski Jr, D.J.; Pardieck, K.L.; Fallon, J.E.; Link, W.A. 2017. The North American Breeding Bird Survey, Results and Analysis 1966 - 2015. Version 2.07.2017. Laurel, MD

Vickery, P. D., M. L. Hunter, Jr., and J. V. Wells. 1992. Evidence of incidental nest predation and its effects on nests of threatened grassland birds. Oikos 63:281-288.

Originally prepared by	Kimberley Corwin
Date first prepared	January 9, 2012
First revision	Jenny Murtaugh (July 2014)
Last revision	December 22, 2023 (Abigail Valachovic)

Species Status Assessment

Common Name: Eastern whip-poor-will **Date Updated:** January 9, 2024

Scientific Name: *Antrostomus vociferus* **Updated By:** Beth Cooper

Class: Aves

Family: Caprimulgidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

In July 2010, the whip-poor-will was separated into two distinct species: Eastern whip-poor-will and Mexican whip-poor-will. Nesting occurs in early- to mid-successional forests and open forested habitats adjacent to clearings. Significant declines have been noted for whip-poor-will since the 1980s in the Northeast primarily, but also across the eastern part of the range (which is now known to include only Eastern whip-poor-will). While neither Breeding Bird Survey nor Breeding Bird Atlas protocol document this nocturnal species well, both show significant and notable declines. BBA data show a 58% decrease in occupancy from the 1980s to early 2000s. The first three years of the third BBA (2020-2023) documented breeding behavior at 235 blocks (eBird 2023). BBS data for New York shows a declining trend of -1.57% per year from 1966-2022. The largest populations are in Northern New York (Clinton and Jefferson Counties).

The causes of the rangewide decline in whip-poor-wills are poorly understood, but likely include the cumulative effects of decreased prey availability, and fragmentation of scrubby woodlands, increased predation on eggs and young by mammalian predators (including cats), and increased road mortality due to paving of dirt roads.

I. Status

a. Current legal protected Status

i. **Federal:** Not Listed **Candidate:** No

ii. **New York:** Special Concern; High Priority SGCN

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** S3B **Tracked by NYNHP?:** Yes

Other Ranks:

IUCN Red List: NT (Near Threatened)

USFWS: Species of Conservation Concern (Both Continental and Bird Conservation Regions 11, 12, 13, 14, 22, 23, 24, 25, 26, 27, 28, 29, 30)

COSEWIC/SARA: Threatened

Species of Northeast Regional Conservation Concern (Therres 1999)

Partners in Flight: “D” Yellow Watch List (Species with population declines and moderate to high threats); Conservation Concern Score 14 (of 20)

Road to Recovery (R2R) – Yellow Alert Tipping Point Species

Status Discussion:

Whip-poor-will are found sparsely across the state but are locally common in a few areas. They are most numerous on eastern Long Island, in northern Jefferson County, Clinton County, and in the Shawangunk Ridge area of southeastern Sullivan County/Ulster County, and rare to absent in western and central New York and in the higher parts of the Adirondacks, Catskills, and Tug Hill region. It is a regular nocturnal migrant.

Within the Northeast, densities are highest in the coastal plain from Cape Cod south, and in areas of northern New York and western Maryland (Hunt 2008). It is ranked as Vulnerable in New York, New Jersey, Connecticut, and Quebec, and as Imperiled in Vermont and Massachusetts (NatureServe 2020). The IUCN Red List status is Near Threatened with a decreasing global population trend (BirdLife International 2018).

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Declining	Declining	1966-2022		Choose an item.
Northeastern US	Yes	Declining	Declining	1966-2022		Choose an item.
New York	Yes	Declining	Declining	1966-2022	Special Concern	Yes
Connecticut	Yes	Declining	Declining	1966-2022	Special Concern	Yes
Massachusetts	Yes	Declining	Declining	1966-2022	Special Concern	Yes
New Jersey	Yes	Declining	Declining	1966-2022	Special Concern	Yes
Pennsylvania	Yes	Declining	Declining	1966-2022		Yes
Vermont	Yes	Declining	Declining	1966-2022	Threatened	Yes
Ontario	Yes	Declining	Declining	1966-2022	Threatened	Choose an item.
Quebec	Yes	Declining	Unknown	1966-2022	Vulnerable	Choose an item.

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

The Northeast Nightjar Monitoring program began in 2005. The NYS Ornithological Association (NYSOA) coordinated annual surveys in 2007 as part of the larger effort in the Northeast but

discontinued the coordination of annual survey efforts after 2007. This effort was re-initiated in 2013 by DEC at a reduced scale, with a subset of the original NYSOA routes monitored based on recommendations from the Northeast Nightjar Survey Coordinator. DEC has also conducted annual whip-poor-will surveys since 2016 at a small number of Wildlife Management Areas with active habitat management to create young forest habitat.

Trends Discussion *(insert map of North American/regional distribution and status):*

Because it is largely nocturnal, the whip-poor-will is not well censused by standard monitoring programs. Though relative abundance on Breeding Bird Survey routes is very low, results are still significant for several areas and trends are declining in most areas. For Eastern BBS routes, long-term trends are -1.9% per year for 1966-2021 and short-term trends are 0.91% per year for 2011-2021; however the latter trend is not significant (Sauer et al. 2020). Trends are also declining on BBS routes in New York routes, but relative abundance is very low and caution regarding use of the data is advised. Combined routes in Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Delaware, and Maryland showed a declining trend of -1.75% per year for 1966-2021. Throughout its range, the species has declined by 69% (Partners In Flight).

Data collected in five second-round Breeding Bird Atlases suggest that the number of atlas blocks occupied by the whip-poor-will has declined by roughly 50% in the last twenty years in the following states or provinces: Ontario, New York, Vermont, Pennsylvania, and Maryland (Hunt 2008).

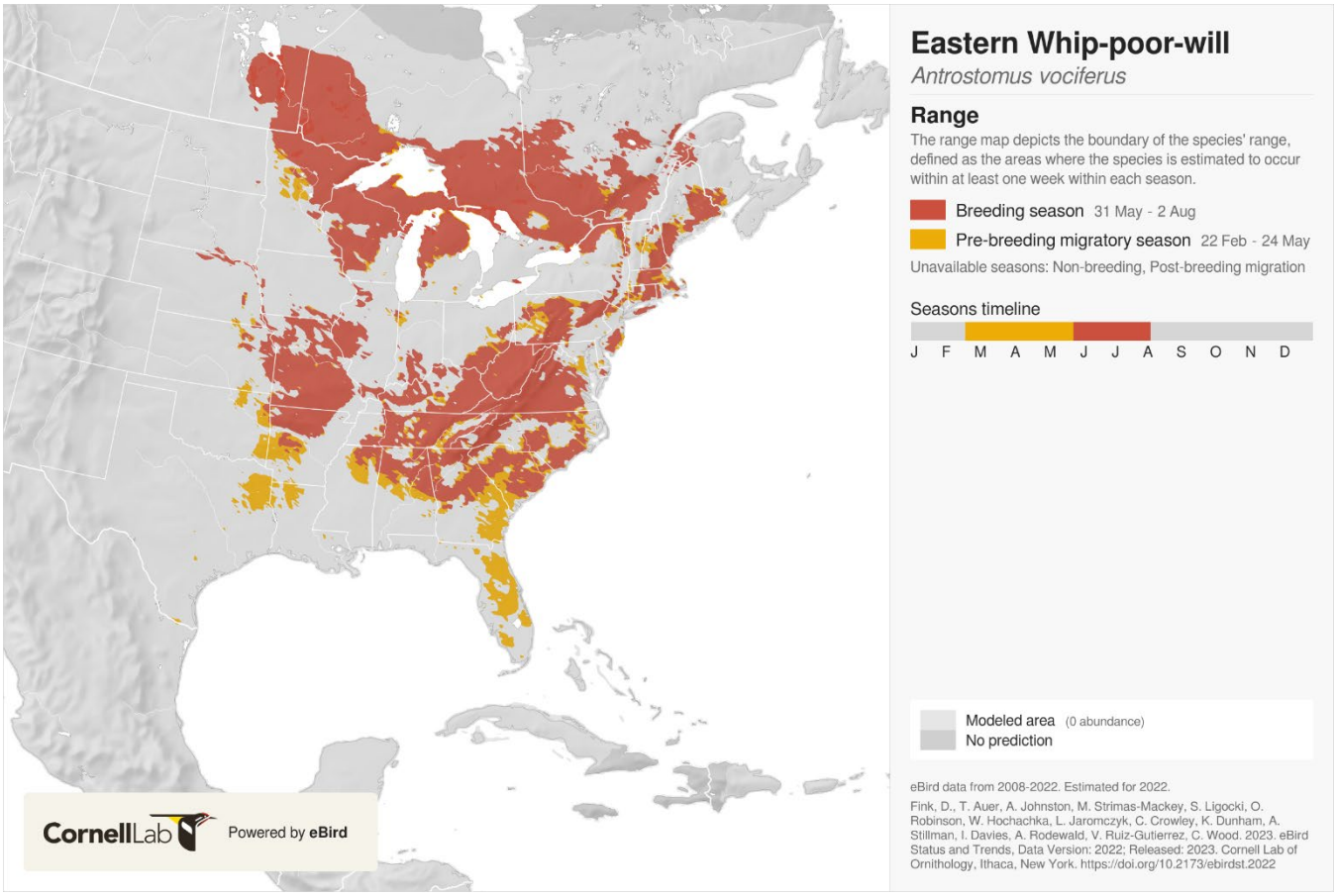

Figure 1. Eastern whip-poor-will distribution in North America (eBird 2022)

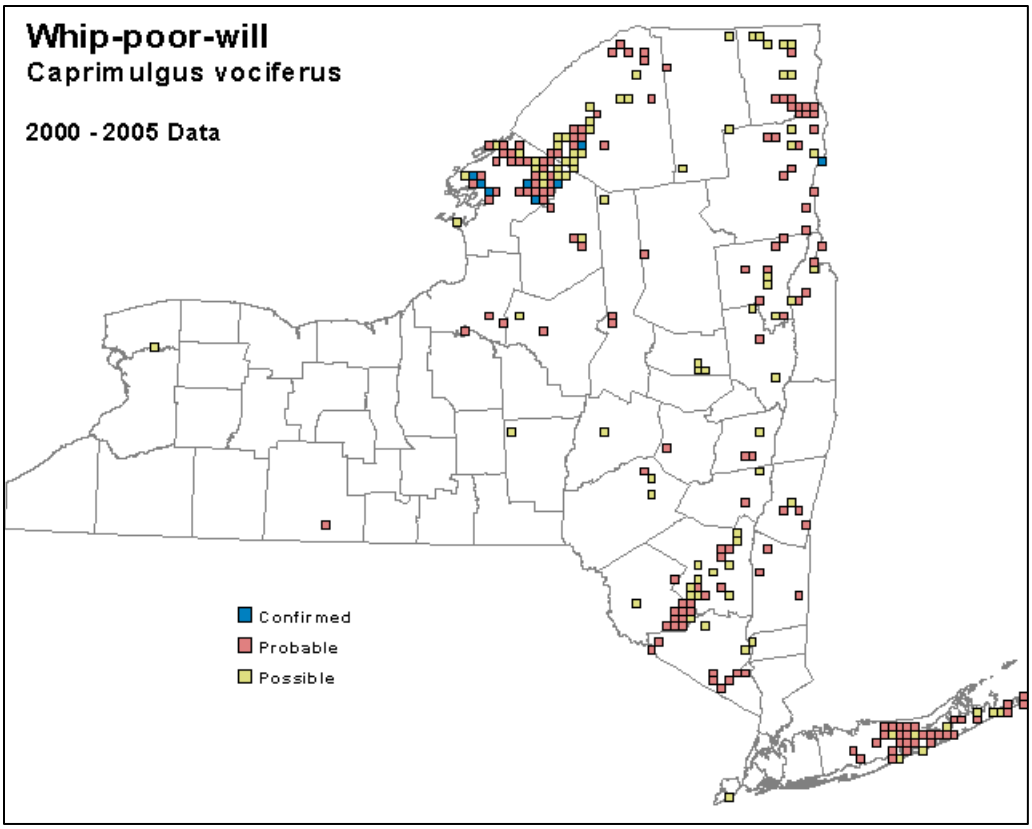

Figure 2. Eastern whip-poor-will occurrence in New York State during the second Breeding Bird Atlas (McGowan and Corwin 2008).

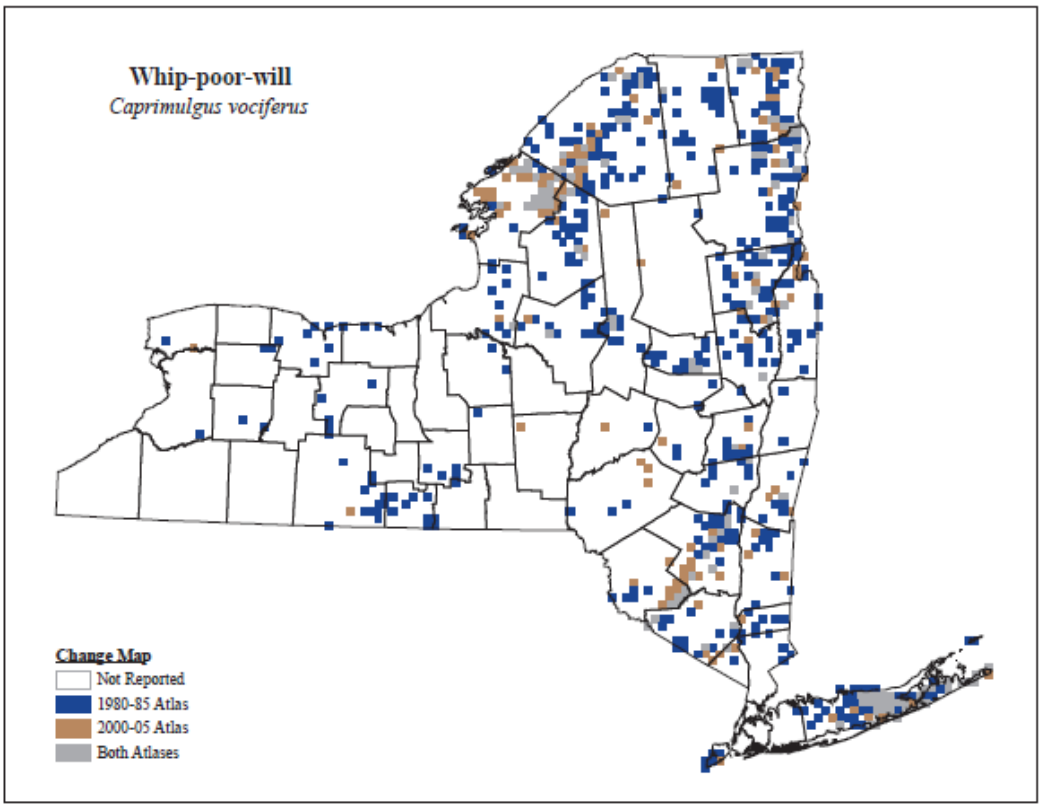

Figure 3. Change in Eastern whip-poor-will occurrence in New York State between the first Breeding Bird Atlas and the second Breeding Bird Atlas (McGowan and Corwin 2008).

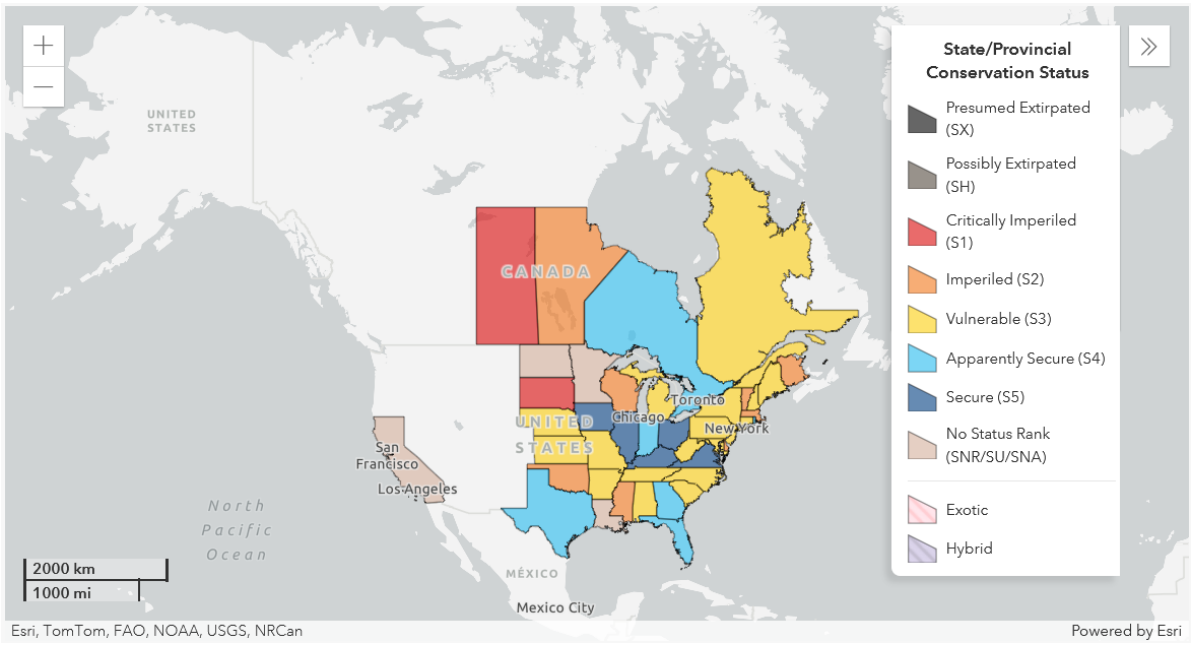

Figure 4. Conservation status of Eastern whip-poor-will in North America (NatureServe 2023).

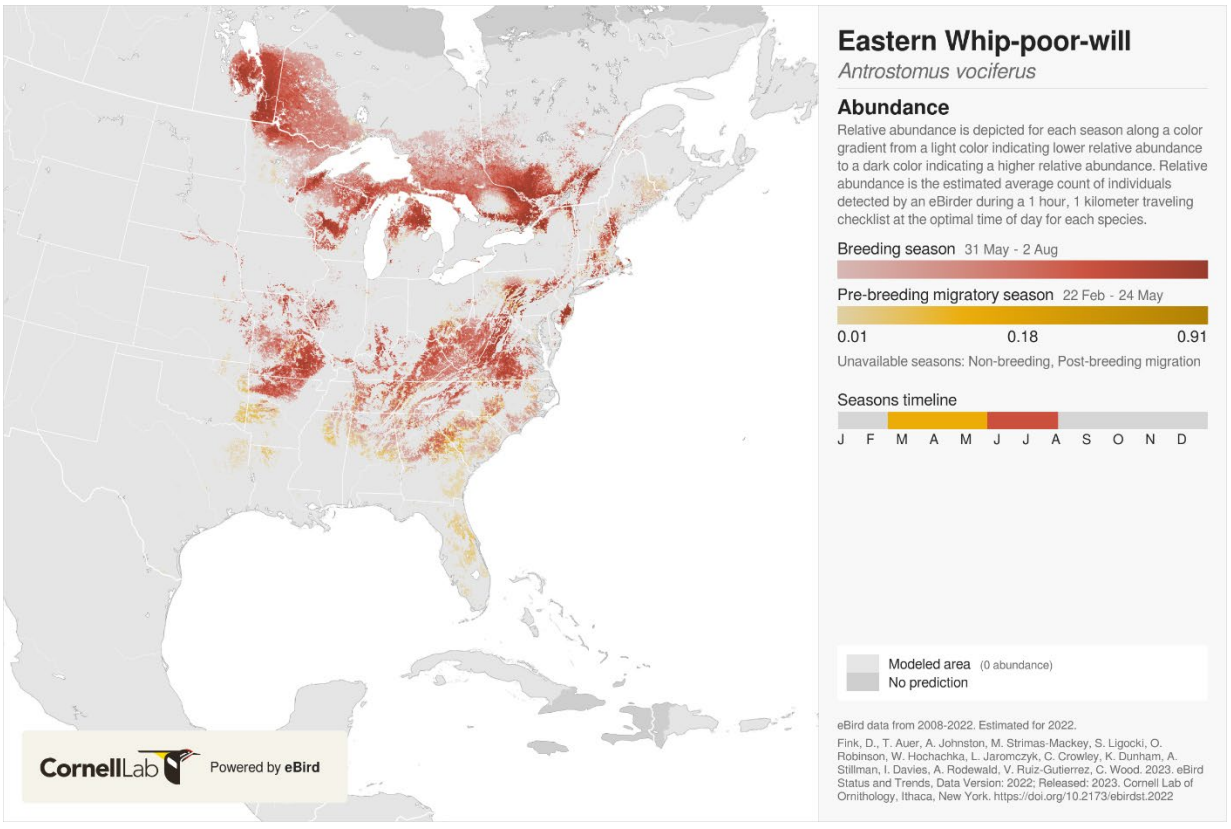

Figure 5. Eastern whip-poor-will abundance in North America (eBird 2022).

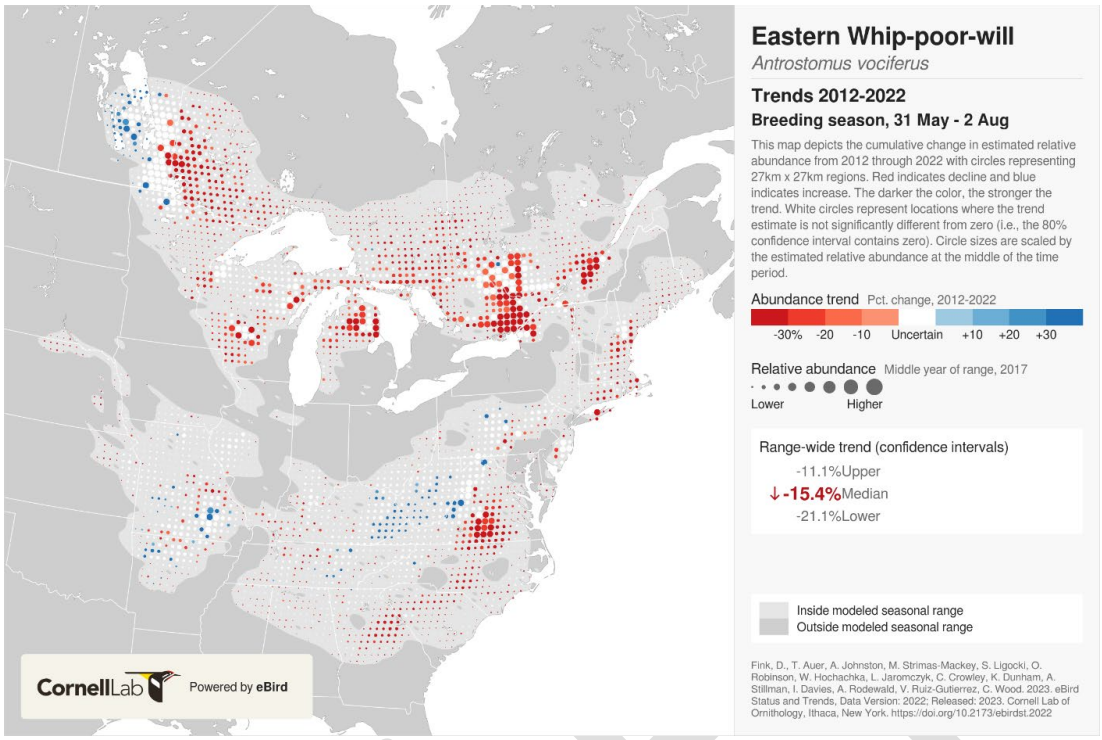

Figure 6. Eastern whip-poor-will trends in North America (eBird 2022).

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

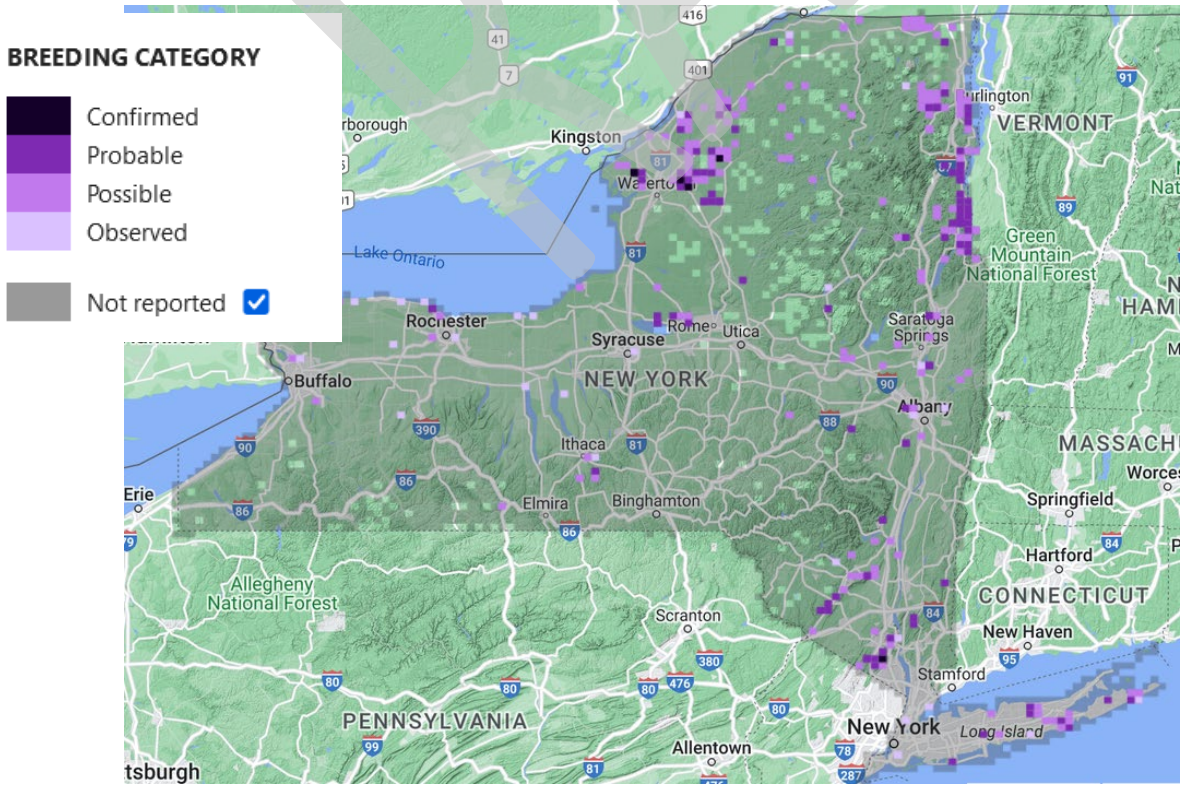

Figure 7. Records of Eastern whip-poor-will in New York (NYS BBA III Map, 2023)

Years	# of Records	# of BBA Blocks	% of State
Pre-1980			
1980-1985		564	11%
2000-2005		241	5%
2020-2023		235	4%

Table 1. Records ofeEastern whip-poor-will in New York.

Details of historic and current occurrence:

Surveys conducted in 2007 by NYSOA's monitoring program identified areas of concentration: Connetquot River State Park (Suffolk County), Fort Drum (Jefferson County), Gadway Sandstone Pavement Barrens (Clinton County), Jefferson County Alvar Communities (Jefferson County), Rocky Point NRMA (Suffolk County), and the Shawangunk Ridge (Ulster/Orange/Sullivan County). Preliminary results from NYSDEC's 2013 monitoring confirmed continued concentrations at: Connetquot River State Park, Gadway Sandstone Pavement Barrens, Jefferson County Alvar Communities, Rocky Point NRMA, and the Shawangunk Ridge. The Fort Drum area in Jefferson County was not monitored in 2013.

The first Breeding Bird Atlas (BBA) (1980-85) documented occupancy in 564 blocks, 11% of the survey blocks statewide (Andrle and Carroll 1988). The second BBA (2000-05) documented occupancy in 241 blocks, 5% of the survey blocks statewide, a decline of 57% since the first atlas (McGowan and Corwin 2008). Areas that appear to have been lost during the years between the two Atlas projects include virtually all of western New York including the southern Lake Ontario Plain and the southern tier, and northern New York areas peripheral to the Adirondacks.

The third BBA (2020-25) is currently underway and utilizes a different number and layout of survey blocks across New York, making direct comparison with the first two Atlases difficult. There were 5,333 blocks in the first and second BBAs, and there are 5,710 blocks in the current BBA. To date, Eastern whip-poor-will has been documented in 235 blocks, 4% of survey blocks statewide during the third BBA (NYS BBA III Overview, 2023).

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Core	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

1. Oak-Pine Forest
2. Oak Forest
3. Pine Barrens
4. Coastal Coniferous Barrens
5. Native Barrens and Savanna
6. Mixed Northern Hardwoods

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
No	No	Stable	

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

Whip-poor-wills are present in a variety of habitats but are absent from extensively forested areas. Occupied areas provide both open habitats for aerial foraging and protected areas for nesting and roosting. In New York, whip-poor-will is most abundant in barrens communities (Medler 2008). Lower densities occur where open areas are found adjacent to second-growth forests, such as along power line cuts, quarries, and fields (Medler 2008).

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	Choose an item.	No	Yes	Choose an item.	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

Much of the biology of the whip-poor-will remains unstudied, largely due to its nocturnal activity and cryptic behavior and plumage. No information is available on the species' age at first breeding and there are no estimates of lifetime reproductive success. About 60% of 20 pairs in a Kansas population reared two broods/season. This compares with 20% (n = 5 pairs) in an Ontario population (Mills 1985). This difference may be a reflection of the smaller sample size in the Ontario study, but more likely occurs because of shorter breeding season at higher latitudes. Akresh and King (2016) documented 63% nest survival in Massachusetts. One banded male was recaptured 15 years later (Cink 2002).

Most predation is of eggs and young. As a ground-nesting species, this species especially vulnerable to nest predators.

VI. Threats *(from NY 2015 SWAP or newly described):*

Threats to NY Populations	
Threat Category	**Threat**
1. Residential & Commercial	Housing & Urban Areas (habitat loss to development)
2. Agriculture & Aquaculture	Perennial & Non-Timber Crops (habitat loss to agriculture)

3. Natural System Modifications	Other Ecosystem Modifications (succession of open areas)
4. Invasive & Other Problematic Species	Problematic Native Species (increased predation from urbanization)
5. Pollution	Industrial & Military Effluents (industrial pollution)
6. Pollution	Agriculture & Forestry Effluents (pesticide use)
7. Pollution	Excess Energy (light)
8. Natural Systems Modifications	Fire & Fire Suppression (suppression)
9. Invasive & Other Problematic Species	Invasive Non-Native/Alien Species (domestic cats)
10. Natural Systems Modifications	Other Ecosystem Modifications (decline of flying insect populations)
11. Climate Change & Severe Weather	Habitat Shifting & Alteration

Habitat loss is believed to be one of the main drivers of whip-poor-will population declines. General threats to the early successional forest/shrubland bird suite in New York include reversion of shrublands to forest; loss of small dairy farms; fire suppression; more intensive agriculture that results in loss of hedgerows, shrubs, and shrub wetlands; reversion of young forest habitat to mature forest; inadequate amounts of forest management that includes even aged and heavy partial removal; and the erroneous public perception that forest management is harmful to birds (NYSDEC 2005). Whip-poor-wills require open forests next to openings such as fields or powerlines; they nest in shaded forest areas and forage in the open areas (Cink et al. 2017, Spiller 2019). Most ornithologists agree that less of the available breeding range of the species is occupied now than previously. Urbanization, along with resulting increases in predation and loss of feeding habitat, is thought to be responsible for loss of this bird in southeastern Pennsylvania (Santner 1992). The changes in land cover/land use and the loss of suitable, adjacent breeding and foraging habitat in New York could explain the disappearance of whip-poor-wills in the central, western, and Adirondack regions during the second BBA (Medler 2008).

In addition to habitat loss, reduced prey availability is increasingly believed to be a driver of whip-poor-will population declines. Whip-poor-will's main food source is large, nocturnal moths. New research has documented insect population declines in the Northeast, demonstrated a link between insect declines and aerial insectivorous bird declines, and indicated that whip-poor-wills now consumer smaller prey items than they did historically (Wagner 2012, Cink et al. 2017, English et al. 2017, Young et al. 2017, English et al. 2018, Sánchez-Bayo and Wyckhuys 2019, Spiller and Dettmers 2019, Wagner 2020).

In an assessment of vulnerability to predicted climate change conducted by the New York Natural Heritage Program, whip-poor-will was identified as a second-priority species whose sensitivity should be assessed in the future (Schlesinger et al. 2011). The National Audubon Society's climate vulnerability assessment found that, under the +3.0 °C scenario, the Eastern whip-poor-will had an overall species vulnerability status of "high" with climate-related threats including habitat loss from increased wildfire and urbanization as well as decreased nesting success due to spring heat waves and heavy rainfall (National Audubon Society 2019).

Because this species flies low to the ground while foraging along roads, it is vulnerable to road mortality. It has been suggested that the paving of formerly-dirt country roads has increased mortality because vehicles can travel faster on paved roads (Cink 2002).

Not much is known about migration patterns and winter habitat, but researchers are beginning to explore these data for a better understanding of full annual-cycle threats (Culp et al. 2017, English et al. 2017, Ross and Driscoll 2020).

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

Whip-poor-will is protected under the Migratory Bird Treaty Act of 1918. It is listed as a Species of Special Concern.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

Maintaining a mosaic of open and mid-successional habitats through active habitat management including clearcutting, thinning, mowing, prescribed burning, and retention of residual deciduous trees within forest and especially shrubland habitats should benefit this species. Best Management Practices have been developed for managing whip-poor-will habitat in New Hampshire and various forest and shrubland management practices have been evaluated in Massachusetts (Garlapow 2007, Hunt 2013, Akresh and King 2016). These studies focused on barrens habitat, and a better understanding of all forest types utilized in New York may provide information that would facilitate forest management beneficial to whip-poor-will. Conservation actions following IUCN taxonomy are categorized in the table below.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
1. Land/Water Protection	Site/Area Protection
2. Land/Water Protection	Resource/Habitat Protection
3. Land/Water Management	Site/Area Management
4. Land/Water Management	Invasive/Problematic Species Control
5. Land/Water Management	Habitat an Natural Process Restoration
6. Education and Awareness	Training
7. Education and Awareness	Awareness and Communications
8. Law and Policy	Policies and Regulations

Table 3. Recommended conservation actions for eastern whip-poor-will.

The Comprehensive Wildlife Conservation Strategy (NYSDEC 2005) includes recommendations for early-successional forest/shrubland birds, which includes whip-poor-will.

Curriculum development:

____ Educate public to the benefits and need for early successional habitat including even-aged management.

Easement acquisition:

____ Implement a Landowner Incentive Project for early successional birds that will direct $600,000 per year at conserving and creating habitat for early successional forest/shrub birds.

Habitat management:

____ Work with Utilities to manage ROWs in a manner that will provide for maximum benefit to early successional species.

____ Double the amount of early successional forest and shrub habitat on public and private land through sound planned management.

____ Increase early successional management on public and private lands.

____ Maintain, restore, and enhance fire adapted ecosystems. Increase use of prescribed fire in fire adapted ecosystems.

____ Promote management of Utility ROWs that will provide the maximum benefit to shrub bird species.

Habitat monitoring:

____ Precisely monitor trends of all species, in particular those that are not currently adequately monitored.

____ Complete an inventory and analysis for high priority focus species that identifies core habitats (highest abundance) and geographic areas (where appropriate).

Habitat research:

____ Determine effects of viburnam leaf beetle on early successional forest/shrub habitats and species utilizing them.

Population monitoring:

____ Encourage full completion of BBS routes.

Statewide management plan:

____ Develop a management plan that provides guidance on maintaining, enhancing and restoring early successional forest/shrub bird species.

Other actions:

____ Develop better mechanisms for directing federal (NRCS and USFWS) funding programs into early successional forest/shrub habitats.

____ Develop BMPs for forest management in riparian areas that recognize the critical need maintain, enhance and restore early successional forest/shrub habitat in these areas.

VII. References

Akresh, M.E., and D.I. King. 2016. Eastern whip-poor-will breeding ecology in relation to habitat management in a pitch pine–scrub oak barren. Wildlife Society Bulletin 40(1):97–105.

BirdLife International. 2021. *Antrostomus vociferus*. *The IUCN Red List of Threatened Species* 2021: e.T22736393A152619806. https://dx.doi.org/10.2305/IUCN.UK.2021-3.RLTS.T22736393A152619806.en. Accessed on 28 December 2023.

Corwin, K. 2012. NYSDEC SWAP 2015 Species Status Assessment for Eastern whip-poor-will. Prepared on August 2, 2012. Revised December 9, 2020.

Culp, L. A., E. B. Cohen, A. L. Scarpignato, W. E. Thogmartin, and P. P. Marra. 2017. Full annual cycle climate change vulnerability assessment for migratory birds. Ecosphere 8(3):e01565. 10.1002/ecs2.1565

Eastman, J. 1991. Whip-poor-will. Pages 252-253 *in* The atlas of breeding birds of Michigan. (Brewer, R., G. A. McPeek, and R. J. Adams, Jr., Eds.) Michigan State Univ. Press, East Lansing.

English, P. A., A. M. Mills, M. D. Cadman, A. E. Heagy, G. J. Rand, D. L. Green, and J. J. Nocera. Tracking the migration of a nocturnal aerial insectivore in the Americas. 2017. BMC Zoology 2:5. DOI 10.1186/s40850-017-0014-1

English, P., J. Nocera, B. Pond, and D. Green (2018). Stable isotopes from museum specimens may provide evidence of long-term change in the trophic ecology of a migratory aerial insectivore. Frontiers in Ecology and Evolution 6:14.

English, P., J. Nocera, B. Pond, and D. Green. 2017. Habitat and food supply across multiple spatial scales influence the distribution and abundance of a nocturnal aerial insectivore. Landscape Ecology 32:343–359.

Fink, D., T. Auer, A. Johnston, M. Strimas-Mackey, S. Ligocki, O. Robinson, W. Hochachka, L. Jaromczyk, C. Crowley, K. Dunham, A. Stillman, I. Davies, A. Rodewald, V. Ruiz-Gutierrez, C. Wood. 2023. eBird Status and Trends, Data Version: 2022; Released: 2023. Cornell Lab of Ornithology, Ithaca, New York. https://doi.org/10.2173/ebirdst.2022

Garlapow, R.M. 2007. Whip-poor-will prey availability and foraging habitat: implications for management in pitch pine/scrub oak barrens habitats. Thesis, University of Massachusetts Amherst, Amherst, USA.

Hostetler, J.A., Sauer, J.R., Hines, J.E., Ziolkowski, D., and Lutmerding, M., 2023, The North American Breeding Bird Survey, Analysis Results 1966 - 2022: U.S. Geological Survey data release, https://doi.org/10.5066/P9IU1UZ6.

Hunt, P.D. 2008. 2008 Northeast Nightjar Survey: 2008 summary and 2007 data analysis. Report to Nuttall Ornithological Club. Audubon Society of New Hampshire, Concord.

Hunt, P.D. 2013. Habitat use by the eastern whip-poor-will (*Antrostomus vociferus*) in New Hampshire, with recommendations for management. Report to the New Hampshire Fish and Game Department, Nongame and Endangered Species Program. New Hampshire Audubon, Concord, USA.

Medler, M.D. 2008. Whip-poor-will, Caprimulgus vociferous. Pages 310-11 in The second atlas of breeding birds in New York State (K.J. McGowan and K. Corwin, eds.). Cornell University Press, Ithaca, NY.

Mills, A. M. 1985. The influence of moonlight on the behavior of goatsuckers (Caprimulgidae). Master's Thesis. Carleton Univ. Ottawa, ON.

National Audubon Society. 2019. How climate change will reshape the range of the Eastern whip-poor-will. Online: https://www.audubon.org/field-guide/bird/eastern-whip-poor-will#bird-climate-vulnerability.

National Audubon Society. 2019. The Climate Report: Eastern-Whip-poor-will. Online: https://climate2014.audubon.org/birds/whip-p1/eastern-whip-poor-will.

NatureServe.2023. NatureServe Explorer. Page last published 5 January 2024. https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.871696/Antrostomus_vociferus. Accessed 9 January 2024.

New York State Breeding Bird Atlas III Map (NYS BBA III Map). 2023. https://ebird.org/atlasny/explore. Accessed 9 January 2024.

New York State Breeding Bird Atlas III Overview (NYS BBA III Overview). 2023. New York Checklist Overview. https://ebird.org/atlasny/state/US-NY. Accessed 9 January 2023.

New York State Department of Environmental Conservation (NYSDEC). 2005. New York State Comprehensive Wildlife Conservation Strategy. Albany, NY. https://extapps.dec.ny.gov/docs/wildlife_pdf/cwcs2005.pdf

North American Bird Conservation Initiative (NABCI). 2016. State of North America's Birds. Online: https://www.stateofthebirds.org/2016/resources/species-assessments/

Partners in Flight. 2021. Avian Conservation Assessment Database, version 2021. http://pif.birdconservancy.org/ACAD. Accessed on 27 December 2023.

Rosenberg, K. V., A. M. Dokter, P. J. Blancher, J. R. Sauer, A. C. Smith, P. A. Smith, J. C. Stanton, A. Panjabi, L. Helft, M. Parr, and P. P. Marra. 2019. Decline of North American avifauna. Science 366:120-124. DOI: 10.1126/science.aaw1313

Rosenberg, K. V., J. A. Kennedy, R. Dettmers, R. P. Ford, D. Reynolds, J.D. Alexander, C. J. Beardmore, P. J. Blancher, R. E. Bogart, G. S. Butcher, A. F. Camfield, A. Couturier, D. W. Demarest, W. E. Easton, J.J. Giocomo, R.H. Keller, A. E. Mini, A. O. Panjabi, D. N. Pashley, T. D. Rich, J. M. Ruth, H. Stabins, J. Stanton, T. Will. 2016. Partners in Flight Landbird Conservation Plan: 2016 Revision for Canada and Continental United States. Partners in Flight Science Committee. 119 pp. Available online: https://partnersinflight.org/resources/the-plan/

Ross, A.E. and J.M. Driscoll. 2020 (in prep and available 12/12/2020). Wintering Ground Habitat Selection by the Eastern Whip-poor-will. Available online at https://digitalcommons.wpi.edu/mqp-all/7250/

Sánchez-Bayo, F. and K.A.G. Wyckhuys. 2019. Worldwide decline of the entomofauna: A review of its drivers. Biological Conservation 232: 8-27.

Santner, S. 1992. Whip-poor-will. Pages 172-173 *in* Atlas of breeding birds in Pennsylvania. (Brauning, D. W., Ed.) Univ. of Pittsburgh Press, Pittsburgh, PA.

Sauer, J. R., D. K. Niven, J. E. Hines, D. J. Ziolkowski, Jr, K. L. Pardieck, J. E. Fallon, and W. A. Link. 2019. The North American Breeding Bird Survey, Results and Analysis 1966 - 2019. Version 2.07.2019 USGS Patuxent Wildlife Research Center, Laurel, MD

Schlesinger, M.D., J.D. Corser, K.A. Perkins, and E.L. White. 2011. Vulnerability of at-risk species to climate change in New York. New York Natural Heritage Program, Albany, NY.

Spiller, K. 2019. Eastern Whip-poor-will Habitat Associations in Fort Drum, NY. Masters Thesis. 797. https://scholarworks.umass.edu/masters_theses_2/797

Spiller, K. J. and R. Dettmers. 2019. Evidence for multiple drivers of aerial insectivore declines in North America. The Condor 121:1-13.

Therres, G.D. 1999. Wildlife species of regional conservation concern in the northeastern United States. Northeast Wildlife 54:93-100.

Treyger, S.M. and M.F. Burger. 2017. Forest management for New York birds: a forester's guide. Audubon, NY.

U.S. Fish and Wildlife Service. 2021. Birds of Conservation Concern 2021. United States Department of the Interior, U.S. Fish and Wildlife Service, Migratory Birds, Falls Church, Virginia. https://www.fws.gov/media/birds-conservation-concern-2021

Wagner, D. L. 2012. Moth decline in the northeast United States. News of the Lepidopterists' Society 54:52–56.

Wagner, D. L. 2020. Insect declines in the Anthropocene. Annual Review of Entomology 65:457-480. https://doi.org/10.1146/annurev-ento-011019-025151

Young, B. E., S. Auer, M. Ormes, G. Rapacciuolo, D. Schweitzer, and N. Sears (2017). Are pollinating hawk moths declining in the northeastern United States? An analysis of collection records. PLoS ONE 12:e0185683.

Originally prepared by	Kimberly Corwin
Date first prepared	2 August 2012
First revision	9 December 2020, Katherine Yard and Beth Cooper
Latest revision	9 January 2024, Beth Cooper

Species Status Assessment

Common Name: Forster's tern **Date Updated:** December 20, 2023

Scientific Name: *Sterna fosteri* **Updated By:** M. Oberkircher

Class: Aves

Family: Laridae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

A "marsh tern," this species breeds primarily in fresh, brackish, and saltwater marshes. It was first recorded breeding in New York in 1981 on Hewlett Hassock in Nassau County and the first Breeding Bird Atlas (1980-85) documented a single breeding pair in 1984. By the second Breeding Bird Atlas in 2000-05, Forster's tern was confirmed breeding in 8 survey blocks. In 2022, Long Island Colonial Waterbird surveys documented 536 pairs at 12 sites. Forster's tern winter further north than any other tern species.

I. Status

a. Current legal protected Status

i. **Federal:** Not Listed **Candidate:** No

ii. **New York:** SGCN

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** S1 **Tracked by NYNHP?:** Yes

Other Ranks:

-IUCN Red List: Least Concern

-Partners in Flight: 13 out of 20

Status Discussion:

This species was recently established (1981) as a breeder in salt marshes on the south shore of Long Island where it is now locally common. Still rare in spring on Long Island away from breeding areas; rare to uncommon spring migrant on the Great Lakes; locally common fall migrant on the coast, and locally uncommon to fairly common fall migrant on the Great Lakes and lower Hudson River; rare on other upstate lakes; casual in winter. Forster's tern is ranked as Critically Imperiled in New York and in Massachusetts. It is ranked as Apparently Secure in New Jersey.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Increasing	Stable			
Northeastern US	Yes	Unknown	Unknown		Watchlist	No
New York	Yes	Increasing	Stable			Yes
Connecticut	No	Choose an item.	Choose an item.			No

Massachusetts	Yes	Unknown	Unknown			No
New Jersey	Yes	Unknown	Unknown			No
Pennsylvania	No	Choose an item.	Choose an item.			No
Vermont	No	Choose an item.	Choose an item.			No
Ontario	Yes	Unknown	Unknown			No
Quebec	No	Choose an item.	Choose an item.			No

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

Forster's tern is surveyed for during the Long Island Colonial Waterbird Survey.

Trends Discussion *(insert map of North American/regional distribution and status):*

Forster's tern was first documented breeding in New York in 1981 (Zarusky 1981). The population has greatly expanded since then, with 536 pairs being recorded at 12 sites during the Long Island Colonial Waterbird survey in 2022. The highest count was recorded in 2013 with 674 pairs. The state's breeding bird atlases documented the increase as well, recording 1 block with confirmed breeding during the first Atlas (1980-85), and 8 blocks with confirmed breeding during the second Atlas (2000-05), an increase of 400%.

The USGS breeding bird survey shows a trend of -0.9 while Christmas Bird Count data shows a slightly positive trend of 0.18 a year from 1993-2021 for Forster's tern. The eBird trends map for this species shows a -14.6% decline with an upper confidence interval of 4.3% and a lower interval of -27% in New York.

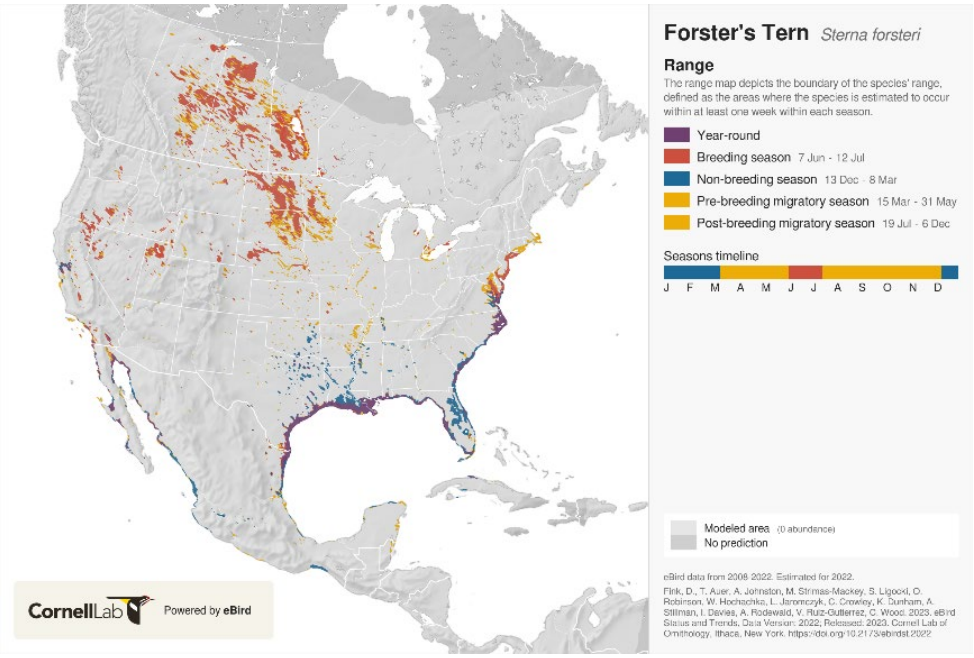

Figure 1. Global distribution of Forster's tern (eBird)

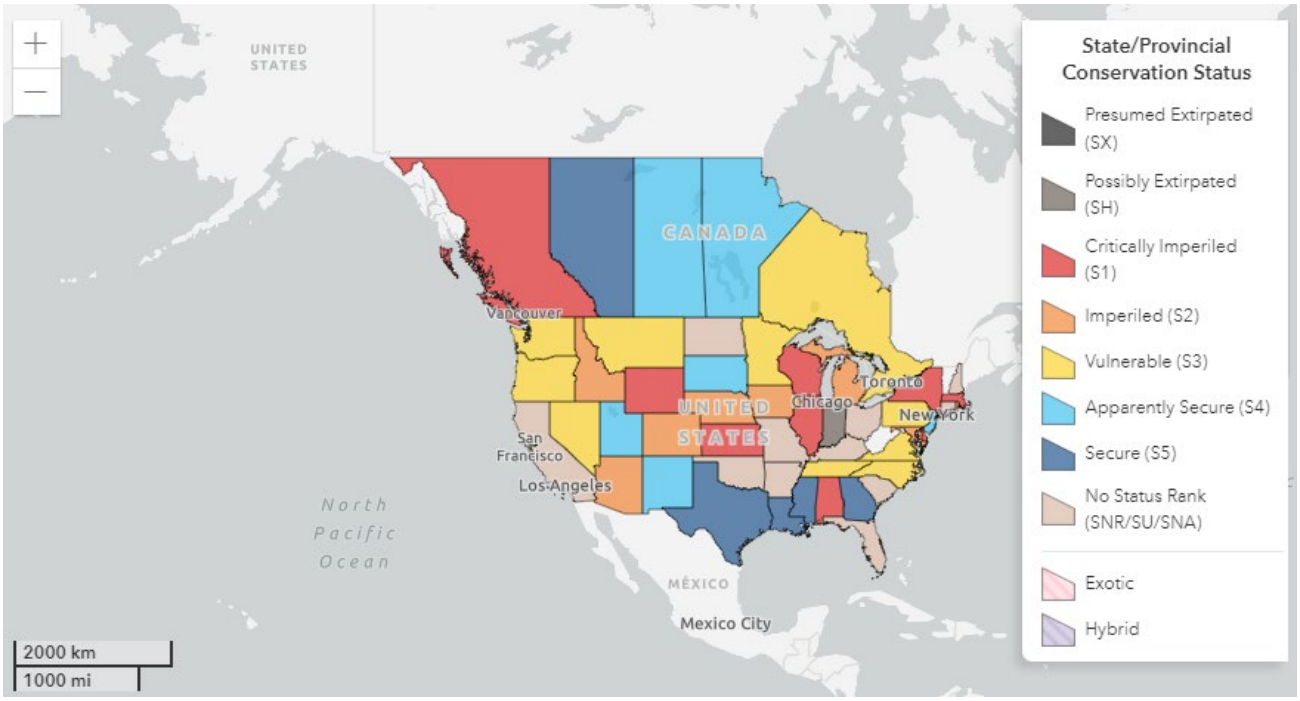

Figure 2. Conservation status of Forster's tern in North America (NatureServe)

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

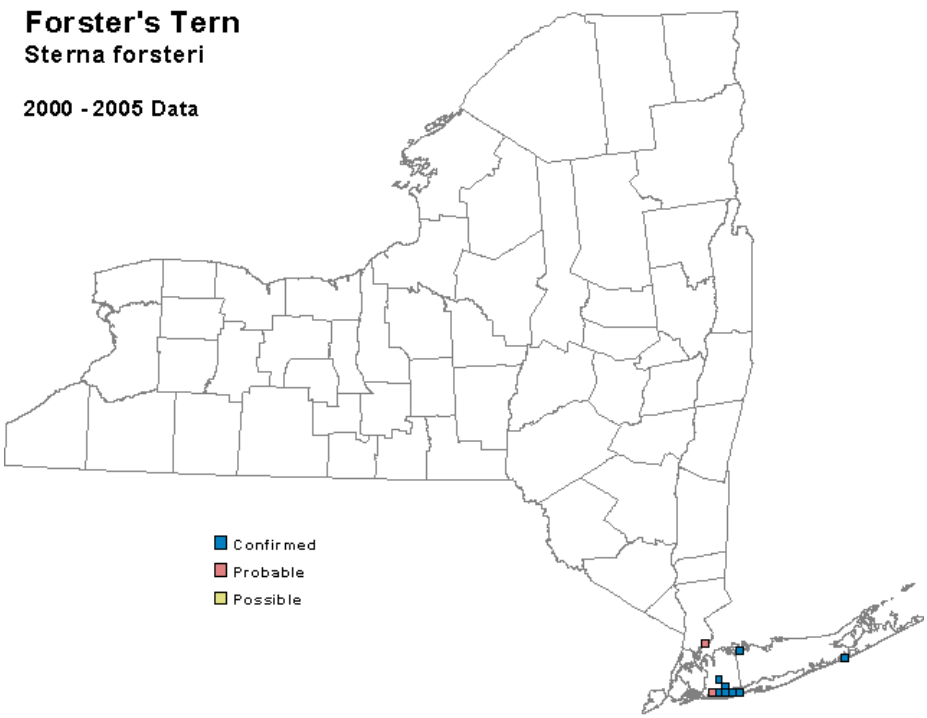

Figure 2. Forster's tern occurrence in New York State during the second Breeding Bird Atlas (McGowan and Corwin 2008).

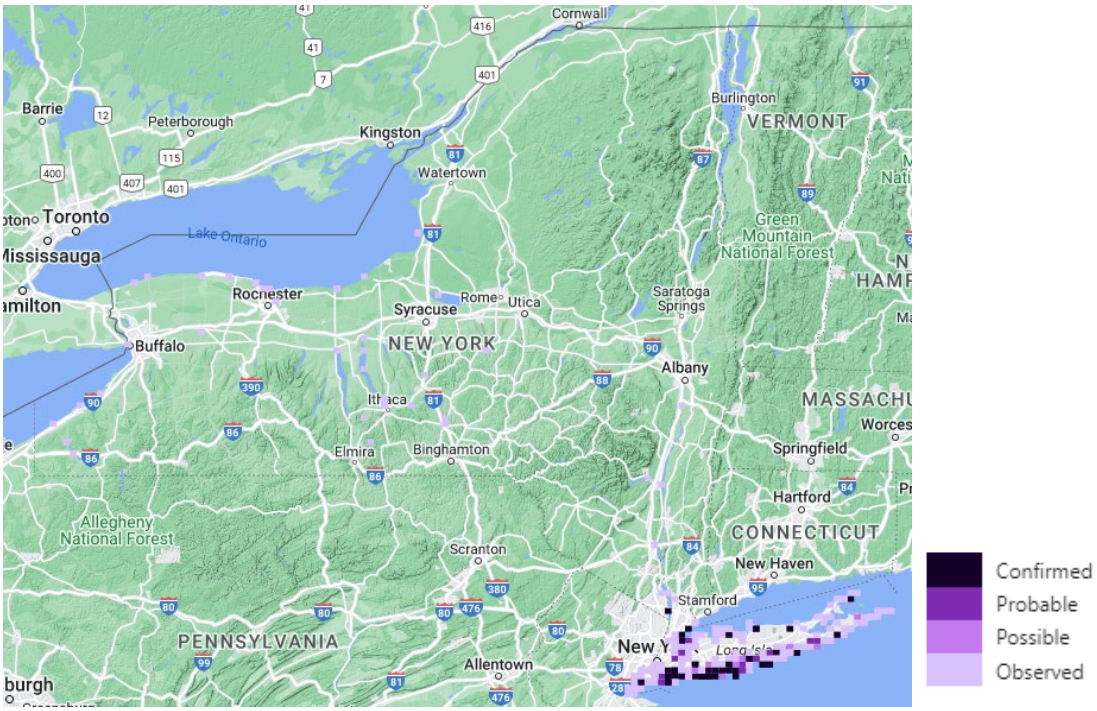

Figure 4. Records of Forster's tern in New York (NYS BBA III Map, 2023)

Years	# of Records	# of BBA Blocks	% of State
Pre-1980	0		0
1980-1985		2	<1
2000-2005		10	<1
2020-2023		52	<1

Table 1. Records of Forster's tern in New York.

Details of historic and current occurrence:

New York's first pair of Forster's terns was documented in 1981 at Hewlett Hassock, Nassau County (Zarudsky 1981). The first confirmed breeding was documented in 1985 at North Green Sedge Island, Nassau County (Peterson et al. 1985). Terns started nesting in a larger colony of 53 pairs at JoCo marsh in Jamaica Bay in 1992.

The Long Island Colonial Waterbird survey documented 12 active breeding colonies in 2022, all in the Town of Hempstead, Nassau County. The second Breeding Bird Atlas (2000-05) documented a 400% increase in occupancy from 1980-85 to 2000-05 (McGowan and Corwin 2008).

The third BBA (2020-25) is currently underway and utilizes a different number and layout of survey blocks across New York, making direct comparison with the first two Atlases difficult. There were 5,333 blocks in the first and second BBAs, and there are 5,710 blocks in the current BBA. Prior to January 2024, Forster's tern has been documented in 52 blocks, <1% of survey blocks statewide during the third BBA (NYS BBA III Overview, 2023).

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Peripheral	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

1. Freshwater Marsh
2. Estuarine, Brackish Intertidal, Tidal Wetland, High Marsh
3. Maritime Dunes

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
No	No	Declining	

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

A “marsh tern,” this species breeds primarily in fresh, brackish, and saltwater marshes, including marshy borders of lakes, islands, or streams. It is found more often in open, deeper portions of marshes, generally in wetlands with considerable open water and large stands of island-like vegetation and/or large mats of floating vegetation. Nesting frequently occurs on storm-deposited wrack material that accumulates within stands of cordgrass during winter storms and high-tide events.

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	Yes	No	Yes	No	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

First breeding may be when ≥2 yr old; probably breeds annually thereafter, but no specific evidence. No information on lifetime reproductive success. Limited information available for breeding success at colonies. Reproductive success for a particular location can be quite variable from year to year and is often dependent on weather and water levels. No information on annual adult survival rate. Maximum reported longevity is 15 years and 10 months.

There is little information on site fidelity; marsh colonies shift rapidly with changes in habitat suitability through changes in water level or vegetative growth but will recolonize when areas become suitable again. Strong ability to colonize newly created marsh-like habitats.

VI. Threats *(from NY 2015 SWAP or newly described):*

A combination of factors may contribute to the dramatic declines of coastal salt marsh observed on Long Island over the last 50 years (Hartig 2002). Sea-level rise and increased storms and flooding due to global climate change are a threat to the salt marsh habitat that Forster's terns require for nesting. Changes to hydrologic processes resulting from coastal development coupled with increases in sedimentary sulfide associated with human development are also believed to play primary roles in the decline of coastal salt marsh (Montalto and Steenhuis 2004, Kolker 2005).

Recreational boaters driving at high speeds or anchoring near salt marsh islands may disrupt terns from parental care of eggs and chicks, leaving them vulnerable to predation. Mortality due to hypothermia has been reported when young chicks fled to the water in response to observers near nesting locations (Hall 1989, Fraser 1994). Habitat loss due to erosion, fragmentation by ditching, and conversion of Spartina marsh into other vegetative types, especially invasive plants such as Phragmites, are threats to all salt-marsh breeding birds. Forster's tern is thought to be able to adapt to remaining available habitat or shift to other habitat types such as beaches, or man-made structures and rooftops.

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

Forster's tern is protected under the Migratory Bird Treaty Act.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

Develop coordinated and specific habitat management and restoration projects for identified focus areas. Protect existing salt marsh habitat. Identify strategies and develop a plan for slowing the loss of emergent tidal salt marsh to erosion, fragmentation, and invasive species.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) -
https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
1. Land/Water Protection	Site/Area Protection
2. Land/Water Protection	Resource/Habitat Protection
3. Land/Water Management	Site/Area Management

4. Land/Water Management	Invasive/Problematic Species Control
5. Land/Water Management	Habitat/Natural Process Restoration

Table 2. Recommended conservation actions for Forster's tern

VII. References

BirdLife International. 2018. *Sterna forsteri*. *The IUCN Red List of Threatened Species* 2018: e.T22694646A132564836. https://dx.doi.org/10.2305/IUCN.UK.2018-2.RLTS.T22694646A132564836.en. Accessed on 16 January 2024.

Corwin, K. 2012. NYSDEC SWAP 2015 Species Status Assessment for *Sterna forsteri*. Prepared on January 10, 2012. Revised by J. Murtaugh July 2014.

eBird data from 2008-2022. Estimated for 2022.Fink, D., T. Auer, A. Johnston, M. Strimas-Mackey, S. Ligocki, O. Robinson, W. Hochachka, L. Jaromczyk, C. Crowley, K. Dunham, A. Stillman, I. Davies, A. Rodewald, V. Ruiz-Gutierrez, C. Wood. 2023. eBird Status and Trends, Data Version: 2022; Released: 2023. Cornell Lab of Ornithology, Ithaca, New York. https://doi.org/10.2173/ebirdst.2022

Fraser, G.S. 1994. Feeding and nesting behaviors of the Forster's Tern on Lake Osakis, Minnesota. Master's thesis. North Dakota State Univ. Fargo.

Hall, J.A. 1989. Aspects of Forster's Tern (*Sterna forsteri*) reproduction on cobblestone islands in southcentral Washington. Northwest Sci. 63:90-95.

Kolker, A.S. 2005. The impacts of climate variability and anthropogenic activities on salt marsh accretion and loss on Long Island. Dissertation. State University of New York at Stony Brook. 759 pp.

McGowan, K.J. and K. Corwin, eds. 2008. The second Atlas of breeding birds in New York State. Cornell University Press, Ithaca, NY.

McNicholl, M. K., P. E. Lowther and J. A. Hall. 2001. Forster's Tern (*Sterna forsteri*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/595

Montalto, F.A., and T.S. Steenhuis. 2004. The link between hydrology and restoration of tidal marshes in the New York/ New Jersey estuary. Wetlands 24:414-425.

NatureServe. 2023. NatureServe Explorer. Page last published 12/1/2023. https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.101506/Sterna_forsteri. Accessed 1/2/2024.

New York Natural Heritage Program. 2023. Online Conservation Guide for *Sterna forsteri*. Available from: https://guides.nynhp.org/forsters-tern/. Accessed December 20, 2023.

New York State Breeding Bird Atlas III Overview (NYS BBA III Overview). 2023. New York Checklist Overview. https://ebird.org/atlasny/state/US-NY. Accessed 12/20/2023.

Peterson, D. M., T.S. Litwin, D.C. MacLean, and R.A. Lent. 1985. 1985 Long Island colonial waterbird and piping plover survey. Unpublished report. Cornell Lab of Ornithology, Seatuck Research Program, Islip, NY.

Zarudsky, J.D. 1981. Forster's tern breeding on Long Island. Kingbird 31:212-213.

Originally prepared by	Kimberley Corwin
Date first prepared	January 10, 2012
First revision	July 2014 (Jenny Murtaugh)
Latest revision	December 20, 2023 (M. Oberkircher)

Species Status Assessment

Common Name: Glossy ibis **Date Updated:** December 20, 2023

Scientific Name: *Plegadis falcinellus* **Updated By:** M. Oberkircher

Class: Aves

Family: Threskiornithidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

Glossy ibis occurs in a variety of wetland habitats including freshwater, saltwater, and brackish marshes. Nests are placed in dense vegetation at various heights.

This colonial waterbird has a short history in New York that includes sharp increases and recent declines. Glossy ibis was first reported breeding in New York in 1961 at Jamaica Bay. Numbers increased each year since that time to a maximum of 892 pairs in 1979. The first Breeding Bird Atlas (1980-85) documented occupancy in 47 survey blocks and the second Atlas (2000-05) documented occupancy in 38 survey blocks, a decline of 19%. Most of the state's population occurs on the coastal lowlands, but breeding has also been confirmed on Four Brothers Island in Lake Champlain.

I. Status

a. Current legal protected Status

i. **Federal:** Not Listed **Candidate:** No

ii. **New York:** SGCN

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** S2 **Tracked by NYNHP?:** Yes

Other Ranks:

-IUCN Red List: Least Concern

-Partners in Flight: 8 out of 20

Status Discussion:

Glossy ibis is a common to abundant local breeder on Long Island and Staten Island and has been found nesting on Four Brothers Island in Lake Champlain. Elsewhere in the state it is an uncommon to fairly common visitant. Glossy ibis is ranked as Imperiled in New York and Massachusetts. It is ranked as Critically Imperiled in Connecticut.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Increasing	Unknown			Choose an item.

Northeastern US	Yes	Unknown	Unknown		Watchlist (assessment priority)	No
New York	Yes	Declining	Stable			Yes
Connecticut	Yes	Unknown	Unknown		Special Concern	Yes
Massachusetts	Yes	Unknown	Stable			Yes
New Jersey	Yes	Unknown	Unknown		Special Concern	Yes
Pennsylvania	No	Choose an item.	Choose an item.			No
Vermont	No	Choose an item.	Choose an item.			No
Ontario	No	Choose an item.	Choose an item.			No
Quebec	No	Choose an item.	Choose an item.			No

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

Glossy ibis are surveyed every three years by the Long Island Colonial Waterbird Survey. The Harbor Herons Project conducts an interim survey in colonies in the New York/New Jersey Harbor annually and a full survey every three years.

Trends Discussion *(insert map of North American/regional distribution and status):*

Glossy ibis was first confirmed breeding in New York in 1961 at Jamaica Bay (Post 1962). Breeding was confirmed in multiple locations eastward to Gardiners Island by 1970. In 1979 there was a high count of 892 pairs breeding in New York City; this number declined to 250 by 2004. The Long Island Colonial Waterbird survey in 2010 documented 491 pairs breeding at 9 of the 29 previously occupied sites. A total of 192 nesting pairs were found in the 2022 Long Island Colonial Waterbird Survey at seven sites.

The species underwent a dramatic population increase up through the 1970s; declines have been noted from Virginia northward since then, especially in Virginia and Delaware with total declines of 35% in the 1980s (Andrews 1990). Elsewhere, colony comparisons of 1977 versus 1985, were as follows: Singaree-Shaw Cutoff, NJ, 900 breeding pairs versus 12; Stone Harbor, NJ, 840 versus 250; Pea Patch I., DE, 650 versus 18; Pearsall's Hassock, NY, 260 versus 14; Ruffle Bary, NY, 310 versus 0 (Andrews 1990). Between 1993-2021, the USGS breeding bird survey found an increasing trend of 9.3 for glossy ibis. The Christmas Bird Count also found a positive trend of 5.33% during the same time period. The abundance trend from eBird shows a decline of -5.2% with an upper confidence interval of 8.2% and a lower interval of -16% for breeding glossy ibis in NY from 2012-2022. Large annual fluctuations are observed in number of breeders, specific causes of which generally not known (Custer et al. 1980).

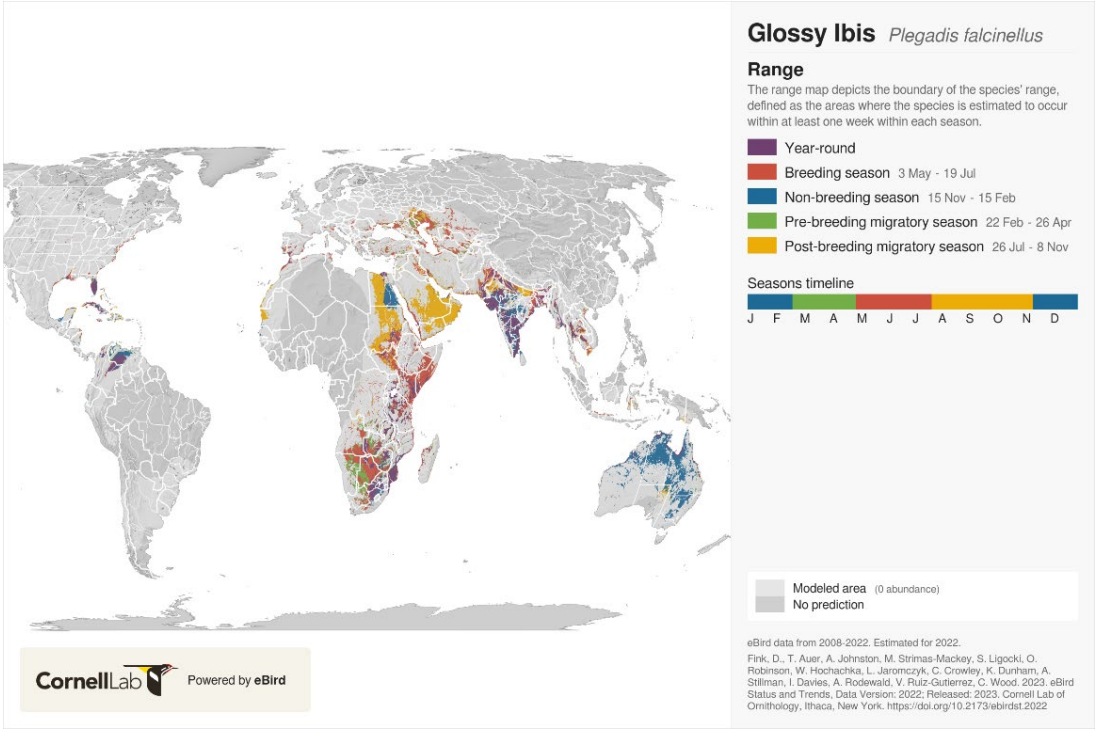

Figure 1. Global distribution of glossy ibis (eBird)

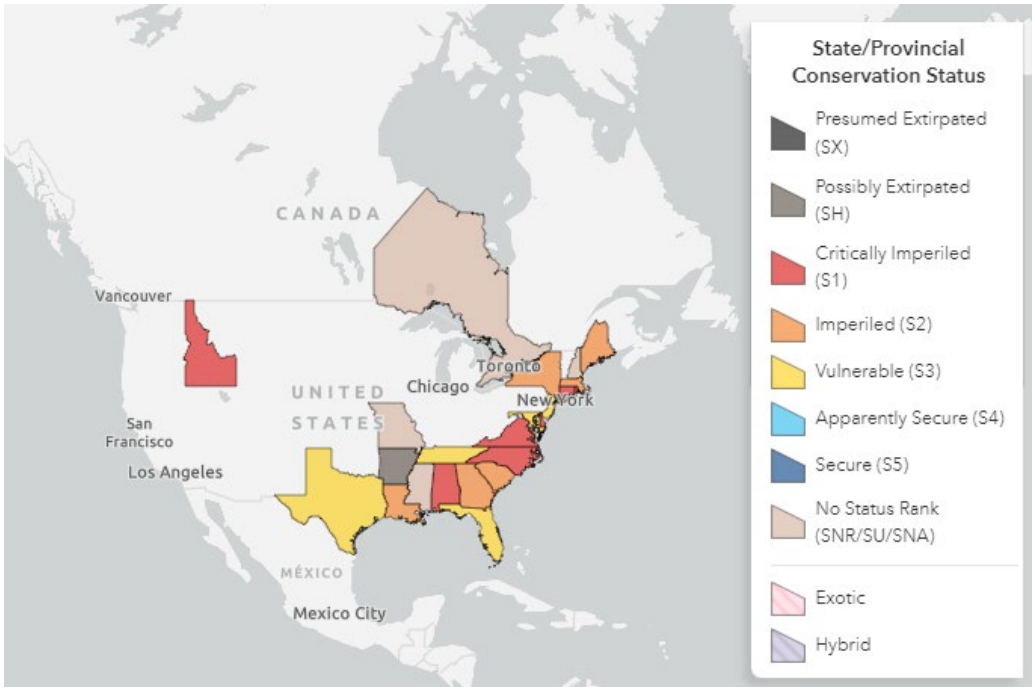

Figure 2. Conservation status of glossy ibis in North America (NatureServe)

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

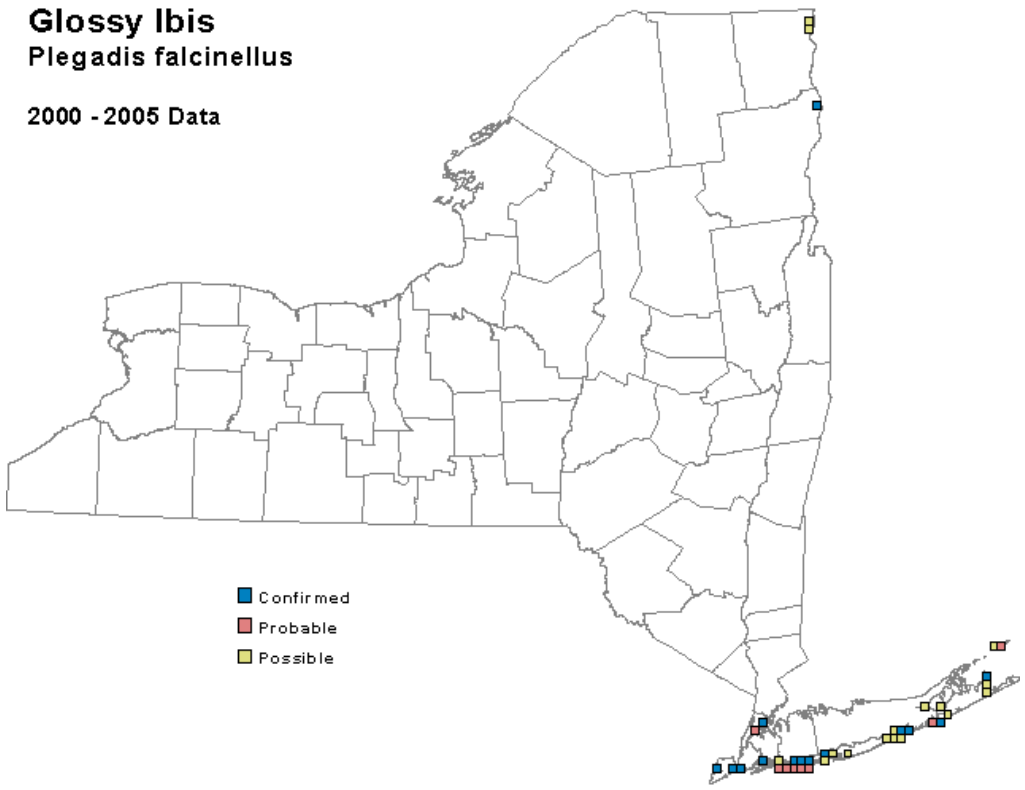

Figure 3. Glossy ibis occurrence in New York State during the second Breeding Bird Atlas (McGowan and Corwin 2008).

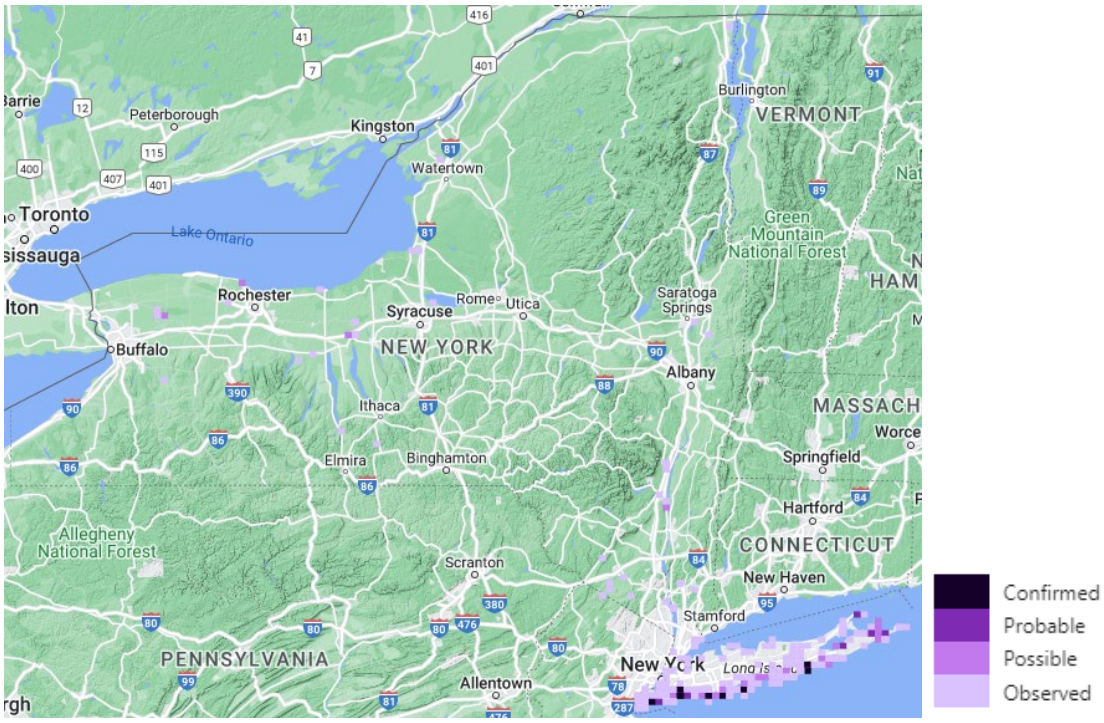

Figure 4. Records of glossy ibis in New York (NYS BBA III Map, 2023)

Years	# of Records	# of BBA Blocks	% of State
Pre-1980	_____	_____	_____
1980-1985	_____	47	<1
2000-2005	_____	38	<1
2020-2023	_____	33	<1

Table 1. Records of glossy ibis in New York.

Details of historic and current occurrence:

The state's first confirmed breeding came in 1961 with three nests at Jamaica Bay (Post 1962). In 1999, glossy ibis were found breeding on Four Brothers Island in Lake Champlain.

The Long Island Colonial Waterbird Survey conducted in 2022 found 192 pairs nesting at seven sites. The 2022 NYC Audubon Harbor Heron Survey recorded 89 pairs on two islands.

The first Breeding Bird Atlas (BBA) (1980-85) documented occupancy in 47 blocks, <1% of the survey blocks statewide (Andrle and Carroll 1988). The second BBA (2000-05) documented occupancy in 38 blocks, <1% of the survey blocks statewide, a decline of 19% since the first atlas (McGowan and Corwin 2008).

The third BBA (2020-25) is currently underway and utilizes a different number and layout of survey blocks across New York, making direct comparison with the first two Atlases difficult. There were 5,333 blocks in the first and second BBAs, and there are 5,710 blocks in the current BBA. As of January 2024, glossy ibis has been documented in 33 blocks, <1% of survey blocks statewide during the third BBA (NYS BBA III Overview, 2023).

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Peripheral	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

1. Freshwater Marsh
2. Wet Meadow/Shrub Swamp
3. Estuarine, Brackish Intertidal, Tidal Wetland, High Marsh
4. Summer-stratified Monomictic Lake
5. Estuarine, Freshwater Intertidal, Tidal Wetland, Freshwater Tidal Marsh

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
No	No	Declining	

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item

Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

Glossy Ibis breed in a variety of wetland habitats including fresh and saltwater marshes, swamps, mudflats, lagoons and mangroves, creating nests in shrubs and trees that are 2-5 m off the ground. It relies on established heronries for nesting sites and is adaptable to various situations. Nesting has occurred in a variety of situations including among deciduous shrubs and small trees, along highways, on isolated islands, and at some distance from water. They typically forage in areas with shallow water and gather to feed at salt marshes on Long Island.

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	Yes	No	Yes	No	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

Most individuals probably breed at 2 years of age, but data from marked birds is needed. One clutch is produced per season. Glossy ibis will re-lay if the first nest fails (Baynard 1913). Annual breeding success varies greatly (Hancock et al. 1992). In New York, 52% of 87 chicks survived to 10 days, 36% to fledging (25 d); all third-hatched chicks died. The oldest known glossy ibis was at least 21 years old and lived in Virginia. There are few data on initial dispersal from natal site.

Storms can lower reproductive success (Burger 1982). A nestling banded on Hoffman Island in June 2008 was seen alive in Lancaster County, Pennsylvania in August 2008 (S. Elbin, pers. comm.).

VI. Threats *(from NY 2015 SWAP or newly described):*

Degradation of breeding and foraging habitat is the greatest threat to glossy ibis (McCrimmon 2006). Other threats include flooding, development, disturbance of nesting areas by human activity such as boating, fishing, and dredge spoil deposition, and predation primarily by gulls, fox, and raccoons (New York Natural Heritage Program 2009).

On a local level, storms, drought, habitat alteration, pesticides, and food availability can affect populations. Butler (1994) hypothesized that, for wading birds, populations not limited by human interference are controlled largely by the number of immature birds that acquire foraging skills that allow them to survive their first winter.

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

Glossy ibis is protected by the Migratory Bird Treaty Act.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

Oil spills, pesticides, wetland drainage, ditching of marshes for mosquito control, and human disturbance are causes of concern for this species. The species is susceptible to avian influenza (Melville and Shortridge 2006) and Newcastle disease so may be threatened by future outbreaks (Kuiken et al. 2006).

Current and potential breeding, foraging, and wintering areas should be protected. Management and habitat restoration plans should continue to be developed and conducted along with state, local, and federal partners. Continue to monitor populations and discuss ways to improve survey methods. State population trends should be compared against regional trends to determine population dynamics across various geographic areas and time periods.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) -
https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
1. Land/Water Protection	Site/Area Protection
2. Land/Water Protection	Resource/Habitat Protection
3. Land/Water Management	Site/Area Management
4. External Capacity Building	Alliance & Partnership Development

Table 2. Recommended conservation actions for glossy ibis

VII. References

Andrews, R. 1990. Coastal waterbird colonies: Maine to Virginia 1984-1985. U.S. Fish Wildl. Serv. Newton Corner, MA.

Baynard, E. O. 1913. Home life of the Glossy Ibis (*Plegadis autumnolis* Linn.). Wilson Bull. 20:103-117.

Brand, C. J., R. M. Windingstad, L. M. Siegfried, R. M. Duncan, and R. M. Cook. 1988. Avian morbidity and mortality from botulism, aspergillosis, and salmonellosis at Jamaica Bay Wildlife Refuge, New York, USA. Colon. Waterbirds 11:284-292.

BirdLife International. 2019. *Plegadis falcinellus* (amended version of 2016 assessment). *The IUCN Red List of Threatened Species* 2019:

e.T22697422A155528413. https://dx.doi.org/10.2305/IUCN.UK.2019-3.RLTS.T22697422A155528413.en. Accessed on 03 January 2024.

Burger, J. 1982. An overview of proximate factors affecting reproductive success in colonial birds: concluding remarks and summary of panel discussion. Colon. Waterbirds 5:58-65.

Butler, R. W. 1994. Population regulation of wading ciconiiform birds. Colon. Waterbirds 17:189-199.

Corwin, K. 2012. NYSDEC SWAP 2015 Species Status Assessment for glossy ibis. Prepared on January 11, 2012. Revised December 9, 2014.

Curley, S.R., 2022. New York City Audubon's Harbor Herons Project: 2022 Nesting Survey Report. New York City Audubon, New York, NY.

Custer, T. W., R. G. Osborn, and W. F. Stout. 1980. Distribution, species abundance, and nesting-site use of Atlantic coast colonies of herons and their allies. Auk 97:591-600.

Davis, Jr., William E. and John Kricher. 2000. Glossy Ibis (*Plegadis falcinellus*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/545

eBird data from 2008-2022. Estimated for 2022.Fink, D., T. Auer, A. Johnston, M. Strimas-Mackey, S. Ligocki, O. Robinson, W. Hochachka, L. Jaromczyk, C. Crowley, K. Dunham, A. Stillman, I. Davies, A. Rodewald, V. Ruiz-Gutierrez, C. Wood. 2023. eBird Status and Trends, Data Version: 2022; Released: 2023. Cornell Lab of Ornithology, Ithaca, New York. https://doi.org/10.2173/ebirdst.2022

Hancock, J. A., J. A. Kushlan, and M. P. Kahl. 1992. Storks, ibises, and spoonbills of the world. Academic Press, London.

McCrimmon, D.A. 2006. Species group report for colonial nesting herons. Pages 33-42 of Appendix A1, Species group reports for birds in: New York State comprehensive wildlife conservation strategy. New York Department of Environmental Conservation, Albany, NY.

NatureServe. 2023. NatureServe Explorer. Page last published 12/1/2023. https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.101242/Plegadis_falcinellus. Accessed 1/3/2024.

New York Natural Heritage Program. 2023. Online Conservation Guide for *Plegadis falcinellus*. Available from: https://guides.nynhp.org/glossy-ibis/. Accessed December 20, 2023.

New York State Breeding Bird Atlas III Overview (NYS BBA III Overview). 2023. New York Checklist Overview. https://ebird.org/atlasny/state/US-NY. Accessed 12/20/2023.

Peterson, J.M.C. 1999. Glossy ibis nests on Four Brothers, Essex County. Kingbird 50(1):11-16.

Post, P.W. 1962. Glossy ibis breeding in New York. Auk 79:120-21.

Originally prepared by	Kimberley Corwin
Date first prepared	January 11, 2012
First revision	December 9, 2014
Latest revision	December 20, 2023 (M. Oberkircher)

Species Status Assessment

Common Name: Golden-winged warbler **Date Updated:** January 9, 2023

Scientific Name: *Vermivora chrysoptera* **Updated By:** Beth Cooper

Class: Aves

Family: Parulidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

The golden-winged warbler is a bird of early-successional habitats. In New York, it is near the northern edge of its distribution. The North American distribution has expanded northward over the past 100 years, but populations in the Northeast have declined severely over the past 40 years. Golden-winged warbler is included on lists of conservation concern in the United States and Canada. Breeding Bird Atlas data for New York, where it is listed as a Species of Special Concern, show a 53% decline in occupancy from 1980-85 to 2000-05. Preliminary data from the first three years of the third BBA (2020-23) documented golden-wing breeding behavior at just 108 blocks (eBird 2023). Breeding Bird Survey (BBS) data show significant long-term (1966-2022) declines rangewide, in the Appalachian and Eastern BBS regions, and in New York (Hostetler et al. 2023). Loss of early-successional habitat for nesting, competition and hybridization with the blue-winged warbler, loss and degradation of winter habitat, and climate effects on suitable habitat and species range are key conservation issues (Crawford et al. 2016; Environment and Climate Change Canada, 2016; Roth et al. 2019; Towes et al. 2016).

I. Status

a. Current legal protected Status

i. **Federal:** Not listed **Candidate:** No

ii. **New York:** Special Concern; High Priority SGCN

b. Natural Heritage Program

i. **Global:** G4

ii. **New York:** S3B **Tracked by NYNHP?:** No

Other Ranks:

IUCN Red List: NT (Near Threatened)

USFWS: Species of Conservation Concern (Both Continental and Bird Conservation Regions 11, 12, 13, 23, 28)

Partners in Flight: Red Watch List (Species with extremely high vulnerability due to small population and range, high threats, and rangewide declines); Conservation Concern Score 16 (of 20)

Road to Recovery (R2R) – Yellow Alert Tipping Point Species

Species of Northeast Regional Conservation Concern (Therres 1999)

Audubon – Priority Bird

COSEWIC/SARA – Threatened

Status Discussion:

Golden-winged warbler is a localized breeder throughout the state but is absent from Long Island and in higher elevations. It is sympatric with blue-winged warbler throughout this range, although hybridization may be reduced in areas of the St. Lawrence Valley and in the Sterling Forest area (Orange County) in the lower Hudson Valley. Golden-winged warbler is ranked as Vulnerable in New York, Vermont, and New Jersey, as Imperiled in Quebec, and as Critically Imperiled in Massachusetts and Connecticut (NatureServe 2020). The IUCN Red List status is Near Threatened with a decreasing global population trend (BirdLife International 2018).

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Declining	Declining	1966-2022		Choose an item.
Northeastern US	Yes	Declining	Declining	1966-2022		Choose an item.
New York	Yes	Declining	Declining	1966-2022	Special Concern	Yes
Connecticut	Yes	Declining	Declining	1966-2022	Endangered	Yes
Massachusetts	Yes	Declining	Declining	1966-2022	Endangered	Yes
New Jersey	Yes	Declining	Declining	1966-2022	Endangered (breeding)	Yes
Pennsylvania	Yes	Declining	Declining	1966-2022		Yes
Vermont	Yes	Declining	Declining	1966-2022	Special Concern	Yes
Ontario	Yes	Declining	Declining	1966-2022	Special Concern	Choose an item.
Quebec	Yes	Declining	Declining	1966-2022	Threatened	Choose an item.

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

The Cornell Lab of Ornithology completed a Golden-winged Warbler Atlas Project; while there is no ongoing monitoring activity, several researchers are investigating habitat use by golden-winged warbler and interactions between golden-winged and blue-winged warblers. DEC monitored golden-winged and blue-winged warblers at Fort Drum from 2007-2009 (Swenson, 2011). Golden-winged warbler surveys have been conducted annually since 2016 at a small number of Wildlife Management Areas where DEC is actively managing to create young forest habitat.

Trends Discussion *(insert map of North American/regional distribution and status):*

The golden-winged warbler increased in abundance and expanded its distribution into New England more than a century ago and continued to expand to the northward and northwestward in the north-central states and adjacent Canada during the last 100 years, yet it is declining in many areas and has

disappeared from previously occupied regions (Confer et al. 2003, Buehler et al. 2007). Throughout its range, the species has declined by 61% (Partners In Flight).

Regional long-term (1966-2022) Breeding Bird Survey trends show declines for all regions analyzed: Boreal Hardwood Transition, Lower Great Lakes/St. Lawrence Plain, Atlantic Northern Forest, Prairie Hardwood Transition, Appalachian Mountains, and New England/Mid-Atlantic Coast (Sauer et al. 2017). Many regions show data deficiencies; however, trends are significant for all but the Boreal Hardwood Transition and Lower Great Lakes/St. Lawrence Plain regions. Short-term trends (2011-2021) were mixed which could indicate a stabilization of the population, however none were significant. In New York, there was a 53% decline in occupancy from the first Breeding Bird Atlas in 1980-85 to the second Atlas in 2000-05. Breeding Bird Survey data show significant declines of -4.22% for 1966-2022 and non-significant increase 2.12% for 2011-2021 in New York (Sauer et al. 2020). In the Appalachian Region, the long-term trend is -6.51% per year and the short-term trend is -3.18% per year. In the Great Lakes/St. Lawrence Region, the long-term trend is -1.35% and the short-term trend is -2.76%.

According to the Golden-winged Warbler Working Group (2010), “Golden-winged warbler populations are declining throughout all of their range as early-successional habitats revert to forest and as upland and wetland habitats are lost to human development. These declines are resulting in extirpation of the species from areas that have supported golden-winged warblers for at least the last century (Georgia, South Carolina, Virginia, Massachusetts, Connecticut, Rhode Island, Vermont, New Hampshire, Indiana, Illinois, Ohio). The northern range in Ontario, Minnesota, Wisconsin, Michigan, and Manitoba once seemed to provide a refuge for golden-winged warblers, but analyses of BBS data for 1998-2007 suggest a rapid rate of decline in the southern portion of the northern population, as well as the long-term decline of the southern portion.”

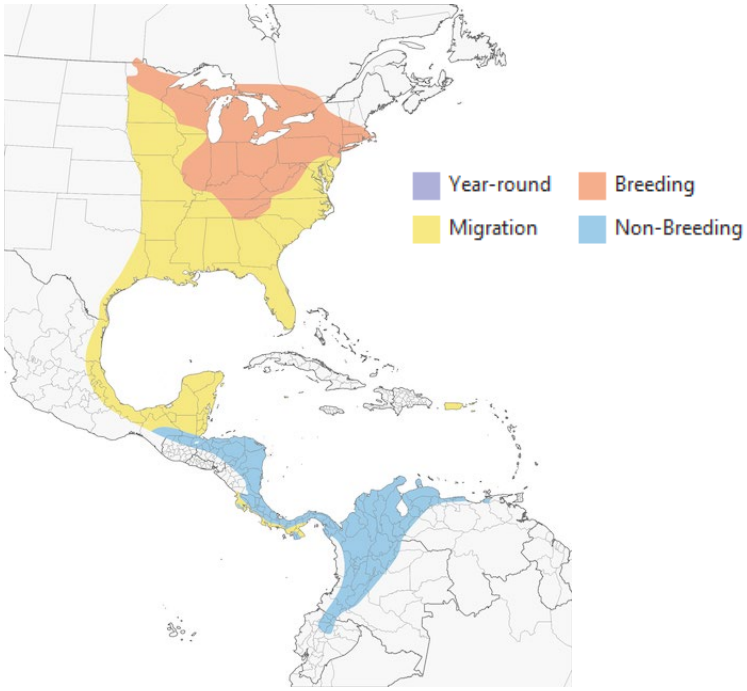

Figure 1. Range of the golden-winged warbler in North America (Birds of the World 2023).

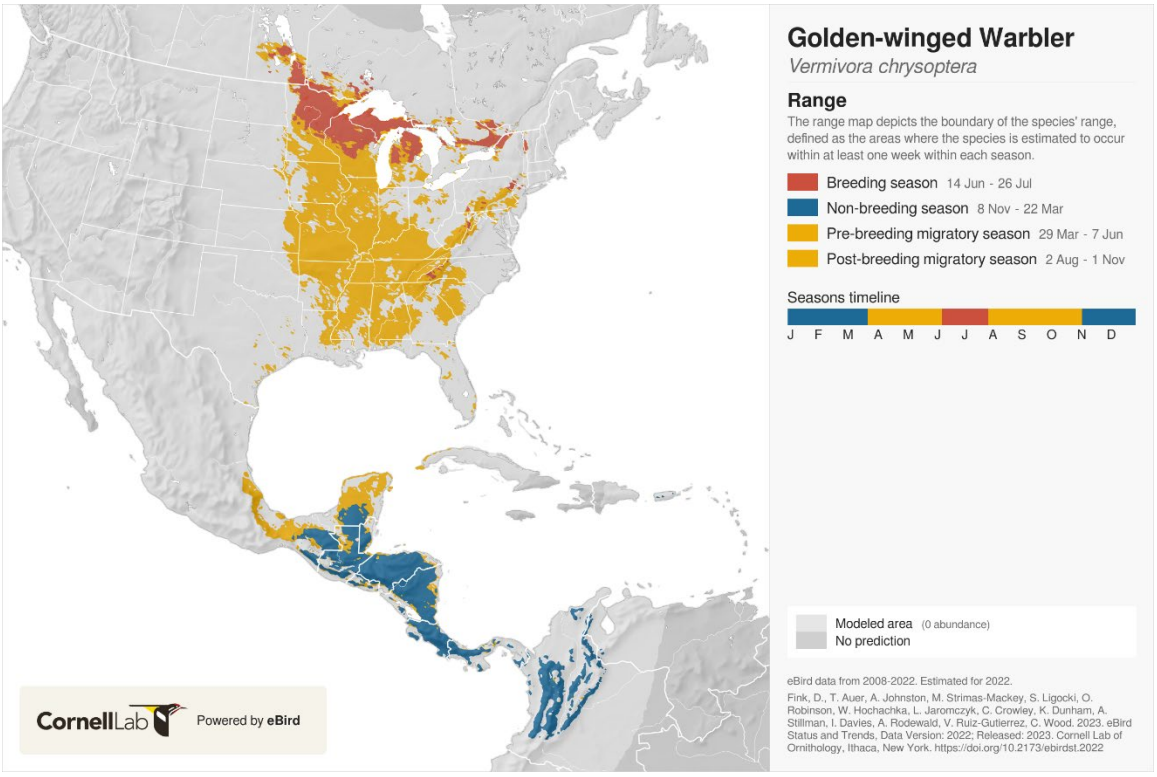

Figure 2. Golden-winged warbler range (eBird www.ebird.org, 11/27/2023)

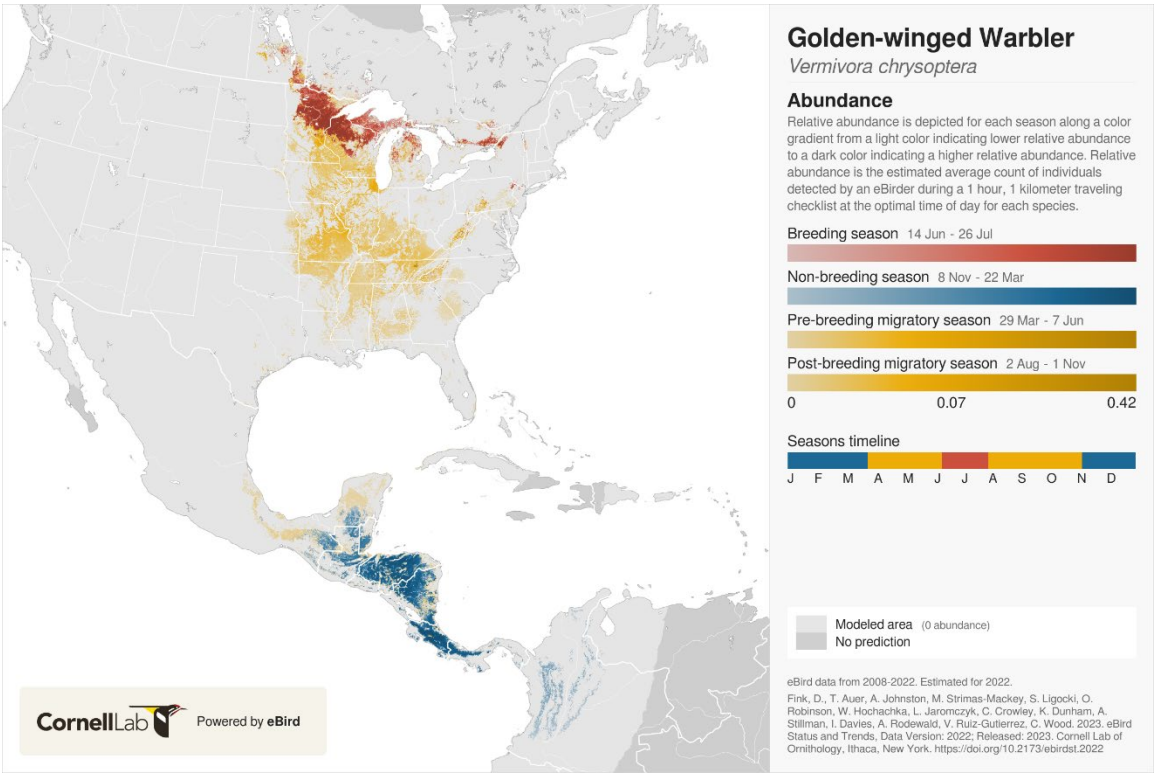

Figure 3. Golden-winged warbler abundance (eBird www.ebird.org, 11/27/2023)

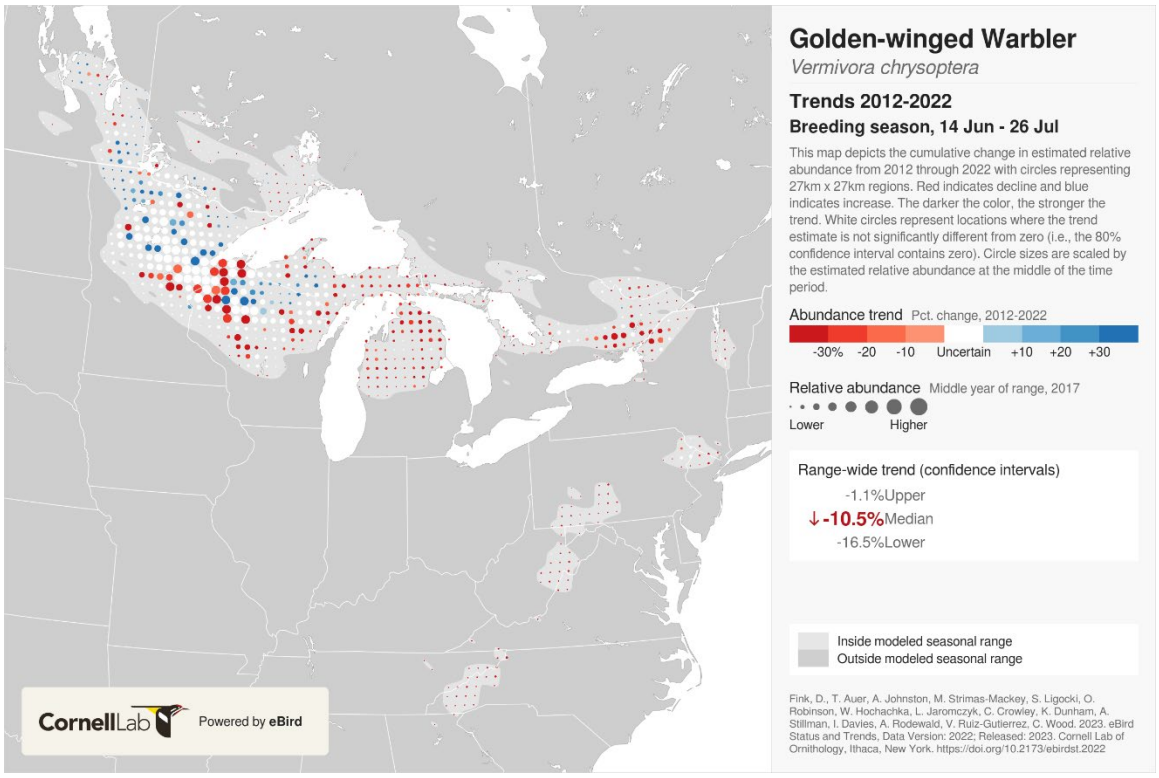

Figure 4. Golden-winged warbler trends (eBird www.ebird.org, 11/27/2023)

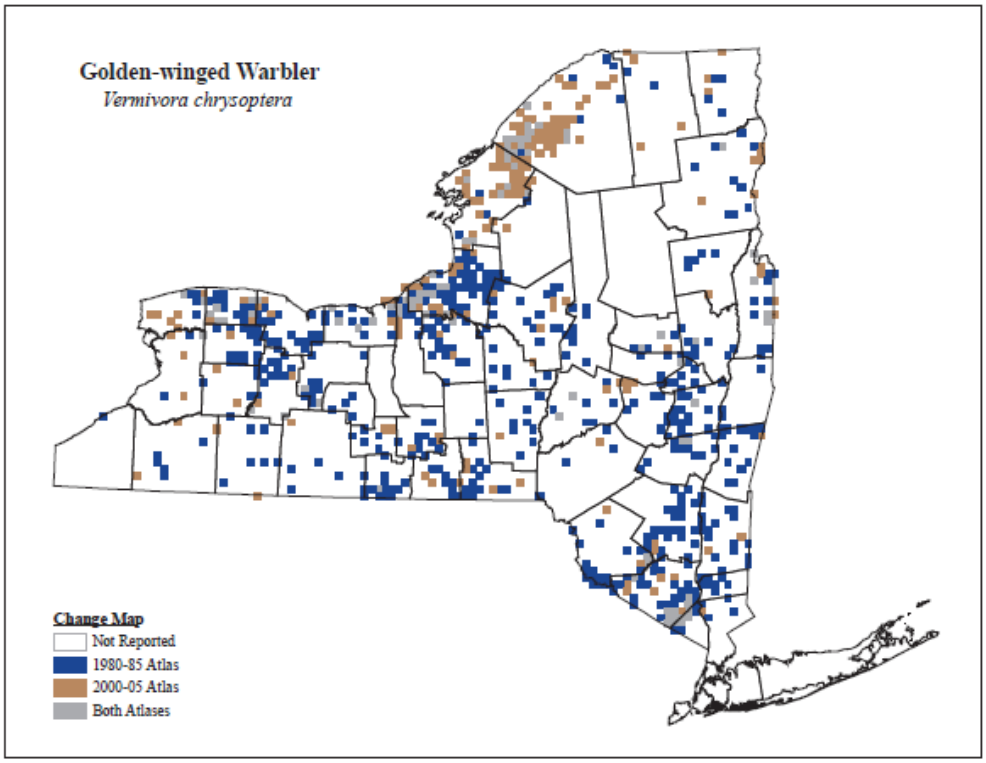

Figure 5. Change in golden-winged warbler occurrence in New York State between the first Breeding Bird Atlas and the second Breeding Bird Atlas (McGowan and Corwin 2008).

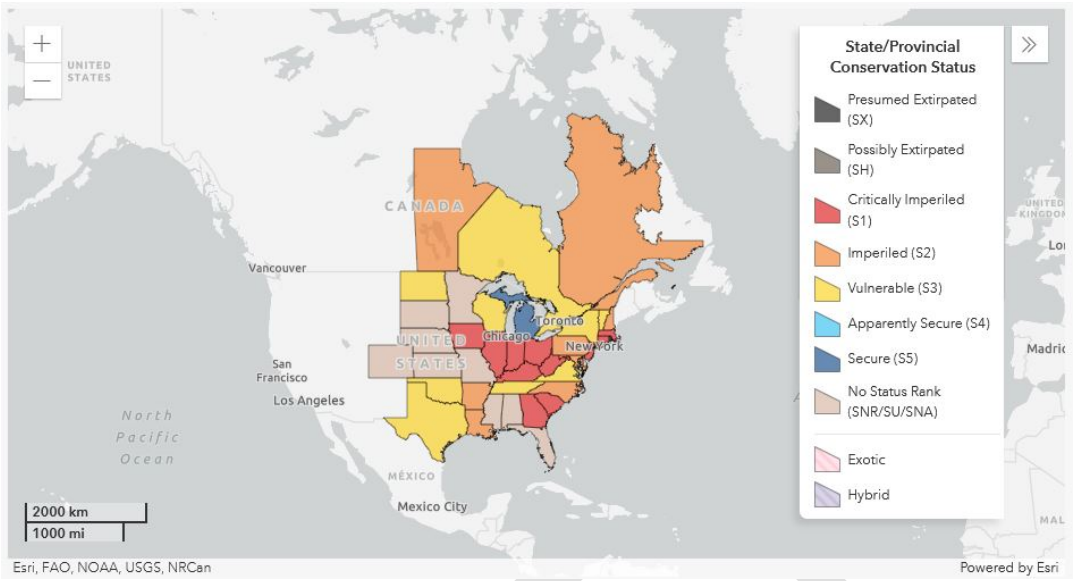

Figure 6. Conservation status of the golden-winged warbler in North America (NatureServe 2023).

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

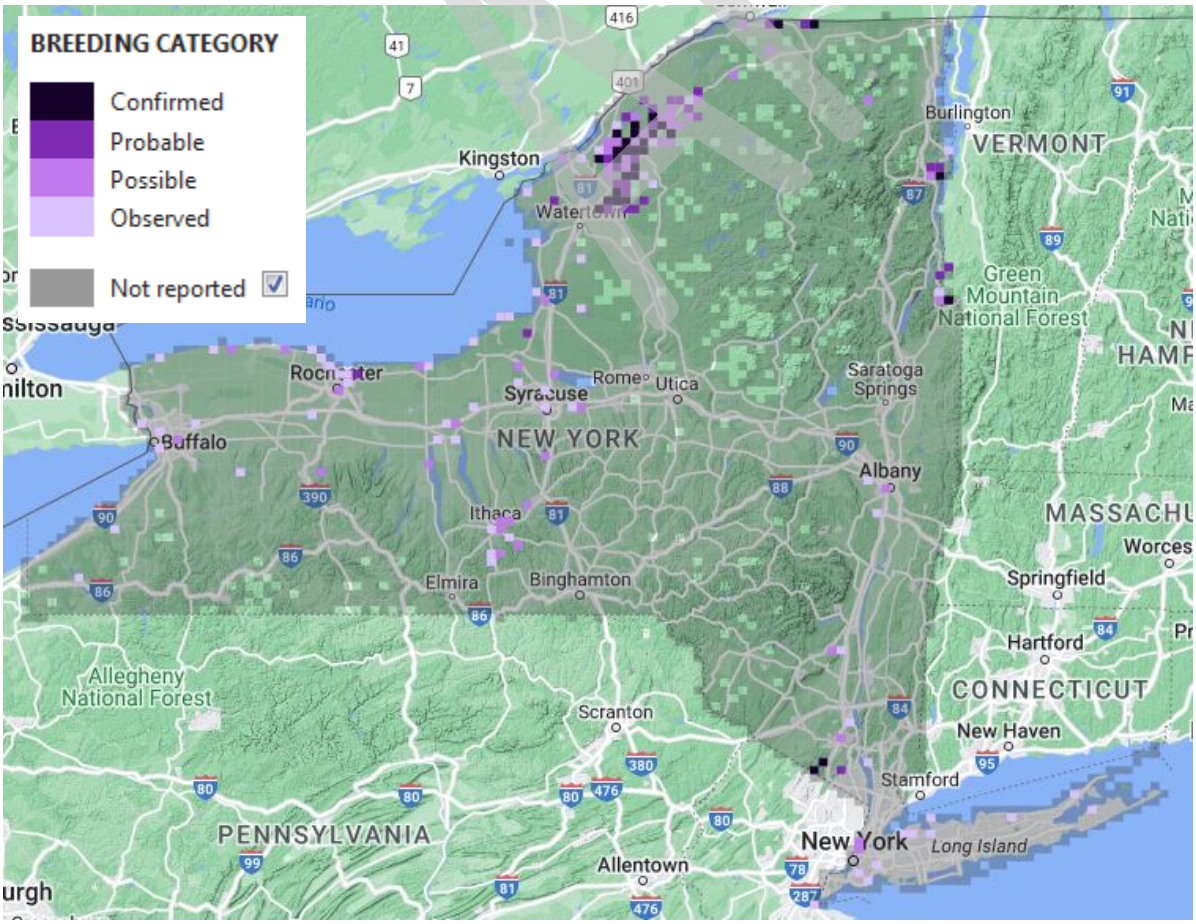

Figure 3. Preliminary golden-winged warbler occurrences from the third year of the third New York State BBA (eBird 2023).

Years	# of Records	# of BBA Blocks	% of State
Pre-1980			
1980-1985		577	10%
2000-2005		270	5%
2020-2023		108	2%

Table 1. Records of golden-winged warbler in New York.

Details of historic and current occurrence:

The second Breeding Bird Atlas (2000-05) documented occupancy in 270 survey blocks statewide, a decline of 53% since the first Atlas (McGowan and Corwin 2008).

Preliminary data from the first three years of the third BBA (2023) documented breeding behavior in 108 blocks, including possible breeding in 50 blocks, probable breeding in 29 blocks, and confirmed breeding in 29 blocks (eBird 2023).

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Core	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

New York is within the core distribution of the species. Populations in southern New York are considered part of the Appalachian conservation region, while populations in northern New York are part of the Great Lakes Conservation Region. The former includes about 5% of the global breeding populations and is declining more severely (see Roth et al. 2019).

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

1. Wet Meadow Shrub Swamp
2. Powerline
3. Hardwood Swamp
4. Non-native Shrublands
5. Riparian
6. Plantation and Disturbed Land Pioneer Forests

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
No	No	Declining	Since 1960s

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

This warbler nests in habitat with dense herbaceous cover and patches of shrubs, often adjacent to a forest edge. Habitats created or maintained by natural disturbance include beaver glades, openings from natural fires, oak parklands, and swamp forests with partially open canopy. It also occurs in a variety of anthropogenic disturbance sites such as clearcuts, abandoned farmlands, reclaimed strip mines, and power line rights-of-ways. At the landscape scale, a mature forest matrix (50-100%) surrounding early successional habitats provides optimal breeding and post-breeding habitat (Rohrbaugh et al. 2016). Streby et al. (2014) found fledglings selected mature forest locations over all other cover types.

Golden-winged warbler is considered a keystone species by the National Fish and Wildlife Foundation's Early Successional (ESH) Habitat Initiative.

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	Choose an item.	Choose an item.	Yes	Choose an item.	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

Golden-winged warbler normally breeds by its second year (age 10-12 months), and every year thereafter. Second attempts at nesting usually occur if the first nest is unsuccessful, but if the first attempt is successful, production of a second clutch is unknown. The oldest known golden-winged warbler was at least 9 years, originally banded as an adult male in Ontario and recaptured in the same province (BBL 2020). In southern New York, one 7-year-old male was observed out of 28 males banded at least 6 years before the end of a field study; one 7-year-old female (banded as an after second year bird) and one 6-year-old female were observed out of 23 females banded at least 5 years before the end of a field study.

VI. Threats *(from NY 2015 SWAP or newly described):*

Threats to NY Populations	
Threat Category	**Threat**
1. Natural System Modification	Other Ecosystem Modification (succession)
2. Invasive & Other Problematic Species & Genes	Problematic Native Species (cowbird parasitism)
3. Invasive & Other Problematic Species & Genes	Problematic Native Species (competition and hybridization with blue-winged warbler)
4. Residential & Commercial	Housing & Urban Areas (habitat loss to development)
5. Agriculture & Aquaculture	Perennial & Non-Timber Crops (habitat loss to agriculture)
6. Invasive & Other Problematic Species & Genes	Invasive Non-native/Alien Species (phragmites)

7. Energy Production and Mining	Renewable Energy (communication towers similar to wind turbines)
8. Climate Change & Severe Weather	Habitat Shifting & Alteration

Virtually all regions where golden-winged warblers have been extirpated or are currently declining have lost habitat due to extensive reforestation or urban sprawl (Confer et at. 2011). This loss of anthropogenic disturbance habitat is an important cause of the decline (Confer and Pascoe 2003).

In north-central New York with moderate density of brown-headed cowbirds (Sauer et al. 2008), nest parasitism lowered the fledging rate by 17% during a five-year survey (Confer et al. 2003). In southern New York with reduced agriculture and fewer cowbirds (Sauer et al. 2008), nest parasitism reduced fecundity by about 5% (JLC). Golden-winged warblers expanded into New England during the 1800s (Gill 1980) when agriculture, livestock, and probably cowbirds, were abundant and have recently expanded into north-central New York (Andrle and Carroll 1988, McGowan and Corwin 2008) where cowbirds remain moderately abundant (Sauer et al. 2008). Thus, the golden-winged warbler population is able to overcome effects of nest parasitism if other factors are suitable.

Extirpation has commonly occurred in areas where the blue-winged warbler has invaded the golden-winged warbler range, even where suitable habitat remains and is unoccupied by either species (Confer and Pascoe 2003). In almost all areas of blue-winged warbler intrusion, the golden-winged warbler phenotype is displaced within 50 years (Gill 1987) or less (Canterbury et al. 1993). The reciprocal displacement of the blue-winged warbler phenotype by the golden-winged warbler phenotype has never been observed. A blue-winged warbler competitive advantage may contribute to the golden-winged warbler decline (Will 1986, Confer et al. 2003), but it is hard to see this as a major factor because the golden-winged warbler is larger and dominates the majority of agonistic interactions (Confer and Larkin 1998), although not in all studies (Will 1986).

The influence of hybridization on the relative abundance of golden-winged warbler and blue-winged warbler is not clear. The breeding habitats utilized by the two species are so seemingly analogous that it is unclear what effects active management would have on the golden-winged warbler in parts of its range also occupied by the blue-winged warbler. More study is needed to determine if microhabitat characteristic exist between the two species that could guide or be utilized during active management for this species.

Strong migratory connectivity has been documented between breeding and wintering populations (Larkin et al. 2017). The top four threats resulting in loss or degradation of winter habitat are due to various agricultural practices and may disproportionally affect female-dominated landscapes (Bennett et al. 2016, Bennett et al. 2019, King et al. 2016).

Arnold and Zink (2011) classified golden-winged warbler as one of top five North American landbird species that most frequently collides with towers. Annual mortalities are estimated to be 2.5% of the population (Longcore et. al. 2013) Additionally, golden-winged warblers are highly vulnerable to collisions with buildings and windows (Loss et al. 2014).

The National Audubon Society's climate vulnerability assessment found that, under the +3.0 °C scenario, the golden-winged warbler had an overall species vulnerability status of "high" with a projected range shift out of the lower 48 states (National Audubon Society 2019). Culp et al.'s (2017) full annual cycle climate change vulnerability assessment determined that golden-winged warbler was moderately vulnerable to climate change (a climate vulnerability score of 2.9 out of 5.0; scores of at least 3.0 indicate high vulnerability).

Data suggests declining populations are supplemented by immigrants, and the overall gene flow and fledgling dispersal support a range shift from south to north (López-Calderón et al, 2019).

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

Golden-winged warbler is protected under the Migratory Bird Treaty Act of 1918. In areas where golden-winged warblers nest in wetland habitats, some protection could be afforded through the Freshwater Wetlands Act, which provides protection for wetlands greater than 12.4 acres in size under Article 24 of the NYS Conservation Law.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

Recommendations for habitat management are available in the recent status report by the Golden-winged Warbler Working Group (see Roth et al. 2019), including . Best Management Practices for the Appalachian population, the Great Lakes population, and several other situations including powerline rights-of-way, shrub wetlands, and mined land reclamation sites. Forest Management for New York Birds provides additional landscape and stand level management guidelines (Treyger and Burger 2017). The golden-winged warbler is one of seven focal species of the Working Lands for Wildlife initiative of the Wildlife Habitat Incentive Program (WHIP). Early-successional habitat management for golden-winged warbler within the core of its range is part of DEC's Young Forest Initiative.

Conservation actions following IUCN taxonomy are categorized in the table below.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
1. Land/Water Protection	Site/Area Protection
2. Land/Water Protection	Resource/Habitat Protection
3. Land/Water Management	Site/Area Management
4. Land/Water Management	Invasive/Problematic Species Control
5. Land/Water Management	Habitat and Natural Process Restoration
6. Education and Awareness	Training
7. Education and Awareness	Awareness and Communications
8. Law and Policy	Policies and Regulations

Table 3. Recommended conservation actions for golden-winged warbler.

The Comprehensive Wildlife Conservation Strategy (NYSDEC 2005) includes recommendations for the following actions overall, and for golden-winged warbler in particular.

Curriculum development:

____ Educate public to the benefits and need for early successional habitat including even-aged management.

Easement acquisition:

____ Implement a Landowner Incentive Project for early successional birds that will direct $600,000 per year at conserving and creating habitat for early successional forest/shrub birds.

Habitat management:

____ Double the amount of early successional forest and shrub habitat on public and private land through sound planned management.

____ Increase early successional management on public and private lands.

____ Maintain, restore, and enhance fire adapted ecosystems. Increase use of prescribed fire in fire adapted ecosystems.

Habitat monitoring:

____ Precisely monitor trends of all species, in particular those that are not currently adequately monitored.

____ Monitor status and trends of golden-winged warblers in areas where they are common, and in particular, along the “front” of blue-winged warbler invasion northward.

____ Complete an inventory and analysis for high priority focus species that identifies core habitats (highest abundance) and geographic areas (where appropriate).

Habitat research:

____ Determine effects of viburnum leaf beetle on early successional forest/shrub habitats and species utilizing them.

____ Develop guidelines for habitat management for golden-winged warblers. Continue to fund John Confers’ work on this subject and expand to areas north of the blue-wing invasion front.

____ Determine if there are management techniques that can favor golden-wings over blue wings, and in a way where pure golden-wings can be maintained, and implement this management public, private land and on ROWs. Continue to fund John Confers' work on this subject and expand to areas north of the blue-wing invasion front.

Population monitoring:

____ Encourage full completion of BBS routes.

____ Develop a long term monitoring program for golden-winged warblers.

____ Monitor status and trends of golden-winged warblers in areas where they are common, and in particular, along the “front” of blue-winged warbler invasion northward.

Statewide management plan:

____ Develop a management plan that provides guidance on maintaining, enhancing and restoring early successional forest/shrub bird species.

____ Develop guidelines for habitat management for golden-winged warblers.

Other actions:

____ Develop better mechanisms for directing federal (NRCS and USFWS) funding programs into early successional forest/shrub habitats.

____ Develop BMPs for forest management in riparian areas that recognize the critical need maintain, enhance and restore early successional forest/shrub habitat in these areas.

The 2015 State Wildlife Action Plan included the following additional recommendations from Recommendations for 2015 SWAP (M. Burger):

Habitat management:

____ Remove phragmites from wooded wetland habitat in southeastern New York.

____ Doubling the amount of early successional forest and shrub habitat on public and private land as recommended in CWCS should be emphasized within golden-winged warbler focus areas.
____ Reduce deer populations where overabundant.

VII. References

Andrle, R.F. and J.R. Carroll, eds. 1988. The Atlas of breeding birds in New York State. Cornell University Press, Ithaca, NY.

Arnold T. W. and R.M. Zink. 2011. Collision Mortality Has No Discernible Effect on Population Trends of North American Birds. PLoS ONE 6(9): e24708. doi:10.1371/journal.pone.0024708

Bennett, R. E., A. D. Rodewald, K. V. Rosenberg. 2019. Overlooked sexual segregation of habitats exposes female migratory landbirds to threats. Biological Conservation 240:108266.

Bennett, R. E., A. Rothman, K.V. Rosenberg, F. Rodriguez. 2016. Golden-winged Warbler non-breeding season conservation plan. In Roth, A. M., R. W. Rohrbaugh, T. Will, and D. A. Buehler, editors. Golden-winged Warbler Status Review and Conservation Plan. www.gwwa.org/

Bird Banding Laboratory (BBL). 2020. Longevity Records of North American Birds. Version 2019.2. Patuxent Wildlife Research Center. US Geological Survey. Laurel, MD.

BirdLife International. 2018. Vermivora chrysoptera. The IUCN Red List of Threatened Species 2018: e.T22721618A132145282. https://dx.doi.org/10.2305/IUCN.UK.2018-2.RLTS.T22721618A132145282.en. Accessed on 28 December 2023.

Buehler, D.A., J.L. Confer, R.A. Canterbury, T. Will, W.E. Thogmartin, W.C. Hunter, A.M. Roth, R. Chandler, K.V. Rosenberg and K. Kreitinger. 2019. Golden-winged Warbler status review. *In* Roth, A.M., R.W. Rorhbaugh, T. Will, and D.A. Beuhler, editors. 2019 Golden-winged Warbler Status Review and Conservation Plan. 2nd Edition. <www.gwwa.org/>.

Canterbury, R. A., D. M. Stover, and T. C. Nelson. 1993. Golden-winged Warblers in southern West Virginia: status and population ecology. Redstart 60(4):97-106.

Confer, J. L. and J. L. Larkin. 1998. Behavioral interactions between Golden-winged and Blue-winged Warblers. Auk 115(1):209-214.

Confer, J. L. and S. M. Pascoe. 2003. Avian communities on utility rights-of-ways and other managed shrublands in the northeastern United States. Forest Ecology and Management 185(1-2):193-205.

Confer, J. L., J. L. Larkin, and P. E. Allen. 2003. Effects of vegetation, interspecific competition, and brood parasitism on Golden-winged Warbler (*Vermivora chrysoptera*) nesting success. Auk 120(1):138-144.

Confer, J. L., P. Hartman, and A. Roth (2020). Golden-winged Warbler (Vermivora chrysoptera), version 1.0. In Birds of the World (A. F. Poole, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.gowwar.01

Corwin, K. 2013. NYSDEC SWAP 2015 Species Status Assessment for Golden-winged warbler. Prepared on March 12, 2012. Revised December 15, 2020.

Culp, L. A., E. B. Cohen, A. L. Scarpignato, W. E. Thogmartin, and P. P. Marra. 2017. Full annual cycle climate change vulnerability assessment for migratory birds. Ecosphere 8(3):e01565. 10.1002/ecs2.1565.

Environment and Climate Change Canada. 2016 Recovery Strategy for the Golden-winged Warbler (*Vermivora chrysoptera*) in Canada. *Species at Risk Act* Recovery Strategy Series. Environment and Climate Change Canada, Ottawa. Vii +59 pp.

Fink, D., T. Auer, A. Johnston, M. Strimas-Mackey, S. Ligocki, O. Robinson, W. Hochachka, L. Jaromczyk, C. Crowley, K. Dunham, A. Stillman, I. Davies, A. Rodewald, V. Ruiz-Gutierrez, C. Wood. 2023. eBird Status and Trends, Data Version: 2022; Released: 2023. Cornell Lab of Ornithology, Ithaca, New York. https://doi.org/10.2173/ebirdst.2022

Gill, F. B. 1980. Historical aspects of hybridization between Blue-winged and Golden-winged warblers. Auk 97:1-18.

Gill, F. B. 1987. Allozymes and genetic similarity of Blue-winged and Golden-winged warblers. Auk 104:444-449.

Hostetler, J.A., Sauer, J.R., Hines, J.E., Ziolkowski, D., and Lutmerding, M., 2023, The North American Breeding Bird Survey, Analysis Results 1966 - 2022: U.S. Geological Survey data release, https://doi.org/10.5066/P9IU1UZ6.

King, D. I., R. B. Chandler, C. Smalling, R. Trubey, R. Raudales, and T. Will. 2016. Nonbreeding Golden-winged Warbler habitat: status, conservation, and habitat management. Studies in Avian Biology (no. 49), CRC press, Boca Raton, FL.

Larkin, J. L., D. Raybuck, A. Roth, L. Chavarría-Duriaux, G. Duriaux, M. Siles, and C. Smalling. 2017. Geolocators reveal migratory connectivity between wintering and breeding areas of Golden-winged Warblers. Journal of Field Ornithology 88:288-298.

Longcore, T., C. Rich, P. Mineau, B. MacDonald, D. G. Bert, L. M. Sullivan, E. Mutrie, S. A. Gauthreaux Jr., M. L. Avery, R. L. Crawford, A. L. Manville II, E. R. Travis, D. Drake. 2013. Avian mortality at communication towers in the the United States and Canada: which species, how many, and where?. Biological Conservation 158:410-419.

López-Calderón, C., S. L. Van Wilgenburg, A. M. Roth, D. J. Flaspohler, and K. A. Hobson. 2019. An evaluation of isotopic (δ^2H) methods to provide estimates of avian breeding and natal dispersal. Ecosphere 10(4):e02633. 10.1002/ecs2.2663

Loss, S.R., T. Will, S.S. Loss, and P.P. Marra. 2014. Bird–building collisions in the United States: Estimates of annual mortality and species vulnerability. The Condor 116:8–23.

McGowan, K.J. and K. Corwin, eds. 2008. The second Atlas of breeding birds in New York State. Cornell University Press, Ithaca, NY.

National Audubon Society. 2019. How climate change will reshape the range of the golden-winged warbler. Online: https://www.audubon.org/field-guide/bird/golden-winged-warbler#bird-climate-vulnerability.

NatureServe.2023. NatureServe Explorer. Page last published 1 December 2023. https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.102068/Vermivora_chrysoptera. Accessed 28 December 2023.

New York State Department of Environmental Conservation (NYSDEC). 2005. New York State Comprehensive Wildlife Conservation Strategy. Albany, NY. https://extapps.dec.ny.gov/docs/wildlife_pdf/cwcs2005.pdf

New York State Third Breeding Bird Atlas (NYS BBA III). 2023. New York Overview. https://ebird.org/atlasny/state/US-NY. Accessed 28 December 2023.

North American Bird Conservation Initiative (NABCI). 2016. State of North America's Birds. Online: https://www.stateofthebirds.org/2016/resources/species-assessments/

Partners in Flight. 2021. Avian Conservation Assessment Database, version 2021. http://pif.birdconservancy.org/ACAD. Accessed on 27 December 2023.

Rohrbaugh, R.W., D.A. Buehler, S. Barker-Swarthout, D.I. King, J.L. Larkin, K.V. Rosenberg, A.M. Roth, R. Vallender, and T. Will. 2016. Conservation perspectives: Review of new science and primary threats to golden-winged warblers. In: Streby, H.M.; Andersen, D.E.; Buehler, D.A., eds. Golden-winged warbler ecology, conservation, and habitat management. Studies in Avian Biology no. 49. Boca Raton, FL: CRC Press: 207-215. [chapter 13].

Rosenberg, K. V., A. M. Dokter, P. J. Blancher, J. R. Sauer, A. C. Smith, P. A. Smith, J. C. Stanton, A. Panjabi, L. Helft, M. Parr, and P. P. Marra. 2019. Decline of North American avifauna. Science 366:120-124. DOI: 10.1126/science.aaw1313

Rosenberg, K. V., J. A. Kennedy, R. Dettmers, R. P. Ford, D. Reynolds, J.D. Alexander, C. J. Beardmore, P. J. Blancher, R. E. Bogart, G. S. Butcher, A. F. Camfield, A. Couturier, D. W. Demarest, W. E. Easton, J.J. Giocomo, R.H. Keller, A. E. Mini, A. O. Panjabi, D. N. Pashley, T. D. Rich, J. M. Ruth, H. Stabins, J. Stanton, T. Will. 2016. Partners in Flight Landbird Conservation Plan: 2016 Revision for Canada and Continental United States. Partners in Flight Science Committee. 119 pp. Available online: https://partnersinflight.org/resources/the-plan/

Roth, A.M., R.W. Rorhbaugh, T. Will, and D.A. Beuhler, editors. 2019. Golden-winged Warbler Status Review and Conservation Plan. 2nd Edition. www.gwwa.org/

Sauer, J. R., D. K. Niven, J. E. Hines, D. J. Ziolkowski, Jr, K. L. Pardieck, J. E. Fallon, and W. A. Link. 2019. The North American Breeding Bird Survey, Results and Analysis 1966 - 2019. Version 2.07.2019 USGS Patuxent Wildlife Research Center, Laurel, MD

Streby, H. M., S. M. Peterson, G. R. Kramer, and D. E. Anderson. 2014, Post-independence fledgling ecology in a migratory songbird: implications for breeding-grounds conservation. Animal Conservation ISSN 1367-9430. doi:10.1111/acv.12163

Swenson, T. 2011. Golden-winged Warbler (Vermivora chrysoptera) and Blue-winged Warbler (Vermivora pinus) Habitat Characterization on Fort Drum Military Installation [Unpublished report]. New York State Department of Environmental Conservation.

Therres, G.D. 1999. Wildlife species of regional conservation concern in the northeastern United States. Northeast Wildlife 54:93-100.

Towes, D. P. L., S. A Taylor, R. Vallender, A. Brelsford, B. G. Butcher, P. W. Messer, and I. J. Lovette. 2016. Plumage genes and little else distinguish the genomes of hybridizing warblers. Current Biology 26:2313-2318.

Treyger, S.M. and M.F. Burger. 2017. Forest management for New York birds: a forester's guide. Audubon, NY.

U.S. Fish and Wildlife Service. 2021. Birds of Conservation Concern 2021. United States Department of the Interior, U.S. Fish and Wildlife Service, Migratory Birds, Falls Church, Virginia. https://www.fws.gov/media/birds-conservation-concern-2021

Originally prepared by	Kimberly Corwin
Date first prepared	12 March 2012
First revision	December 2014 (K. Corwin)
Second revision	15 December 2020, Katherine Yard and Beth Cooper
Last revision	28 December 2023, Beth Cooper

Species Status Assessment

Common Name: Great egret **Date Updated:** January 16, 2024

Scientific Name: *Ardea alba* **Updated By:** M. Oberkircher

Class: Aves

Family: Ardeidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

Relationships among the Ardeidae have been revised or relisted several times, and both the common and scientific names have changed correspondingly. The great egret has been classified in the past under several genera, including its own monotypic genus, Casmerodius; with other egrets in Egretta; or allied with other large herons in Ardea.

Great egret are found in marshes, swampy woods, tidal estuaries, lagoons, mangroves, streams, lakes, and ponds, as well as in fields and meadows. Nests are placed primarily in tall trees, usually with other colonial water birds.

The population has been expanding in New York in the past 20 years. The second Breeding Bird Atlas in New York atlas shows an increase of 71% including three additional new locations outside of the Coastal Lowlands. Populations are increasing in the eastern U.S. as well. This egret's adaptability as a generalist has doubtless contributed to its global distribution and wide-ranging recovery from previous North American population decimation.

I. Status

a. Current legal protected Status

i. **Federal:** Not Listed **Candidate:** No

ii. **New York:** SGCN

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** S4 **Tracked by NYNHP?:** No

Other Ranks:

-IUCN Red List: Least Concern

-Partners in Flight: 6 out of 20

Status Discussion:

Local breeder on Long Island. Also breeds on islands in the Niagara River Basin and Lake Champlain; rare elsewhere in the state.

Great egret is ranked as Apparently Secure in New York and New Jersey. It is ranked as Critically Imperiled in Pennsylvania and Connecticut, and as Imperiled in Massachusetts.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Increasing	Increasing			Choose an item.
Northeastern US	Yes	Increasing	Increasing			No
New York	Yes	Increasing	Increasing			Yes
Connecticut	Yes	Increasing	Increasing		Threatened	Yes
Massachusetts	Yes	Increasing	Increasing			Yes
New Jersey	Yes	Increasing	Increasing			No
Pennsylvania	Yes	Stable	Stable		Endangered	Yes
Vermont	Yes	Unknown	Unknown			No
Ontario	Yes	Increasing	Increasing			No
Quebec	Yes	Increasing	Increasing			No

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

The Long Island Colonial Waterbird Survey is conducted every three years for great egret. NYC Audubon conducts annual, interim surveys of major colony sites, with all islands surveyed every three years. A coordinated regional survey was conducted in 2013, spanning Maine through Virginia.

Trends Discussion *(insert map of North American/regional distribution and status):*

Great egret was a common and widely distributed bird during the early to mid-nineteenth century. The aggressive and systematic killing of egrets for plumes, primarily 1870–1910, reduced numbers in North America by >95%. Recovery was rapid following legislation that ended most plume-hunting in 1910. The species resumed breeding in New Jersey in the late 1920s (Walsh et al. 1999) and the first New York breeding was confirmed in 1953 on Fishers Island, Suffolk County (Griffith 1998).

In New York, confirmed breeding was completely restricted to Long Island and Staten Island from 1980-1985. The combined breeding population of Long Island and the New York Harbor region increased substantially from 296 pairs in 1985 to a peak of 875 in 2001; the count in 2010 totaled 1,352 pairs. The second Breeding Bird Atlas (2000–2005) documented three new breeding locations away from the Coastal Lowlands: Motor Island in the Niagara River, Erie County; Four Brothers Island in Lake Champlain; and Triassic Lowlands, Rockland County (McCrimmon 2008).

The eBird abundance trend map shows a decline of 9.3% with an upper confidence interval of -1.2% and a lower interval of -13.2% for breeding great egrets in New York from 2012-2022. Breeding bird survey data shows an increasing trend of 2.9% for great egrets in New York from 1993-2021.

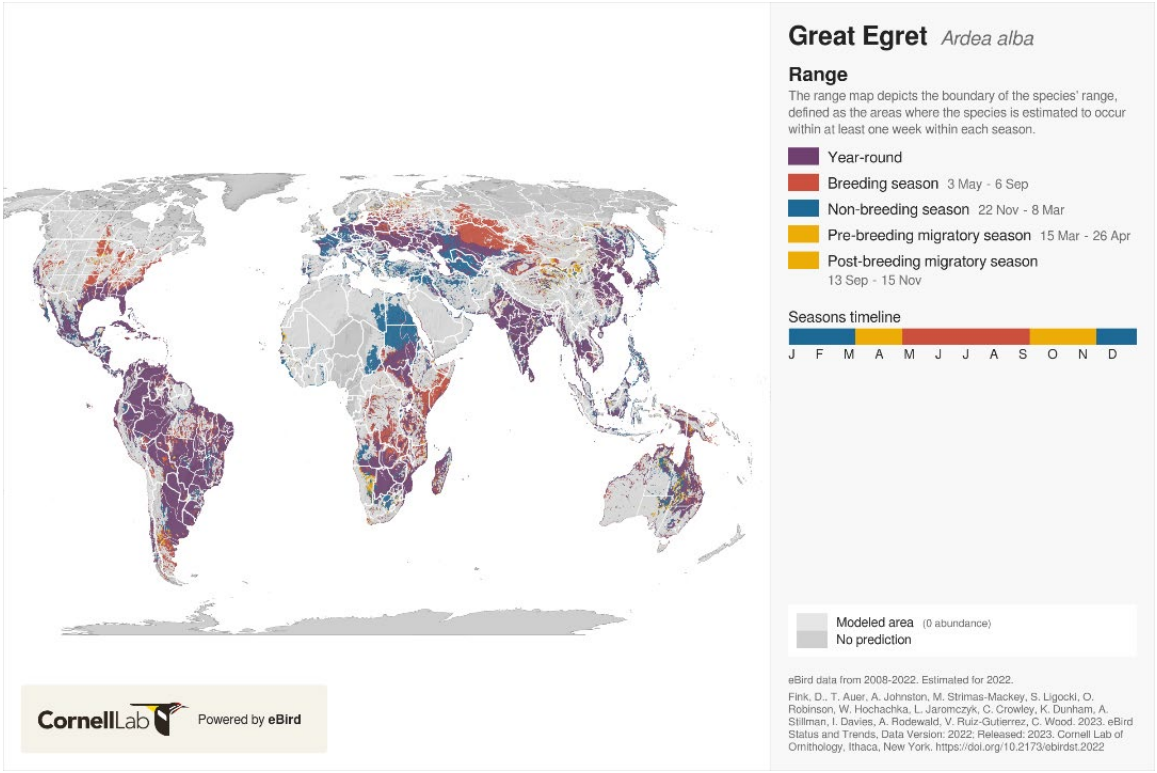

Figure 1. Great egret global distribution (eBird 2022)

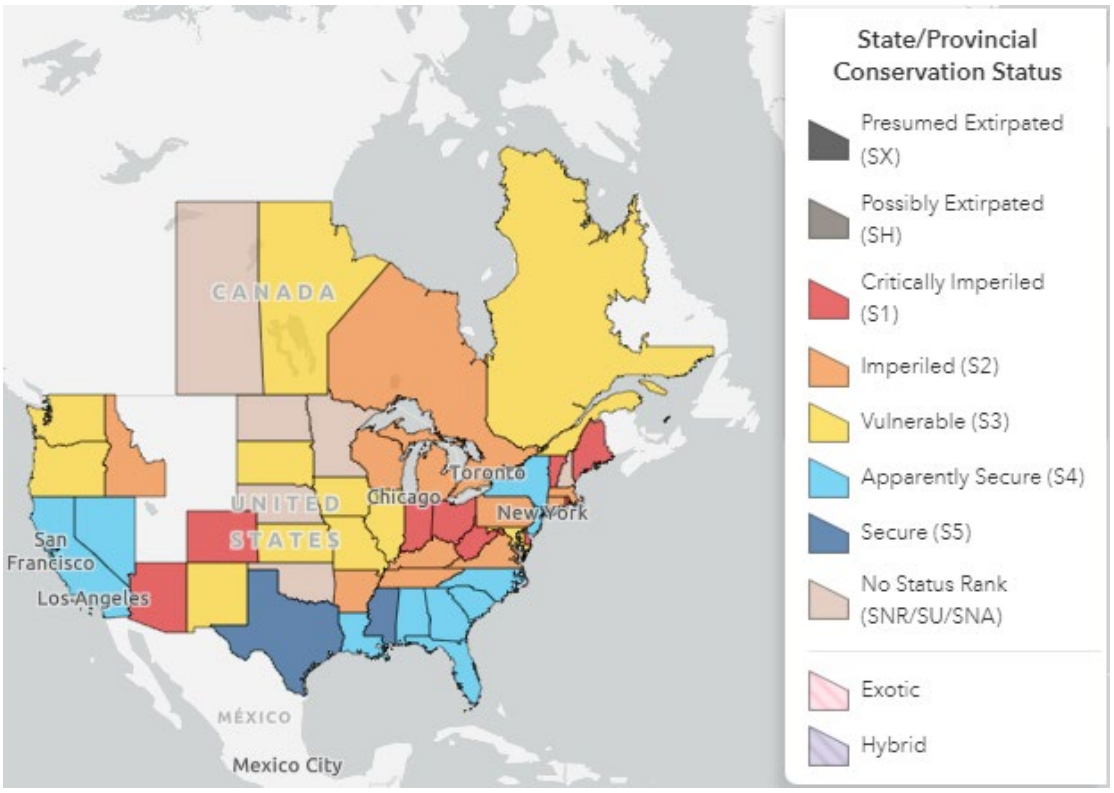

Figure 2. Conservation status of great egret in North America (NatureServe)

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

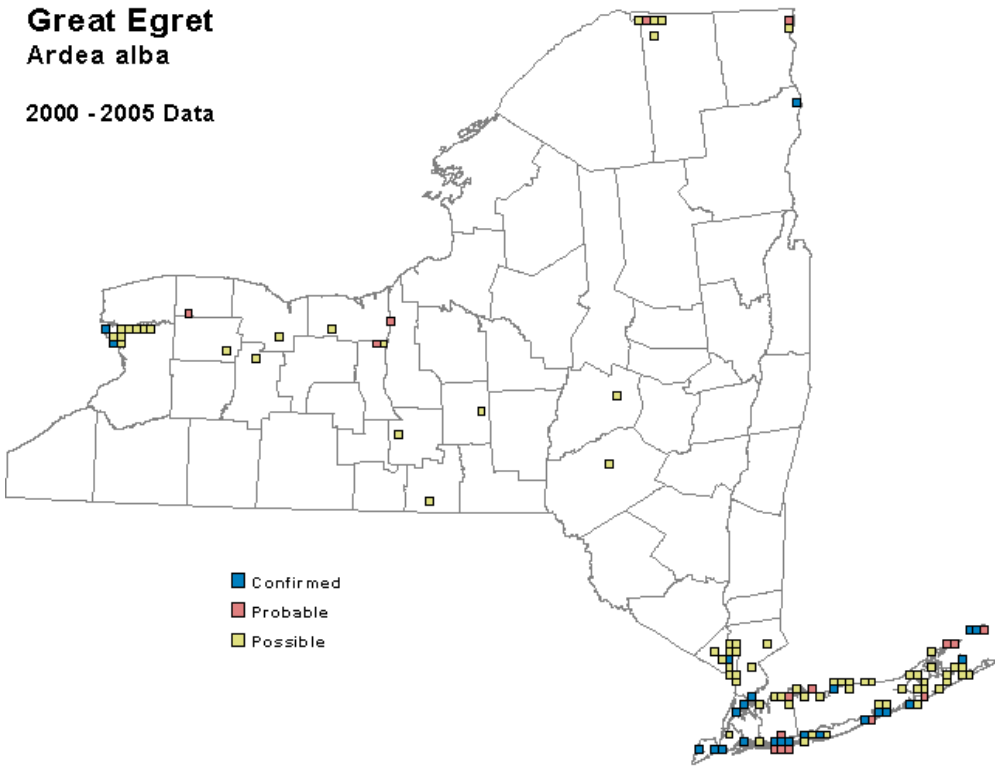

Figure 3. Great egret occurrence in New York State during the second Breeding Bird Atlas (McGowan and Corwin 2008).

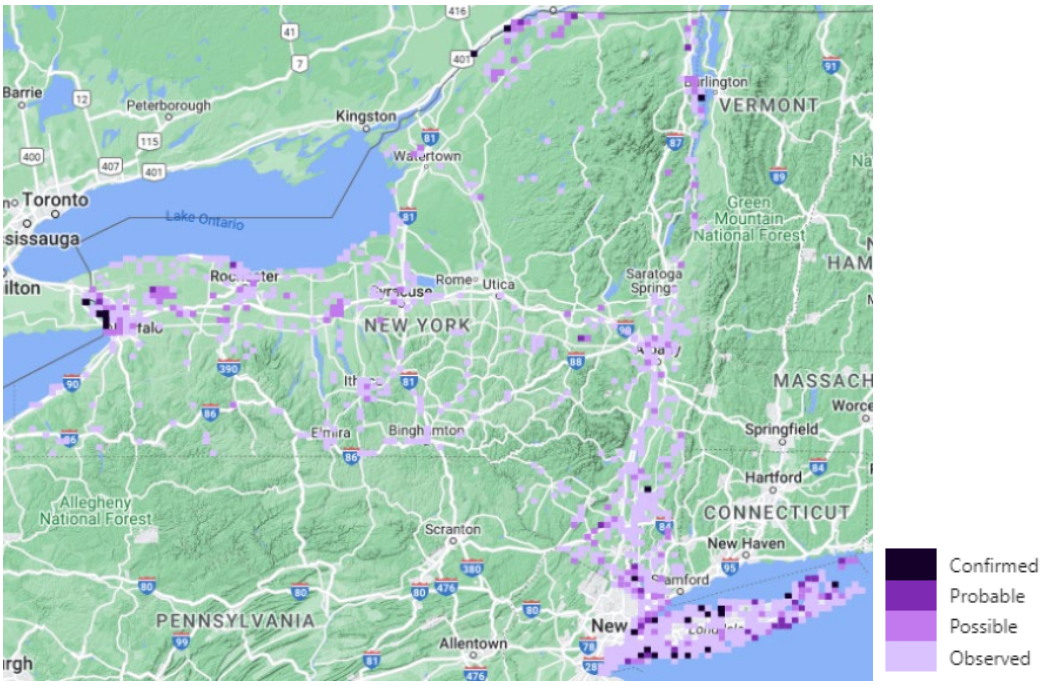

Figure 4. Records of great egret in New York (NYS BBA III Map, 2023)

Years	# of Records	# of BBA Blocks	% of State
Pre-1980			
1980-1985		65	1
2000-2005		111	2
2020-2023		190	

Table 1. Records of great egret in New York.

Details of historic and current occurrence:

In 1978, there were 1,400 pairs breeding in 21 colonies on Long Island (Andrle and Carroll 1988). The first Breeding Bird Atlas documented occurrence in 65 survey blocks (1% of the state), all of which were on Long Island with the exception of a single survey block representing Four Brothers Island in Lake Champlain (Andrle and Carroll 1988).

The Long Island Colonial Waterbird Survey documented 554 pairs in 11 colonies in 2022. A high of 1,352 pairs in 16 colonies were documented in 2010. The second Breeding Bird Atlas documented occurrence in 111 survey blocks statewide, an increase of 71% since 1980-85 (McGowan and Corwin 2008). NYC Audubon recorded 300 great egret nests in the NYC Harbor in 2022, down from 2010 and 2011 (n=498; 567, respectively), the high-count years. Hoffman Island had the most great egrets in 2013 (n=203) (S. Elbin, pers. comm.). Four Brothers Island had 38 nesting pairs in 2022. Several islands in Lake Ontario also had small colonies of nesting great egrets in 2022. Great egrets began nesting on Motor Island on the Niagara River in 1995 and another colony was found on Weseloh Rocks above Niagara Falls in 2011. In 2022, the Motor Island colony had 29 nesting pairs.

The third BBA (2020-25) is currently underway and utilizes a different number and layout of survey blocks across New York, making direct comparison with the first two Atlases difficult. There were 5,333 blocks in the first and second BBAs, and there are 5,710 blocks in the current BBA. To date, great egret has been documented in 190 blocks, 3% of survey blocks statewide during the third BBA (NYS BBA III Overview, 2023).

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Peripheral	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

1. Freshwater Marsh
2. Estuarine, Brackish Intertidal, Tidal Wetland, High Marsh
3. Wet Meadow/Shrub Swamp
4. Summer-stratified Monomictic Lake
5. Estuarine, Freshwater Intertidal, Tidal Wetland, Freshwater Tidal Marsh

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
No	No	Stable	

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

The great egret occurs in marshes, swampy woods, tidal estuaries, lagoons, mangroves, streams, lakes, and ponds; also fields and meadows. Nests primarily in tall trees, usually with other colonial water birds; in woods or thickets near water.

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	No	No	Yes	No	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

Conclusive information on age of first breeding is lacking. Breeding during first year following hatching (Wiese 1975, 1976) and beginning at age 3 year (Palmer 1962) have been suggested. No information on lifetime reproductive performance. Single-brooded under ordinary circumstances. Loss of nest or nestlings may result in production of additional broods. The longest-lived, banded great egret was 22 years, 10 months (Clapp et al. 1982). Survivorship rates are highly variable, but generally higher for older nestlings than for eggs and new hatchlings. S. Elbin at NYC Audubon has been banding pre-fledged nestlings since 2008. Post-fledging dispersal has been seen, with young of the year travelling as far as Quebec, Canada, or Pennsylvania (John Heinz Wildlife Sanctuary, Philadelphia). Increased banding and re-sighting effort should provide more information about birds returning to the harbor to breed. To date, this has not been recorded (S. Elbin, pers. comm.).

VI. Threats *(from NY 2015 SWAP or newly described):*

Loss of habitat is the most critical threat for this species. Loss or modification of wetland habitat affects breeding and foraging. On Long Island, threats include flooding, erosion, human activity, and predation.

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

Great egrets are protected by the Migratory Bird Treaty Act.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

Limiting predation and human activity using predator exclosures, visitor education, and by posting restricted signs in breeding and foraging areas would be beneficial. Vehicle disturbances, especially in undeveloped areas, have been shown to cause a decline in foraging rates for this species, with seasonal differences in behavioral response (Stolen 2003, Traut and Hostetler 2003). This suggests that buffer zones could provide additional protection.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
1. Land/Water Protection	Site/Area Protection
2. Land/Water Protection	Resource/Habitat Protection
3. Land/Water Management	Site/Area Management
4. External Capacity Building	Alliance & Partnership Development

Table 2. Recommended conservation actions for great egret

VII. References

Andrle, R.F. and J.R. Carroll, eds. 1988. The Atlas of breeding birds in New York State. Cornell University Press, Ithaca, NY.

BirdLife International (2024) Species factsheet: *Ardea alba*. Downloaded from http://datazone.birdlife.org/species/factsheet/great-white-egret-ardea-alba on 16/01/2024. Recommended citation for factsheets for more than one species: BirdLife International (2024) IUCN Red List for birds. Downloaded from http://datazone.birdlife.org on 16/01/2024.

Clapp, R. B., M. K. Klimkiewicz, and J. H. Kennard. 1982. Longevity records of North American birds: Gaviidae through Alcidae. J. Field Ornithol. 53:81-208.

Curley, S.R., 2022. New York City Audubon's Harbor Herons Project: 2022 Nesting Survey Report. New York City Audubon, New York, NY.

eBird data from 2008-2022. Estimated for 2022. Fink, D., T. Auer, A. Johnston, M. Strimas-Mackey, S. Ligocki, O. Robinson, W. Hochachka, L. Jaromczyk, C. Crowley, K. Dunham, A. Stillman, I. Davies, A. Rodewald, V. Ruiz-Gutierrez, C. Wood. 2023. eBird Status and Trends, Data Version: 2022; Released: 2023. Cornell Lab of Ornithology, Ithaca, New York. https://doi.org/10.2173/ebirdst.2022

McCrimmon, Jr., D.A., J. C. Ogden and G. T. Bancroft. 2011. Great Egret (*Ardea alba*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/570

McGowan, K.J. and K. Corwin, eds. 2008. The second Atlas of breeding birds in New York State. Cornell University Press, Ithaca, NY.

NatureServe. 2023. NatureServe Explorer. Page last published 1/5/2024. https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.103493/Aredea_alba. Accessed 1/22/2024.

New York Natural Heritage Program. 2024. Online Conservation Guide for *Ardea alba*. Available from: https://guides.nynhp.org/great-egret/. Accessed January 16, 2024.

New York State Breeding Bird Atlas III Overview (NYS BBA III Overview). 2023. New York Checklist Overview. https://ebird.org/atlasny/state/US-NY. Accessed 1/16/2024.

Palmer, R. S. 1962. Handbook of North American birds, Vol. 1: loons through flamingos. Yale Univ. Press, New Haven, CT.

Stolen, E.D. 2003. The effects of vehicle passage on foraging behavior of wading birds. Waterbirds 26(4): 429-436.

Traut, A.H. and M.E. Hostetler. 2003. Urban lakes and waterbirds: effects of development on avian behavior. Waterbirds 26(3): 290-302.

Wiese, J. H. 1975. The reproductive biology of the Great Egret *Casmerodius albus egretta* (Gmelin). Master's Thesis. Florida State Univ. Tallahassee.

Wiese, J. H. 1976. Courtship and pair formation in the Great Egret. Auk 93:709-724.

Originally prepared by	Kimberley Corwin
Date first prepared	January 17, 2012
First revision	December 10, 2014
Latest revision	January 16, 2024 (M. Oberkircher)

Species Status Assessment

Common Name: Greater scaup **Date Updated:** January 19, 2024

Scientific Name: *Aythya marila* **Updated By:** J. O'Connor and C. Hoh

Class: Aves

Family: Anatidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

Greater scaup is a very abundant winter visitant to Long Island; it is present but much less numerous on the Great Lakes and in the Niagara River region. It does not breed in New York. Distinguishing greater scaup from lesser scaup (*A. affinis*) at a distance is difficult and the two species are combined during aerial (and most ground) population surveys. Surveys therefore do not provide an accurate assessment of changes for either species, but especially for greater scaup, which is the less common of the two.

Wintering populations in Long Island Sound decreased greatly (by one order of magnitude) from the 1950s to the early 1990s (Barclay and Zingo 1994). No other areas in North America showed increases that might indicate a shift in wintering location. Recent declines in wintering populations also are evident in northeastern North America, the Atlantic Flyway, and for all other North American flyways. The record low count in 2006 was 37% lower than the long-term average.

Population size and trends are difficult to determine because survey data cannot be collected separately for greater scaup and lesser scaup. The scaup population is estimated at 3.5 million; lesser scaup are believed to represent 89% of the scaup population.

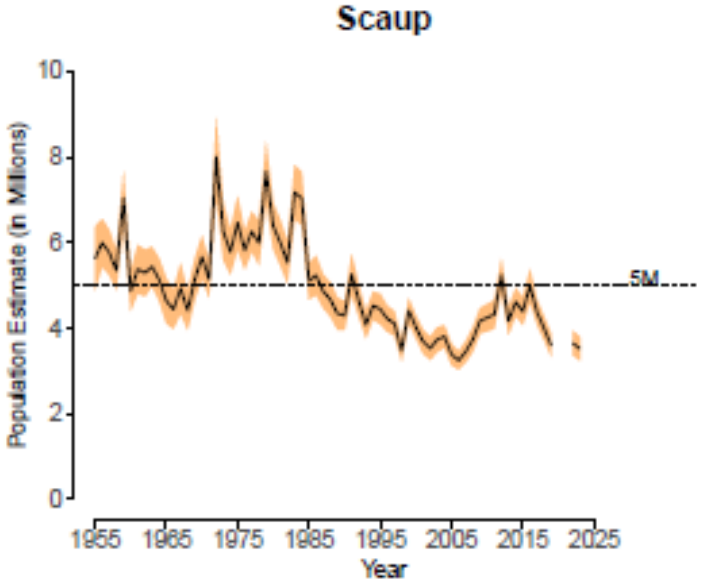

Figure 1. Combined Greater and Lesser Scaup Breeding Population Estimate from the Traditional Survey Area (USF&WS 2023)

I. Status

a. Current legal protected Status

i. **Federal:** Not listed/Game Species **Candidate:** No

ii. **New York:** SGCN/Game Species

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** SNRN **Tracked by NYNHP?:** No

Other Ranks:
-IUCN Red List: Least Concern

Status Discussion:

Greater scaup is a very abundant winter visitant on Long Island, much less numerous on the Great Lakes and in the Niagara River region.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Declining	Stable	1990-1999		No
Northeastern US	Yes	Declining	Stable	1990-1999		No
New York	Yes	Declining	Stable	1980-2005		Yes
Connecticut	Yes	Declining	Declining	1960-2023		Yes
Massachusetts	Yes	Declining	Declining	1960-2023		No
New Jersey	Yes	Declining	Declining	1980-2023		No
Pennsylvania	Yes	Unknown	Unknown			No
Vermont	Yes	Increasing	Stable	1999-2023		No
Ontario	Yes	Declining	Declining	1980-2023		No
Quebec	Yes	Increasing	Stable	1999-2023		No

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

The New York State Ornithological Association has conducted an annual January Waterfowl Count since 1955.

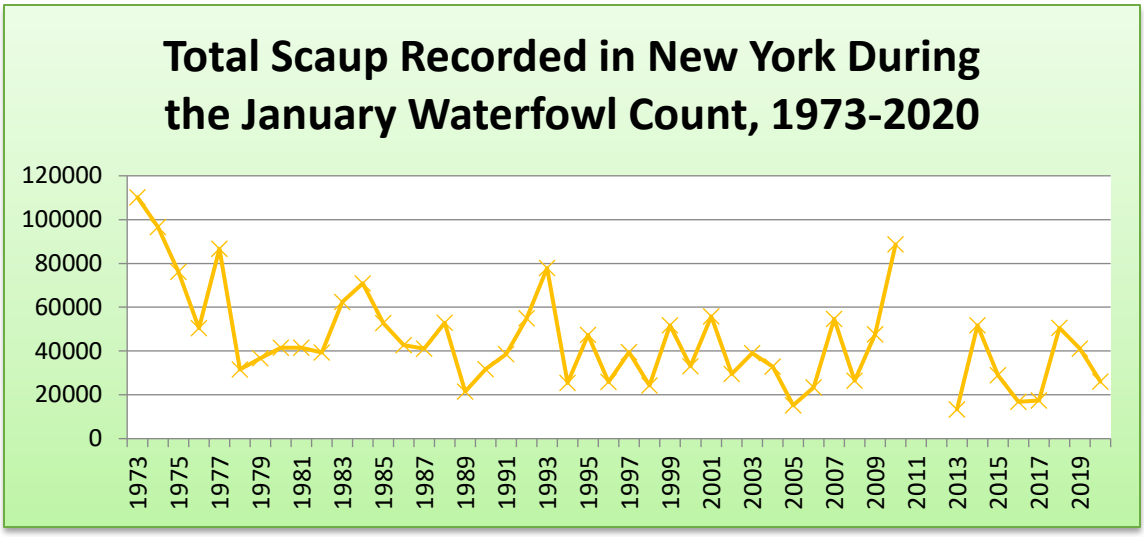

Figure 2. Number of scaup observed during the January waterfowl count in New York 1973-2020 (NYSOA Waterfowl Count www.nybird.org/projwaterfowl.htm)

Trends Discussion *(insert map of North American/regional distribution and status):*

Continental aerial surveys for the breeding season (U.S. Fish and Wildl. Serv. 2001) and flyway midwinter waterfowl estimates (Serie and Raftovich 2001, Trost and Drut 2001, K. Gamble pers. comm., D. Sharp pers. comm.) combine greater and lesser scaup and report the results as "scaup," since the 2 similar-looking species cannot be reliably distinguished from the air. Hence, continental estimates of greater scaup populations can be derived only indirectly. The use of biogeographic distinctions, harvest ratios from fall hunting, and midwinter surveys are the only means at this time of estimating continent-wide greater scaup numbers.

The estimated 2012 breeding population for "scaup" was 5.2 million, 21% above the 2011 estimate and similar to the long term average of 5.0 million. The population has rebounded significantly from a low of 3.2 million in 2006.
Population estimates of tundra scaup (essentially all greater scaup) averaged 430,000 during 1978–2001, with a high of 642,000 in 1980 and a low of 340,000 in 1981 (Hodges et al. 1996). The 2000 estimate of greater scaup breeding-ground populations was 560,000 (Conant et al. 2000); the 2001 estimate was 634,000 (Conant and Groves 2001).

Estimates of annual midwinter population indices for all "scaup" are highly variable due to many factors, but a 5-yr moving average indicates a significant declining trend (R2= 0.632; $p < 0.001$) for U.S. midwinter scaup populations (1955–1999). This decline represents a loss of 21,400 scaup/yr since 1975. Totals of U.S. midwinter surveys of "scaup" from all flyways (U.S. Office Migratory Bird Management) yielded an estimate of 896,000 scaup in 1999. The average midwinter U.S. "scaup" population during 1961–1999 was 1.3 million.

Prior to 1980, scaup were generally not reported to species level during the annual January Waterfowl Count. Since 1980, however, scaup have been recorded as greater scaup, lesser scaup or not to species, with the greatest number of scaup recorded as greater scaup. The 1980 to 2008 average total scaup (greater, lesser, and not to species combined) was 41,187 while the average for just greater scaup was 34,096. The 1999 to 2008 average for total scaup was 36,186 and 32,166 for greater scaup. While lesser scaup may be more abundant than greater scaup, larger numbers of greater scaup winter in New York.

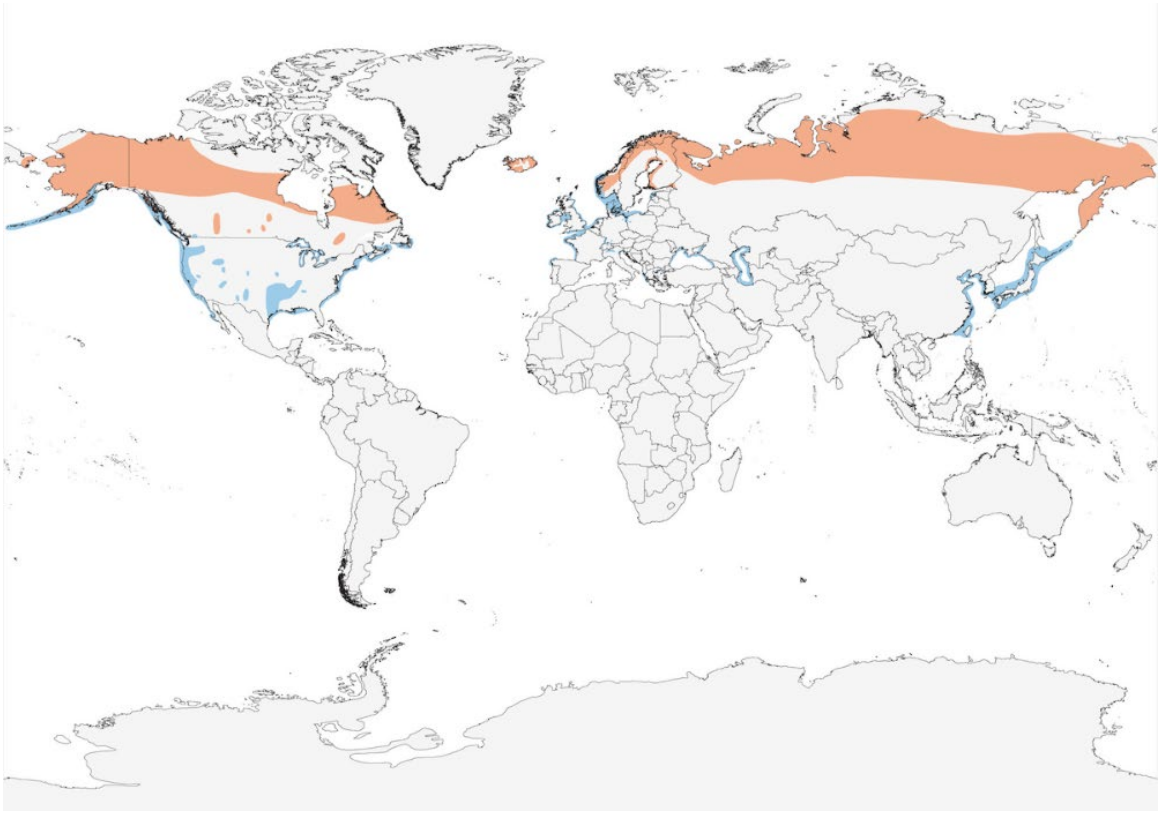

Figure 3. Worldwide distribution of greater scaup (Birds of the World, 2024)

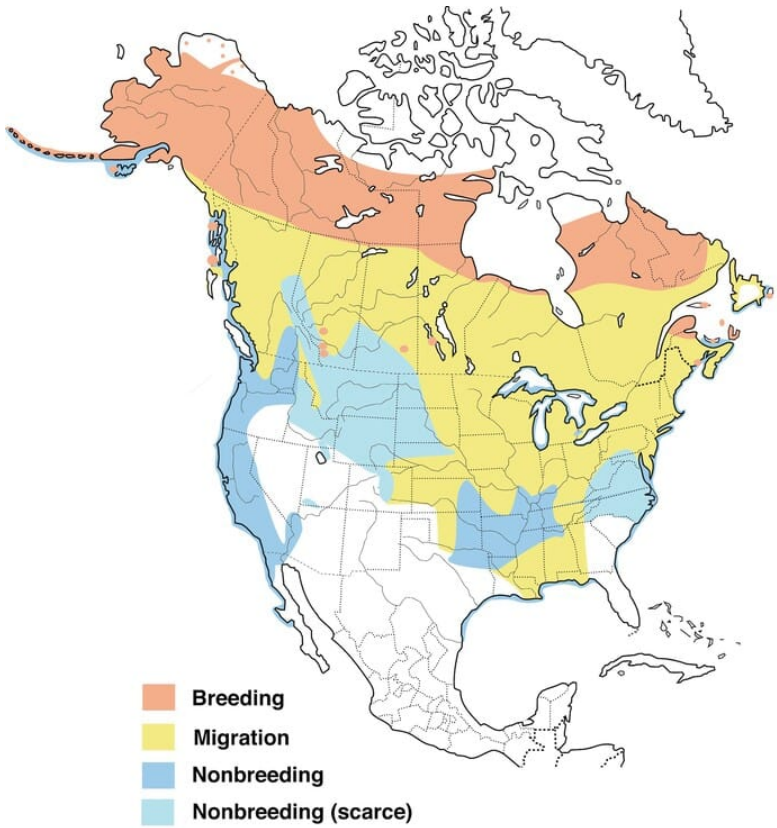

Figure 4. Distribution of greater scaup in North America (www.allaboutbirds.org)

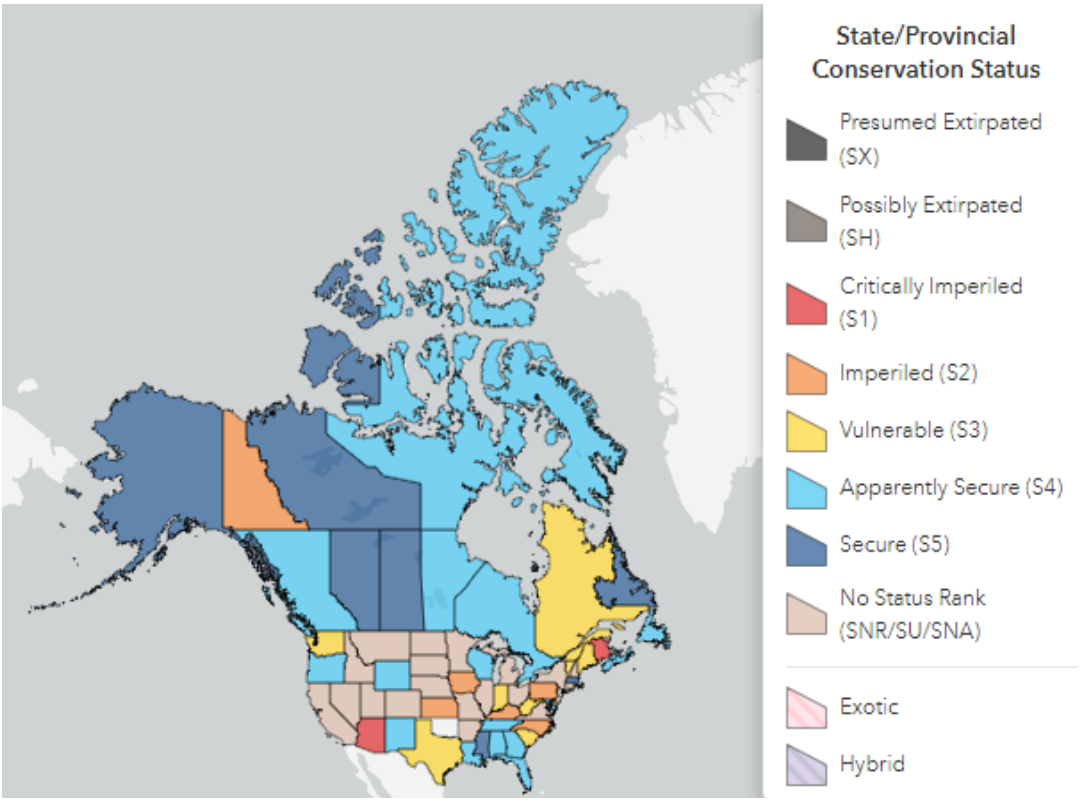

Figure 5. Conservation status of greater scaup in North America (NatureServe)

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

Years	# of Records	# of BBA Blocks	% of State
Pre-1980	_____	_____	_____
1980-1985	_____	_____	_____
2000-2005	_____	_____	_____
2020-2023	_____	_____	_____

Table 1. Records of greater scaup in New York.

Details of historic and current occurrence:

250,000 wintering individuals reported on Great South Bay, Suffolk County in December 1929 (Brock 1998). The Christmas Bird Count total for New York in 2009 was 68,650 individuals.

Abundant winter resident on coast, Great Lakes, and Niagara River region. Recorded in every month of the year in New York.

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Peripheral	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

1. Marine / Estuarine, Shallow Subtidal, Aquatic Bed
2. Great Lakes Aquatic Bed
3. Summer-stratified Monomictic Lake
4. Lake and River Shore/Beach

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
No	No	Unknown	

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

During migration and in winter, this species is found in bays, estuaries, and large open inland lakes and rivers. Greater scaup breeds near shores of ponds and lakes, in marshes, or on islands, primarily in forested tundra and northern borders of the taiga; among grass or shrubs, or under spruce boughs.

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Choose an item.	Choose an item.	Choose an item.	Yes	Yes	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

Some individuals of both sexes are capable of breeding in the first year. After first breeding, if environmental conditions permit, most females apparently breed annually.

Annual survival rates in the Atlantic Flyway, based on banding returns, are higher for adult males (76%, 1958–1986) than for adult females (70%, 1955–1972; Rocque 1997). Survival rates for adults banded

and recovered New Jersey and north were also higher for males (78%, 1958–1971) than females (67%, 1955–1972). Based on low numbers of bandings and recoveries, these Atlantic Flyway estimates of greater scaup survival rates are highly variable, but they are best available.

“Flocked birds,” i.e., nonbreeders, are an increasing component of the breeding population estimates in Alaska. The cause of this increase is unknown, but 2 major changes in the scaup’s environment may be involved: contaminants, contacted primarily during stays on the Great Lakes and along the Atlantic Coast, which may affect the reproductive biology of the species; and global warming as it may affect the environment on the breeding grounds.

VI. Threats *(from NY 2015 SWAP or newly described):*

Threats to NY Populations	
Threat Category	**Threat**
1. Pollution	Industrial & Military Effluents (oil spills, contaminants)
2. Climate Change & Severe Weather	Habitat Shifting & Alteration
3. Transportation & Service Corridors	Shipping Lanes (oil spills)
4. Biological Resource Use	Fishing & Harvesting Aquatic Resources (entanglement)

Fuel oil and other hydrocarbons transported by commercial vessels are a constant risk for greater scaup on the Atlantic Coast, especially from Cape Cod, MA, to the Chesapeake Bay. Occasional spills, including one in Long Island Sound in the late 1950s that killed significant numbers of greater scaup, have been documented in the media for the past 50 years. Levels of DDE and PCBs increased in Long Island Sound greater scaup, from 1981–1998 (Burger et al. 1990, Barclay et al. 1995, Perkins and Barclay 1997, Cohen 1998). Naturally occurring metals, such as gold, arsenic, mercury, or selenium, often are locally or regionally significant, especially near mining activities.

The great valleys of interior Alaska, between Alaska and Brooks Ranges, have a continental climate, including relatively long, warm summers, and it is this region that supports the forest of the taiga and most of Alaska’s breeding lesser scaup. The cool maritime climate of the Bering Sea coast, with the additional cooling influence of the seasonal pack ice, results in the absence of trees (i.e., tundra) and is the region supporting most breeding greater scaup. In 1976, a major climate-related step-like change occurred along the Pacific coast of the Americas that caused a composite of 40 environmental variables to rise to a new state in subsequent years (Ebbesmeyer et al. 1991). In Alaska, air temperatures in 1977 abruptly increased nearly 2°C to a new level that has been maintained since (Weller and Anderson 1998). Because temperature largely determines the edge of the forest-tundra zone (Kirschbaum and Fischlin 1996), this increase in Alaska temperature may have been a factor in the decline of greater scaup at Minto Lakes, in the heart of Alaska’s taiga, and could be causing a contraction of the breeding habitat of the greater scaup toward the cooler coast.

Breeding grounds remain relatively undisturbed by human activities, although habitats near coastal villages are impacted by a variety of activities (e.g., boating, hunting, fishing, waste disposal, trash

incineration, spillage of hydrocarbon fuels, widespread use of 2-cycle engines, outboard motors, commercial barges and fishing vessels, vehicles, and aircraft).

In general, wintering waterbirds face threats from loss of habitat to coastal wetlands activities that result in large scale alteration of bay or ocean substrates (dredging, sand mining, development of barrier islands, etc.), direct mortality from collisions with structures, various contaminants, or intensive human disturbance.

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

Greater scaup is a game bird with an open hunting season. The season length and daily bag limit can be modified annually, or the season can be closed. Greater and lesser scaup are managed together as "scaup." In 2008, the U.S. Fish & Wildlife Service adopted an adaptive harvest management protocol to inform harvest management decisions for the combined population of greater and lesser scaup. This harvest strategy prescribes season length and daily bag limits annually based on the breeding population observed each spring (U.S. Fish and Wildlife Service 2012).

Harvest surveys conducted by the U.S. Fish & Wildlife Service do differentiate between greater and lesser scaup. Lesser scaup are harvested in much higher numbers than greater scaup across the Atlantic Flyway, except in New York where harvest of the two species is nearly equal, and New Jersey where higher numbers of greater scaup are taken. Harvest of greater scaup in New York has fluctuated since 1999 from a high of 6,600 to a low of 1,300 but has averaged about 3,500. Approximately one quarter of all the greater scaup harvested in the Atlantic Flyway are harvested in New York each year with a higher harvest typically occurring only in Maryland. The 2012 hunting season length in New York is 60 days and the bag limit is 4 scaup (greater and/or lesser) per day. Prior to 2005, the bag limit was 3 scaup per day, and was 2 per day from 2005 to 2011 except in 2008 when 2 scaup per day could be harvested only during a 20 day "season within a season" and only one scaup per day could be harvested during the remaining 40 days of the duck season.

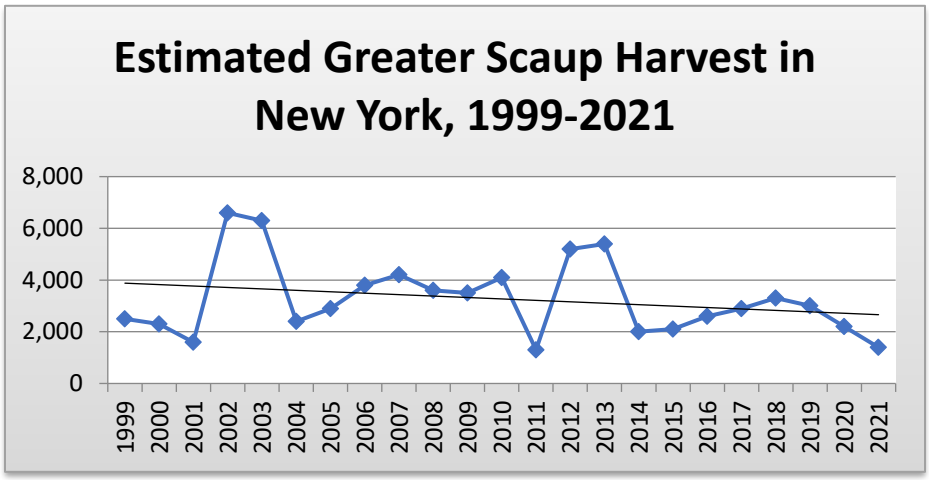

Figure 6. Estimated greater scaup harvest in New York, 1999-2023 (USFWS)

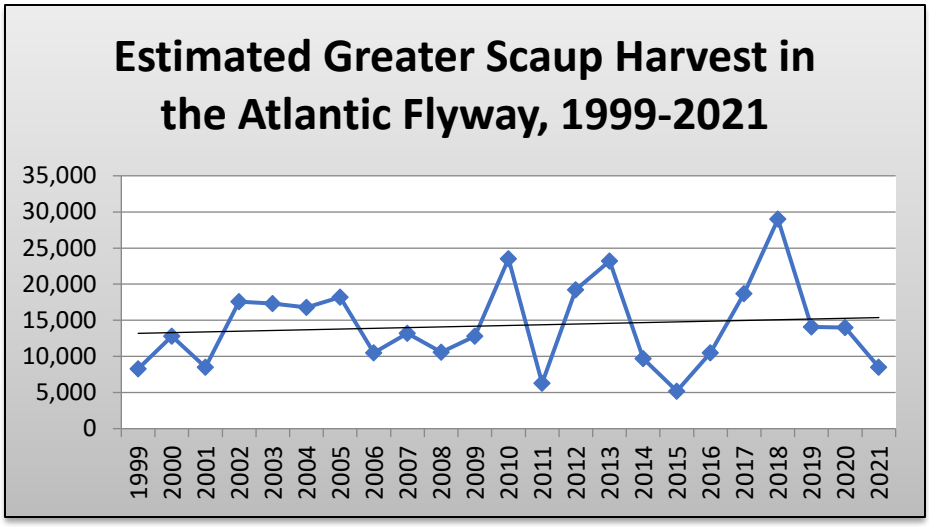

Figure 7. Estimated greater scaup harvest in the Atlantic Flyway, 1999-2023 (USFWS)

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

The Comprehensive Wildlife Conservation Strategy (NYSDEC 2005) includes recommendations for the following actions for wintering water birds, which includes greater scaup.

Habitat Management:

_____ Protect important waterfowl/water bird foraging areas from long-term destruction or development, excessive human disturbance, oil spills, environmental contaminants, and other potential impacts, through environmental permit reviews, etc.

Habitat Research:

_____ Characterize and map important foraging areas (submerged aquatic vegetation, mussel beds) for waterfowl/water birds wintering on Long Island.

_____ Document habitats used by northern pintails during spring migration and staging in the St. Lawrence Valley and Lake Plains regions of New York.

Life History Research:

_____ Determine contaminant levels (mercury, other metals, PCBs, other organochlorines) in samples above waterfowl/water birds wintering in New York to assess potential impacts on reproduction and survival. Obtain samples as opportunities arise.

_____ Document and estimate annual mortality of waterfowl/water birds in New York associated with Type E botulism and other major mortality factors, as opportunities arise.

Modify Regulation:

_____ Establish hunting regulations that will ensure long-term conservation of waterfowl populations migrating through or wintering in New York.

_____ Reduce or modify ocean dumping and disposal practices that may damage important water bird habitats or result in debris (ex- lead, plastics) that can cause waterbird mortality.

Other Action:

____ Because most of the species in this group are non-breeding visitors to the eastern U.S., NY should provide technical, financial, or political support as needed, to further international waterfowl/water bird conservation efforts.

Regional Management Plan:

____ Work with regional marine resource managers to identify common interests and potential conflicts (ex- commercial fishing/shell fishing techniques, aquaculture development, entanglement, oil spill response plans) with needs of wintering water birds. More intensive studies are needed of interactions between commercial fisheries and seabirds.

Statewide Baseline Survey:

____ Cooperate in development and conduct of baseline surveys or monitoring programs to determine population status of wintering waterfowl/water bird species in New York and/or eastern North America, at 10-year (or more frequent) intervals.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
1. Land/Water Protection	Site/Area Protection
2. Land/Water Protection	Resource/Habitat Protection
3. Land/Water Management	Site/Area Management
4. Land/Water Management	Habitat and Natural Process Restoration (pollution control)
5. Law/Policy Actions	Policy/Regulation Changes (hunting regulations, ocean dumping practices)
6. External Capacity Building	Alliance & Partnership Development

Table 2. Recommended conservation actions for greater scaup

VII. References

Barclay, J. S., C. Perkins, M. Tomassone, and K. Eccleston. 1995. Declining populations of ducks and habitat quality in Long Island Sound. Project Completion Rep., Conn. Dep. Environ. Protection., Long Island Sound Stud. Prog. Hartford, CT.

Barclay, J., and J. Zingo. 1994. Winter scaup populations in Connecticut coastal waters. Connecticut Warbler 13:136-150.

Brock, R. W. 1998. Greater scaup, Aythya marila. Pages 163-64 in Bull's Birds of New York (E. Levine, ed.). Cornell University Press, Ithaca, NY.

Burger, J., M. Gochfeld, and K. Parsons. 1990. Toxicant accumulation and effects on birds: the reproductive biology and effects of pollutants on estuarine and marine birds of the New York-New Jersey Harbor Estuary. no. CE002888 01-0 Fin. Rep. Environ. Protection Agency.

Cohen, J. 1998. Greater Scaup as bioindicators of contaminants in Long Island Sound. Master's Thesis. Univ. of Connecticut, Storrs.

Conant, B. and D. J. Groves. 2001. Alaska-Yukon waterfowl breeding population survey. U.S. Fish Wildl. Serv. Juneau, AK.

Conant, B., J. I. Hodges, and D. J. Groves. 2000. Alaska-Yukon waterfowl breeding population survey. U.S. Fish Wildl. Serv. Juneau, AK.

Corwin, K. 2013. NYSDEC SWAP 2015 Species Status Assessment for greater scaup. Prepared on January 23, 2012. Revised July 5, 2013.

Ebbesmeyer, C. C., D. R. Cayan, D. R. McLain, F. H. Nichols, D. H. Peterson, and K. T. Redmond. 1991. 1976 step in the Pacific climate: Forty environmental changes between 1968-1975 and 1977-1984. *in* Proc. Seventh Annu. Pacific Climate Workshop, April 1990. (Betancourt, J. L. and V. L. Tharp, Eds.) Tech. Rep. 26, Interagency Ecol. Stud. Prog., Calif. Dep. Water Resour.

Hodges, J. I., J. G. King, B. Conant, and H. A. Hanson. 1996. Aerial surveys of waterbirds in Alaska 1957-94: population trends and observer variability. Inform. Technol. Rep. 4. U.S. Dep. Int., Natl. Biol. Surv.

Kessel, B., D. A. Rocque and J. S. Barclay. 2002. Greater Scaup (*Aythya marila*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/650

Kirschbaum, M. U. F. and A. Fischlin. 1996. Climate change impacts on forests. Pages 95-129 *in* Climate change 1995, impacts, adaptations and mitigation of climate change: scientific-technical analyses. (Watson, R. T., M. C. Zinyowera, and R. H. Moss, Eds.) Cambridge Univ. Press, Cambridge, U.K.

Klimstra, J.D. et al., compiler. 2012. Atlantic Flyway harvest and population survey data book. U.S Fish and Wildlife Service, Laurel, MD.

Perkins, C. R. and J. S. Barclay. 1997. Accumulation and mobilization of organochlorine contaminants in wintering Greater Scaup. J. Wildl. Manage. 61:444-449.

Roberts, A.J. 2022. Atlantic Flyway harvest and population survey data book. U.S Fish and Wildlife Service, Laurel, MD.

Rocque, D. A. 1997. Population ecology and modeling of Greater Scaup. Master's Thesis. Univ. of Connecticut, Storrs.

Serie, J. and B. Raftovich. 2001. Atlantic Flyway: waterfowl harvest and population survey data. Admin. Rep. U.S. Fish Wildl. Serv. Off. Migr. Bird Manage. Laurel, MD.

Trost, R. E. and M. S. Drut. 2001. Waterfowl harvest and status, hunter participation and success, and certain hunting regulations in the Pacific Flyway and United States. Admin. Rep. U.S. Fish Wildl. Serv. Off. Migr. Bird Manage. Portland, OR.

U.S. Fish and Wildlife Service. 2012. Adaptive Harvest Management: 2012 Hunting Season. U.S. Department of Interior, Washington, D.C.

U.S. Fish and Wildlife Service. 2023. Waterfowl population status, 2023. U.S. Dept. Int. Washington, D.C.

Weller, G. and P. A. Anderson. 1998. Implications of global change in Alaska and Bering Sea regions. Proceedings of a workshop, June 1997. Center for Global Change and Arctic Syst. Res. Univ. of Alaska, Fairbanks.

Zimpfer, N.L., W.E. Rhodes, E.D. Silverman, G.S. Zimmerman, and K.D. Richkus. 2011. Trends in duck breeding populations, 1955-2011. USFWS Administrative Report, July 1, 2011. Laurel, MD.

Originally prepared by	Kimberley Corwin
Date first prepared	January 23, 2012
First revision	July 5, 2013 (Samantha Hoff)
Latest revision	

Species Status Assessment

Common Name: Harlequin duck **Date Updated:** January 29, 2024

Scientific Name: *Histrionicus histrionicus* **Updated By:** J. O'Connor and C.Hoh

Class: Aves

Family: Anatidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

The harlequin duck is among the rarest of waterfowl in eastern North America. In New York, harlequin ducks occur in small numbers off coastal Long Island and on the large water bodies where rock jetties provide habitat. Lauro (1998) stated that the number of individuals wintering in New York had "increased dramatically" during the previous two decades.

Two disjunct breeding areas are found in North America: the east coast and the west coast. It is unclear how much, if any, mixing of birds between the two breeding areas occurs, however recent studies have concluded that the two populations are truly distinct. On the East Coast, three populations of harlequin duck are recognized. There is one population in Iceland that is sedentary, and two populations that isolate themselves by wintering areas: Greenland and the east coast of North America. More than half of the eastern population winters in Maine; the species is listed as Threatened there. Another key wintering area is on coastal Rhode Island.

The population that winters in eastern North America has declined from historic levels but has shown a slight upward trend since the early 1990s—likely in response to a ban on hunting—and currently numbers about 1,800 to 2,000 birds. Historic population levels are debated and largely unknown but probably were less than 10,000.

I. Status

a. **Current legal protected Status**

i. **Federal:** Not Listed/Game Species **Candidate:** No

ii. **New York:** SGCN/Game Species

b. **Natural Heritage Program**

i. **Global:** G4

ii. **New York:** S1N **Tracked by NYNHP?:** Yes

Other Ranks:

IUCN Red List: Least Concern

COSEWIC: Special Concern (eastern population)

Species of Northeast Regional Conservation Concern (Therres 1999)

Status Discussion:

Harlequin duck is a rare to fairly common winter visitant on Long Island and a rare winter visitant on the Great Lakes, Niagara Falls, along the St. Lawrence River, and on Lakes George and Champlain.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Increasing	Stable	1990-2023		No
Northeastern US	Yes	Increasing	Increasing	1990-2023		No
New York	Yes	Stable	Stable	1999-2023		Yes
Connecticut	No data	Unknown	Unknown			No
Massachusetts	Yes	Increasing	Increasing	1979-2008		Yes
New Jersey	Yes	Increasing	Increasing	1998-2008		Yes
Pennsylvania	No	N/A	N/A			No
Vermont	No	N/A	N/A			No
Ontario	Yes	Increasing	Increasing	1998-2008		No
Quebec	Yes	Increasing	Increasing	1997-2007	Special Concern	No

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

The New York State Ornithological Association has conducted an annual January Waterfowl Count since 1955, however these surveys do not include the open ocean. A Sea Duck Survey had been conducted in the Atlantic Flyway, which includes New York, in the 1990s and early 2000s but was discontinued.

Trends Discussion *(insert map of North American/regional distribution and status):*

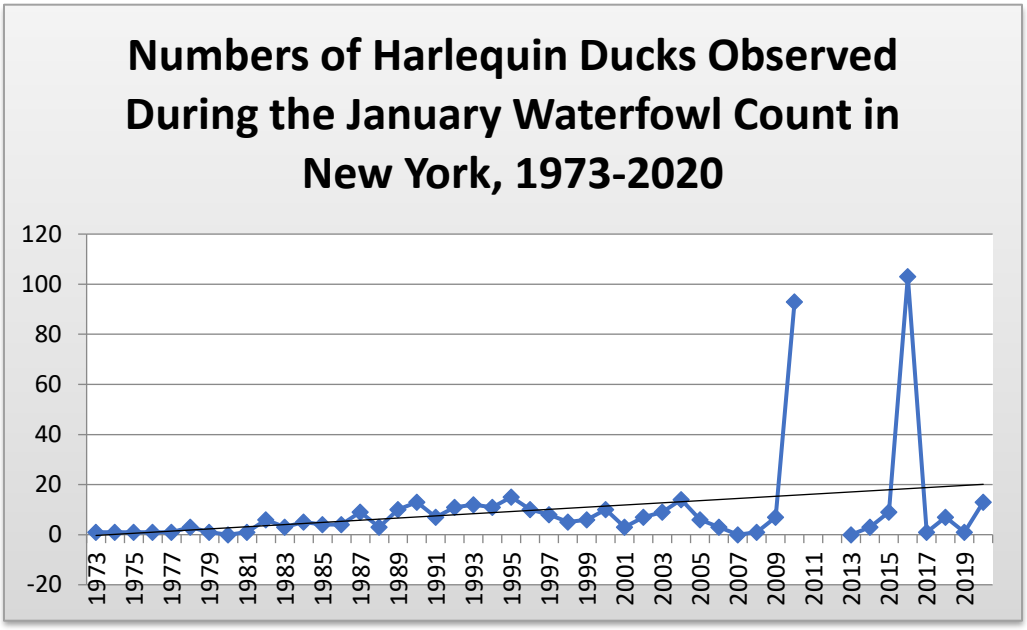

Figure 1. Number of harlequin ducks observed during the January waterfowl count in New York, 1973-2020. NYSOA Waterfowl Count (www.nybirds.org/ProjWaterfowl.htm).

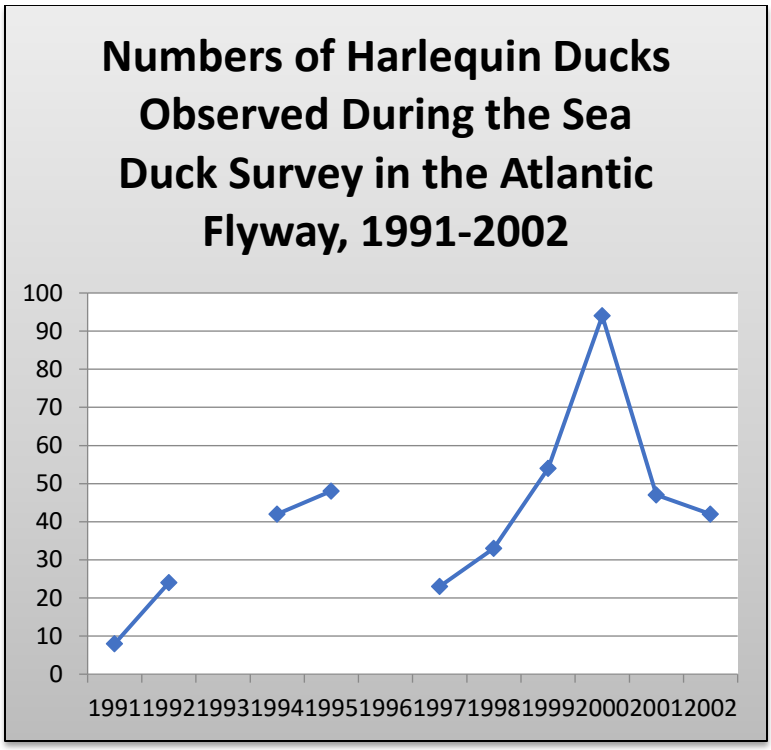

Figure 2. Number of harlequin ducks observed during the sea duck survey in the Atlantic Flyway, 1991-2002. Atlantic Flyway Harvest and Population Survey Data (USFWS).

Although still globally widespread, harlequin ducks have experienced substantial declines from historic levels. There are no reliable population estimates for harlequin ducks as their breeding and wintering habitats make them difficult to survey. The western population is much larger than the eastern population and is believed to be stable at about 150,000 to 200,000 birds. The eastern population may contain about 10,000 birds wintering in Greenland and another 1,800 to 2,000 birds that winter farther south along the east coast.

Harlequins may exhibit high breeding and wintering site fidelity and small local breeding populations, and are thus subject to local extirpations. Declining overall populations may provide little chance of recolonization (NatureServe 2012). Historical evidence suggests that the eastern North America population has declined from as many as 5,000 to 10,000 individuals in the 1800s to only several thousand before 1940, with possibly fewer than 1,000 individuals in the 1980s (Vickery 1988, Goudie 1989). This population has shown a slightly increasing trend since the 1990s.

Lauro (1998) stated that the number of individuals wintering in New York had “increased dramatically” during the previous two decades. Small numbers of harlequin ducks have been recorded annually during the January Waterfowl Count in New York.

The U.S. Fish and Wildlife Service conducted the Sea Duck Survey in the Atlantic Flyway in the 1990s and early 2000s. This mid-winter survey was conducted over the open ocean about 3 miles offshore from Nova Scotia to Florida. No harlequin ducks were recorded in New York waters during the survey and a high of 94 harlequins and low of 8 were observed along the length of the survey route.

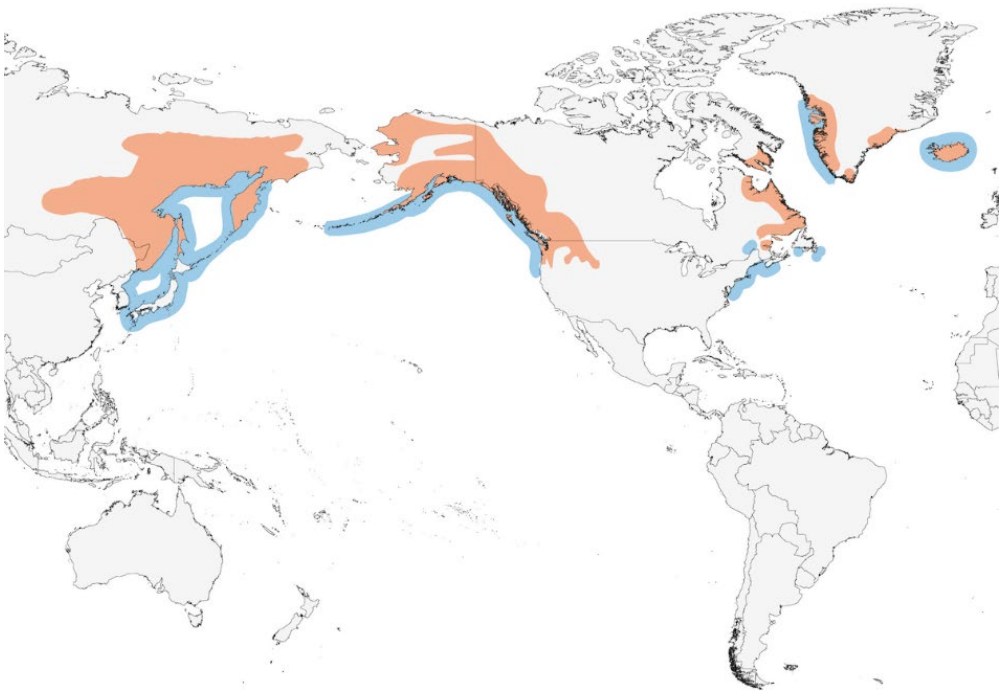

Figure 3. Distribution of the harlequin duck (Birds of the World, 2024)

Figure 4. Harlequin duck distribution (www.allaboutbirds.org)

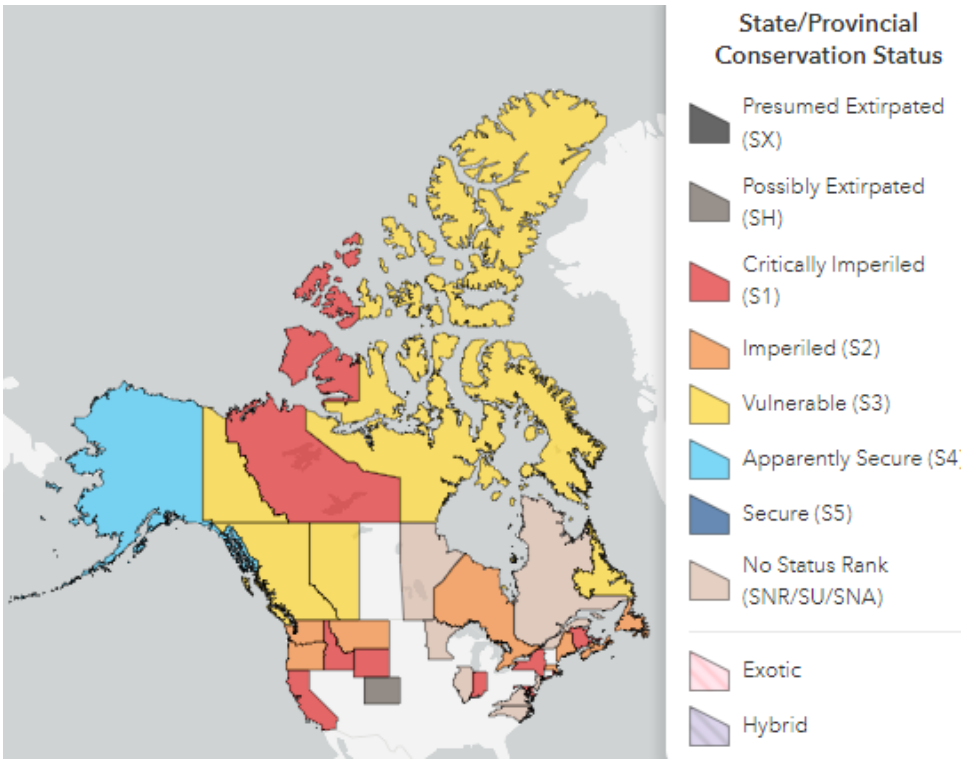

Figure 5. Harlequin duck conservation status (NatureServe)

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

Years	# of Records	# of BBA Blocks	% of State
Pre-1980	_____	_____	_____
1980-1985	_____	_____	_____
2000-2005	_____	_____	_____
2020-2023	_____	_____	_____

Table 1. Records of harlequin duck in New York.

Details of historic and current occurrence:

The annual January Waterfowl Count averaged 2 harlequin ducks during the period from 1973 to 1982, with a high count of 6 in 1982. Lauro (1998) noted a high count of harlequin duck—25 individuals—at Jones Inlet in Nassau County in 1989. From 1982 to 1992, the average count was 8 with a high count of 11 in 1992. The count was similar in the next ten-year period with an average of 9 and a high count of 15 in 1995. The next decade saw a high count of 93 in 2010, bumping the average count to 13 (with 2 years of missing data). A high count of 103 in 2016 is another outlier in a decade of single digit counts. The Average count for the entire dataset from 1973 to 2020 is 9 harlequin ducks.

The eastern North America population is estimated at 1,500-2,000 individuals (USFWS 1998).

In 1998, the USFWS ruled that listing as a Threatened or Endangered species was not warranted because hunting had been prohibited on the Atlantic Coast since 1990, oil spill procedures had

been updated in Maine and Rhode Island, and key wintering sites in those states were protected under federal ownership (Caron and Paton 2007).

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Peripheral	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

a. Marine, Intertidal, Benthic Geomorphology, Rocky Intertidal

b. Marine, Intertidal, Artificial Structure, Jetties

c. Marine, Intertidal, Artificial Structure, Groins

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
Choose an item.	Choose an item.	Unknown	

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

Harlequin ducks spend the winter in rough coastal waters, especially along rocky shores or reefs; summering nonbreeders and immatures also occur in this habitat (Cassirer et al. 1993).

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Choose an item.	Yes	Choose an item.	Choose an item.	Yes	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

Some females are able to breed at 2 years of age. Breeding success is low until at least 5 years old (Reichel et al. 1997). For males, age at first breeding depends on acquisition of a mate; 2-year-old males are able to acquire mates, but most do not form first pair bond until ≥3 years old (Robertson et al.

1998). Annual rates of non-breeding can be substantial and apparently vary with environmental conditions, especially food abundance (Bengtson and Ulfstrand 1971, Gardarsson and Einarsson 1994).

Females produce zero or one brood, never more. Re-nesting by females that lose clutches to predators has not been documented. Lifetime reproductive success is unknown.

VI. Threats *(from NY 2015 SWAP or newly described):*

This species is threatened by habitat degradation in breeding and wintering areas including: destruction of riparian areas; destruction of watershed stability and stream flow regimes by mining, roads, and timber harvest; impoundments and diversions on breeding streams; destruction of food base via pesticides; shoreline development and activities on wintering and breeding areas; disturbance by recreational river users and hikers in breeding areas (Spahr et al. 1991). Mortality factors include: over-harvesting of remnant populations; oil and other contamination in coastal areas (Harlequin Duck Working Group 1993).

Declines in the number of harlequin ducks along the Atlantic Coast were attributed to factors such as habitat loss, oil contamination, climatic and stream level changes, and hunting (Thomas and Robert 2001). Of these, heavy hunting pressure in eastern North America has been hypothesized to be the primary factor causing population declines because harlequins were targeted for their ease of hunting and brightly colored plumage of the males (Vickery 1988, Goudie 1989, Mittelhauser et al. 2002). Harlequin ducks are particularly vulnerable to oil spills because they are linked closely to the intertidal habitats where oil washes up. Oil spilled by the wreck of the Exxon Valdez in 1989 in Prince William Sound, Alaska, killed an estimated 1,400 birds. Oil may chronically re-contaminate birds and interfere with reproduction (Patten 1993).

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

The harlequin duck is protected by the Migratory Bird Treaty Act. It is a game bird with a closed hunting season in the Atlantic Flyway and New York.

The Tidal Wetlands Act, Article 25 of the Environmental Conservation Law, protects some of the near-shore intertidal habitats used by harlequin ducks but does not protect any habitats beyond 6 feet deep measured at mean low water. This does not adequately protect harlequin duck habitat but does restrict shoreline development and reduce urban runoff.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

Reliable techniques for monitoring population size and trends across its range need to be developed and implemented. Continued support of the Sea Duck Joint Venture should lead to improved knowledge and management of the species.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated

subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
1. Land/Water Protection	Site/Area Protection
2. Land/Water Protection	Resource/Habitat Protection
3. Land/Water Management	Site/Area Management
4. Land/Water Management	Habitat and Natural Process Restoration (pollution control)
5. Law/Policy Actions	Policy/Regulation Changes (hunting regulations, ocean dumping practices)
6. External Capacity Building	Alliance & Partnership Development

Table 2. Recommended conservation actions for the harlequin duck

VII. References

Bengtson, S. A. and S. Ulfstrand. 1971. Food resources and breeding frequency of the harlequin duck *Histrionicus histrionicus* in Iceland. Oikos 22:235-239.

Cassirer, E. F., G. Schirato, F. Sharpe, C.R. Groves, and R.N. Anderson. 1993. Cavity nesting by harlequin ducks in the Pacific Northwest. Wilson Bull. 105:691-694.

Gardarsson, A. and A. Einarsson. 1994. Responses of breeding duck populations to changes in food supply. Hydrobiologia 279/280:15-27.

Goudie, R. I. 1989. Historical status of harlequin ducks wintering in eastern North America: a reappraisal. Wilson Bull. 101:112-114.

Harlequin Duck Working Group. 1993. Status of harlequin ducks (*Histrionicus Histrionicus*) in North America. Report of the Harlequin Duck Working Group. 83 pp.

Klimstra, J.D. et al., compiler. 2012. Atlantic Flyway harvest and population survey data book. U.S Fish and Wildlife Service, Laurel, MD.

Lauro, A.J. 1998. Harlequin Duck, *Histrionicus histrionicus*. Page 167 *in* Bull's Birds of New York State (E. Levine, ed.). Cornell University Press, Ithaca, NY.

Patten, S. 1993. Acute and sublethal effects of the Exxon Valdez oil spill on harlequins and other seaducks. Alaska Dept. Fish and Game, Anchorage, AK. 7 pp.

Reichel, J. D., D. L. Genter, and D. P. Hendricks. 1997. Harlequin Duck research and monitoring in Montana: 1996. Montana Nat. Herit. Prog. Helena.

Robertson, G. J., F. Cooke, R. I. Goudie, and W. S. Boyd. 1998. The timing of pair formation in Harlequin Ducks. Condor 100:551-555.

Robertson, Gregory J. and R. Ian Goudie. 1999. Harlequin Duck (*Histrionicus histrionicus*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/466 doi:10.2173/bna.466

Spahr, R., L. Armstrong, D. Atwood, and M. Rath. 1991. Threatened, endangered, and sensitive species of the Intermountain Region. U.S. Forest Service, Ogden, Utah.

Therres, G.D. 1999. Wildlife species of regional conservation concern in the northeastern United States. Northeast Wildlife 54:93-100.

U.S. Fish and Wildlife Service (USFWS). 1998. One-year finding for a petition to list the Harlequin Duck (*Histrionicus histrionicus*) in eastern North America as endangered or threatened. Federal Register 63:25177-25178.

Vickery, P. D. 1988. Distribution and population status of Harlequin Ducks (*Histrionicus histrionicus*) wintering in eastern North America. Wilson Bull. 100: 119-126.

Originally prepared by	Kimberley Corwin
Date first prepared	March 15, 2012
First revision	July 2014 (Jenny Murtaugh)
Latest revision	

Species Status Assessment

Common Name: Horned lark **Date Updated:** December 2023

Scientific Name: *Eremophila alpestris* **Updated By:** Abigail Valachovic

Class: Aves

Family: Alaudidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

Two races of Horned lark occur in New York. The nominate *alpestris* is highly migratory, breeding in Ontario and Quebec, and on islands in the Gulf of St. Lawrence; it winters in large numbers in New York. The race *practicola* breeds in New York and is at least partially sedentary.

A bird of open agricultural lands, the Horned lark breeds on unplowed fields early in the year, often raising and fledging young before those fields are planted in the spring. The North American distribution has shifted in response to habitat availability, with populations in the shortgrass prairies west of the Mississippi River expanding eastward and southward during the late 1800s as land was cleared for agriculture. Breeding was first confirmed in New York (Buffalo) in 1875 (Bull 1974).

Populations are now declining in the east—including in New York—with the loss of open agricultural lands for breeding. Declines were first documented in the Northeast in the 1940s. Breeding Bird Survey data for the eastern United States show a short-term decline of 0.9% per year from 1999 to 2009 and a long-term decline of 2.9% per year from 1966 to 2009. The second Breeding Bird Atlas in New York showed a 37% decline in occupancy from 1980-85 to 2000-05.

I. Status

a. Current legal protected Status

i. **Federal:** Not Listed **Candidate:** No

ii. **New York:** Special Concern: SGCN

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** S3S4B **Tracked by NYNHP?:** No

Other Ranks:

NY Natural Heritage Program Watch List
COSEWIC - Endangered
IUCN Red List Category: Least concern

Status Discussion:

The Horned lark is a locally common breeder in agricultural areas of New York, absent at higher elevations. It is ranked as Vulnerable in New York, Connecticut, and New Jersey.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Declining	Declining	1999-2009		Yes
Northeastern US	Yes	Declining	Declining	1999-2009		Yes
New York	Yes	Declining	Declining	1976-1981 to 2003-07	SC	Yes
Connecticut	Yes	Declining	Declining		E	Yes
Massachusetts	Yes	Declining	Declining	1974-79 to 2007-11	Not listed	No
New Jersey	Yes	Declining	Declining		T	Yes
Pennsylvania	Yes	Increasing	Increasing	1984-89 to 2004-08	Not listed	No
Vermont	Yes	Declining	Declining	1976-81 to 2003-07	Not listed	No
Ontario	Yes	Declining	Declining	1981-85 to 2001-05	Not listed	No
Quebec	Yes	Declining	Declining	1984-89 to 2021	Not listed	No

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

New York's Landowner Incentive Program (LIP) monitors grassland birds at eight Grassland Focus Areas in the state. Horned lark is one of the focal species in point counts that are conducted annually. Surveys are conducted in June, however, and might not document the presence of this early breeder.

Trends Discussion *(insert map of North American/regional distribution and status):*

Recently, BBS data for the United States showed a significant 1.97% decline from 1996-2019, and a population increase by 0.34% in New York. In North America, this species has undergone a large, significant decline over the last 50 years (70% decline between 1966 and 2015 based on the North American Breeding Bird Survey [Sauer et al. 2017], or 65% decline between 1970 and 2014 based on Partners in Flight. Recent trends suggest a significant decline of 22.9% over the last three generations in North America (Sauer et al. 2017). Therefore, the global population is assessed as being in decline. In New York, the cumulative change in estimated relative abundance from 2012 through 2022 of Horned larks during the breeding season has decreased by 40.2% with confidence intervals of –22.2% to –56.4%.

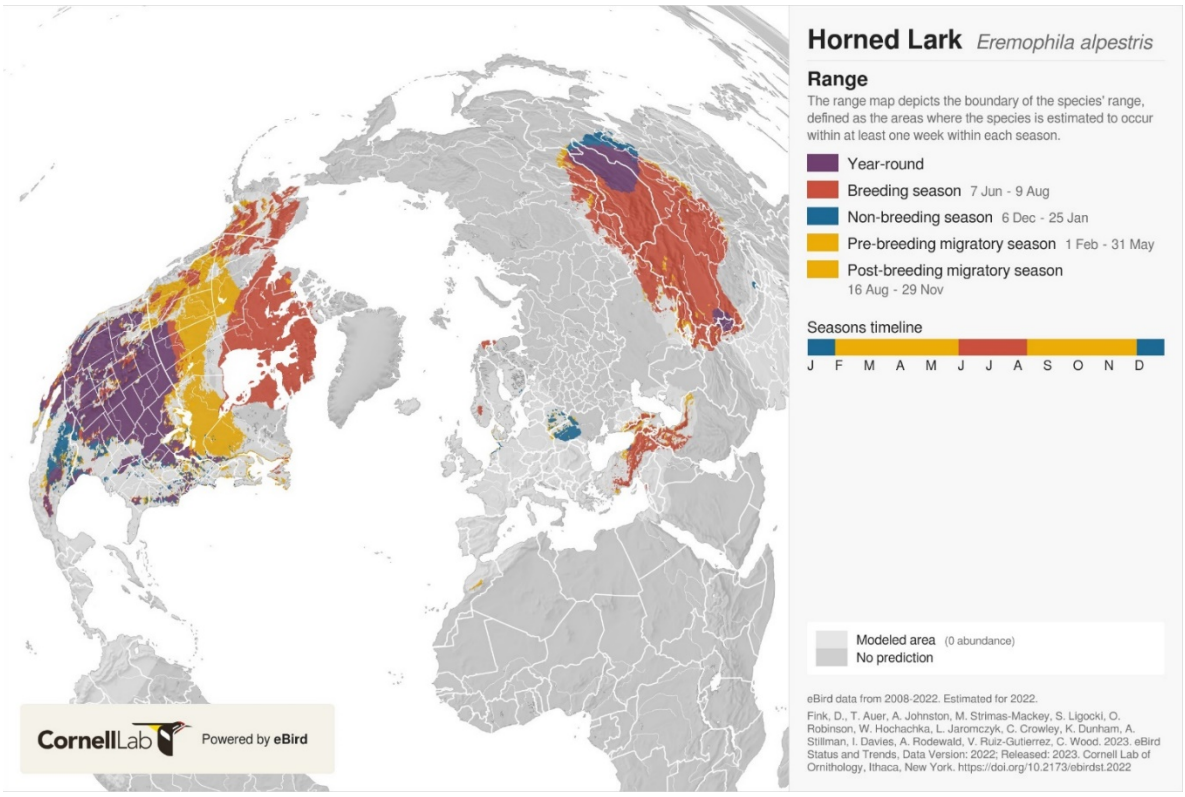

Figure 1. Horned lark distribution in North America (eBird).

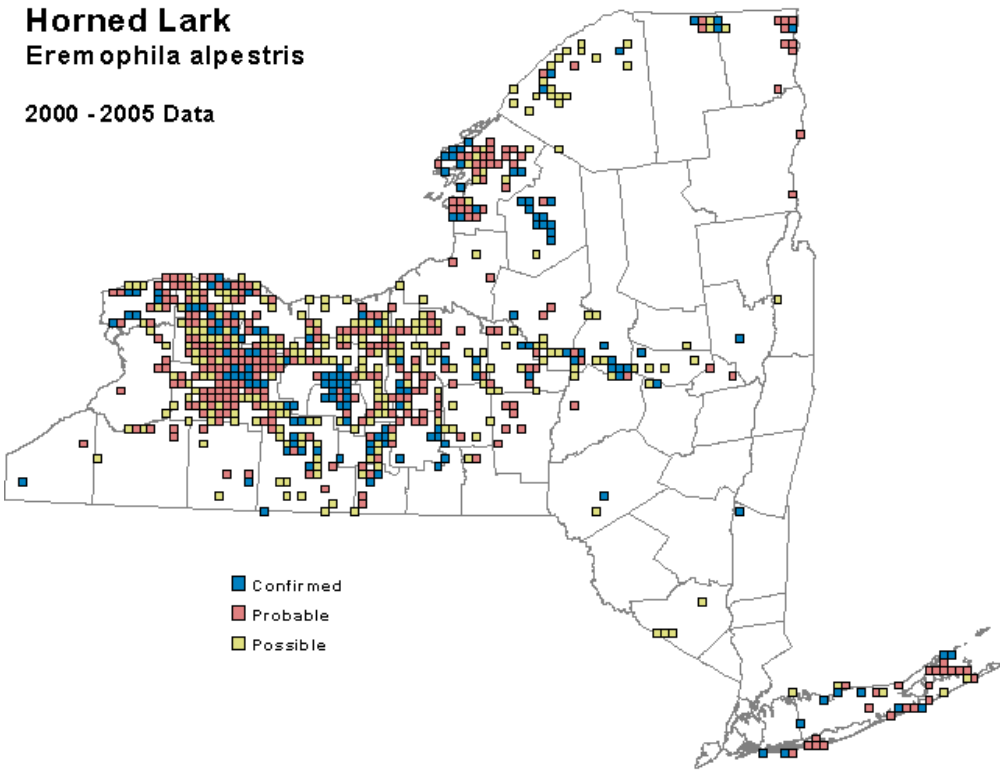

Figure 2. Horned lark occurrence in New York State during the second Breeding Bird Atlas (McGowan and Corwin 2008).

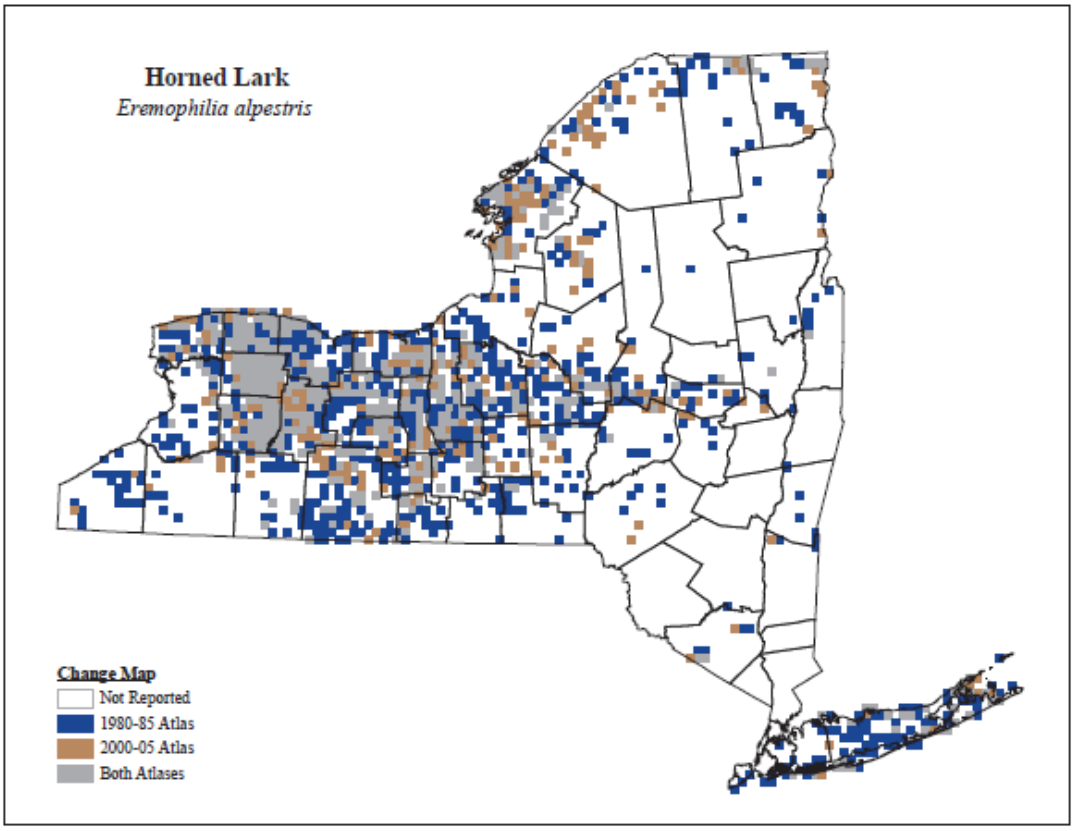

Figure 3. Change in Horned lark occurrence in New York State between the first Breeding Bird Atlas and the second Breeding Bird Atlas (McGowan and Corwin 2008).

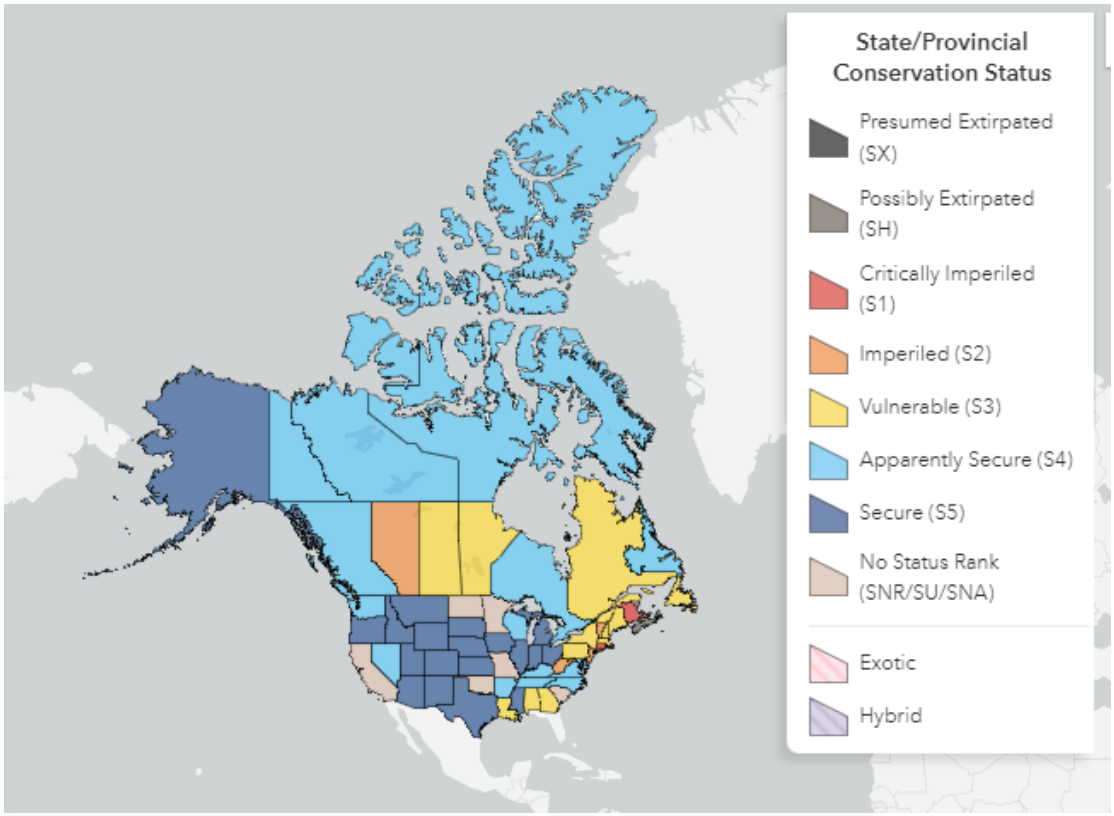

Figure 4. Conservation status of the Horned lark in North America (NatureServe 2016).

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

Years	# of Records	# of BBA Blocks	% of State
Pre-1980	_____	_____	_____
1980-1985	_____	1,105	21%
2000-2005	_____	698	13%
2020-2023	_____	411	7.2%

Table 1. Records of horned lark in New York.

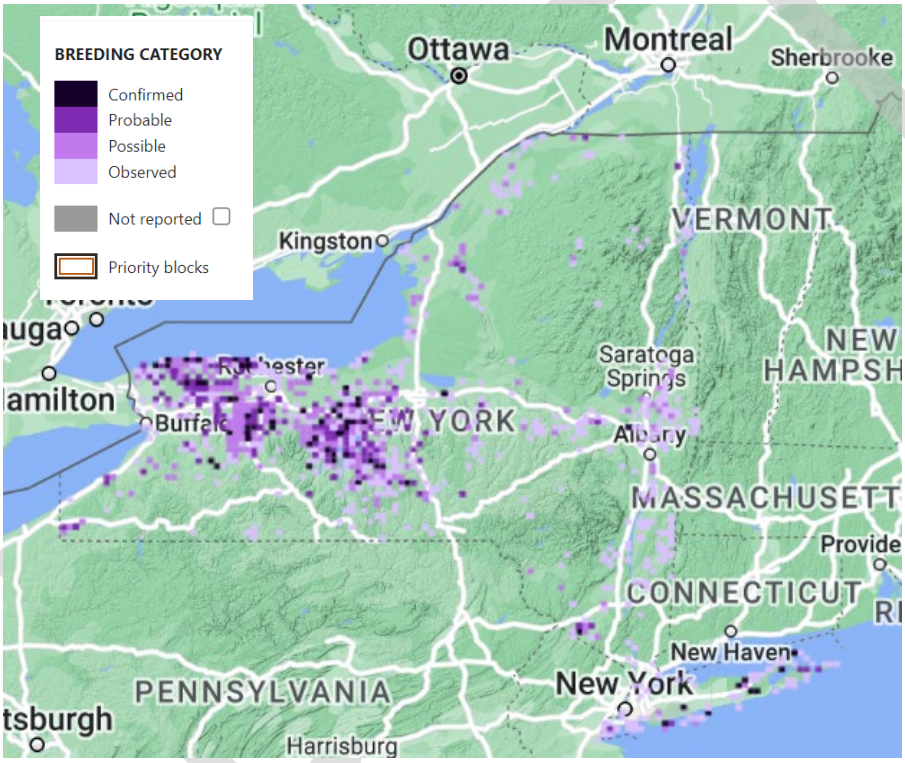

Figure 5. Breeding Bird Atlas 3 records of horned lark in New York (BBA-eBird).

Details of historic and current occurrence:

Bull (1974) stated that breeding occurred in virtually every county and described the historic movement of Horned lark into New York: the first nest was found near Buffalo in 1875; a nest was confirmed the following year in Rochester and as far east as the Black River region near Lowville, Lewis County; by 1879 young birds were collected in Long Island City in Queens County; breeding was confirmed in Albany County in 1881 and in the Adirondacks (Jay, Essex County) by 1900.
The first Breeding Bird Atlas (1980-85) documented occupancy in 21% of the survey blocks statewide (Andrle and Carroll 1988).

The second Breeding Bird Atlas (2000-05) documented occupancy in 13% of survey blocks statewide, a decline of 37% in the past 20 years (McGowan and Corwin 2008).

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Peripheral	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

1. Cultivated Crops
2. Urban and Recreational Grasses
3. Pasture/Hay
4. Native Barrens and Savanna
5. Maritime Dunes
6. Great Lakes Dune and Swale

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
Yes	No	Declining	Since 1950s

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

Horned larks prefer the least vegetated of open lands for nesting; sparse vegetation and exposed soil are characteristic of nesting areas. Pickwell (1931) described the horned lark habitat in New York to include old meadows, plowed fields, pastures, potato and cabbage fields, racetrack grounds, golf courses, sheep pastures, and sandy barrens. Bull (1974) included sand dunes with beach grass as a breeding habitat. Larks will continue to occupy active pastures and fields planted with corn, beans, and potatoes well into mid-summer (Smith 2008).

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	Choose an item.	No	Yes	Yes	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

The horned lark is the earliest nesting, native non-raptor bird species in New York State with nesting reported as early as late February. Nests are constructed on the ground with the site selected by the female. The nest is typically in a small depression and is made of grasses, roots, and hair. It is often lined by small by pebbles on its outer rim. Incubation is done entirely by the female and begins after the last egg is laid.

The Horned lark is thought to breed in its first year, as do most small passerines; adults breed yearly (Beason 1995). In most locations, at least two and possibly more successful clutches are produced per year (Beason 1970). No long-term studies of a color-marked populations exist, so data on lifetime success or between-year variation of individual reproductive success for this species is not available. The oldest banded Horned lark was captured near Pueblo, CO, seven years after it was banded as an adult at the same location, making it at least eight years old (Klimkiewicz and Futcher 1989).
Major causes of mortality are predation and human activities, especially agricultural operations. Data is not available on dispersal of young from natal sites. Birds that successfully reproduced are known to have returned to the same or nearby territories the next year (Beason 1970).

VI. Threats *(from NY 2015 SWAP or newly described):*

Since the mid-1940s, the eastward expansion of grassland birds has reversed in northeastern U.S. and southern Ontario as agricultural lands have been abandoned, reverting to deciduous forest (Robbins et al. 1986, Hussell 1987). Sibley (1988) noted that declines had resulted from the replacement of grain crops by corn and alfalfa, despite the use of corn fields for breeding noted by other authors.

Declines in some areas have been attributed to a decrease in hayfield area, earlier and more frequent hay-cropping, and a shift from timothy and clover to alfalfa; earlier, agricultural practices that converted wooded land to open land resulted in an increase in range (Bollinger et al. 1990, Bollinger and Gavin 1992). In New York, primary disturbance to nesting is hay-cropping; 100% of nests with eggs and young nestlings affected by mowing were abandoned or destroyed, but proportion of young lost declined with age of nestlings (Bollinger et al. 1990). A threat to the grasslands in New York is a failure to address the viability of dairy farming, especially smaller family farms (NYSDEC 2005). Fire-dependent pine barren type communities also support grassland species. Fire suppression can make them less suitable.

A study led by a Canadian toxicologist identified acutely toxic pesticides as the most likely leading cause of the widespread decline in grassland bird numbers in the United States. Overall insecticide use, and change in permanent pasture and rangeland, concluded that lethal pesticides were nearly four times more likely to be associated with population declines than the next most likely contributor, changes in cropped pasture (Mineau and Whiteside 2013).

In addition to the threat of pesticides used in agricultural fields and other habitats, Horned larks are frequent victims of collisions, particularly at wind turbines and airports. The main factors influencing the future viability of the streaked horned lark include ongoing and sustained habitat loss, continued land management activities and related effects, recreation, and the synergistic effects of climate change and small population size.

Threats to NY Populations	
Threat Category	**Threat**

1. Residential & Commercial Development	Housing & Urban Areas (habitat loss)
2. Agriculture & Aquaculture	Annual & Perennial Non-timber Crops (intensification & changes in agriculture)
3. Transportation & Service Corridor	Roads & Railroads
4. Transportation & Service Corridor	Flight Paths (plane strikes)
5. Pollution	Agriculture & Forestry Effluents (pesticides, rodenticides)
6. Natural System Modifications	Other Ecosystem Modifications (succession)
7. Energy Production & Mining	Renewable Energy (sensitive to disturbance from turbines)
8. Invasive & Other Problematic Species & Genes	Invasive/ Non-native Alien Species (non-native plants e.g. swallowwort)
9. Energy Production & Mining	Oil & Gas Drilling (fracking)

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:**_____

If yes, describe mechanism and whether adequate to protect species/habitat:

Horned lark is protected under the Migratory Bird Treaty Act of 1918.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

The NYSDEC's Strategy for Grassland Bird Conservation Best Management Practices (BMPs) for should be used to guide habitat management on grassland habitat or habitat to be converted into grassland. The management goal of these BMPs is to maintain the open, grassy conditions necessary for successful breeding by grassland birds and to avoid disturbance to nesting birds. Techniques may include seeding, mowing, and removal of trees and shrubs including invasive species. Typically, land should be managed for a minimum of 5 years to begin showing benefits for grassland birds. These BMPs form the basis for specific 5-year Site Management Plans for landowners selected to receive technical and financial assistance through LIP (NYSDEC 2022-2027).

Some general recommendations:

•Target management for grassland bird species known to be in the vicinity and consider the needs of both breeding and wintering grassland bird species.
• Consider the surrounding landscape when making management decisions.
• Conduct baseline grassland bird surveys on newly acquired fields or fields targeted for management changes to determine which species are present.

• Increase field size by hedgerow removal, removing trees, etc. to benefit species that require large, open fields.
• Control invasive plant species (glossy buckthorn, pale and black swallowwort, Canada thistle, Phragmites, etc.) to improve habitat quality.
• When developing grassland planting or habitat restoration projects, consider a variety of factors including the targeted grassland bird species, pollinators, seed mix (warm versus cool season grasses, forbs, wildflower mixes, grass height and density), timing of planting, existing site conditions, and vegetation removal techniques (including herbicide and intensive disking).
• Utilize mowing, haying, burning, and grazing for maintaining grassland habitat, after evaluating the appropriateness of these methods relative to site conditions and management objectives. In particular, burning cool season grasses is not advisable in most situations in New York.

Conservation actions following IUCN taxonomy are categorized in the table below.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
1. Land/Water Protection	Site/Area Protection
2. Land/Water Protection	Resource/Habitat Protection
3. Land/Water Management	Site/Area Management
4. Land/Water Management	Invasive/Problematic Species Control
5. Land/Water Management	Habitat and Natural Process Restoration
6. Education and awareness	Training
7. Education and awareness	Awareness & Communications
8. Land and Policy	Policies and Regulations

Table 2. Recommended conservation actions for horned lark

VII. References

Beason, R. C. 1970. The annual cycle of the prairie Horned lark in west-central Illinois. Master's Thesis. Western Illinois Univ. Macomb.

Beason, R. C. 1995. Horned Lark (*Eremophila alpestris*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology < http://bna.birds.cornell.edu/bna/species/195 doi:10.2173/bna.195>.

Bull, J. 1974. Birds of New York State. Doubleday/Natural History Press, Garden City, NY [Reissued with corrections by Cornell University Press, Ithaca, NY 1985].

Corwin, K. 2012. NYSDEC SWAP 2015 Species Status Assessment for Horned lark. Prepared on March 27, 2012. Revised July 2014 by Jenny Murtaugh.

Hussell, D. J. T. 1987. Horned Lark. Pages 270 *in* Atlas of the breeding birds of Ontario. (Cadman, M. D., P. F. J. Eagles, and F. M. Helleiner, Eds.) Univ. of Waterloo Press, Waterloo.

Klimkiewicz, M. K. and A. G. Futcher. 1989. Longevity records of North American birds. J. Field Ornithol. 60(Supp. 1.): 469-494.

Mineau, P. and M. Whiteside. 2013. Pesticide acute toxicity is a better correlate of U.S. grassland bird declines than agricultural intensification. PloS ONE 8: 1-8.

Morgan, M. R. and M. F. Burger. 2008. A plan for conserving grassland birds in New York: Final report to the

New York State Department of Environmental Conservation under contract #C005137. Audubon New York, Ithaca, NY. <http://ny.audubon.org/PDFs/ConservationPlan-GrasslandBirds-NY.pdf>. Accessed 7 June 2013.

New York State Department of Environmental Conservation (NYSDEC). 2013. Best management practices for grassland birds. < http://www.dec.ny.gov/pubs/86582.html>. Accessed 7 June 2013.

NYSDEC Strategy for Grassland Bird Habitat Management and Conservation 2022-2027.

New York State Third Breeding Bird Atlas. New York Overview. https://ebird.org/atlasny/state/US-NY. Accessed (21 December 2023).

Robbins, C. S., D. Bystrak, and P. H. Geissler. 1986. The breeding bird survey: its first fifteen years, 1965-1979. U.S. Fish Wildl. Serv. Resour. Publ. 157:1-196.

Sauer, J. R.; Niven, D. K.; Hines, J. E.; Ziolkowski, Jr, D. J.; Pardieck, K. L.; Fallon, J. E.; Link, W. A. 2017. The North American Breeding Bird Survey, Results and Analysis 1966 - 2015. Version 12.23.2015. Laurel, MD.

Sibley, S. C. 1988. Horned Lark. Pages 264-65 *in* The atlas of breeding birds in New York State. (Andrle, R. F. and J. R. Carroll, Eds.) Cornell Univ. Press, Ithaca, NY.

Originally prepared by	Kimberley Corwin
Date first prepared	March 27, 2012
First revision	July 2014 (Jenny Murtaugh)
Last revision	December 22, 2023 (Abigail Valachovic)

Species Status Assessment

Common Name: Kentucky warbler **Date Updated:** January 4, 2024

Scientific Name: *Geothlypis formosa* **Updated By:** M. Oberkircher

Class: Aves

Family: Parulidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

Kentucky warbler is a fairly common breeder in the southern United States and has been expanding its range northward since the early 1960s, reoccupying its historic range. New York is the northern extent of the breeding range. Breeding occurs only in the southernmost parts of the state and populations appear to fluctuate. The preferred habitat in New York is hilly woodlands with stream-bearing ravines and a dense shrubby understory.

I. Status

a. Current legal protected Status

i. **Federal:** Not Listed **Candidate:** No

ii. **New York:** SGCN

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** S2B **Tracked by NYNHP?:** Yes

Other Ranks:

-IUCN Red List: Least Concern

-Partners in Flight: 14 out of 20

Status Discussion:

In New York, Kentucky warbler is an uncommon and local breeder in the southeastern portion of the state. It may also breed in river valleys along the Pennsylvania border. It is a rare spring and fall migrant through the breeding area and very rare anywhere else. Kentucky warbler is ranked as Imperiled in New York and Massachusetts and as Vulnerable in Connecticut and New Jersey (NatureServe 2020). The IUCN Red List status is Least Concern with a decreasing global population trend (BirdLife International 2016).

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Declining	Declining			Choose an item.
Northeastern US	Yes	Declining	Declining			No
New York	Yes	Declining	Declining			Yes

Connecticut	Yes	Unknown	Unknown			No
Massachusetts	No	Choose an item.	Choose an item.			No
New Jersey	Yes	Unknown	Unknown		Special Concern	Yes
Pennsylvania	Yes	Stable	Stable			Yes
Vermont	No	Choose an item.	Choose an item.			No
Ontario	No	Choose an item.	Choose an item.			No
Quebec	No	Choose an item.	Choose an item.			No

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

None.

Trends Discussion *(insert map of North American/regional distribution and status):*

Declines in Kentucky warbler populations in New York were noted in the early 1900s and the species was essentially extirpated from New York by 1942 (Bull 1964). Breeding resumed in 1973 on Long Island and expanded until the 1980s and 1990s. Breeding Bird Atlas data show a loss in occupancy of 72% between 1980-85 and 2000-05.

Breeding Bird Survey data show both long- and short-term survey-wide declines of -0.90 from 1966-2015 and -0.4 from 1993 to 2021; in the Eastern region Kentucky warblers declined -0.73 from 1966-2015 and increased 0.36 from 2005-2015 (Sauer et al. 2017). Abundance trends from eBird show a -10.8% decline with an upper confidence interval of -3.5% and a lower interval of -18% for breeding Kentucky warblers in NY from 2012-2022.

Partners In Flight estimates that the species has declined by 29% throughout its range.

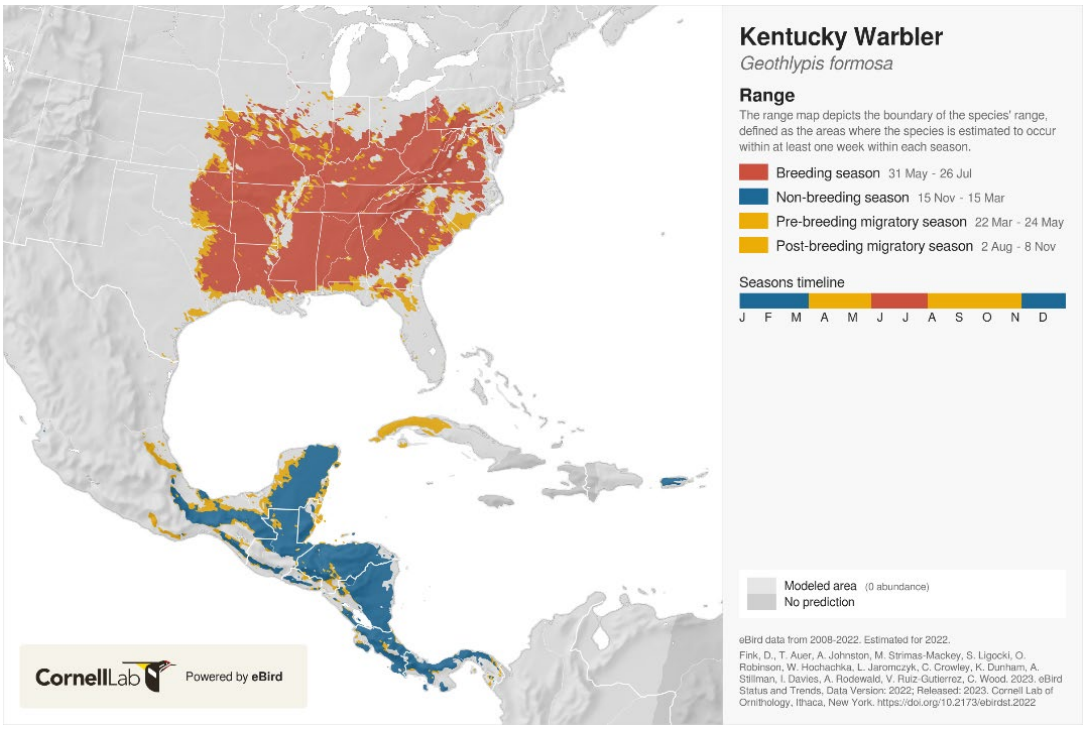

Figure 1. Global distribution of Kentucky warbler (eBird)

III. **New York Rarity** *(provide map, numbers, and percent of state occupied)*

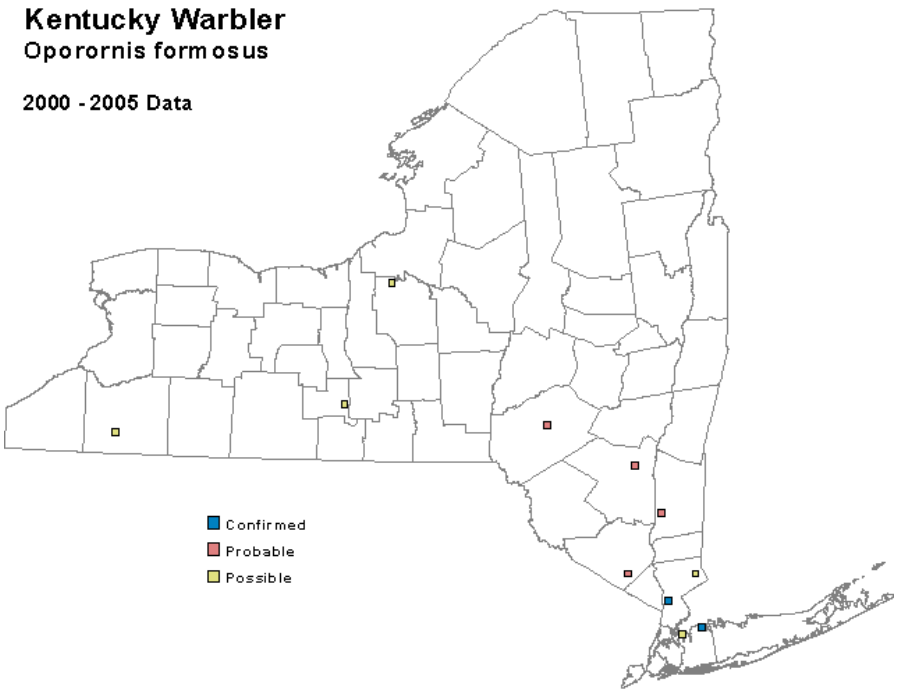

Figure 2. Kentucky warbler occurrence in New York State during the second Breeding Bird Atlas (McGowan and Corwin 2008).

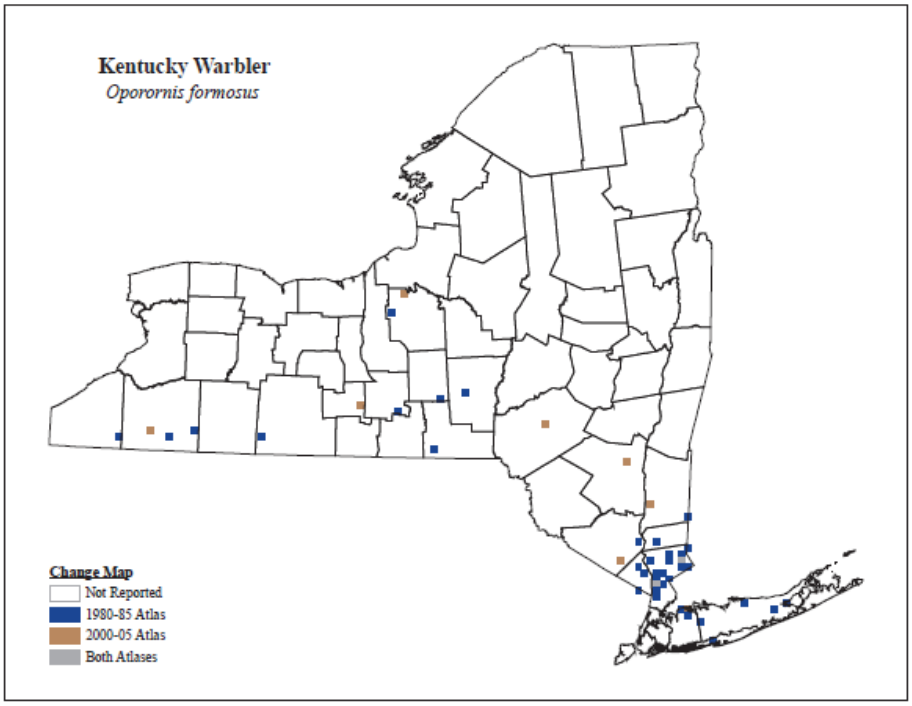

Figure 3. Change in occurrence of Kentucky warbler in New York since the first Breeding Bird Atlas (McGowan and Corwin 2008)

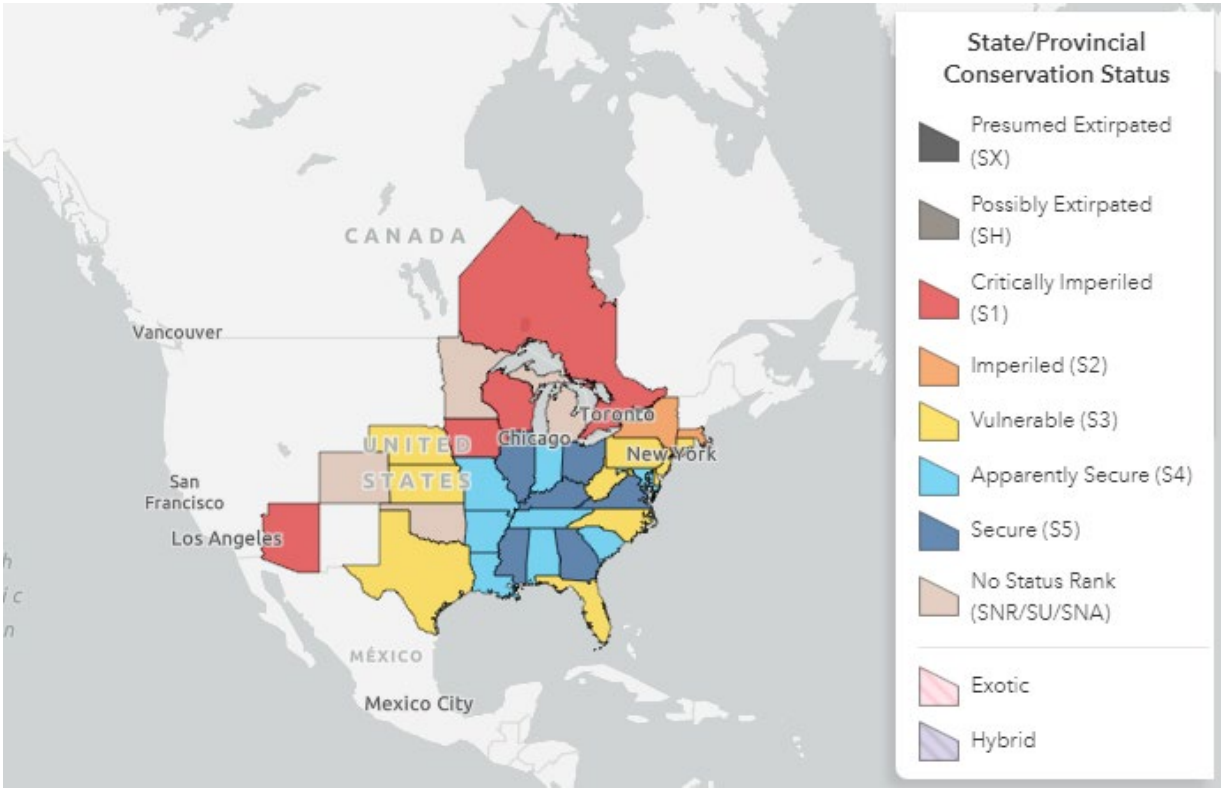

Figure 4. Conservation status of Kentucky warbler in North America (NatureServe)

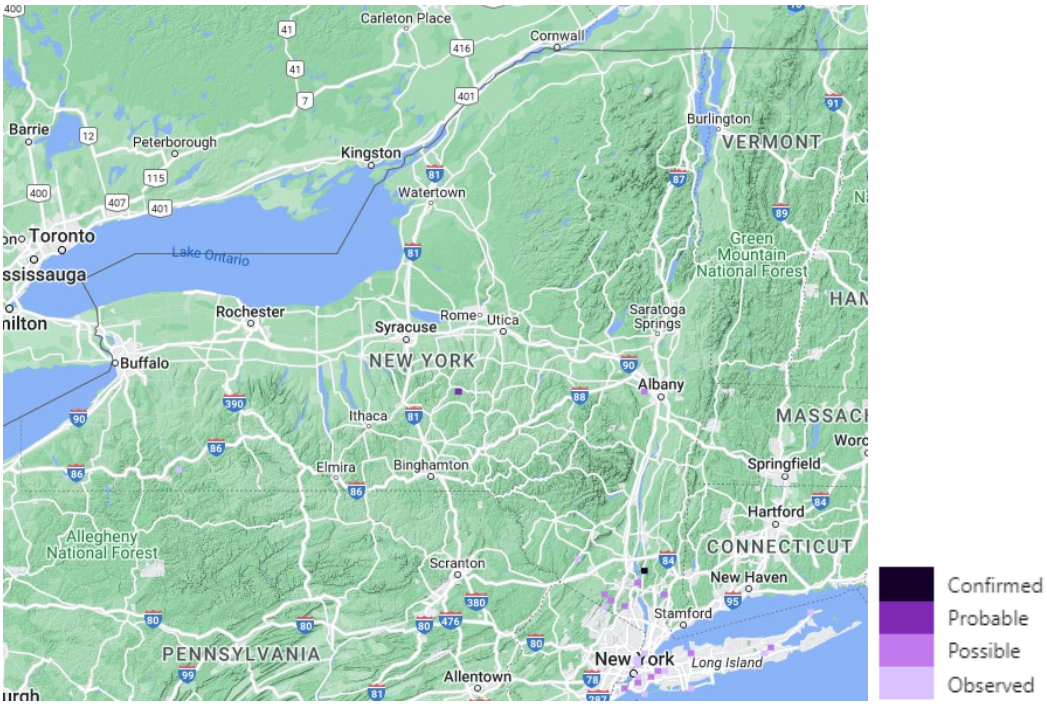

Figure 5. Records of Kentucky warbler in New York (NYS BBA III Map, 2023)

Years	# of Records	# of BBA Blocks	% of State
Pre-1980	_____	_____	_____
1980-1985	_____	39	<1
2000-2005	_____	11	<1
2020-2023	_____	14	<1

Table 1. Records of Kentucky warbler in New York.

Details of historic and current occurrence:

The first Breeding Bird Atlas (1980-85) documented occupancy in 39 survey blocks with Probable or Confirmed breeding in 27 blocks. The species occupied less than 1% of the 5,335 survey blocks statewide (Andrle and Carroll 1988).

The second Breeding Bird Atlas (2000-05) documented occupancy in 11 survey blocks, with Probable or Confirmed records in only 6 blocks, a decline of 72% since the first Atlas. Occupancy was still less than 1% of the 5,335 survey blocks (McGowan and Corwin 2008). Declines were especially dramatic in the two former strongholds, the Manhattan Hills and the Coastal Lowlands.

The third BBA (2020-25) is currently underway and utilizes a different number and layout of survey blocks across New York, making direct comparison with the first two Atlases difficult. There were 5,333 blocks in the first and second BBAs, and there are 5,710 blocks in the current BBA. To date, Kentucky warbler has been documented in 14 blocks, <1% of survey blocks statewide during the third BBA (NYS BBA III Overview, 2023).

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Peripheral	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
Yes	No	Declining	

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

The Kentucky warbler breeds in dense thickets within damp, heavily shaded deciduous forests of floodplains, swamps, and ravines (Bent 1953, Terres 1980). McDonald (1998) described the breeding habitat as bottomland hardwoods at low elevations. Robbins (1979) estimated that the minimum forest area required to sustain a viable breeding population was 80-125 acres. A thick understory and well-developed ground cover are essential to the species' reproductive success. Kentucky warbler density is positively associated with leaf litter, understory density, and canopy height (Bakermans et al. 2012).

In New York, Kentucky warbler breeds in hilly woodlands with stream-bearing ravines and a dense shrubby understory. These warblers will breed in forests of various ages but are most common in medium-aged forests (NatureServe 2011).

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	Yes	No	Yes	No	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

Plumage is not a reliable criterion for distinguishing first-year birds from older adults of this species. Data from banded male nestlings, however, indicate that first-year males can breed successfully. No female banded as a nestling is known to have returned to a research site. Few pairs (1–2 out of 40 pairs/yr) raise two broods. A second nesting attempt is initiated about 10 days after the first brood leaves the nest (McDonald 1998).

The record for the oldest known Kentucky warbler was at least 8 years, banded as adult male in Alabama and was subsequently recaptured in the same state returning annually to the same territory in north Virginia (BBL 2020). Adult survivorship of banded birds in Virginia varies annually; the mean over 6 years was 62%. Causes of mortality include several known instances of nestlings dying from exposure during rainy periods and thunderstorms (McDonald 1998).

Two males banded as nestlings in Virginia (out of 44) returned and bred 50 and 250 m, respectively, from their natal grounds. No females banded as nestlings returned from 1980-1997. Overall, the species apparently rarely returns to its natal site to breed. Most males return to exactly the same territory they defended the previous year, and they maintain the same territorial boundaries. Those known to relocate between years (7% of total; *n* = 201) have moved distances of 100–500 m (McDonald 1998).

VI. Threats *(from NY 2015 SWAP or newly described):*

Much of the range occupied by Kentucky warbler in New York is currently, or has long been, under a high degree of suburban development. This development pressure leads to a number of factors that collectively threaten Kentucky warbler occupancy and nesting success including increased brood parasitism, increased predation, and higher populations of white-tailed deer which remove understory.

In areas where forests are fragmented, brood parasitism from brown-headed cowbird increases, which can greatly decrease reproductive success. High white-tailed deer populations in urban areas where they cannot be controlled by hunting may greatly reduce the amount of dense, low vegetation that Kentucky warbler needs during the breeding season (NYNHP 2012). High populations of subsidized predators such as raccoon, opossum, etc. increase the risk of nest failure. Silvicultural activities that may create forest openings and promote a dense, shrubby understory may not be undertaken in developed fragmented forest patches.

Neotropical migrants face additional threats on wintering grounds and during migration including loss and degradation of wintering habitat, exposure to unregulated contaminants, and collision with various structures such as powerlines, towers, and turbines. Loss et al. (2014) estimated that 365 to 988 million birds are killed by building/glass collisions in the U.S. each year, with warblers being among the most vulnerable taxa, and Kentucky warblers among the most vulnerable species to collisions with buildings/glass. They also noted that building collisions are the second leading source of direct mortality of migratory birds, following predation by feral and outdoor pet cats. Kentucky warblers are also vulnerable to mortality from communication towers (Shire et al. 2000 in McDonald 2020). Longcore (2013) found that nearly 60% of avian mortality from collisions with communication towers and guy wires are warblers; Kentucky warblers had an estimated annual loss of 2.5% of estimated population size from mortality at communication towers.

The National Audubon Society's climate vulnerability assessment found that, under the +3.0 °C scenario, the Kentucky warbler had an overall species vulnerability status of "low" with range gained in New York. Climate-related threats include habitat loss from urbanization as well as decreased nesting success due to spring heat waves and heavy rainfall (National Audubon Society 2019).

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

Kentucky warbler is protected under the Migratory Bird Treaty Act of 1918.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

Forest management practices that encourage a dense understory and well-developed ground cover should enhance forest stands for this species (Bushman and Therres 1988). Kendrick et al. (2015) found that Kentucky warbler density increased after clearcuts, thinnings, and selection cuts, although the increases were short lived after the silvicultural treatment. However, Robinson and Robinson (2001) noted that brood parasitism on Kentucky warbler nests was significantly higher in selectively harvested forest stands compared to uncut stands.

Forest management practices that include patches of low-level harvesting will generally benefit ground and shrub nesting species. Some areas of moderate or even- aged management would also be beneficial to many species by providing food and cover, although the majority of the forest should be kept in a relatively mature state. Efforts should also include minimizing the effects of fragmentation on habitats due to development, and on implementing population control of white-tailed deer in areas where deer populations are affecting forest regeneration and species composition (NYSDEC 2005). White-tailed deer population reduction in some areas may reduce over-browsing of the shrub understory critical for Kentucky warbler nesting.

Public outreach about the benefits of and need for forest management to enhance populations of ground and shrub nesting forest breeding birds on public and private lands is greatly needed (NYSDEC 2005).

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
1. Land/Water Protection	Site/Area Protection
2. Land/Water Protection	Resource/Habitat Protection
3. Land/Water Management	Site/Area Management
4. Land/Water Management	Invasive/Problematic Species Control
5. Education & Awareness	Awareness & Communications

Table 2. Recommended conservation actions for Kentucky warbler

VII. References

Bakermans, M.H., A.D. Rodewald, and A.C. Vitz. 2012. Influence of forest structure on density and nest success of mature forest birds in managed landscapes. Journal of Wildlife Management 76(6):1225-1234.

Bent, A. C. 1953. Life histories of North American wood warblers. U.S. Natl. Mus. Bull. 203. Washington, D.C.

Bird Banding Laboratory (BBL). 2020. Longevity Records of North American Birds. Version 2019.2. Patuxent Wildlife Research Center. US Geological Survey. Laurel, MD.

BirdLife International. 2021. *Geothlypis formosa*. *The IUCN Red List of Threatened Species* 2021: e.T22721812A137319618. https://dx.doi.org/10.2305/IUCN.UK.2021-3.RLTS.T22721812A137319618.en. Accessed on 03 January 2024.

Bushman, E. S. and G. D. Therres. 1988. Habitat management guidelines for forest interior breeding birds of coastal Maryland. Wildl. Tech. Publ. 88-1. Maryland Dept. Nat. Res.

eBird data from 2008-2022. Estimated for 2022. Fink, D., T. Auer, A. Johnston, M. Strimas-Mackey, S. Ligocki, O. Robinson, W. Hochachka, L. Jaromczyk, C. Crowley, K. Dunham, A. Stillman, I. Davies, A. Rodewald, V. Ruiz-Gutierrez, C. Wood. 2023. eBird Status and Trends, Data Version: 2022; Released: 2023. Cornell Lab of Ornithology, Ithaca, New York. https://doi.org/10.2173/ebirdst.2022

Kendrick, S.W., P.A. Porneluzi, F.R. Thompson III, D.L. Morris, J.M. Haslerig, and J. Faaborg. 2015. Stand-level bird response to experimental forest management in the Missouri Ozarks. Journal of Wildlife Management 79(1):50-59.

Longcore, T., C. Rich, P. Mineau, B. MacDonald, D.G. Bert, L.M. Sullivan, E. Mutrie, S.A. Gauthreaux Jr., M.L. Avery, R.L. Crawford, A.M. Manville II, E.R. Travis, and D. Drake. 2013. Avian mortality at communication towers in the United States and Canada: which species, how many, and where? Biological Conservation 158:410-419.

Loss, S.R., T. Will, S.S. Loss, and P.P. Marra. 2014. Bird–building collisions in the United States: Estimates of annual mortality and species vulnerability. The Condor 116:8–23.

McDonald, M. V. (2020). Kentucky Warbler (Geothlypis formosa), version 1.0. In Birds of the World (A. F. Poole, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.kenwar.01

National Audubon Society. 2019. How climate change will reshape the range of the Kentucky warbler. Online: https://www.audubon.org/field-guide/bird/kentucky-warbler#bird-climate-vulnerability.

NatureServe. 2023. NatureServe Explorer. Page last published 12/1/2023. https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.103148/Geothlypis_formosa. Accessed 1/4/2024.

New York Natural Heritage Program (NYNHP). 2011. Online Conservation Guide for Oporornis formosaus. Available from: http://www.acris.nynhp.org/guide.php?id=7074. Accessed April 3rd, 2012.

New York Natural Heritage Program. 2024. Online Conservation Guide for *Geothlypis formosa*. Available from: https://guides.nynhp.org/kentucky-warbler/. Accessed January 4, 2024.

New York State Breeding Bird Atlas III Overview (NYS BBA III Overview). 2023. New York Checklist Overview. https://ebird.org/atlasny/state/US-NY. Accessed 1/4/2024.

North American Bird Conservation Initiative (NABCI). 2016. State of North America's Birds. Online: https://www.stateofthebirds.org/2016/resources/species-assessments/

Robbins, C. S. 1979. Effect of forest fragmentation on bird populations. Pages 198-212 in. Management of North Central and Northeastern Forests for Nongame Birds (R. M. DeGraff and K. E. Evans, eds.). U.S. Department of Agriculture, Forest Service, General Technical Report NC-51. htto://www.ncrs.fs.fed.us/pubs/gtr/other/gtr_nc051/index.htm.

Robinson, S.K. and W.D. Robinson. 2001. Avian nesting success in a selectively harvested north temperate deciduous forest. Conservation Biology 15(6):1763-1771.

Rosenberg, K. V., J. A. Kennedy, R. Dettmers, R. P. Ford, D. Reynolds, J.D. Alexander, C. J. Beardmore, P. J. Blancher, R. E. Bogart, G. S. Butcher, A. F. Camfield, A. Couturier, D. W. Demarest, W. E. Easton, J.J. Giocomo, R.H. Keller, A. E. Mini, A. O. Panjabi, D. N. Pashley, T. D. Rich, J. M. Ruth, H. Stabins, J. Stanton, T. Will. 2016. Partners in Flight Landbird Conservation Plan: 2016 Revision for Canada and Continental United States. Partners in Flight Science Committee. 119 pp. Available online: https://partnersinflight.org/resources/the-plan/

Rosenberg, K. V., A. M. Dokter, P. J. Blancher, J. R. Sauer, A. C. Smith, P. A. Smith, J. C. Stanton, A. Panjabi, L. Helft, M. Parr, and P. P. Marra. 2019. Decline of North American avifauna. Science 366:120-124. DOI: 10.1126/science.aaw1313.

Sauer, J. R., D. K. Niven, J. E. Hines, D. J. Ziolkowski, Jr, K. L. Pardieck, J. E. Fallon, and W. A. Link. 2017. The North American Breeding Bird Survey, Results and Analysis 1966 - 2015. Version 2.07.2017 USGS Patuxent Wildlife Research Center, Laurel, MD.

Terres, J. K. 1980. The Audubon Society encyclopedia of North American birds. Alfred A. Knopf, New York.

U.S. Fish and Wildlife Service. 2008. Birds of Conservation Concern 2008. United States Department of Interior, Fish and Wildlife Service, Division of Migratory Bird Management, Arlington, Virginia. 85 pp. [Online version available at <http://www.fws.gov/migratorybirds/>]

Originally prepared by	Kimberley Corwin
Date first prepared	April 3, 2012
First revision	July 2014 (Jenny Murtaugh)
Second revision	December 10, 2020 (Katherine Yard)
Latest revision	January 4, 2024 (M. Oberkircher)

Species Status Assessment

Common Name: Laughing gull **Date Updated:** January 10, 2024

Scientific Name: *Leucophaeus atricilla* **Updated By:** M. Oberkircher

Class: Aves

Family: Laridae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

The laughing gull was recently reclassified in the genus *Leucophaeus*, having formerly been in the paraphyletic genus *Larus*.

After devastation from egg collecting and the millinery trade in the late 1800s, coastal populations of this small gull expanded northward during the early 1900s only to face competition from larger gulls—herring gulls and great black-backed gulls—that were expanding southward. The laughing gull is currently expanding its population in most of the range, likely due to its adaptation to feeding on landfills and mowed fields surrounding airports. In New York, laughing gulls breed at five colonies, the largest of which—Jo Co Marsh—is subject to a lethal control program because of its proximity to John F. Kennedy International Airport (JFK). An annual survey of nests at Jamaica Bay (immediately adjacent to JFK) in 2011 revealed 1,979 estimated nests, the lowest estimate since aerial surveys began in 1992.

I. Status

a. Current legal protected Status

i. **Federal:** Not Listed **Candidate:** No

ii. **New York:** SGCN

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** S1 **Tracked by NYNHP?:** Yes

Other Ranks:

-IUCN Red List: Least Concern

-Partners in Flight: 9 out of 20

Status Discussion:

Laughing gull is a very local breeder on western Long Island. It is an abundant post-breeding visitant and common fall migrant on Long Island and lower Hudson River, and a casual visitor in winter. Inland, it is a rare visitant in spring, summer, and fall (Levine 1998). Laughing gull is ranked as Critically Imperiled in New York. It is ranked as Imperiled in Massachusetts, and as Secure in New Jersey.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Choose an item.	Choose an item.			Choose an item.
Northeastern US	Yes	Choose an item.	Choose an item.			No
New York	Yes	Stable	Stable			Yes
Connecticut	No	Choose an item.	Choose an item.			No
Massachusetts	Yes	Declining	Declining	Since 1940's		Yes
New Jersey	Yes	Increasing	Unknown			No
Pennsylvania	No	Choose an item.	Choose an item.			No
Vermont	No	Choose an item.	Choose an item.			No
Ontario	No	Choose an item.	Choose an item.			No
Quebec	No	Choose an item.	Choose an item.			No

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

Gulls are surveyed every three years by the NYSDEC during the Long Island Colonial Waterbird Survey. Aerial photography has been used from 1992-2008 to estimate the number of nests at four marshes in Jamaica Bay.

Trends Discussion *(insert map of North American/regional distribution and status):*

The North American population has undergone a large and statistically significant increase over the last 40 years in North America (344% increase over 40 years, equating to a 45.2% increase per decade; data from Breeding Bird Survey and/or Christmas Bird Count: Butcher and Niven 2007). Breeding Bird Survey results from 2993-2021 show a negative trend of -0.7 while Christmas Bird Count shows a positive trend of 2.23% in the same time period. The eBird abundance trends map shows a -8.9% trend with an upper confidence interval of -2.4% and a lower interval of -15% for breeding laughing gulls in New York from 2012-2022.

Laughing gull populations were extirpated from New York in the late 1800s due to egging and the millinery trade. Breeding birds returned to Long Island in 1978. Populations grew to include five sites: Tobay Marsh Islands, East High Meadow, Jo Co Marsh, Silver Hole Marsh, and Youngs Island. According to Long Island Colonial Waterbird Surveys, the population numbered 15 pairs in 1979; 7,629 pairs in 1990; 3,238 pairs in 2002; 1,364 pairs in 2007; and 1,571 pairs in 2010.

Aerial surveys conducted annually since 1992 to estimate the number of active nests in Jamaica Bay recorded 1,979 estimated nests in 2011, the lowest count since surveys began (Washburn and Tyson 2011). The authors note that a major change that has occurred during this period is a sharp decline in nesting on East High Meadow (beginning in 1997) and Silver Hole (beginning in 2000) that is likely related to tidal flooding and erosion. The decline in nesting could also be attributed to the harvesting of adult birds in close proximity to JFK International Airport.

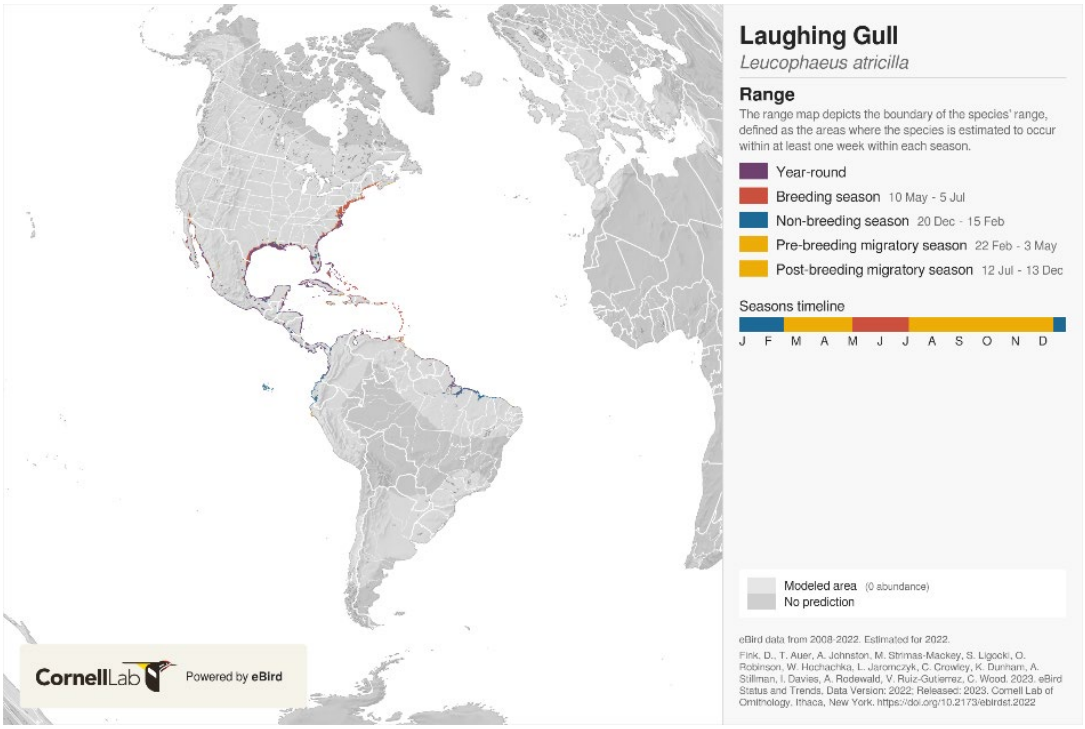

Figure 1. Laughing gull distribution in North America (eBird 2022)

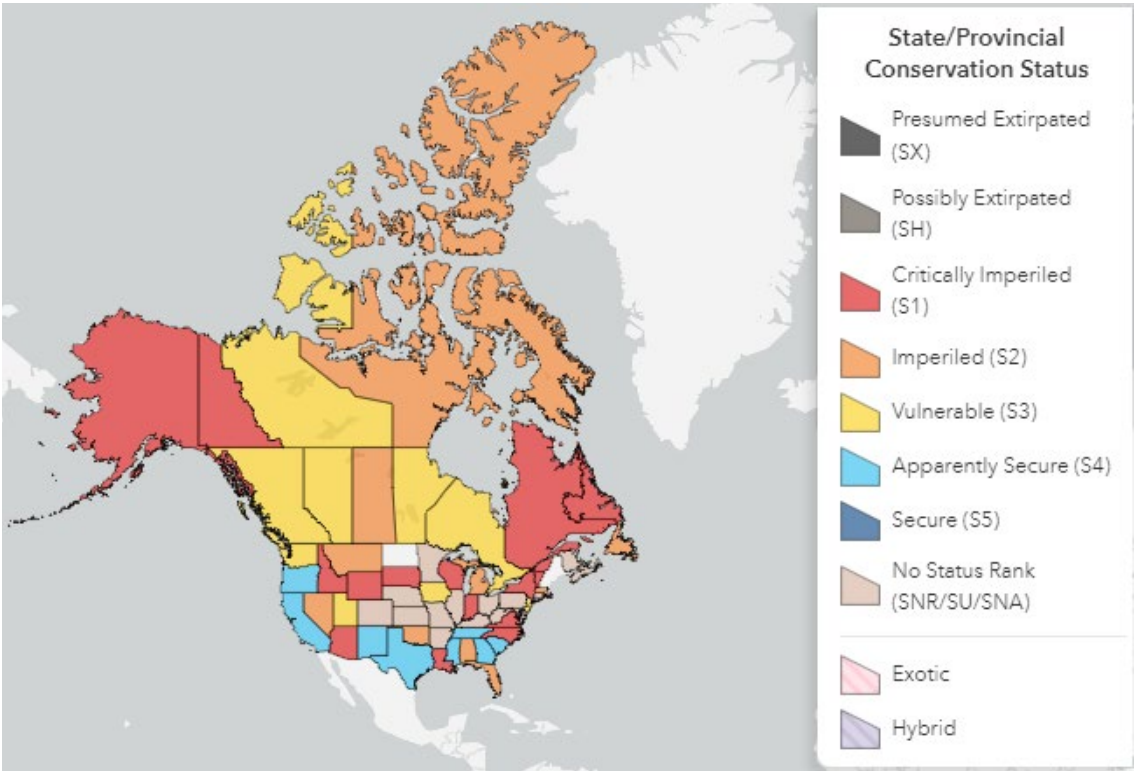

Figure 2. Conservation status of laughing gull in North America

III. **New York Rarity** *(provide map, numbers, and percent of state occupied)*

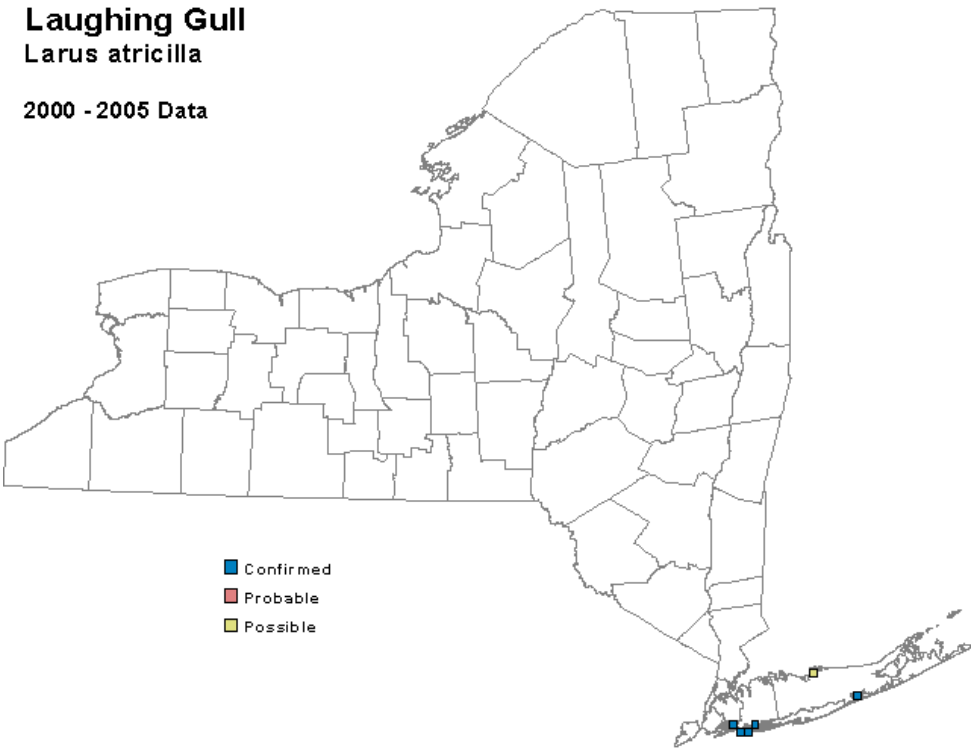

Figure 3. Laughing gull occurrence map for second NY Breeding Bird Atlas

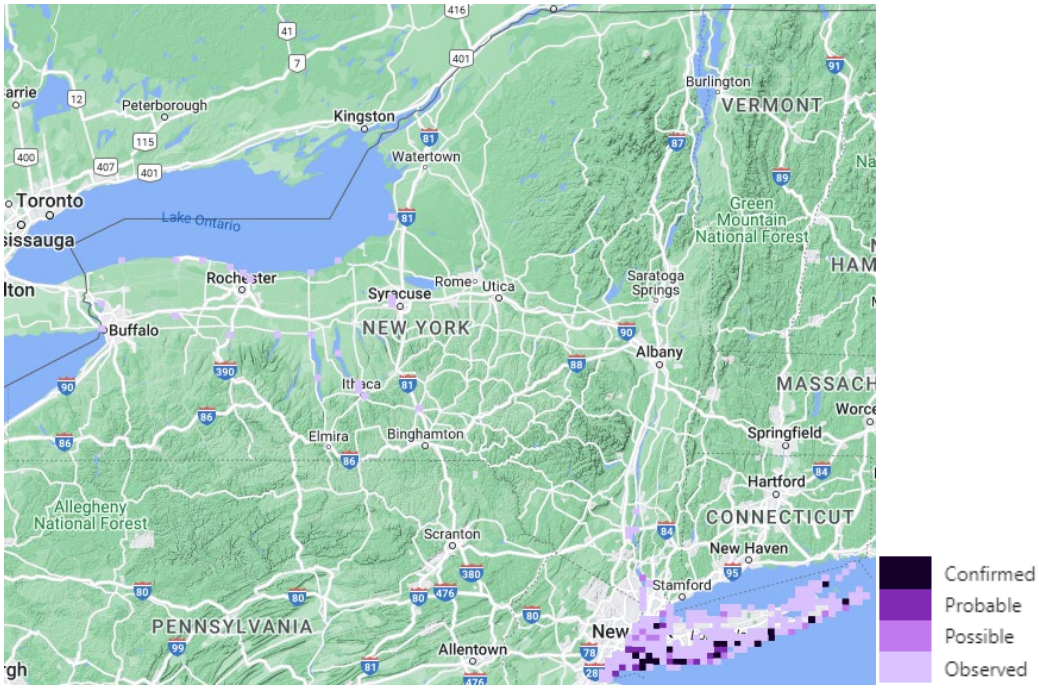

Figure 4. Records of laughing gull in New York (NYS BBA III Map, 2023)

Years	# of Records	# of BBA Blocks	% of State
Pre-1980			
1980-1985		32	<1
2000-2005		6	<1
2020-2023		47	

Table 1. Records of laughing gull in New York.

Details of historic and current occurrence:

Laughing gull was extirpated from New York in the late 1800s due to pressures from egg collecting and the millinery trade. A single nest was discovered in salt marshes in Great South Bay, Long Island in 1978. In 1979, 15 pairs were documented at Jo Co Marsh in Jamaica Bay Wildlife Refuge (Post and Riepe 1980).

The Long Island Colonial Waterbird Survey documented 1,571 pairs at three sites in 2010, including 330 pairs at East High Meadow; 41 pairs at Silver Hole Marsh; and 1,200 pairs at Jo Co Marsh.

The first Breeding Bird Atlas (BBA) (1980-85) documented occupancy in 32 blocks, <1% of the survey blocks statewide (Andrle and Carroll 1988). The second BBA (2000-05) documented occupancy in 6 blocks, <1% of the survey blocks statewide, a decline of 81% since the first atlas (McGowan and Corwin 2008).

The third BBA (2020-25) is currently underway and utilizes a different number and layout of survey blocks across New York, making direct comparison with the first two Atlases difficult. There were 5,333 blocks in the first and second BBAs, and there are 5,710 blocks in the current BBA. To date, laughing gull has been documented in 47 blocks, <1% of survey blocks statewide during the third BBA (NYS BBA III Overview, 2023). The twelve blocks currently confirmed may over-represent the true nesting distribution since many include recently fledged birds seen in August, after young have dispersed from nesting areas.

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Peripheral	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

1. Estuarine, Brackish Intertidal, Tidal Wetland
2. Urban and Recreational Grasses
3. Maritime Dunes
4. Marine Intertidal Gravel/Sand Beach

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
No	No	Declining	Since mid-1900's

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

In New York, laughing gulls nest primarily on vegetated salt marsh islands. Elsewhere, laughing gulls nest in a variety of coastal habitats such as sandy beaches, dredge spoil islands, salt marshes, and vegetated and rocky islands. Nesting can occur close to areas with human activity. In winter, laughing gulls are found all along the coast and occasionally inland. They are opportunistic and may occur wherever food is present.

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	No	No	Yes	Yes	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

Based on banding data, the youngest breeders were 3-year-olds found incubating in New Jersey colonies; some 2-year-olds were shot near a Jamaica Bay, NY, breeding colony, but it is not known if they were incubating. Laughing gull breeds every year in New Jersey. There is no data on lifetime reproductive success.

Annually, a large number of adult birds are killed by the JFK International Airport Gull Reduction program (Washburn et al. 2008). Outside of this, mortality is rare for adults, which are killed by herring gulls and great black-backed gulls. Adults and juveniles are killed by entanglement in fishing lines, by plastic six-pack holders, kite strings, overhead power lines, and aircraft.

VI. Threats *(from NY 2015 SWAP or newly described):*

Laughing gulls are vulnerable to human intrusions at colonies: early in the season, laughing gulls will abandon the site while later, they mob and attack people entering colonies. The effects of disturbance are greater in small or new colonies than in large colonies. People still collect eggs for food (mainly in the Caribbean), disturb nests, interrupt incubation, drive through beach colonies with off-road vehicles, or allow dogs to chase and kill young chicks. Nesting laughing gulls are relatively immune to human disturbance on salt-marsh colonies because people avoid this wet, mosquito-rich habitat (Burger 1996).

Laughing gulls are vulnerable to direct human disturbance on foraging grounds from sunbathers, joggers, swimmers, anglers, clammers, dog-walkers, and others (Burger and Galli 1987). Individuals respond to these disturbances by flying away, remaining in place but stopping feeding, or by continuing to feed; the percentage of birds that fly away is inversely related to number of disturbances, suggesting that laughing gulls habituate (Burger and Galli 1987, Burger and Gochfeld 1991).

Collisions with aircraft (bird strikes) at the John F. Kennedy International Airport (JFK) in New York City are managed by gull control programs, including direct killing of laughing gulls (Belant and Dolbeer 1993, USDA 1994, Washburn et al. 2008). Bird strikes rose from 2 in 1979 (when 15 pairs nested near JFK) to 180 in 1989 (56% of all strikes) when 2,665 pairs nested near JFK (Dolbeer et al. 1989). Non-lethal control techniques failed (Sillings et al. 1992), and a lethal control program was started in 1991 (USDA 1994). The shooting of laughing gulls resulted in a 68% reduction in collisions with aircraft in 1991 (Belant and Dolbeer 1993). A reduction in bird strikes of 76-99% was achieved annually in 1992-2007 (Washburn et al. 2008). From 2000-07, an average of about 4,000 gulls were shot annually (Washburn et al. 2008). The number of laughing gulls shot at JFK each year represents about 5–6% of annual nesting population from Maine to Virginia, and 2–3% of total U.S. nesting population (Belant and Dolbeer 1993).

As a coastal species, laughing gull is potentially susceptible to the predicted sea level rise associated with global warming (North American Bird Conservation Initiative 2010). Many tern species are also susceptible to pollution from water-borne contaminants from agricultural or industrial runoff.

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

The colony within Jamaica Bay has been proposed for relocation away from John F. Kennedy International Airport. To date, no study has demonstrated that this is feasible. Current operation of the JFK Gull Reduction Program will lead to the removal of the species from New York State (J. Pane, pers. comm.).

Salt marsh restoration plans should be developed including removal of invasive species from nesting grounds. Nesting areas should be protected from disturbance.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) -
https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**

1. Land/Water Protection	Site/Area Protection
2. Land/Water Protection	Resource/Habitat Protection
3. Land/Water Management	Site/Area Management
4. Land/Water Management	Invasive/Problematic Species Control
5. Land/Water Management	Habitat/Natural Process Restoration

Table 2. Recommended conservation actions for laughing gull

VII. References

Belant, J. L. and R. A. Dolbeer. 1993. Population status of nesting Laughing Gulls in the United States: 1977-1991. Am. Birds 47:220-224.

BirdLife International. 2018. *Larus atricilla*. *The IUCN Red List of Threatened Species* 2018: e.T22694455A132552784. https://dx.doi.org/10.2305/IUCN.UK.2018-2.RLTS.T22694455A132552784.en. Accessed on 11 January 2024.

Burger, J. 1985. Factors affecting bird strikes on aircraft at a coastal airport. Biol. Conserv. 33:1-28.

Burger, J. 1996. Laughing Gull (*Leucophaeus atricilla*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/225 doi:10.2173/bna.225

Burger, J. and J. Galli. 1987. Factors affecting distribution of gulls (*Larus* spp.) on two New Jersey coastal bays. Environ. Conserv. 14:59-65.

Burger, J. and M. Gochfeld. 1991. Vigilance and feeding behaviour in large feeding flocks of Laughing Gulls, *Larus atricilla*, on Delaware Bay. Estuarine, Coastal and Shelf Sci. 32:207-212.

Butcher, G.S. and D.K. Niven. 2007. Combining data from the Christmas Bird Count and the Breeding Bird Survey to determine the continental status and trends of North American Birds. National Audubon Society, New York, NY. http://www.audubon.org/bird/stateofthebirds/CBID/report.php.

Corwin, K. 2012. NYSDEC SWAP 2015 Species Status Assessment for laughing gull. Prepared on April 6, 2012. Revised by J. Murtaugh July 2014.

Dolbeer, R. A., M. Chevalier, P. P. Woronecki, and E. B. Butler. 1989. Laughing Gulls at JFK airport: safety hazard or wildlife resource. Proc. East. Wild. Damage Control Conf. 4:37-44.

eBird data from 2008-2022. Estimated for 2022. Fink, D., T. Auer, A. Johnston, M. Strimas-Mackey, S. Ligocki, O. Robinson, W. Hochachka, L. Jaromczyk, C. Crowley, K. Dunham, A. Stillman, I. Davies, A. Rodewald, V. Ruiz-Gutierrez, C. Wood. 2023. eBird Status and Trends, Data Version: 2022; Released: 2023. Cornell Lab of Ornithology, Ithaca, New York. https://doi.org/10.2173/ebirdst.2022

NatureServe. 2013. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available http://www.natureserve.org/explorer. (Accessed: June 4, 2013).

NatureServe. 2023. NatureServe Explorer. Page last published 1/5/2024. https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.104635/Hydroprogne_caspia. Accessed 1/11/2024.

New York State Breeding Bird Atlas III Overview (NYS BBA III Overview). 2023. New York Checklist Overview. https://ebird.org/atlasny/state/US-NY. Accessed 1/11/2024.

New York Natural Heritage Program. 2024. Online Conservation Guide for *Leucophaeus atricilla*. Available from: https://guides.nynhp.org/laughing-gull/. Accessed January 11, 2024.

North American Bird Conservation Initiative, U.S. Committee. 2010. The State of the Birds 2010 Report on Climate Change, United States of America. U.S. Department of the Interior: Washington, DC.

Post, P.W. and D. Riepe. 1980. Laughing gulls colonize Jamaica Bay. Kingbird 30:11-13.

Sillings, J. L., R. A. Dolbeer, R. Wadleigh, M. Bedford, and G. T. Falzetta. 1992. Environmental assessment: interim operational gull control program, John F. Kennedy International Airport, Jamaica, New York. U.S. Dep. Agric., Animal Damage Control, Pittstown, NJ.

USDA (United States Department of Agriculture). 1994. Gull Hazard Reduction Program: John F. Kennedy International Airport. USDA, Animal and Plant Health Inspection Program, Wildlife Services, State Office, 1930 Route 9, Castleton NY, 12033.

Washburn, B.E. and L.A. Tyson. 2011. Laughing gull nest population in Jamaica Bay, New York, 1992-2011. Special Report for the Port Authority of New York and New Jersey John F. Kennedy International Airport.

Washburn, B.E., R.A. Dolbeer, M.S. Lowney, and A.L. Gosser. 2008. Shooting gulls to reduce strikes with aircraft at John F. Kennedy International Airport, 1991-2007. Special Report for the Port Authority of New York and New Jersey John F. Kennedy International Airport.

Originally prepared by	Kimberley Corwin
Date first prepared	April 6, 2012
First revision	July 2014 (Jenny Murtaugh)
Latest revision	January 10, 2024 (M. Oberkircher)

Species Status Assessment

Common Name: Lesser scaup **Date Updated:** January 19, 2024

Scientific Name: *Aythya affinis* **Updated By:** J. O'Connor and C. Hoh

Class: Aves

Family: Anatidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

Lesser scaup breeds in north central Canada and north central United States, well north of New York, though two disjunct breeding populations are known in Quebec and Ontario. Only one breeding record exists for New York, from June 1946 in Erie County. There are a handful of summer records since 1980, but this duck is best known as a migrant through New York.

Population size and trends are difficult to determine because survey data cannot be collected separately for lesser scaup and greater scaup (*Aythya marila*). The scaup population is estimated at 3.5 million; lesser scaup are believed to represent 89% of the scaup population.

The lesser scaup is among the most abundant ducks in North America, but it has been declining significantly over the last 30 years. In 2006, combined winter estimates of lesser and greater scaup set a record low—37% below the long-term average. Between 1966 and 2003, Breeding Bird Surveys recorded significant population declines, especially in the southern and central ranges. Statistical analyses reveal that the lesser scaup's population is becoming older, and has fewer females.

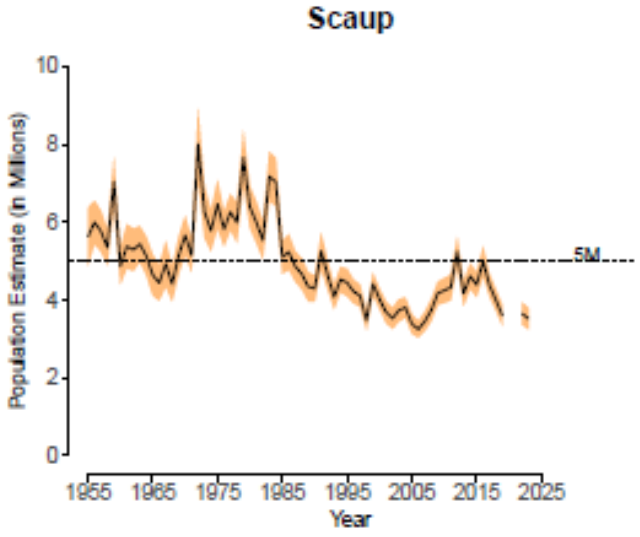

Figure 1. Combined Greater and Lesser Scaup Breeding Population Estimate from the Traditional Survey Area (USF&WS 2023)

I. Status

a. Current legal protected Status

i. **Federal:** Not listed/ Game Species **Candidate:** No

ii. **New York:** SGCN/ Game Species

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** SNA **Tracked by NYNHP?:** No

Other Ranks:
-IUCN Red List: Least Concern

Status Discussion:

Only one lesser scaup breeding record exists for the state. This is an abundant migrant.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Declining	Increasing	1955-2023		No
Northeastern US	Yes	Unknown	Unknown			No
New York	Yes	Increasing	Unknown	1980-2005		Yes
Connecticut	Yes	Declining	Unknown			Yes
Massachusetts	Yes	Increasing	Unknown	1979-2008		No
New Jersey	Yes	Unknown	Unknown			Yes
Pennsylvania	Yes	Increasing	Increasing	1999-2009		No
Vermont	Yes	Increasing	Unknown	1999-2009		No
Ontario	Yes	Increasing	Increasing	1981-2005		No
Quebec	Yes	Declining	Declining	1984-2012		No

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

A January Waterfowl Count is conducted annually by the NYSDEC and the NYS Ornithological Association.

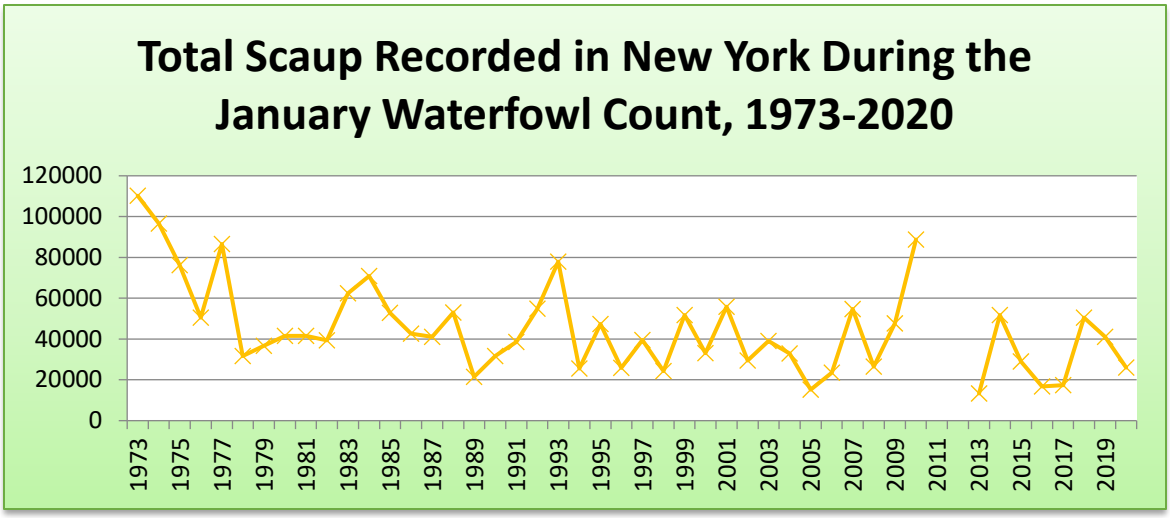

Figure 2. Number of scaup observed during the January waterfowl count in New York 1973-2020 (NYSOA Waterfowl Count (www.nybirds.org/projwaterfowl.htm)

Trends Discussion *(insert map of North American/regional distribution and status):*

Lesser scaup and greater scaup are counted together during most surveys since the 2 similar-looking species cannot be reliably distinguished from the air. Although, estimates of lesser scaup populations can be derived only indirectly through biogeographic distinctions, harvest ratios from fall hunting, and midwinter surveys, lesser scaup are estimated to constitute roughly 89 percent of the continental scaup population, which is currently estimated to be 5.2 million. In 2006, the combined estimate of scaup species hit a low of 37% below the long-term average. The North American population of lesser scaup has declined significantly over the last 30 years.

Prior to 1980, scaup were generally not reported to species during the annual January Waterfowl Count. Since 1980, scaup have been recorded as greater scaup, lesser scaup or not to species, with the greatest number of scaup recorded as greater scaup. The 1980 to 2008 average total scaup (greater, lesser, and not to species combined) was 41,187 while the average for just lesser scaup was 1,607. The 1999 to 2008 average for total scaup was 36,186 and 2,749 for lesser scaup. While lesser scaup may be more abundant than greater scaup continent wide, larger numbers of greater scaup winter in New York while lesser scaup prefer the warmer climate of the southern Atlantic coastal states and the Gulf of Mexico.

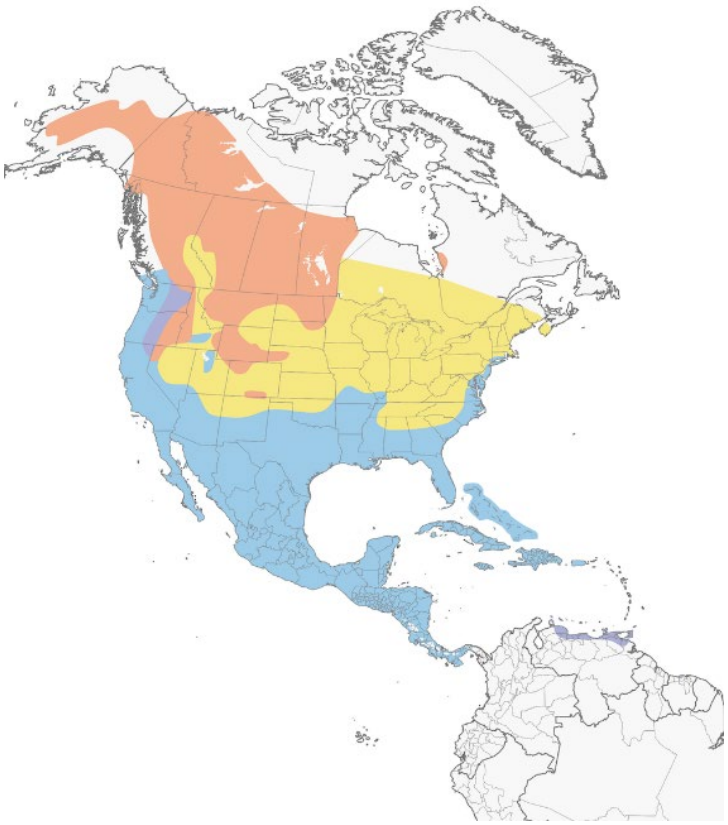

Figure 3. Distribution of lesser scaup in North America (Birds of the World, 2024)

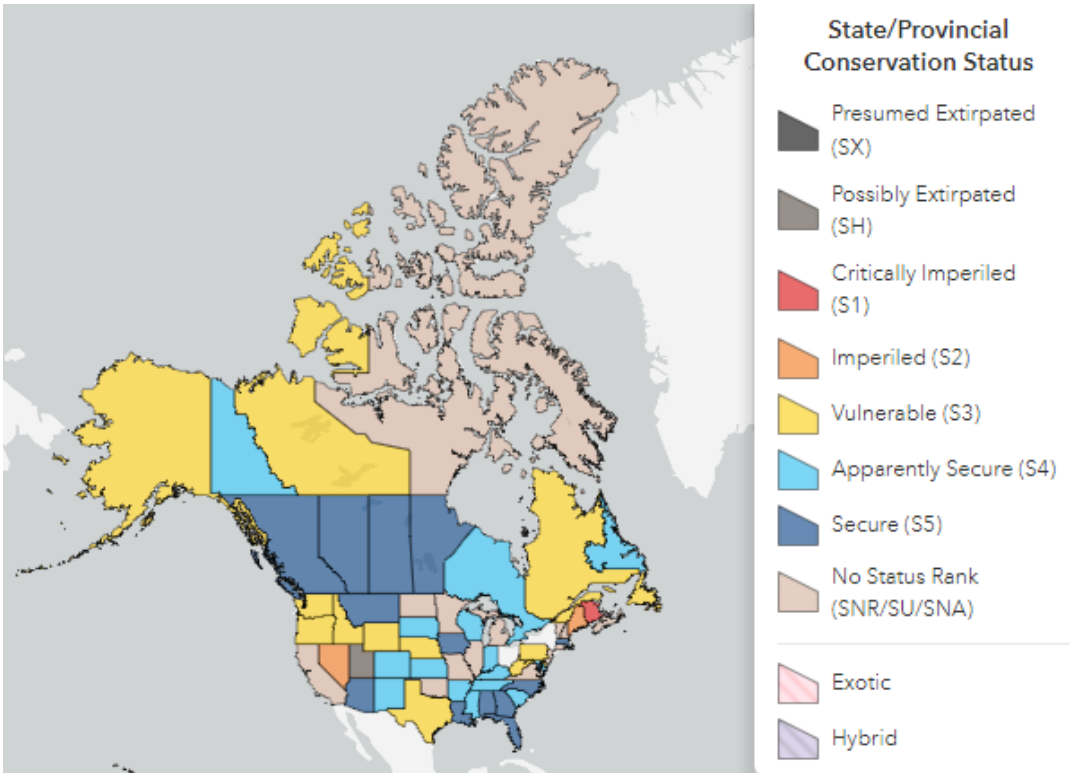

Figure 4. Conservation status of lesser scaup in North America (NatureServe)

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

Years	# of Records	# of BBA Blocks	% of State
Pre-1980	_____	_____	_____
1980-1985	3	3	<1
2000-2005	1	1	<1
2020-2023	_____	_____	_____

Table 1. Records of lesser scaup in New York.

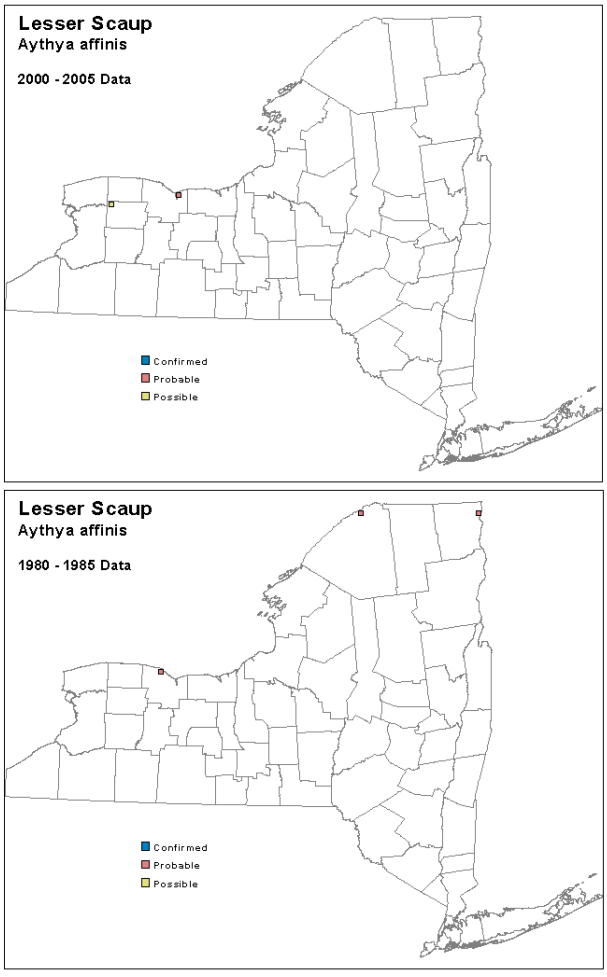

Figure 5. Records of lesser scaup during the first and second New York Breeding Bird Atlas (BBA)

Details of historic and current occurrence:

A single breeding event is known: a female with a brood of seven downy young was observed in June 1946 at the Tifft Street Marsh in Buffalo, Erie County (Beardslee and Mitchell 1965). The first Breeding Bird Atlas (1980-85) documented Probable breeding in three survey blocks (out of

5,335): Braddock Bay, Monroe County; Wilson Hill WMA, St. Lawrence County; and Kings Bay WMA, Clinton County.

During the second Breeding Bird Atlas (2000-05), one sighting was made in June 2000 at the Iroquois National Wildlife Refuge, and a pair was recorded at Irondequoit Bay in June 2003. No breeding was documented.

Lesser scaup are abundant migrants, common winter residents, and rare during summer months. Only one breeding record exists from 1946. The continental population of scaup (lesser and greater combined) is about 4.5 million, well below the 6.3 million goal set by the USFWS.

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Peripheral	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

1. Estuarine, Brackish Shallow Subtidal, Aquatic Bed
2. Great Lakes Aquatic Bed
3. Eutrophic Dimictic Lake
4. Summer-stratified Monomictic Lake

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
No	No	Unknown	

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

A variety of habitats are used during migration and wintering, but lesser scaup are typically found on larger semi-permanent and permanent wetlands and lakes, such as along the Great Lakes and large impounded portions of rivers (>3,000 ha) in Minnesota, Wisconsin, and Iowa; along coasts, found on large wetlands, lakes, reservoirs, and fresh to brackish estuaries (Bookhout et al. 1989. Korschgen 1989).

Breeding occurs primarily in boreal forests and parklands with small seasonal wetlands and lakes that have emergent vegetation (Austin et al. 1998).

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

Both males and females can breed at 1 year of age, but some males may not because of excess males in population. Most non-breeding females are 1 or 2 years old. Annual reproductive success varies over breeding range (Austin et al. 1998). Lesser scaup exhibit a temporally dynamic reproductive strategy, breeding when conditions are favorable for the individual (Afton 1984). There is no information on lifetime reproductive success.

Recorded longevity in the wild via band recovery was 18 years, 4 months for an adult male banded in S. Dakota (Clapp et al. 1982). The annual estimated mortality rate for lesser scaup banded during the summer before 1962 averaged 71% of immatures and 32% of adult males (Smith 1963). Annual estimated mortality for birds banded during winter and early spring (1941–1962) averaged 47.5% for adult males and 53.7% for adult females. Banding of lesser scaup in Chesapeake Bay area during winter (1952–1957) indicated mortality rates of 41.8%. No more recent analyses exist for survival or mortality rates.

Females successful in rearing broods return to the same home range the following year; unsuccessful females shift the center of their home range 0.5–1.5 km the following year. Female ducklings returning to breed the following year set up home ranges within or adjacent to their mother's home range. Male ducklings rarely return to their natal areas in subsequent years (Trauger 1971).

VI. Threats *(from NY 2015 SWAP or newly described):*

Threats to NY Populations	
Threat Category	**Threat**
1. Pollution	Industrial & Military Effluents (oil spills, contaminants)
2. Climate Change & Severe Weather	Habitat Shifting & Alteration
3. Transportation & Service Corridors	Shipping Lanes (oil spills)
4. Biological Resource Use	Fishing & Harvesting Aquatic Resources (entanglement)

The reasons for these declines are unclear, but prime suspects include prolonged drought on the Prairie Parkland breeding grounds (from which lesser scaup would be relatively slow to recover because of low productivity and high site fidelity compared to other ducks), contaminants (which they may be acquiring from eating Zebra Mussels), habitat changes in migration and wintering areas (caused by pollution, wetland drainage, siltation, exotic plants, etc.), and possibly disturbance on the breeding grounds. Widespread logging, fires, and acid rain in the boreal region probably threaten broad areas of breeding habitat, and recruitment in this region appears suppressed, for as yet unknown reasons (Boreal Songbird Initiative 2012).

Recent research on western Lake Ontario found elevated levels of selenium in wintering greater scaup but concluded that selenium is not contributing to the decline of greater and lesser scaup (Ware et al. 2010). Additional research has investigated other contaminants and trace elements in scaup but has yet to positively link contaminants to declining populations (Petrie et al. 2007, Badzinski et al. 2009).

The largest numbers of wintering lesser scaup are found along the Gulf of Mexico and the lower Mississippi River, where the threat of oil spills, from both drilling and shipping, is ever present. Wintering and migrating lesser scaup along the Atlantic Coast and Great Lakes are also exposed to occasional spills.

Harvest has declined in all flyways since late 1970s, primarily because of decreasing numbers of scaup and hunters, and more restrictive hunting regulations during 1988–1994. Mortality from fishing lines and nets may be substantial.

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

Lesser scaup is a game bird with an open hunting season. The season length and daily bag limit can be modified annually, or the season can be closed. Greater and lesser scaup are managed together as “scaup.” In 2008, the U.S. Fish & Wildlife Service adopted an adaptive harvest management protocol to inform harvest management decisions for the combined population of greater and lesser scaup. This harvest strategy prescribes season length and daily bag limits annually based on the breeding population observed each spring (U.S. Fish and Wildlife Service 2012).

Harvest surveys conducted by the U.S. Fish & Wildlife Service do differentiate between greater and lesser scaup. Lesser scaup are harvested in much higher numbers than greater scaup across the Atlantic Flyway, except in New York where harvest of the two species is nearly equal, and New Jersey where more greater scaup are taken. Harvest of lesser scaup in New York has fluctuated since 1999 from a low of 900 in 2001 to a high of 4,300 two years later, but has averaged about 2,600. Less than 10% of the Atlantic Flyway lesser scaup harvest occurs in New York, with the majority taken in southern states from Maryland to Florida. The 2012 hunting season length in New York is 60 days and the bag limit is 4 scaup (greater and/or lesser) per day. Prior to 2005, the bag limit was 3 scaup per day, and was 2 per day from 2005 to 2011 except in 2008 when 2 scaup per day could be harvested only during a 20 day “season within a season” and only one scaup per day could be harvested during the remaining 40 days of the duck season.

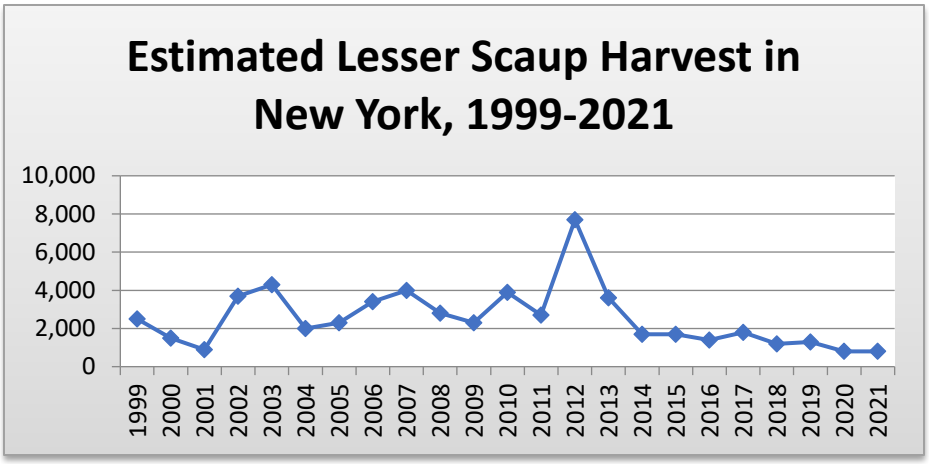

Figure 6. Estimated annual harvest of lesser scaup in New York, 1999-2021 (USFWS)

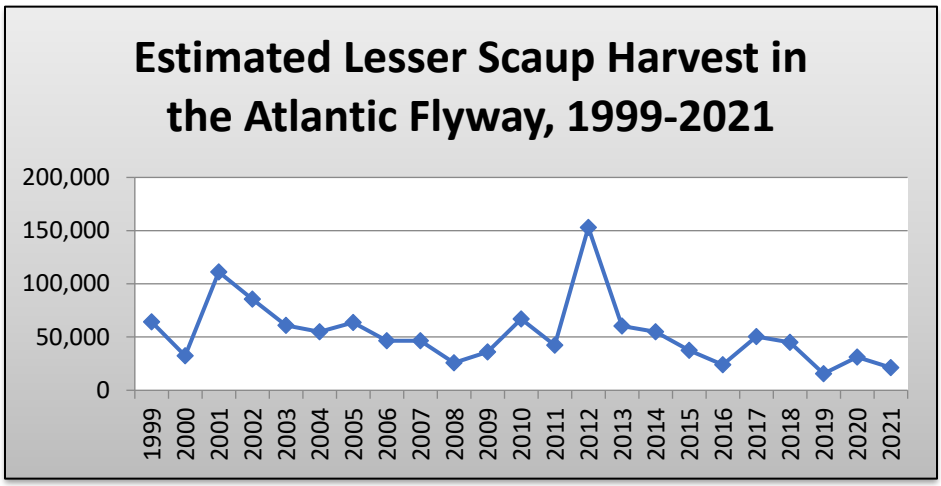

Figure 6. Estimated annual harvest of lesser scaup in the Atlantic Flyway, 1999-2021 (USFWS)

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

The Comprehensive Wildlife Conservation Strategy (NYSDEC 2005) includes recommendations for the following actions for wintering water birds, which includes lesser scaup.

Habitat Management:

____ Protect important waterfowl/water bird foraging areas from long-term destruction or development, excessive human disturbance, oil spills, environmental contaminants, and other potential impacts, through environmental permit reviews, etc.

Habitat Research:

____ Characterize and map important foraging areas (submerged aquatic vegetation, mussel beds) for waterfowl/water birds wintering on Long Island.

____ Document habitats used by northern pintails during spring migration and staging in the St. Lawrence Valley and Lake Plains regions of New York.

Life History Research:

____ Determine contaminant levels (mercury, other metals, PCBs, other organochlorines) in samples above waterfowl/water birds wintering in New York to assess potential impacts on reproduction and survival. Obtain samples as opportunities arise.
____ Document and estimate annual mortality of waterfowl/water birds in New York associated with Type E botulism and other major mortality factors, as opportunities arise.

Modify Regulation:
____ Establish hunting regulations that will ensure long-term conservation of waterfowl populations migrating through or wintering in New York.
____ Reduce or modify ocean dumping and disposal practices that may damage important water bird habitats or result in debris (ex- lead, plastics) that can cause waterbird mortality.

Other Action:
____ Because most of the species in this group are non-breeding visitors to the eastern U.S., NY should provide technical, financial, or political support as needed, to further international waterfowl/water bird conservation efforts.

Regional Management Plan:
____ Work with regional marine resource managers to identify common interests and potential conflicts (ex- commercial fishing/shell fishing techniques, aquaculture development, entanglement, oil spill response plans) with needs of wintering water birds. More intensive studies are needed of interactions between commercial fisheries and seabirds.

Statewide Baseline Survey:
____ Cooperate in development and conduct of baseline surveys or monitoring programs to determine population status of wintering waterfowl/water bird species in New York and/or eastern North America, at 10-year (or more frequent) intervals.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
1. Land/Water Protection	Site/Area Protection
2. Land/Water Protection	Resource/Habitat Protection
3. Land/Water Management	Site/Area Management
4. Land/Water Management	Habitat and Natural Process Restoration (pollution control)
5. Law/Policy Actions	Policy/Regulation Changes (hunting regulations, ocean dumping practices)
6. External Capacity Building	Alliance & Partnership Development

Table 2. Recommended conservation actions for lesser scaup

VII. References

Afton, A. D. 1984. Influence of age and time on reproductive performance of female Lesser Scaup. Auk 101:255-265.

Austin, J.E., C. M. Custer and A.D. Afton. 1998. Lesser Scaup (*Aythya affinis*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/338 doi:10.2173/bna.338

Badzinski, S.S., P.L. Flint, K.B. Gorman, and S.A. Petrie. 2009. Relationships between hepatic trace element concentrations, reproductive status, and body condition of female greater scaup. Environmental Pollution 157:1886-1893.

Bookhout, T. A., K. E. Bednarik, and R. W. Kroll. 1989. The Great Lakes marshes. Pages 131-156 *in* Habitat management for migrating and wintering waterfowl in North America. (Smith, L. M., R. L. Pederson, and R. M. Kaminski, Eds.) Texas Tech Univ. Press, Lubbock.

Boreal Songbird Initiative website: http://www.borealbirds.org/birdguide/bd0400_species.shtml [Accessed April 18, 2012]

Clapp, R. B., M. K. Klimkiewicz, and J. H. Kennard. 1982. Longevity records of North American birds: Gaviidae through Alcidae. J. Field Ornithol. 53:81-124.

Corwin, K. 2013. NYSDEC SWAP 2015 Species Status Assessment for lesser scaup. Prepared on April 18, 2012. Revised July 12, 2014.

Korschgen, C. E. 1989. Riverine and deepwater habitats for diving ducks. Pages 157-180 *in* Habitat management for migrating and wintering waterfowl in North America. (Smith, L. M., R. L. Penderson, and R. M. Kaminski, Eds.) Texas Tech. Univ. Press, Lubbock.

Klimstra, J.D. et al., compiler. 2012. Atlantic Flyway harvest and population survey data book. U.S Fish and Wildlife Service, Laurel, MD.

Petrie, S.A., S.S. Badzinski, and K.G. Drouillard. 2007. Contaminants in lesser and greater scaup staging on the lower great lakes. Archives of Environmental Contamination and Toxicology 52:580-589.

Roberts, A.J. 2022. Atlantic Flyway harvest and population survey data book. U.S Fish and Wildlife Service, Laurel, MD.

Smith, R. I. 1963. Lesser Scaup and Ring-necked Duck shooting pressure and mortality rates. Rep. no. 20. U.S. Bur. Sport Fish. Wildl. Admin.

Trauger, D. L. 1971. Population ecology of Lesser Scaup (*Aythya affinis*) in subarctic taiga. Phd Thesis. Iowa State Univ. Ames.

U.S. Fish and Wildlife Service. 2012. Adaptive Harvest Management: 2012 Hunting Season. U.S. Department of Interior, Washington, D.C.

U.S. Fish and Wildlife Service. 2023. Waterfowl population status, 2023. U.S. Dept. Int. Washington, D.C.

Ware, L.L., S.A. Petrie, S.S. Badzinski, and R.C. Bailey. 2010. Selenium concentrations in greater scaup and dreissenid mussels during winter on western Lake Ontario. Archives of Environmental Contamination and Toxicology 61:292-299.

Originally prepared by	Kimberley Corwin
Date first prepared	April 18, 2012
First revision	July 2014 (Jenny Murtaugh)
Latest revision	

Species Status Assessment

Common Name: Little blue heron **Date Updated:** December 20, 2023

Scientific Name: *Egretta caerulea* **Updated By:** M. Oberkircher

Class: Aves

Family: Ardeidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

Little blue heron is an uncommon breeder in New York, where it nears the northern edge of its breeding distribution. The majority of the population breeds in the southeastern United States. Population trends can be difficult to determine for this species because the bird's dark coloration makes them difficult to see during aerial surveys. Breeding Bird Survey data show a decreasing trend in North America during 1993-2021.

In New York, breeding occurs only on the Coastal Lowlands. The Long Island Colonial Waterbird Survey documented declines in breeding pairs and colonies of little blue heron since 2000. The second Breeding Bird Atlas (2000-05) documented little change in occupancy. The New York City Audubon Harbor Herons Nesting Survey, conducted annually since 1985, has documented a consistent, low-level presence of little blue herons nesting in the Greater New York/New Jersey Harbor (Craig 2012).

I. Status

a. Current legal protected Status

i. **Federal:** Not listed **Candidate:** No

ii. **New York:** SGCN

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** S2 **Tracked by NYNHP?:** Yes

Other Ranks:

-IUCN Red List: Least Concern

-Partners in Flight: 11 out of 20

Status Discussion:

Little blue heron is an uncommon breeder on Long Island and in the New York-New Jersey Harbor, and a common summer visitant. Little blue heron is ranked as Imperiled in New York and as Critically Imperiled in Massachusetts, Connecticut, and Rhode Island. It is ranked as Vulnerable in New Jersey.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?

North America	Yes	Declining	Unknown		Not listed	Choose an item.
Northeastern US	Yes	Declining	Unknown		Watchlist	No
New York	Yes	Choose an item.	Stable			Yes
Connecticut	Yes	Unknown	Unknown		SC	Yes
Massachusetts	Yes	Unknown	Unknown			No
New Jersey	Yes	Unknown	Unknown		SC	Yes
Pennsylvania	No	Choose an item.	Choose an item.			No
Vermont	No	Choose an item.	Choose an item.			No
Ontario	No	Choose an item.	Choose an item.			No
Quebec	No	Choose an item.	Choose an item.			No

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

The Long Island Colonial Waterbird Survey conducts surveys for herons every three years. New York City Audubon has conducted the Harbor Herons Nesting Survey in the Greater New York/New Jersey Harbor annually since 1982; the surveys target long-legged wading birds including little blue heron. Every three years all islands that have hosted nesting birds since the start of the program are surveyed. In the years between only islands which had nesting birds the previous year are surveyed.

Trends Discussion *(insert map of North American/regional distribution and status):*

Breeding was first documented in New York in 1958 at Tobay Pond in Nassau County. The distribution expanded through the1970s with breeding scattered over some 20 or so mixed-species colonies over the years, though few sites have consistently reported the species (Lauro 1998). The Long Island Colonial Waterbird Survey has documented a decline in breeding pairs from 2001 when 32 pairs were recorded to 2022 when 8 breeding pairs were found. The second Breeding Bird Atlas documented a five percent decline in occupancy from 1980-85 to 2000-05. The NYC Audubon Harbor Heron survey documented a stable, low-level presence annually since 1982 in the Greater NY/NJ Harbor, with high counts below 20 and low counts at about five (nests).

Regional trends from eBird show a -11.6% decline with an upper confidence interval of 0.2% and a lower interval of -25.7% for breeding little blue herons in New York from 2012-2022. Lack of historic and accurate survey data hinders trend analysis for little blue herons across their range. Breeding Bird Survey data show a decrease of -2.5 across the distribution during 1993-2021.

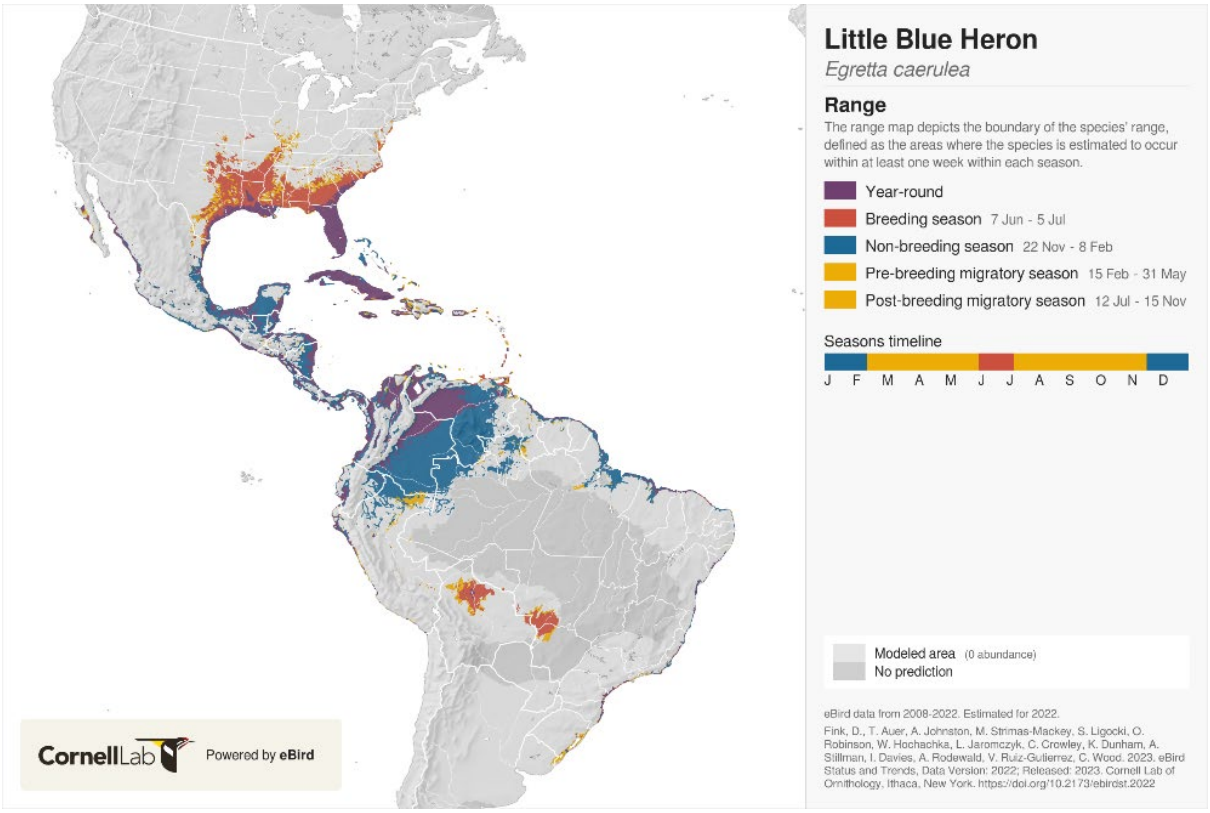

Figure 1. Global distribution of little blue heron (eBird)

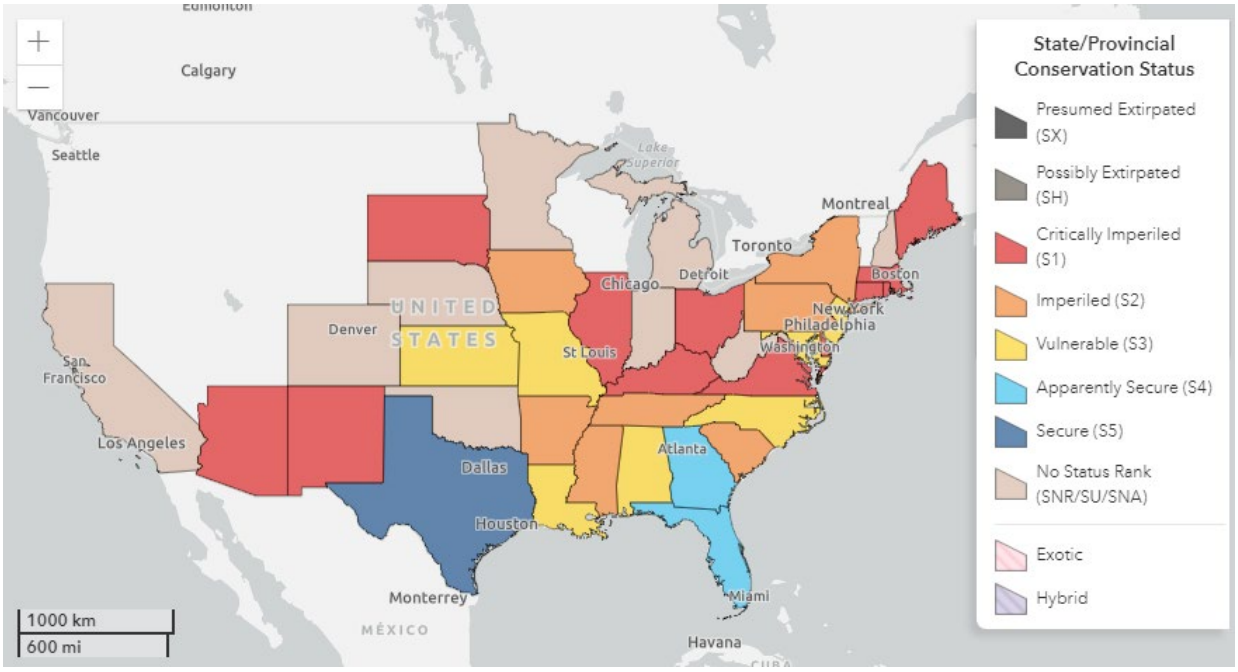

Figure 3. Conservation status of little blue heron in North America (NatureServe)

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

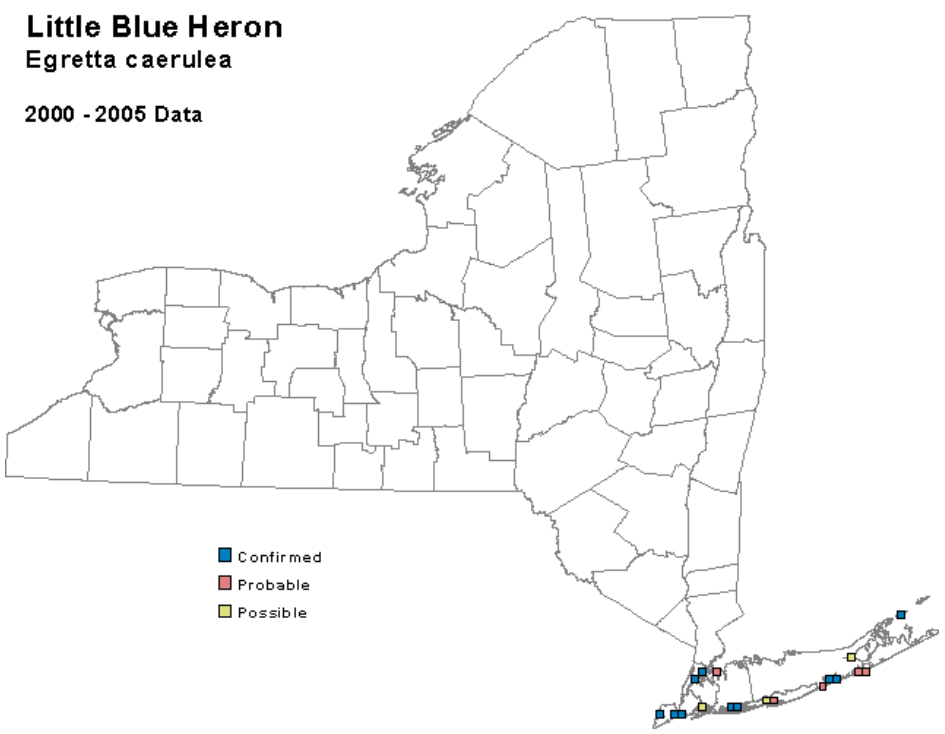

Figure 2. Little blue heron occurrence in New York State during the second Breeding Bird Atlas (McGowan and Corwin 2008).

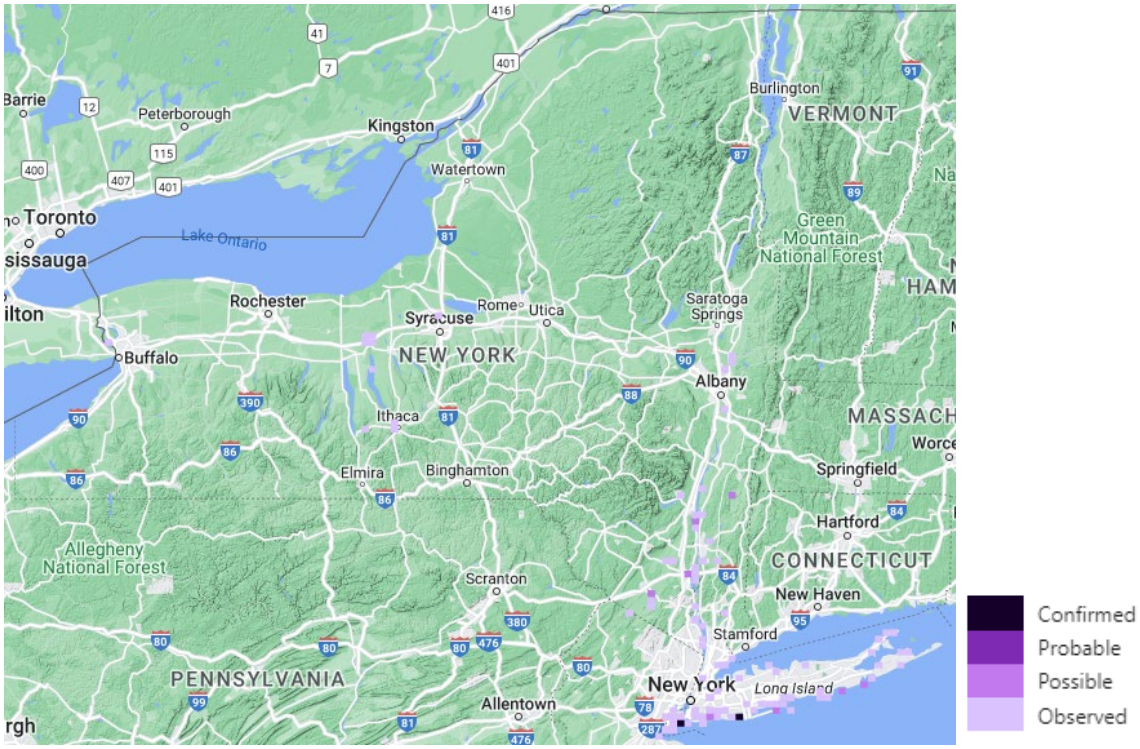

Figure 4. Records of little blue heron in New York (NYS BBA III Map, 2023)

Years	# of Records	# of BBA Blocks	% of State
Pre-1980	_____	_____	_____
1980-1985	_____	19	<1
2000-2005	_____	18	<1
2020-2023	_____	10	<1

Table 1. Records of little blue heron in New York.

Details of historic and current occurrence:

The first breeding record in New York was at Tobay Pond in Nassau County in 1958. Breeding expanded along the south shore, and from 1974 to 1978, a mean of 20 pairs were documented at four sites. In 1985, 68 pairs were reported breeding in 8 colonies on the South Shore of Long Island (Andrle and Carroll 1988). From 1985 to 1995, nesting pairs fluctuated between the high of 68 in 1985 to a low of 27 in 1995 with a mean of 51 pairs (Sommers et al. 1996). The Breeding Bird Atlas (1980-85) documented Confirmed breeding in 9 survey blocks.

The Long Island Colonial Waterbird survey documented 16 breeding pairs at three sites in 2010: Carnarsie Pol (12 pairs; Brooklyn), Ingraham Hassock (2 pairs; Hempstead), and Hoffman Island (2 pairs; Staten Island). In 2001 there were 32 breeding pairs, 23 in 2004, and 19 in 2007. The second Breeding Bird Atlas (2000-05) documented confirmed breeding in 11 survey blocks. NYC Audubon's Harbor Herons Project documented a low-level, stable presence in the Greater NY/NJ Harbor since 1982, with nest counts ranging from 0 in some years to a high of 19 in 2011 (a 46% increase from 2010 counts). Eight nests were documented in 2022. From 2002 to 2022, the average annual count was 6 nests and nesting occurred on 9 out of 18 islands surveyed (NYC Audubon).

The first Breeding Bird Atlas (BBA) (1980-85) documented occupancy in 19 blocks, >1% of the survey blocks statewide (Andrle and Carroll 1988). The second BBA (2000-05) documented occupancy in 18 blocks, <1% of the survey blocks statewide, not a significant change since the first atlas (McGowan and Corwin 2008).

The third BBA (2020-25) is currently underway and utilizes a different number and layout of survey blocks across New York, making direct comparison with the first two Atlases difficult. There were 5,333 blocks in the first and second BBAs, and there are 5,710 blocks in the current BBA. To date, little blue heron has been documented in 10 blocks, <1% of survey blocks statewide during the third BBA (NYS BBA III Overview, 2023).

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Peripheral	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

1. Freshwater Marsh
2. Lake and River Shore/Beach
3. Hardwood Swamp
4. Northern White Cedar Swamp
5. Riparian
6. Floodplain Forests
7. Old Field Managed Grasslands
8. Estuarine, Brackish Intertidal, Tidal Wetland

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
No	No	Declining	

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

Little blue herons nest in mixed-species assemblages of colonial waterbirds using varied colony habitat and nesting substrate. Nesting occurs mostly in shrubs and small trees in standing water or upland sites on islands. Wetlands used for nesting include both freshwater and bottomland hardwood swamps, and marine-estuarine habitats. Colony sites are located in riparian habitats, swamps, ponds, lakes, human-made impoundments, and on natural and human-made (dredged-material) islands (Rodgers and Smith 1995).

Little blue herons feed in a variety of freshwater and marine-estuarine habitats, including marshes, swamps, streams and rivers, ponds, lakes, impoundments, lagoons, tidal flats and wetlands, canals, ditches, fish-rearing facilities, and flooded agricultural fields.

In New York, nesting occurs on coastal marsh scrub/shrub islands in dense thickets and trees. Foraging occurs in estuaries surrounding the islands (Rodgers and Smith 1995, McCrimmon 2006, NYNHP 2009).

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	Yes	No	Yes	No	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

Little blue herons breed as yearlings, based on the presence of white plumage (Neill 1949, Palmer 1962, Hopkins 1971) and known-age banded birds (Rodgers 1978, 1980). A typical clutch consists of 3-5 eggs. The greatest reported longevity of a banded little blue heron was 13 years, 11 months

(Clapp et al. 1982). Because of difficulty in following nestling herons once they become mobile, studies usually monitor breeding success only to the age of 10–14 days. Variable nesting success is reported among studies and years, but no information is available for New York. No information is available on lifetime reproductive success.

VI. Threats *(from NY 2015 SWAP or newly described):*

Degradation of breeding and foraging habitat is the greatest threat to little blue herons (McCrimmon 2006). Specific threats include flooding, development, disturbance of nesting areas by human activity such as boating, fishing, dredge spoil deposition, and predation primarily by gulls, fox, and raccoons (Rodgers and Smith 1995, New York Natural Heritage Program 2009, Harbor Herons Subcommittee 2010).

Asian long-horned beetle (Anoplophora glabripennis) was discovered on Prall's Island in the Arthur Kill in 2001. Efforts to eradicate this invasive insect failed (Harbor Herons 2010). Non-native invasive plants also create an interesting issue for nesting herons. Although some species including bittersweet, porcelain berry, and kudzu provide attractive nesting structure for herons, their presence degrades the overall quality of the nesting habitat.

Heavy metal and organic contaminants in the water and sediments are picked up by fish, which are eaten by heron, egrets, and ibis. Monitoring the contaminant landscape and reversing contamination of the waterways is key. A study (on-going) by Elbin at NYC Audubon shows that there is a contaminant gradient across the NY Harbor, with the East River/Western Long Island sound having the greatest load and the lower, outer harbor having the lowest. These compounds are detected in herring gull eggs (gulls as bioindicators). Samples were collected post-Super Storm Sandy and are currently being analyzed. Productivity assessment should accompany the contaminants study.

Coastal areas are expected to be affected by predicted sea level rise associated with climate change. In an assessment of vulnerability to predicted climate change conducted by the New York Natural Heritage Program, little blue heron was identified as a second-priority species whose sensitivity should be assessed in the future (Schlesinger et al. 2011).

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

The little blue heron is protected under the Migratory Bird Treaty Act of 1918.The Tidal Wetlands Act provides protection for all tidal wetlands under Article 25 of the NYS Conservation Law.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

Protection and restoration of current nesting areas is important.

NYC Audubon recommends: "continued monitoring of wader populations through nesting surveys and banding is a necessary step to comprehend species status, population trends, and overall health and persistence of the system" (Craig 2012). The Harbor Herons Conservation Plan (2010) provides recommendations for addressing threats known in the New York-New Jersey Harbor. General recommendations are as follows:

- Set target population size for wading birds, by species, in the greater NY/NJ Harbor

- Set target size for each nesting colony, by species in the greater NY/NJ Harbor
- Monitor breeding colonies annually to determine breeding population size
- Monitor nests in breeding colonies to determine productivity and nest success.
- Monitor wetland habitat availability and use by Harbor Herons in the greater NY/NJ Harbor

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
1. Land/Water Protection	Site/Area Protection
2. Land/Water Protection	Resource/Habitat Protection
3. Land/Water Protection	Site/Area Management
4. Land/Water Protections	Alliance & Partnership Development

Table 2. Recommended conservation actions for little blue heron

VII. References

BirdLife International. 2017. *Egretta caerulea* (amended version of 2016 assessment). *The IUCN Red List of Threatened Species* 2017: e.T22696944A118857172. https://dx.doi.org/10.2305/IUCN.UK.2017-3.RLTS.T22696944A118857172.en. Accessed on 03 January 2024.

Clapp, R. B., M. K. Klimkiewicz, and J. H. Kennard. 1982. Longevity records of North American birds: Gaviidae through Alcidae. J. Field Ornithol. 53:81-124.

Corwin, K. 2012. NYSDEC SWAP 2015 Species Status Assessment for little blue heron. Prepared on April 23, 2012. Revised December 2014.

Craig, E. 2011. New York City Audubon's Harbor Herons Project: 2012 interim nesting survey report. New York City Audubon, New York, NY.

Craig, E. 2012. New York City Audubon's Harbor Herons Project: 2012 interim nesting survey report. New York City Audubon, New York, NY.

Curley, S.R., 2022. New York City Audubon's Harbor Herons Project: 2022 Nesting Survey Report. New York City Audubon, New York, NY.

eBird data from 2008-2022. Estimated for 2022. Fink, D., T. Auer, A. Johnston, M. Strimas-Mackey, S. Ligocki, O. Robinson, W. Hochachka, L. Jaromczyk, C. Crowley, K. Dunham, A. Stillman, I. Davies, A. Rodewald, V. Ruiz-Gutierrez, C. Wood. 2023. eBird Status and Trends, Data Version: 2022; Released: 2023. Cornell Lab of Ornithology, Ithaca, New York. https://doi.org/10.2173/ebirdst.2022

Harbor Herons Subcommittee. S. B. Elbin and N.K. Tsipoura (Editors). 2010. Harbor Herons Conservation Plan- NY/NJ Harbor Region. NY-NJ Harbor Estuary Program.

Hopkins, Jr., M. N. 1971. Does the Little Blue Heron breed in the white plumage? Oriole 36:30-33.

McCrimmon, D.A. 2006. Species group report for colonial nesting herons. Pages 33-42 of Appendix A-1, Species group reports for birds in: NYS Comprehensive Wildlife Conservation Strategy. NYSDEC, Albany.

NatureServe. 2023. NatureServe Explorer. Page last published 12/1/2023. https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.106018/Egretta_caerulea. Accessed 1/3/2024.

Neill, W. T. 1949. Little Blue Herons breeding in the juvenile plumage. Oriole 14:17-18.

New York Natural Heritage Program. 2009. Biotics database. NYSDEC, Albany.

New York Natural Heritage Program. 2023. Online Conservation Guide for *Egretta caerulea*. Available from: https://guides.nynhp.org/little-blue-heron/. Accessed December 20, 2023.

New York State Breeding Bird Atlas III Overview (NYS BBA III Overview). 2023. New York Checklist Overview. https://ebird.org/atlasny/state/US-NY. Accessed 1/3/2024.

Rodgers, Jr., J. A. 1978. Display characteristics and frequency of breeding by subadult Little Blue Herons. Pages 35-39 in Wading birds. (Sprunt IV, A., J. C. Ogden, and S. Winckler, Eds.) Res. rept. no. 7, Nat. Audubon Soc., New York.

Rodgers, Jr., J. A. 1980. Little Blue Heron breeding behavior. Auk 97:371-384.

Rodgers, Jr., J. A. and H.T. Smith. 1995. Little Blue Heron (Egretta caerulea), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/145 doi:10.2173/bna.145

Palmer, R. S. 1962. Handbook of North American birds. Vol. 1. Yale Univ. Press, New Haven, CT.

Schlesinger, M.D., J.D. Corser, K.A. Perkins, and E.L. White. 2011. Vulnerability of at-risk species to climate change in New York. New York Natural Heritage Program, Albany, NY.

Sommers, L., M. Alfieri, K. Meskill, and R. Miller. 1996. 1995 Long Island colonial waterbird and Piping Plover survey. A Research Report of NYSDEC. Stony Brook, NY.

Originally prepared by	Kimberley Corwin
Date first prepared	April 23, 2012
First revision	December 2014
Latest revision	December 20, 2023 (M. Oberkircher)

Species Status Assessment

Common Name: Little gull **Date Updated:** December 20, 2023

Scientific Name: *Hydrocoloeus minutus* **Updated By:** M. Oberkircher

Class: Aves

Family: Laridae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

Formerly placed in the genus Larus, little gull was reclassified to the genus Hydrocoloeus in 2008.

Little gull began colonizing the United States in the early 1960s and was first recorded breeding in 1962 at Oshawa's Second Marsh in Ontario. The little gull was first recorded in the Niagara Frontier region in 1938. No breeding has been documented in New York, but birds have wintered annually in the Buffalo/Lake Erie and Rochester areas since the 1970s. In recent years there have been more reports of little and Bonaparte's gulls lingering on the lower Great Lakes into early winter, along with more reports of wintering birds.

The debate is ongoing as to whether this species occurred historically in small numbers in North America or colonized during this century by influxes across the North Atlantic or across the Bering Strait (Baillie 1963, Bruun 1968, Johnson and Adams 1977, Hutchinson and Neath 1978, McRae 1989).

I. Status

a. Current legal protected Status

i. **Federal:** Not listed **Candidate:** No

ii. **New York:** SGCN

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** SNRN **Tracked by NYNHP?:** No

Other Ranks:

-IUCN Red List: Least Concern

-Partners in Flight: 13 out of 20

Status Discussion:

Little gull is a rare to uncommon visitant on the coast of New York; it is a rare to fairly common visitant in western New York in the winter.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Unknown	Unknown			Choose an item.
Northeastern US	Choose an item.	Choose an item.	Choose an item.			No

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
New York	Choose an item.	Choose an item.	Choose an item.			Yes
Connecticut	Choose an item.	Choose an item.	Choose an item.			No
Massachusetts	Choose an item.	Choose an item.	Choose an item.			No
New Jersey	Choose an item.	Choose an item.	Choose an item.			No
Pennsylvania	No	Choose an item.	Choose an item.			No
Vermont	No	Choose an item.	Choose an item.			No
Ontario	Yes	Unknown	Unknown		Conservation Priority	Choose an item.
Quebec	Yes	Unknown	Unknown		Conservation Priority	Choose an item.

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

None.

Trends Discussion *(insert map of North American/regional distribution and status):*

The number of wintering individuals reported in Ontario had been increasing steadily, particularly since the late 1960s (Ewins and Weseloh 1999); a fourfold increase was reported 1965–1969 to 1970–1974 (Weseloh 1994). At Niagara Falls, Ontario, there was a significant increase in the number of little gulls reported/party-hour on Christmas Bird Counts from 1966–1996. Since recorded reproductive output is very low in North America, it is presumed that these increases reflect either differing breeding output from as-yet unknown breeding concentrations in North America, or continued immigration from Palearctic or Siberia. The latter is supported by the 1996 return of Swedish-banded chick in Pennsylvania in its first summer [M. Gustafson pers. comm. in Ewins and Weseloh (1999)]. The second Ontario Breeding Bird Atlas reported a decline in breeding little gulls from 1981-85 to 2001-05 (Cadman et al. 2007).

In the period from 2009-2021, Christmas Bird Count data has recorded a -3.6% decline per year in sightings of little gulls in New York and -1.91 decline per year in Ontario. Little gull has not been confirmed as breeding in southern Ontario since 1989 which may suggest a decline in the Canadian breeding population.

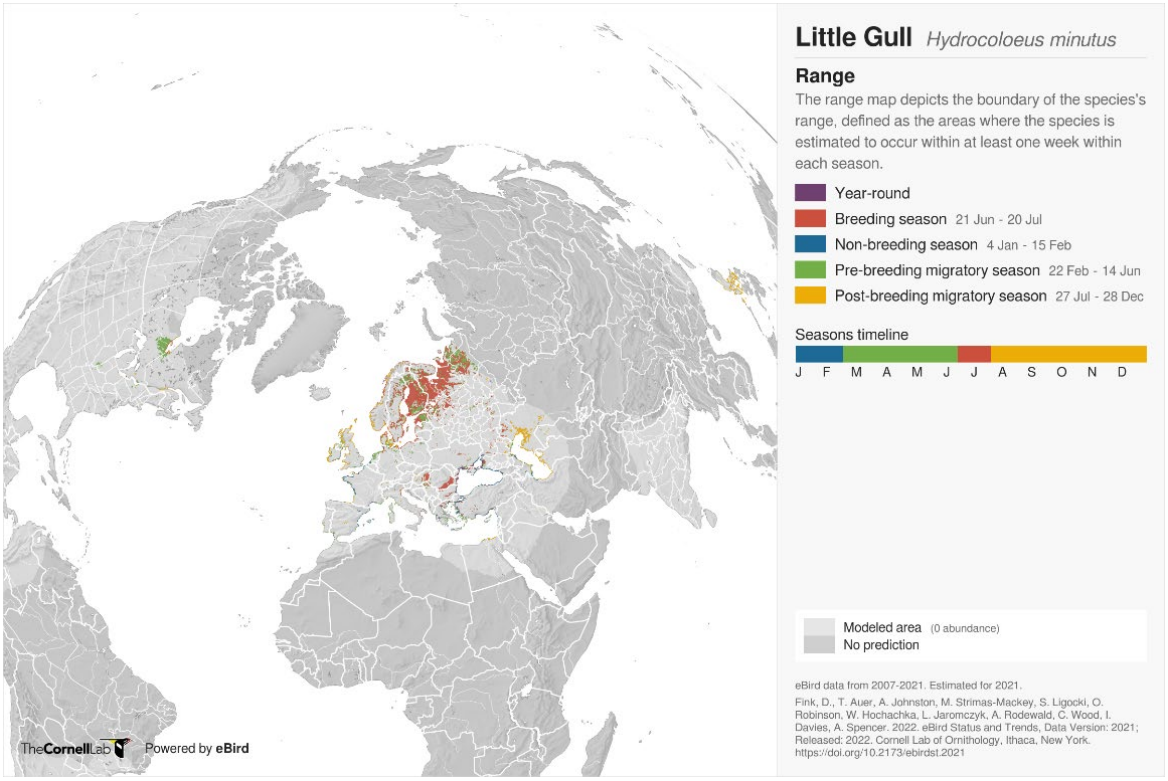

Figure 1. Global distribution of little gull (eBird)

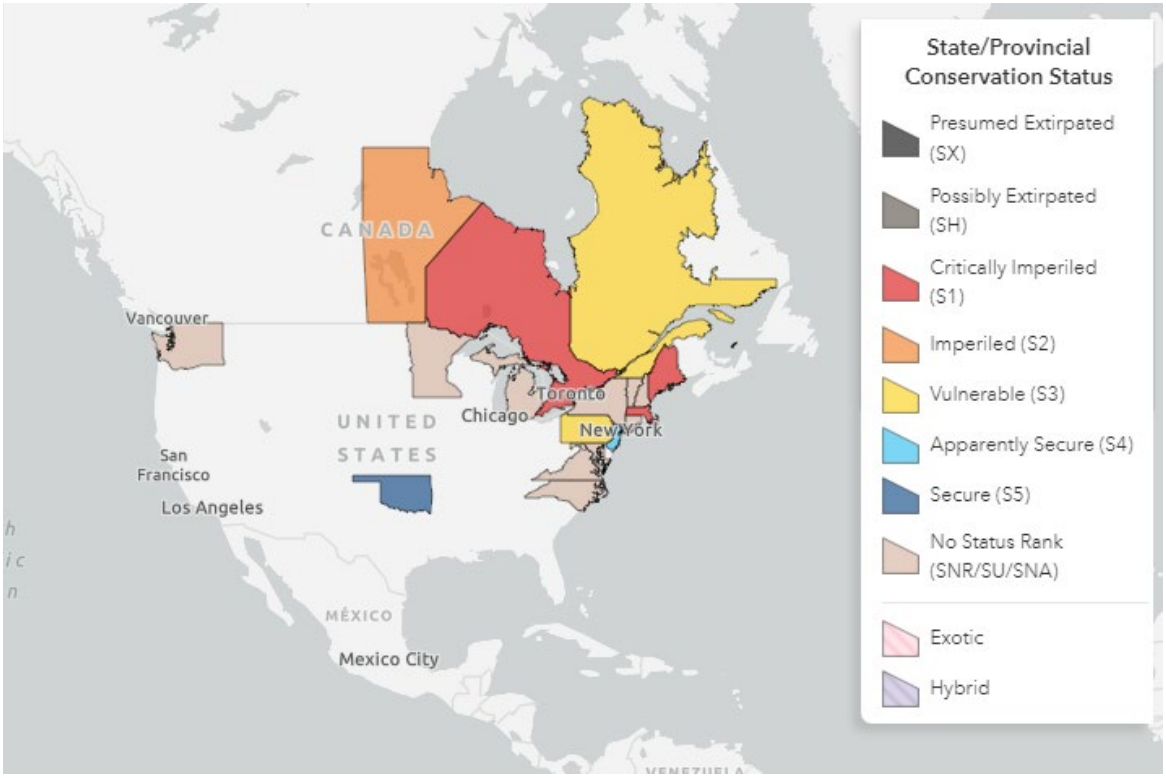

Figure 2. Conservation status of little gull in North America (NatureServe)

III. **New York Rarity** *(provide map, numbers, and percent of state occupied)*

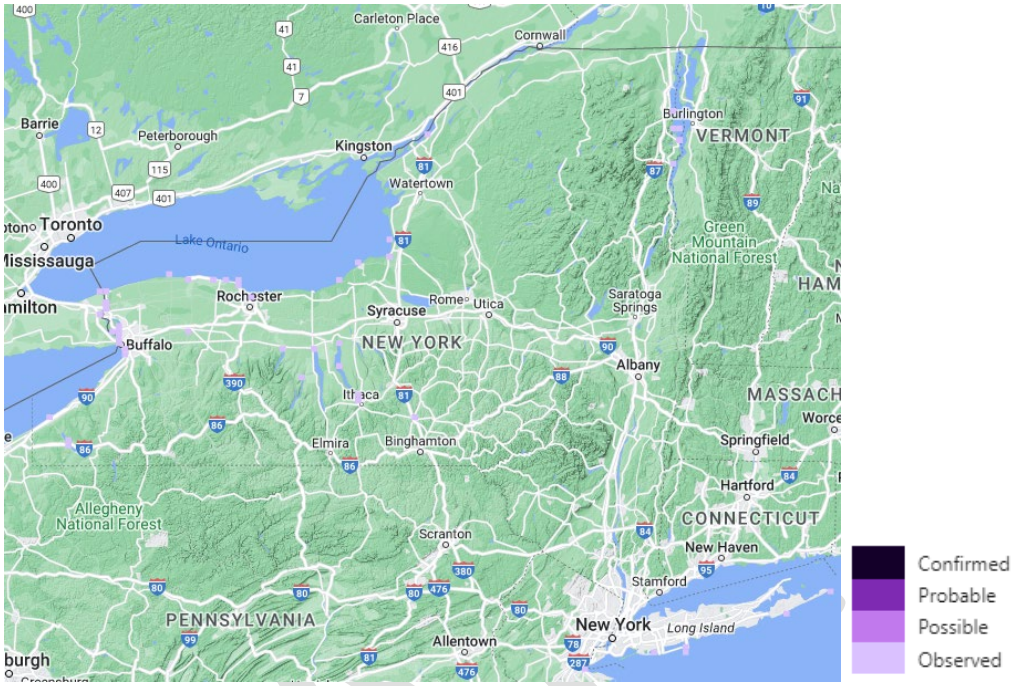

Figure 3. Observations of little gull in New York (NYS BBA III Map, 2023)

Years	# of Records	# of BBA Blocks	% of State
Pre-1980	_____	0	_____
1980-1985	_____	0	_____
2000-2005	_____	0	_____
2020-2023	_____	0	_____

Table 1. Records of little gull in New York.

Details of historic and current occurrence:

Though little gull may appear on any large body of water, it is reliably encountered at three locations: Buffalo/Niagara Falls area, Rochester area, and along the coast, especially New York Harbor.

Large numbers of little gull were reported in western New York during the late 1970s and early 1980s during a time when the species was expanding its Canadian range eastward: 78 individuals were reported at Durant-Eastman Park in Rochester (Monroe County) in November 1981; 61 birds were reported at Irondequoit Bay (Monroe County) in December 1979 (see DiCostanzo 1998). A new high count was reported in March 1999 when 85 little gulls were observed at the mouth of the Niagara River (Bellerby 1999). The subsequent years produced more typical numbers, a few to a dozen birds per sighting.

This species is often found in association with Bonaparte's gull (Larus philadelphia); one to three little gulls can be found on the coast, in bays and inlets, wherever large flocks of Bonaparte's gull are present. Upstate, it is found most often in the Buffalo-Niagara Falls and Rochester areas. Large flocks have occurred in these areas, but in most years only small numbers are reported.

Large numbers that were reported in the late 1970s and early 1980s coincided with an increase in the Little Gull's range in Europe and Asia and large numbers wintering on the west coast of Europe and the Mediterranean.

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Peripheral	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

1. Marine, Intertidal, Benthic Geomorphology, Tidal Flat
2. Marine Intertidal Gravel/Sand Beach
3. Large/Great River
4. Estuarine, Freshwater Intertidal, Tidal Wetland
5. Estuarine, Brackish Intertidal, Tidal Wetland

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
No	No	Stable	

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

During migration, little gull is noted most often on larger lakes and rivers, and along marine coasts. Regularly associates with Bonaparte's Gulls at roosting areas, and productive feeding sites in areas of water turbulence, and at sewage outfalls, upwellings and at mouths of rivers. Daytime roosts (loafing areas) noted on beaches, mudflats, lawns, and airports, often with other gulls (Green 1974, Steeves et al. 1989, Davis 1995a, 1995b).

Most breeding records are from shallow, freshwater wetland complexes, but brackish marshes are used along the Hudson Bay and James Bay lowlands (McRae 1984, Carpentier 1986, Wilson and McRae 1993).

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
No	Yes	No	Yes	Yes	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

In the Palearctic, where most breeding occurs, first breeding is usually at 2–3 years (Berg 1937), but occasionally first-year birds form loose pair bonds, and very rarely breed (Cramp and Simmons 1983, Veit and Petersen 1993). Hatching success is low in Ontario nestings, and most recorded North American breeding attempts have failed. Mobility of young and difficult access to many breeding areas has prevented collection of good breeding data. Most studies record low productivity, 0–0.2 young fledged/pair or occupied nest (Ewins and Weseloh 1999). Little gulls prefer to nest in areas with Common Terns, Black Terns, and Forster's Terns. No information is available on life span for North America, but the oldest banded bird in the Palearctic was 20 years, 11 months.

There are few cases in which mortality causes were identified for fully grown birds in North America, other than collection for museum specimens. Breeding failures in North America are attributed to predation by muskrat, long-tail weasel, northern water snake, Franklin's and ring-billed gulls. Protracted human disturbance of nesting areas likely increases risk of nest predation from other Laridae (Scharf et al. 1979, Schadweiler 1986). There have been very few marked individuals in North America, so the degree of site fidelity is unknown. Most breeding sites are occupied for <2–3 successive years, so there is little evidence for traditional use of same sites.

Initial dispersal from North American nesting areas is poorly understood, but adults from failed nests often move away from breeding marshes within 3–4 weeks of failure (Scott 1963, Tozer and Richards 1974). Sharp increases in sightings of adults and first-year birds well away from breeding sites by July and August (often accompanying concentrations of Bonaparte's Gulls) indicates relatively rapid movement after breeding (Weseloh 1994). There is no information on home range. Fidelity to wintering sites is poorly known, but concentrations are regular at certain Great Lakes (Niagara River) and Atlantic Coast sites, and single birds have returned over successive years to winter at the same inland sites in California (Roberson 1980, Langham 1991).

VI. Threats *(from NY 2015 SWAP or newly described):*

Regulation of water in wetlands (for waterfowl management, recreational boating, or irrigation) has likely been a major cause of nest flooding and failure. Contaminants may have been a factor for this species as it appears to have experienced DDT-induced eggshell thinning. There is likely risk of predation of nests and small young by other colonial nesting gulls. Other known threats to wintering birds are loss of habitat to coastal and offshore developments, diseases, entanglement in fishing gear, exposure to oil spills and other environmental contaminants, and habitat loss due to rising sea levels.

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

Little gull is protected by the Migratory Bird Treaty Act.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

Little work has yet been conducted in North America. In breeding areas, control of water levels, power boating and human disturbance during the breeding season, as well as provision of artificial nesting rafts (as per marsh-nesting terns), would likely improve breeding success in some areas.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
1. Land/Water Protection	Site/Area Protection
2. Land/Water Protection	Resource/Habitat Protection
3. Land/Water Management	Site/Area Management
4. Land/Water Management	Habitat and Natural Process Restoration (pollution control)
5. Law/Policy Actions	Policy/Regulation Changes (hunting regs, ocean dumping practices)
6. External Capacity Building	Alliance & Partnership Development

Table 2. Recommended conservation actions for little gull

VII. References

Baillie, J. L. 1963. Three bird immigrants from the Old World. Trans. R. Can. Inst. 34:95-105.

Bellerby, G. 1999. “Noteworthy records.” The Prothonotary 65(4):47.

BirdLife International. 2018. *Hydrocoloeus minutus*. *The IUCN Red List of Threatened Species* 2018: e.T22694469A132554081. https://dx.doi.org/10.2305/IUCN.UK.2018-2.RLTS.T22694469A132554081.en. Accessed on 03 January 2024.

Bruun, B. 1968. Migration of Little Gull (Larus minutus) in the North Atlantic region. Danskorn. Foren. Tidsskr. 62:126-136.

Cadman, M.D., D.A. Sutherland, G.G. Beck, D. Lepage, and A.R. Couturier (eds.). 2007. Atlas of the Breeding Birds of Ontario, 2001-2005. Bird Studies Canada, Environment Canada, Ontario Ornithologists, Ontario Ministry of Natural Resources, and Ontario Nature, Toronto.

Carpentier, A. G. 1986. Little Gull nesting on the James Bay lowlands, Ontario. Ont. Birds 4:112-113.

Cramp, S. and K. E. L. Simmons. 1983. The birds of the Western Palearctic, Vol. 3: Waders to gulls. Oxford Univ. Press, Oxford.

Corwin, K. 2012. NYSDEC SWAP 2015 Species Status Assessment for little gull. Prepared on April 20, 2012. Revised by J. Murtaugh July 2014.

Davis, R. 1995a. Briefs for the file. Chat 59:28-39.

Davis, R. 1995b. Briefs for the file. Chat 59:71-83.

eBird data from 2007-2021. Estimated for 2021. Fink, D., T. Auer, A. Johnston, M. Strimas-Mackey, S. Ligocki, O. Robinson, W. Hochachka, L. Jaromczyk, A. Rodewald, C. Wood, I. Davies, A. Spencer. 2022. eBird Status and Trends, Data Version: 2021; Released: 2022. Cornell Lab of Ornithology, Ithaca, New York. https://doi.org/10.2173/ebirdst.2021

Ewins, P. J. and D. V. Weseloh. 1999. Little Gull (Larus minutus), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/428 doi:10.2173/bna.428

Green, J. C. 1974. Arctic Tern and Little Gull as migrants in Duluth. Loon 46:52-57.

Hutchinson, C. D. and B. Neath. 1978. Little Gulls in Britain and Ireland. Br. Birds 71:563-582.

Johnson, S. R. and W. J. Adams. 1977. The Little Gull (Larus minutus) in Arctic North America. Can. Field-Nat. 91:294-296.

Langham, J. M. 1991. Twelfth report of the California Bird Records Committee. West. Birds 22:97-130.

Mcrae, R. D. 1984. First nesting of the Little Gull in Manitoba. Am. Birds 38:368-369.

Mcrae, R. D. 1989. Little Gull: immigrant or elusive resident? Seasons 29:44-45.

NatureServe. 2023. NatureServe Explorer. Page last published 12/1/2023. https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.104598/Hydrocoloeus_minutus. Accessed 1/3/2024.

Roberson, D. 1980. Rare birds of the west coast of North America. Woodcock Publ. Pacific Grove, CA.

Schladweiler, J. 1986. First state [Minnesota] nesting record for the Little Gull. Loon 58:166-170.

Scharf, W., M. L. Chamberlin, L. Shanks, and M. Landin. 1979. Nesting and migration areas of birds of the US Great Lakes (30 April-25 August 1976). Technical Rep. FWS/OBS-77/2. U.S. Fish and Wildlife Service and U.S. Army Corps of Engineers.

Scott, G. A. 1963. First nesting of the Little Gull (Larus minutus) in Ontario and the New World. Auk 80:548-549.

Steeves, J., S. Holohan, and R. Barnhurst. 1989. Migration of larids at Beauharnois, Québec, 1967-1980. Can. Field-Nat. 103(1):23-28.

Tozer, R. G. and J. M. Richards. 1974. Birds of the Oshawa -- Lake Scugog Region, Ontario. Alger Press, Oshawa, Ontario.

Veit, R. and W. Petersen. 1993. Birds of Massachusetts. Mass. Audubon Soc., Lincoln, MA
.
Weseloh, D. V. 1994. A history of the Little Gull in Ontario, 1930-1991. Pages 240-259 in Ornithology in Ontario. (McNicholl, M. K. and J. L. Cranmer-Byng, Eds.) Hawk Owl Publ., H. F. and G. Witherby, Ontario.

Wilson, N. C. and R. D. McRae. 1993. Seasonal and geographical distribution of birds for selected sites in Ontario's Hudson Bay lowland. Ontario Ministry of Natural Resources, Toronto.

Originally prepared by	Kimberley Corwin
Date first prepared	April 20, 2012
First revision	July 2014 (Jenny Murtaugh)
Latest revision	December 20, 2023 (M. Oberkircher)

Species Status Assessment

Common Name: Long-tailed duck **Date Updated:** January 19, 2023

Scientific Name: *Clangula hyemalis* **Updated By:** C. Hoh

Class: Aves

Family: *Anatidae*

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

Formerly known as oldsquaw, the long-tailed duck is a circumpolar breeder and migrant. Breeding range includes Alaska, Northern Canada, Greenland, Iceland, Scandinavia, and Russia. It winters along the Pacific coasts of North America, Russia and Eurasia, including Japan and Korea; the Atlantic coasts of North America, Europe, Greenland and Iceland. In North America, it winters along coastal areas and large lakes, occasionally as far south as Florida and San Francisco Bay, California. Except for the Great Lakes, it is rare inland away from the coasts. Long-tailed duck is hunted throughout its range for sport and subsistence.

Obtaining population size and trend estimates for long-tailed duck have proven difficult; its light color makes it difficult to see, a low-flying plane can cause individuals to dive for long periods, and flocks can occur far offshore. The species has undergone a small or statistically insignificant decrease over the last 40 years in North America (data from Breeding Bird Survey and/or Christmas Bird Count: Butcher and Niven 2007). Available data for the west coast of North America suggest that this species is declining drastically. On the east coast, trends do not show evidence of declines, but estimates have been difficult to obtain. Winter counts in New York for the period 1998-2008 suggest increases in wintering birds since the 1970s.

I. Status

a. Current legal protected Status

i. **Federal:** Not Listed **Candidate:** No

ii. **New York:** SGCN

b. Natural Heritage Program

i. **Global:**

ii. **New York:** **Tracked by NYNHP?:** No

Other Ranks:

-IUCN Red List: Vulnerable (2018)

- Partners in Flight (North America): Common birds in steep decline (2017)

Status Discussion:

Common to very abundant winter visitant along the coast and larger lakes.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Choose an item.	Choose an item.			Choose an item.
Northeastern US	Yes	Choose an item.	Choose an item.			Choose an item.
New York	Yes	Declining	Choose an item.			Choose an item.
Connecticut	Yes	Declining	Choose an item.			Choose an item.
Massachusetts	Yes	Declining	Choose an item.			Choose an item.
New Jersey	Yes	Declining	Choose an item.			Choose an item.
Pennsylvania	Yes	Declining	Choose an item.			Choose an item.
Vermont	Yes	Unknown	Choose an item.			Choose an item.
Ontario	Yes	Declining	Choose an item.			Choose an item.
Quebec	Yes	Declining	Choose an item.			Choose an item.

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

A Mid-Winter Waterfowl Survey is conducted annually on Long Island and Lake Champlain and the New York State Ornithological Association has conducted an annual January Waterfowl Count since 1955, however these surveys do not include the open ocean. A Sea Duck Survey had been conducted in the Atlantic Flyway, including NY, in the 1990s and early 2000s.

Trends Discussion *(insert map of North American/regional distribution and status):*

According to Birdlife International (2012), the overall population trend is decreasing, although some populations may be stable and others have unknown trends (Wetlands International 2006). According to monitoring data from the Baltic Sea, where the western Siberian and northern European populations winter, the population there decreased by up to 70% between 1995 and 2009 (Hario *et al*. 2009, Ellermaa *et al*. 2010, Nilsson and Månsson 2010).

The species has undergone a small or statistically insignificant decrease over the last 40 years in North America (data from Breeding Bird Survey and/or Christmas Bird Count: Butcher and Niven 2007). However, all winter surveys were quite variable and suffer from several biases. Better estimates are needed.

January Waterfowl Count data in New York suggest an increase in wintering long-tailed duck. The average count for the period 1973-2008 was 4,903 and the average count for 1999-2008 was 7,406. The highest count for 1999-2008 occurred in 2008 with 13,568 individuals.
Offshore sea duck concentration areas have not been completely identified or routinely surveyed. The U.S. Fish and Wildlife Service designed and conducted The Atlantic Flyway Sea Duck Survey to measure sea duck abundance along a continuous transect line 400 meters (3 miles) offshore and

parallel to the shore from Nova Scotia to Florida. The survey was flown mid-winter from 1991 to 2002, except for 1993 and 1996, and was discontinued in 2003 due to budget cuts. A high of 1,720 long-tailed ducks were counted in New York with a low of 52, and a high of 12,798 total along the survey route with a low of 3,719.

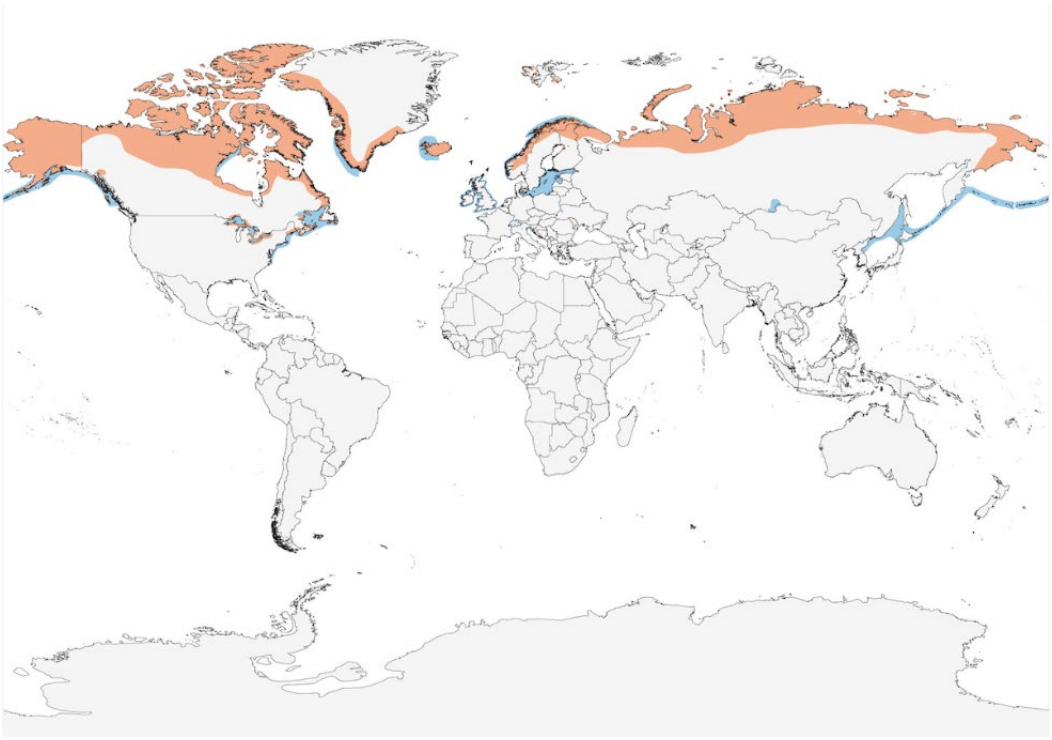

Figure 1. Distribution of long-tailed duck (Birds of North America Online, 2024)

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

Years	# of Records	# of BBA Blocks	% of State
Pre-1980	_____	_____	_____
1980-1985	_____	_____	_____
2000-2005	_____	_____	_____
2020-2023	_____	_____	_____

Table 1. Records of long-tailed duck in New York.

Details of historic and current occurrence:

January Waterfowl Count data averaged 2,827 individuals during the period 1973-1982. High counts reported by Lauro (1998) include: A high count on 20 December 1985 of 15,000 individuals at the mouth of the Niagara River was notable; in March 1998, a count of 4,500 individuals along the coast of Long Island was “impressive;” for the Finger Lakes area, a high count of 1,000 individuals was reported in April 1965.

January Waterfowl Count data averaged 7,406 individuals during the period 1999-2008. The January Waterfowl Count in 2008 recorded 13,568 individuals.

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Peripheral	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

1. Marine / Estuarine, Shallow Subtidal, Aquatic Bed
2. Great Lakes Aquatic Bed
3. Summer-stratified Monomictic Lake
4. Great Lakes Deepwater Community

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
No	No	Unknown	

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

Long-tailed duck winters in New York on coastal marine waters and large freshwater lakes. Most feeding takes place in water less than 9 meters (30') deep, but water up to 60 meters (200') deep is used. During migration, long-tailed duck moves close to shore, but may also migrate offshore, following ice leads (Richardson and Johnson 1981, Johnson and Richardson 1982); it stays inland when ice cover is extensive (Woodby and Divoky 1982), and uses coastal lagoons and deep open lakes for molting grounds (Johnson and Richardson 1982, Derksen et al. 1981).

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Choose an item.	Yes	Choose an item.	Choose an item.	Yes	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

Long-tailed duck does not begin breeding until two years of age. As with other sea ducks, probability of attempting to breed and breeding success is low in the first few years after attaining maturity, but no data is available for long-tailed duck. Similarly, some proportion of the population may not breed in poor years; rates of non-breeding by adults is still poorly documented in most species. There is no data on intervals between breeding (Robertson and Savard 2002). Hatching success of 383 eggs is 80.7%. Nest success (= proportion of clutches that hatch) is largely influenced by predators. Overall, 58.9% of nests are successful in reaching hatch (*n* = 95). Fowl cholera (*Pasterulla multocida*) is known to kill substantial numbers (Palmer 1976). The mean annual survival of adults banded in Iceland is 72% and life expectancy 3.1 years (Roselaar 1977), likely an underestimate. Fidelity to breeding and wintering sites is generally high.

VI. Threats *(from NY 2015 SWAP or newly described):*

Threats to NY Populations	
Threat Category	**Threat**
1. Biological Resource Use	Fishing & Harvesting Aquatic Resources (entanglement in fishing gear)
2. Energy Production & Mining	Oil & Gas Drilling (oil spills)
3. Pollution	Industrial & Military Effluents (contaminants)
4. Invasive & Other Problematic Species & Genes	Problematic Non-Native species (botulism e)
5. Energy Production & Mining	Renewable Energy (wind turbines)
6. Energy Production & Mining	Renewable Energy (tidal turbines)
7. Human Intrusions & Disturbance	Recreational Activities (running gun, drift fishing on Niagara River)

Nets are documented as a source of mortality for long-tailed ducks, at least on the Great Lakes (Robertson and Savard 2002). This species takes longer to reach sexual maturity than other ducks; there is a low survival rate of eggs, chicks, and first-year birds. Not all adults of reproductive age attempt nesting every year (Robertson and Savard 2002). With such a life history strategy, rates of adult mortality as low as a few percent per year can lead to long-term population declines.

The species is threatened by wetland habitat degradation and loss from petroleum pollution, wetland drainage and peat-extraction (Grishanov 2006). It is also threatened with direct mortality from oil pollution (Gorski et al. 1977, del Hoyo et al. 1992, Kirby et al. 1993), drowning through entanglement in fishing nets (del Hoyo et al. 1992, Kirby et al. 1993) and from hunting on migration routes over certain regions of the Arctic (del Hoyo et al. 1992). The species has previously suffered heavy losses from an outbreak of avian cholera and is susceptible to avian influenza so may be threatened by future outbreaks of these diseases (Friend 2006).

A number of studies have found increasing levels of contaminants and toxics, including trace elements, in sea ducks. Cadmium, selenium, mercury, lead, and organochlorides have all been found in high levels in long-tailed ducks. Kannan et al. (1998) found high levels of butyltin, an active ingredient in antifouling marine paint, in long-tailed ducks in British Columbia. The impacts of these contaminants on

the population are not yet fully understood. In the Chesapeake Bay and similar areas, water quality degradation has led to changes in the submerged aquatic plant and benthic communities where sea ducks feed (Birdlife International 2012).

In general, wintering waterbirds face threats from loss of habitat to coastal wetlands, activities that result in large scale alteration of bay or ocean substrates (dredging, sand mining, development of barrier islands, etc.), direct mortality from collisions with structures, various contaminants, or intensive human disturbance.

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

Long-tailed duck is a game species with an open hunting season. The hunting season length and daily bag limit could be modified or the season could be closed. Currently, the spring breeding population is not estimated annually, or adequately counted, and there is not a specific harvest strategy in place. In the Atlantic Flyway, "sea ducks" (scoters, eiders, and long-tailed ducks) are managed as underutilized species capable of additional harvest opportunity, where within designated special sea duck hunting areas a 107 day hunting season may be allowed with a daily bag limit of 7 ducks (but only 4 may be scoters). In all other areas, sea ducks may be harvested during the regular 60 day hunting season with a bag limit of 6 per day (but only 4 may be scoters). Even with this abundant hunting opportunity, harvest of long-tailed ducks is relatively low. Since 1999, long-tailed duck harvest in New York has averaged 4,500 and 17,500 for the Atlantic Flyway. Estimated harvest for the United States was 26,000 in 2010 and 16,000 in 2011 and less than 3,000 each year in Canada (Raftovich et al. 2012).

In New York, the 2012 hunting season for long-tailed ducks includes a 60 day season with a 6 per day bag limit for all of upstate New York and inland waters of Long Island, and a 107 day season with a 7 per day bag limit for the coastal waters of Long Island in the Special Sea Duck Hunting Area.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

Owing to its offshore distribution, long-tailed duck is poorly monitored by regular midwinter surveys for waterfowl; light color in winter makes it difficult to detect from the air (Stott and Olson 1972). Tendency to dive for prolonged periods at the approach of an airplane and its clumped distribution accentuate survey problems (Forsell and Gould 1980). Winter counts should thus be considered minimums. Reliable techniques for monitoring population size and trends across its range need to be developed and implemented. Continued support of the Sea Duck Joint Venture should lead to improved knowledge and management of the species.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions

Action Category	Action
1. Land/Water Management	Site/Area Management
2. Land/Water Management	Habitat and Natural Processes Restoration (pollution control)
3. Law/Policy Actions	Policy/Regulation Changes (hunting regulations, ocean dumping practices)
4. External Capacity Building	Alliance & Partnership Development

Table 2. Recommended conservation actions for long-tailed duck

VII. References

Alison, R. M. 1975a. Breeding biology and behavior of the Oldsquaw (*Clangula hyemalis* L.). Ornithol. Monogr. no. 18.

BirdLife International. 2012. Species factsheet: *Clangula hyemalis*. Downloaded from http://www.birdlife.org on 24/04/2012. Recommended citation for factsheets for more than one species: BirdLife International (2012) IUCN Red List for birds. Downloaded from http://www.birdlife.org on 24/04/2012.

del Hoyo, J., A. Elliot, and J. Sargatal. 1992. Handbook of the birds of the world, vol 1: Ostrich to Ducks. Barcelona, Spain: Lynx Edicions.

Derksen, D. V., T. C. Rothe, and W. D. Eldridge. 1981. Use of wetland habitats by birds in the National Petroleum Reserve-Alaska. Resour. Publ. no. 141. U.S. Fish Wildl. Serv. Washington, D.C.

Forsell, D. J. and P. J. Gould. 1980. Distribution and abundance of seabird wintering in the Kodiak area of Alaska. Reg. Rep. Bur. Land Manage., Environ. Stud. Prog., Alaska, OCS Office, Anchorage.

Friend, M. 2006. Evolving changes in diseases of waterbirds. Pp. 412-417 in Boere, G. and Galbraith, C., Stroud, D., eds. Waterbirds around the world. Edinburgh, UK: The Stationary Office.

Grishanov, D. 2006. Conservation problems of migratory waterfowl and shorebirds and their habitats in the Kaliningrad region of Russia.. Pp. 356 in Boere, G. and Galbraith, C., Stroud, D., eds. Waterbirds around the world. Edinburgh, UK: The Stationary Office.

Gorski, W., B. Jakuczun, C. Nitecki, and A. Petryna. 1977. Investigation of oil pollution on the Polish Baltic coast in 1974-1975.. Przegl. Zool. 21: 20-23.

Johnson, S. R. and W. J. Richardson. 1982. Waterbird migration near the Yukon and Alaskan coast of the Beaufort Sea: II. Moult migration of seaducks in summer. Arctic 35:291-301.

Kannan, K., K. Senthilkumar, J.E. Elliot, L.A. Feyk, and J.P. Giesy. 1998. Occurrence of butytlin compounds in tissues of water birds and sea ducks from the United States and Canada. Archives of Environmental Contamination and Toxicology 35:64-69.

Kirby, J., R. Evans, and A.D. Fox. 1993. Wintering seaducks in Britain and Ireland: Populations, threats, conservation and research priorities. Aquat. Conserv: Mar. Freshw. Ecosyst. 3: 105-137.

Klimstra, J.D. et al., compiler. 2012. Atlantic Flyway harvest and population survey data book. U.S Fish and Wildlife Service, Laurel, MD.

Palmer, R. S. 1976. Handbook of North American birds, Vol. 3: waterfowl. Pt. 2. Yale Univ. Press, New Haven, CT.

Raftovich, R.V., K.A. Wilkins, S.S. Williams, and H.L. Spriggs. 2012. Migratory Bird Hunting Activity and Harvest during the 2010 nad 2011 Hunting Seasons. U.S. Fish and Wildlife Service, Laurel, Maryland.

Richardson, W. J. and S. R. Johnson. 1981. Waterbird migration near the Yukon and Alaskan coast of the Beaufort Sea: I. Timing, routes and numbers in spring. Arctic 34:108-121.

Robertson, G.J., and J. P. L. Savard. 2002. Long-tailed Duck (*Clangula hyemalis*). In The Birds of North America, No. 651 (A. Poole and F. Gill, eds.). The Birds of North America, Inc., Philadelphia, Pennsylvania.

Roselaar, C. S. 1977. Long-tailed Duck. Pages 626-634 *in* The birds of the Western Palearctic. Vol. 1: ostrich to ducks. (Cramp, S. and K. E. L. Simmons, Eds.) Oxford Univ. Press, Oxford, U.K.

Stott, R. S. and D. P. Olson. 1972. An evaluation of waterfowl surveys on the New Hampshire coastline. J. Wildl. Manage. 36:468-477.

Woodby, D. A. and G. J. Divoky. 1982. Spring migration of eiders and other waterbirds at Point Barrow, Alaska. Arctic 35:403-410.

Originally prepared by	Kimberley Corwin
Date first prepared	April 25, 2012
First revision	July 2014 (Jenny Murtaugh)
Latest revision	

Species Status Assessment

Common Name: Louisiana waterthrush **Date Updated:**

Scientific Name: *Parkesia motacilla* **Updated By:**

Class: Aves

Family: Parulidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

Formerly in the genus *Seiurus*, the Louisiana waterthrush was reclassified to the genus *Parkesia* in 2010 (Chesser et al. 2010). This warbler has been expanding its range northward and eastward in northeastern North America from the 1950s to the 1990s, perhaps as a result of reforestation (Robinson 1995). It breeds in forested ravines alongside moving streams and is sensitive to fragmentation. In the Coastal Lowlands where this bird is much less common than upstate, wooded wetlands and slow-moving streams are used.

Breeding Bird Survey data show stable range-wide population trends since 1968 though in many areas outside of southern states, data are insufficient due to low detection rates. Short-term trends (2000-2010) indicate an increase across the range and in the Northeast. In New York, the second Breeding Bird Atlas recorded a decline in occupancy of 21% from 1980-85 to 2000-05.

Louisiana waterthrush breeds primarily in the southern half New York with a concentration in the lower Hudson Valley.

I. Status

a. Current legal protected Status

i. **Federal:** Not listed **Candidate:** No

ii. **New York:** Not listed; SGCN

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** S5 **Tracked by NYNHP?:** No

Other Ranks:

IUCN Red List: Least Concern

Partners in Flight Species of Regional Priority in Appalachian Bird Conservation Region

Northeast Regional SGCN:

Status Discussion:

The Louisiana waterthrush is a fairly common breeder in New York along streams, primarily south of the Adirondacks. Wood thrush is ranked as Secure or Apparently Secure in all northeastern states except Maine, where it is ranked Imperiled. It is ranked Critically Imperiled in Quebec and Vulnerable in Ontario.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Increasing	Increasing	2000-2010		Choose an item.
Northeastern US	Yes	Increasing	Increasing	2000-2010		Choose an item.
New York	Yes	Declining	Declining	1980-85 to 2000-05	Not listed	Yes
Connecticut	Yes	Unknown	Unknown		Not listed	Yes
Massachusetts	Yes	Increasing	Increasing	1975-79 to 2007-11	Not listed	Yes
New Jersey	Yes	Unknown	Unknown		Not listed	Yes
Pennsylvania	Yes	Increasing	Increasing	1984-89 to 2004-08	Not listed	Yes
Vermont	Yes	Stable	Stable	1976-81 to 2003-07	Not listed	No
Ontario	Yes	Stable	Stable	1981-85 to 2001-05	Special Concern	Choose an item.
Quebec	Yes	Unknown	Unknown		Special Concern	Choose an item.

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

None.

Trends Discussion *(insert map of North American/regional distribution and status):*

According to BBS results (Sauer et al. 2004), the only statistically significant trends were increasing over the entire period (1966–2007) and distributed over central and southern portions of their range (Mattsson et al. 2009).

Breeding Bird Atlas data showed a change in occupancy of 21% statewide from 1980-85 to 2000-05. Rosenberg (2008) noted in the BBA data an alarming decline of -55% in the southeastern edge of the Appalachian Plateau, a decline of 24% in the Catskills, and the disappearance from the recently colonized Adirondack and Champlain Valley sites.

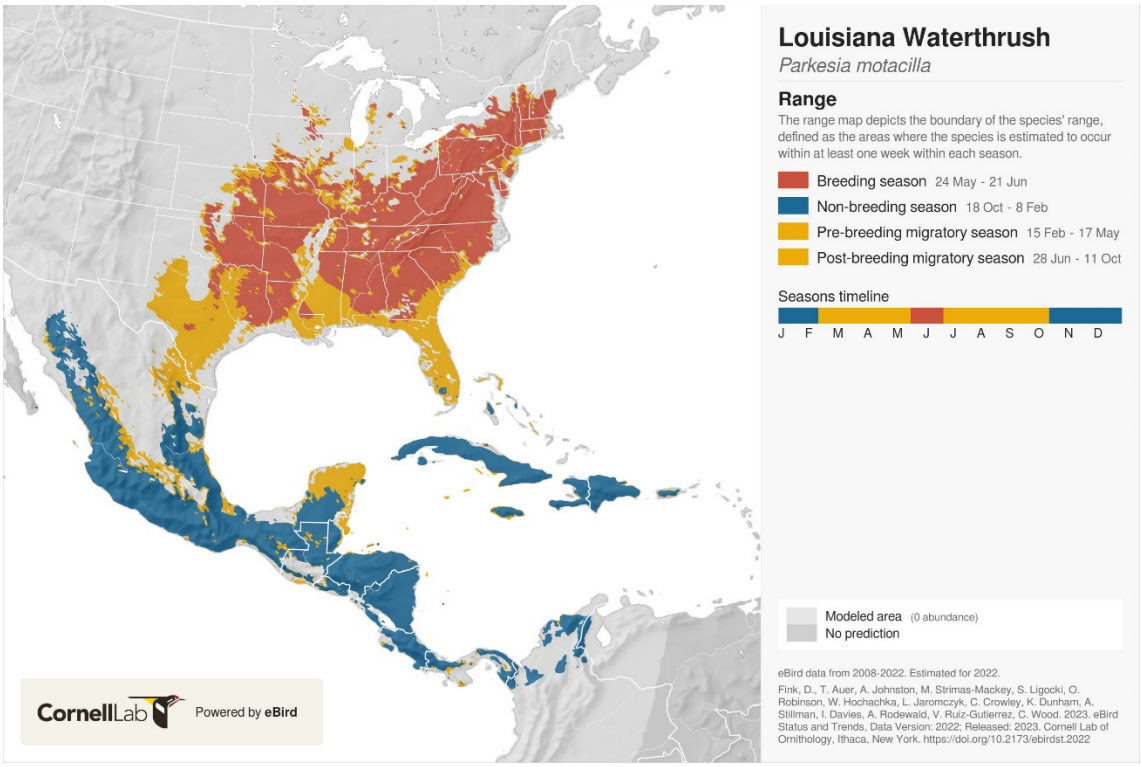

Figure 1. Louisiana waterthrush distribution (eBird 2022)

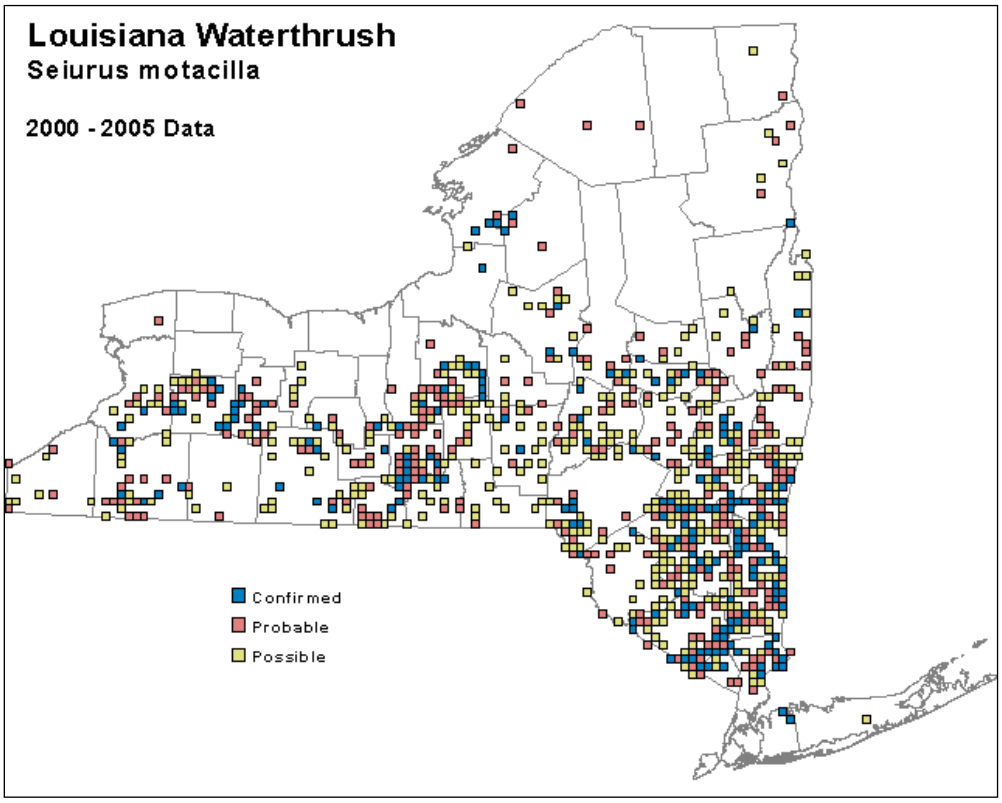

Figure 2. Louisiana waterthrush occurrence in New York during the second Breeding Bird Atlas (McGowan and Corwin)

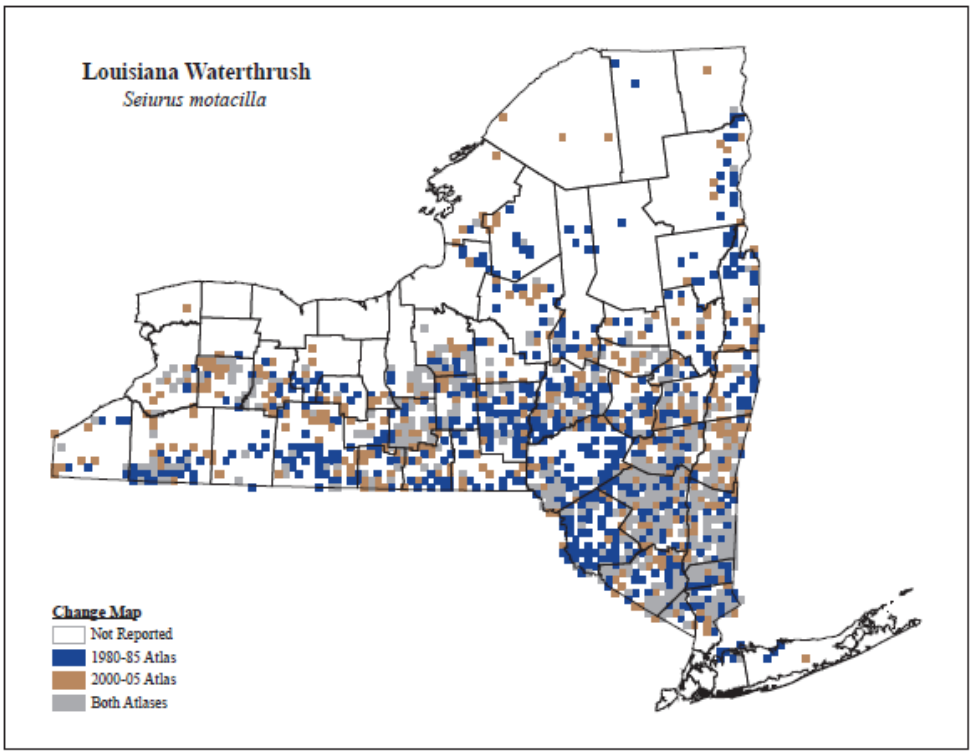

Figure 3. Change in Louisiana waterthrush occurrence in New York between the first Breeding Bird Atlas and the second Breeding Bird Atlas (McGowan and Corwin 2008)

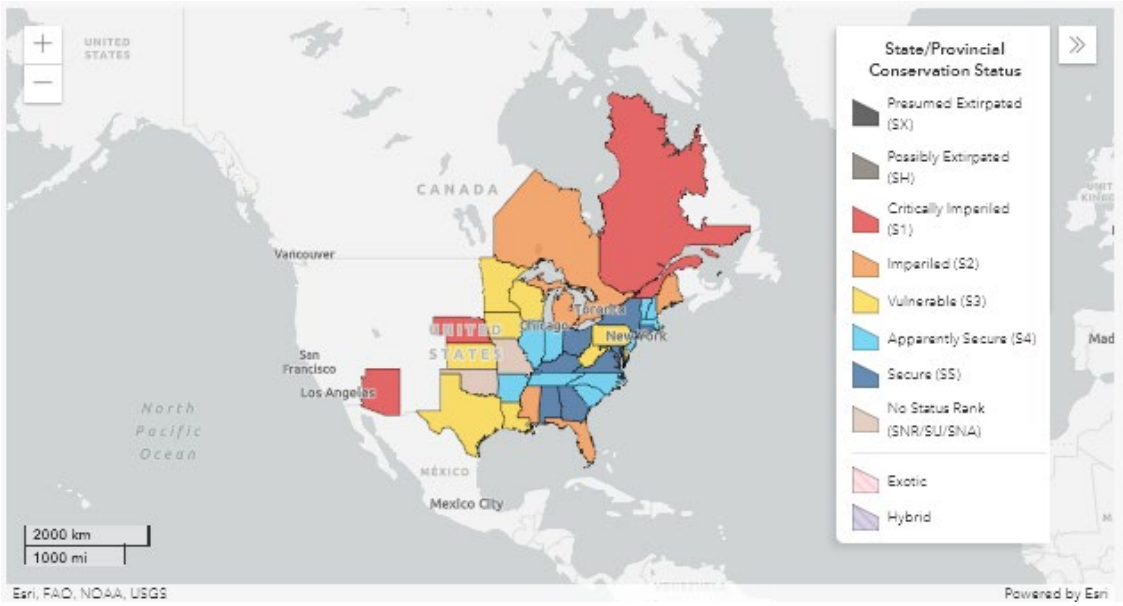

Figure 4. Conservation status of Louisiana waterthrush in North America (NatureServe 2023).

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

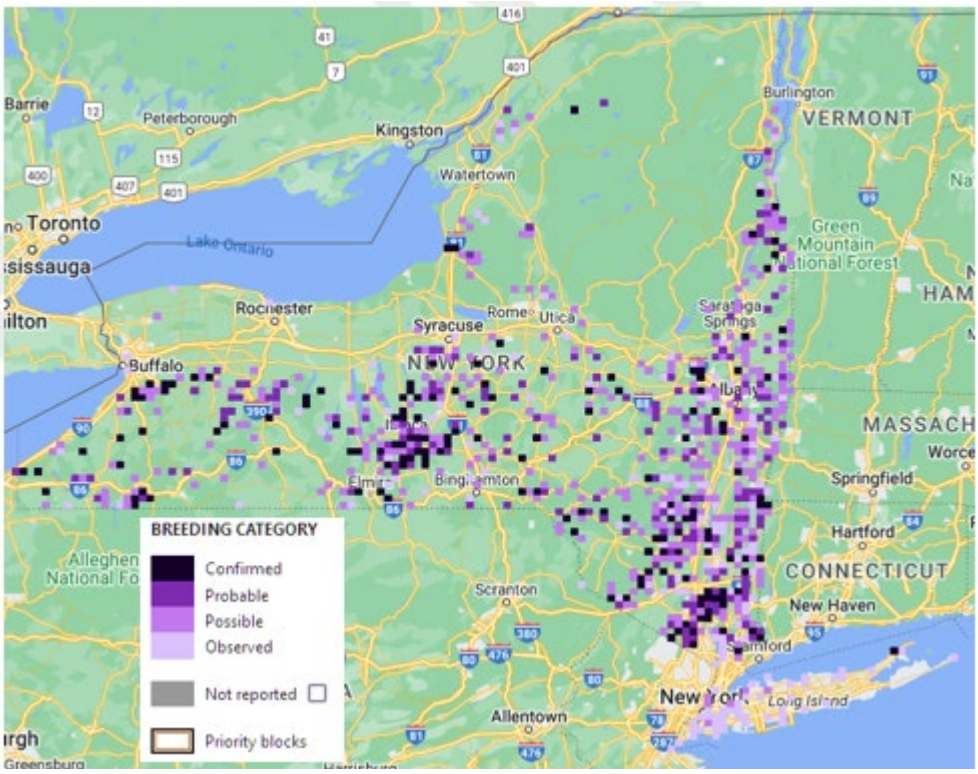

Figure 5. Records of Louisiana waterthrush in New York (NYS BBA III Map, 2023)

Years	# of Records	# of BBA Blocks	% of State
Pre-1980	_____	_____	_____
1980-1985	_____	1,055	20%
2000-2005	_____	838	16%
2020-2023	_____	684	12%

Table 1. Records of Louisiana waterthrush in New York.

Details of historic and current occurrence:

The first Breeding Bird Atlas (BBA) (1980-85) documented occupancy in 1,055 blocks, 20% of the survey blocks statewide. The second BBA (2000-05) documented occupancy in 838 blocks, 16% of the survey blocks statewide, a decline of 21% since the first atlas (McGowan and Corwin 2008).

The third BBA (2020-25) is currently underway and utilizes a different number and layout of survey blocks across New York, making direct comparison with the first two Atlases difficult. There were 5,333 blocks in the first and second BBAs, and there are 5,710 blocks in the current BBA. To date, Louisiana waterthrush has been documented in 684 blocks, 12% of survey blocks statewide during the third BBA (NYS BBA III Overview, 2023).

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Peripheral	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

a. Mixed Northern Hardwoods

b. Oak Forest

c. Hardwood Swamp

d. Coastal Red Maple/Black Gum Swamp

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
Yes	Yes	Increasing	

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

The Louisiana waterthrush establishes linear territories of 200-1,200 m in length alongside fast-running streams in coniferous or mixed deciduous forests (Mattsson et al. 2009). Ravines with well-developed banks and overturned trees with exposed root masses provide structure necessary for nesting and feeding. In the Coastal Lowlands, the Louisiana waterthrush is found in wooded swamps and near slow-moving streams (Bull 1974). This warbler is an indicator of high-quality streams because it expands its diet in response to declining water quality (Mulvihill 1999, Mattsson and Cooper 2006).

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	Choose an item.	Choose an item.	Yes	No	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

Louisiana waterthrush breeds in the first breeding season after fledging, producing 1 brood/year. There are typically 1-2 clutches/season, and individuals will re-nest if first nest fails; second broods are rare.

Hatching success is usually ≥80% and the average number of young to nest-leaving age in successful, un-parasitized nests was 4.6 (0.9 SD, 7 nests, range 1–6) in Illinois and New York (Eaton 1958). The maximum reported life span based on recapture of banded bird is 11 years, 11 months (Mattsson et al. 2009). Lifetime reproductive success not reported. Detection can be difficult because of this bird's habitat and its behavior in which it ceases singing after eggs are laid.

VI. Threats *(from NY 2015 SWAP or newly described):*

Threats to NY Populations	
Threat Category	**Threat**
1. Residential & Commercial Development	Housing & Urban Areas
2. Biological Resource Use	Logging & Wood Harvesting
3. Natural System Modification	Dams & Water Management/Use (channelization)
4. Agriculture & Aquaculture	Annual & Perennial Non-Timber Crops (intensification)
5. Invasive & Other Problematic Species & Genes	Problematic Native Species (nest site competition, parasitism, raccoons, opossum)
6. Pollution	Air-Borne Pollutants (mercury)
7. Climate Change & Severe Weather	Habitat Shifting & Alteration
8. Climate Change & Severe Weather	Storms & Flooding
9. Climate Change & Severe Weather	Drought
10. Energy Production & Mining	Renewable Energy (wind turbine collisions)
11. Invasive & Other Problematic Species & Genes	Non-native/ Alien Species (Hemlock woolly adelgid, cats)

Habitat fragmentation is a potential threat, as Louisiana waterthrush are thought to be area-sensitive (DeGraaf and Yamasaki 2001). The effects of exurban development on wildlife in the Adirondack Park have been studied by the Wildlife Conservation Society. A pattern has been observed in which the introduction of houses and roads into the landscape via residential development brings in a different set of predators and competitors that previously occurred in lower numbers (e.g., blue jay, American crow, gray squirrel). The combined effect of these changes tend to favor certain kinds of species over others – omnivores over insectivores, residents over migrants, generalists over habitat specialists (especially interior forest specialists), and tree nesters over ground nesters (Glennon and Kretser In Press, Reed et al. In Press). Louisiana waterthrush is more specialized species that must compete with, or suffer higher predation from, the more common ones for which exurban development creates habitat.

Acidification of streams results in lower prey availability. Waterthrushes respond by increasing the diversity of prey items taken (Mulvihill 1999). Invasion of exotic hemlock woolly adelgid may result in loss of streamside hemlocks (Evans 2002), which are an important component of quality waterthrush

habitat. Louisiana waterthrush exhibits high levels of mercury in areas of high mercury deposition (Evers and Duron 2006). Osborne et al. (2011) showed that the effects of mercury can be exacerbated in boreal species that use high-acid habitats such as peatlands.

In an assessment of vulnerability to predicted climate change conducted by the New York Natural Heritage Program, Louisiana waterthrush was identified as a second-priority species whose sensitivity should be assessed in the future (Schlesinger et al. 2011).

Neotropical migrants face additional threats on wintering grounds and during migration including loss and degradation of wintering habitat, exposure to unregulated contaminants, and collision with various structures such as powerlines, towers, and turbines.

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

Louisiana waterthrush is protected under the Migratory Bird Treaty Act of 1918. The Protection of Waters Program provides protection for rivers, streams, lakes, and ponds under Article 15 of the NYS Environmental Conservation Law.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

Implementation of silvicultural Best Management Practices that provide for forest buffers along streams will help maintain and protect breeding habitat. Widespread regulatory mechanisms to reduce acid deposition and mercury accumulation will benefit this species.

Low levels of forest management that include patches of light harvesting will benefit ground and shrub nesting species. Some areas of moderate or even aged management would also be beneficial to many species by providing food and cover, although the majority of the forest needs to be in a relatively mature state. Efforts should also include minimizing the effects of fragmentation on habitats due to development, and on implementing population control of white-tailed deer in areas where deer populations are affecting forest regeneration and species composition (NYSDEC 2005).

Research is needed on area-sensitivity and habitat requirements of some species in this suite, and further research should be conducted on the effects of logging on forest interior birds. The public should be educated on the benefits and need for forest management to enhance populations of ground and shrub nesting forest breeding birds on public and private lands (NYSDEC 2005). Conservation actions following IUCN taxonomy are categorized in the table below.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions

Action Category	Action
Land/Water Protection	Site/Area Protection
Land/Water Protection	Resource/Habitat Protection
Land/Water Management	Site/Area Management
Land/Water Management	Invasive/Problematic Species Control
Education & Awareness	Awareness & Communications

Table 2. Recommended conservation actions for Louisiana waterthrush

The Comprehensive Wildlife Conservation Strategy (NYSDEC 2005) includes recommendations for the following actions for deciduous/mixed forest birds, which includes Louisiana waterthrush.

Habitat management:

____ Minimize the effects of fragmentation of habitats due to human development.
____ Maintain habitat conditions for Louisiana waterthrush.
____ Implement population control of whitetail deer in areas where deer populations are affecting forest regeneration and species composition.

Habitat research:

____ Research effects of logging on "forest interior" birds.

Other action:

____ Educate the public on the benefits and need for forest management to enhance populations of ground and shrub nesting forest breeding birds on public and private lands.
____ Educate the public on the benefits and need for forest management on public and private lands.

Population monitoring:

____ BBS appears adequate for most species.

VII. References

Chesser, R.T., R.C. Banks, F.K. Barker, C. Cicero, J.L. Dunn, A.W. Kratter, I.J. Lovette, P.C. Rasmussen, J.V. Remsen Jr., J.D. Rising, D.F. Stotz, K. Winkler. 2010. Fifty-first supplement to the American Ornithologists' Union *Checklist of North American Birds*. The Auk 127(3):726-44.

DeGraaf, R.M. and M. Yamasaki. 2001. New England Wildlife. University Press of New England, Hanover, NH.

Eaton, S. W. 1958. A life history study of the Louisiana Waterthrush. Wilson Bull. 70:210-235.

eBird. 2022. Fink, D., T. Auer, A. Johnston, M. Strimas-Mackey, S. Ligocki, O. Robinson, W. Hochachka, L. Jaromczyk, C. Crowley, K. Dunham, A. Stillman, I. Davies, A. Rodewald, V. Ruiz-Gutierrez, C. Wood. 2023. eBird Status and Trends, Data Version: 2022; Released: 2023. Cornell Lab of Ornithology, Ithaca, New York. https://doi.org/10.2173/ebirdst.2022

Evans, R.A. 2002. An ecosystem unraveling? Pages 23-33 in Proceedings: Hemlock woolly adelgid in the Eastern United States Symposium, February 5-7, 2002, East Brunswick, NJ. (B. Onken, R. Reardon, and J. Lashomb, eds.). New Jersey Agricultural Experiment Station and Rutgers University, New Brunswick, NJ.

Evers, D.C. and M. Duron. 2006. Developing an exposure profile for mercury in breeding birds of New York and Pennsylvania 2005. Report BRI 2006-11. BioDiversity Research Institute, Gorham, ME.

Glennon, M.J., and H.E. Kretser. In Press. Size of the ecological effect zone associated with exurban development in the Adirondack Park, N.Y. Landscape and Urban Planning.

Mattsson, B.J. and R. J. Cooper. 2006. Louisiana waterthrushes (*Seiurus motacilla*) and habitat assessments as cost-effective indicators of instream biotic integrity. Freshwater Biology 51(10):1941-58.

Mattsson, B. J., T.L. Master, R.S. Mulvihill and W.D. Robinson. 2009. Louisiana Waterthrush (*Parkesia motacilla*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/151 doi:10.2173/bna.151

Mulvihill, R.S. 1999. Effects of stream acidification on the breeding biology of an obligate riparian songbird, the Louisiana wood thrush (*Seiurus motacilla*) In: Pp. 51-61 in The effects of acidic deposition on aquatic ecosystems in Pennsylvania (W. E. Sharpe and J. R. Drohan, eds.). Proc. 1998, Pennsylvania Acidic Deposition Conf., Vol. 2, Environmental Resources Research Institute, University Park, PA.

NatureServe. 2023. NatureServe Explorer. Page last published 12/1/2023. https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.105622/Parkesia_motacilla. Accessed December 28, 2023.

New York State Breeding Bird Atlas III Map (NYS BBA III Map). 2023. https://ebird.org/atlasny/explore. Accessed December 28, 2023.

New York State Breeding Bird Atlas III Overview (NYS BBA III Overview). 2023. New York Checklist Overview. https://ebird.org/atlasny/state/US-NY. Accessed December 28, 2023.

New York State Department of Environmental Conservation (NYSDEC). 2005. New York State Comprehensive Wildlife Conservation Strategy. Albany, NY. https://extapps.dec.ny.gov/docs/wildlife_pdf/cwcs2005.pdf

Osborne, C. E, D. C. Evers, M. Duron, N. Schoch, D. Yates, D. Buck, O. P. Lane, and J. Franklin. 2011. Mercury Contamination within Terrestrial Ecosystems in New England and Mid-Atlantic States: Profiles of Soil, Invertebrates, Songbirds, and Bats. Report BRI 2011-09. Submitted to The Nature Conservancy – Eastern New York Chapter. Biodiversity Research Institute, Gorham, Maine.

Robinson, W.D. 1995. Louisiana waterthrush (*Seiurus motacilla*). *In* The Birds or North America, No. 151 (A. Poole and F. Gill, eds.). The Academy of Natural Sciences, Philadelphia, PA and The American Ornithologists' Union, Washington, D.C.

Reed, S.E., H.E. Kretser, M.J. Glennon, L. Pejchar, and A.M. Merenlender. In Press. Faunal biodiversity at the urban-rural interface: current knowledge, research priorities, and planning strategies. Invited submission to: B.G. Lockaby, W. Zipperer, and D.N. Laband, editors. Urban-Rural Interfaces: Linking People and Nature.

Rosenberg, K.V. 2008. Louisiana waterthrush, *Seiurus motacilla*. Pages 522-23 in The Second Atlas of Breeding Birds in New York State (K.J. McGowan and K. Corwin, eds.). Cornell University Press, Ithaca, NY.

Sauer, J. R., J. E. Hines, and J. Fallon. 2004. The North American Breeding Bird Survey, Results and Analysis 1966-2003. Version 2004.1. USGS Patuxent Wildlife Research Center, Laurel, MD. [Online.] http://www.mbr-pwrc.usgs.gov/bbs/

Schlesinger, M.D., J.D. Corser, K.A. Perkins, and E.L. White. 2011. Vulnerability of at-risk species to climate change in New York. New York Natural Heritage Program, Albany, NY.

Therres, G.D. 1999. Wildlife species of regional conservation concern in the northeastern United States. Northeast Wildlife 54:93-100.

Originally prepared by	Kimberley Corwin
Date first prepared	April 26, 2012
First revision	July 2014 (Jenny Murtaugh)
Last revision	Transcribed with minor updates December 28, 2023

Species Status Assessment

Common Name: Northern bobwhite **Date Updated:** December 21, 2023

Scientific Name: *Colinus virginianus* **Updated By:** Chip Hamilton

Class: Aves (Birds)

Family: Odontophoridae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

Northern bobwhites breed and winter in New York—the northern extent of the range—where they occur in open, early-successional habitats and farmland. Northern bobwhite is a game species with an open season. Individuals were released in western New York in the 1930s and 1950s, though the influence of these introductions is unclear (McGowan 2008). Two subspecies, *mexicanus* and *marilandicus*, occurred historically in New York, with the former arriving from the west and the latter from the south. The populations within the original ranges of these subspecies are now heterogenous and the species is considered binomial.

Northern bobwhites have been declining at an alarming rate for the past 40 years across their range. Breeding Bird Survey data show significant long-term (1966-2010) and short-term (2000-2010) declines of -3.8% and -4.0% per year respectively for the United States, and -5.1% and -5.3% respectively for the Eastern region. Long-term and short-term BBS trends for New York are significant and declining as well, at -7.3% and -6.4% respectively, though caution is warranted because of small sample sizes. Christmas Bird Count data have documented fewer than 15 individuals in total since the 2006-07 season (McGowan 2007, 2011).

A long-term call-count survey in Suffolk County conducted since 1979 shows a precipitous decline in this region from an annual average of 101 calling males in the 1980s, to 41 calling males in the 1990s, and an average of 20 calling males from years 2000-2019 . No calling males were heard during the 2011, 2012, and 2014-2019 surveys. DEC staff expanded the survey to 3 additional routes in areas of suitable habitat to see if birds can be detected. 3 years of surveys across these new sites yielded no detections.

I. Status

a. Current legal protected Status

i. **Federal:** Not Listed **Candidate:** No

ii. **New York:** SGCN

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** S4 **Tracked by NYNHP?:** No

Other Ranks:

-IUCN Red List: Near Threatened

Status Discussion:

Northern bobwhite is a rare breeder in New York's coastal lowlands. Its numbers have severely declined, and natural breeding is highly unlikely.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Declining	Declining			Choose an item.
Northeastern US	Yes	Declining	Declining		None	Yes
New York	Yes	Declining	Declining		None	Yes
Connecticut	No	Declining	Declining		None	Yes
Massachusetts	No	Declining	Declining		None	Yes
New Jersey	Yes	Declining	Declining		None	Yes
Pennsylvania	Yes	Declining	Declining		None	Yes
Vermont	No	Declining	Declining		None	Yes
Ontario	No	Declining	Declining		Endangered	Yes
Quebec	No	Declining	Declining		Endangered	Yes

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

A call count survey is conducted annually in Suffolk County. No other DEC surveys are conducted for this species.

Trends Discussion *(insert map of North American/regional distribution and status):*

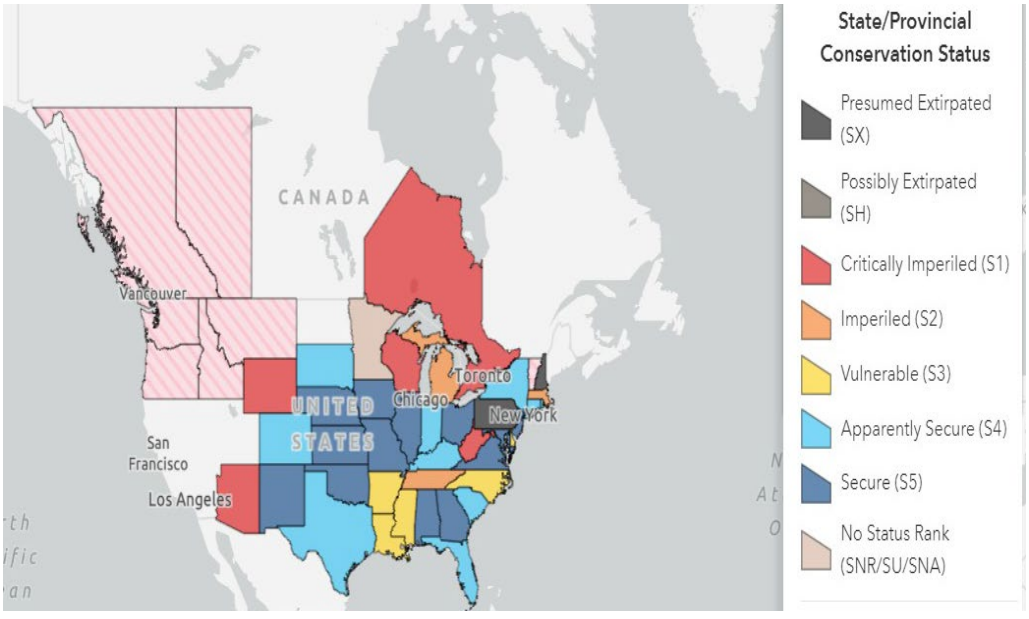

Figure 1. Northern bobwhite Conservation Status in North America (NatureServe)

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

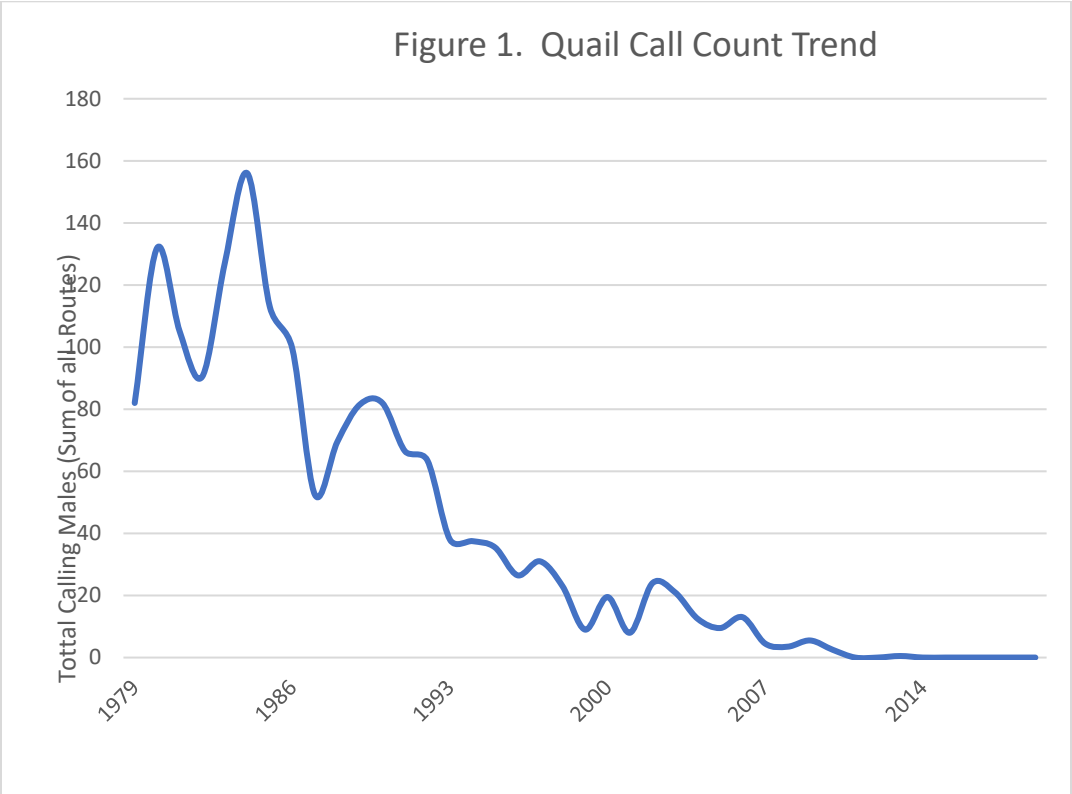

Figure 2. Records of northern bobwhite from Long Island call count survey (NYSDEC, R1)

Years	# of Records	# of BBA Blocks	% of State
Pre-1980	_____	_____	_____
1980-1985	_____	_____	_____
2000-2005	_____	_____	_____
2020-2023	_____	_____	_____

Table 1. Records of northern bobwhite in New York.

Details of historic and current occurrence:

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Peripheral	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

1.

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
No	No	Declining	Since 1970s

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

Northern bobwhite breed and winter in open, early-succession habitats and farmlands. Favored breeding areas include brushy fields, hedgerows, and thickets. During the winter, bobwhites use the edges of swamps in open country (Bull 1985). Levine (1988) notes the use of open fields of tall grass, in weedy and cultivate fields, along the edges of golf courses, and even in open scrub pine forest. The requirement for breeding is the close proximity of nearly bare ground and associated herbaceous cover (Levine 1988).

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	Choose an item.	Choose an item.	Yes	Yes	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

Northern bobwhites have a high annual mortality rate, and hence rapid population turnover and a short life span. The species' robust reproductive capability can compensate for these factors, however; when weather and habitat conditions permit, an adult pair can successfully produce 2 or more broods (≥25 offspring) during a single breeding season (Brennan 1999). Northern bobwhite have a short life span, longevity record in wild is 6 years, 5 months (Marsden 1961). Very few individuals exceed 5 years (Rosene 1969) and most bobwhites (about 80%) live <1 year (Brennan 1999).

Both males and females attempt to breed in first year after hatching (Stoddard 1931, Rosene 1969). Some males (about 5–10% of population) do not pair (Stoddard 1931), or possibly are involved with hens in multiple-brood situations. Within-year intervals between breeding, under ideal conditions, are very short. In some situations, female may re-nest within 1–2 days after the first clutch hatches if she

pairs with new mate, and original mate broods chicks (Curtis et al. 1993). In less-than-ideal conditions (i.e., drought or poor habitat), intervals between breeding can be much longer (e.g., 43 days in Texas; Taylor 1992), or breeding will cease (Brennan 1999).

Exposure is an important source of mortality during winter in northern parts of range (Kabat and Thompson 1963, Roseberry and Klimstra 1984). Deep winter snows and prolonged periods of cold can cause extensive losses (up to 50%) during severe winters (Errington and Hammerstrom 1936). Avian predation (29%) and mammalian predation (29%) are also important sources of mortality (Burger et al. 1995). Snakes are known to destroy nests and eat adults and eggs (Stoddard 1931). Females are subject to high levels of mammalian predation while nesting; breeding males are vulnerable to avian predation because of displaying and calling from prominent locations (Burger et al. 1994).

VI. Threats *(from NY 2015 SWAP or newly described):*

Threats to NY Populations	
Threat Category	**Threat**
1. Residential & Commercial Development	Housing & Urban Areas (habitat loss)
2. Agriculture & Aquaculture	Annual & Perennial Non-timber Crops (intensification & changes in agriculture)
3. Natural System Modifications	Other Ecosystem Modifications (succession)
4. Invasive & Other Problematic Species & Genes	Invasive Non-Native/Alien Species (domestic cats)
5. Invasive & Other Problematic Species & Genes	Problematic Native Species
6. Biological Resource Use	Hunting & Collecting Terrestrial Animals

Loss and degradation of early-successional and grassland habitats at both the local and landscape level are the primary causes of bobwhite's decline. Specifically, a lack of nesting and brood-rearing cover has resulted from the long-term practice of replacing native warm-season grasses with exotic grasses and completely eliminating nesting habitat in intensive cropland and dense pine forests (Dimmock et al. 2002 in McGowan 2008). On Long Island, the loss of woodland, old field, and hedgerow were likely important factors in the decline there (Salzman and Parkes 1998 in McGowan 2008).

In New Jersey, a high annual adult mortality rate (91%) is noted to be the cause of the decline. Two primary sources of mortality are avian predators (43.5%) and both feral cats and housecats (10%).

Land-use changes are traditionally believed to be most important in affecting overall grassland bird abundance on regional and continental scales. From 1940 to 1986 in 18 northeastern states, the area in hay fields declined from 12.6 to 7.1 million ha. During the same period, hay fields planted to alfalfa and alfalfa mixtures, a vegetation type not normally used by many species of grassland birds, increased from 20 to 60% (Bollinger and Gavin 1992). Also, hay fields now are cut 2–3 weeks earlier than they were in 1940s and 1950s, with mowing coinciding with the peak nesting period.

Declines in some areas have been attributed to decrease in hayfield area, earlier and more frequent hay-cropping, and shift from timothy and clover to alfalfa; earlier, agricultural practices that converted

wooded land to open land resulted in an increase in range (Bollinger et al. 1990, Bollinger and Gavin 1992). In New York, primary disturbance to nesting is hay-cropping; 100% of nests with eggs and young nestlings affected by mowing were abandoned or destroyed, but proportion of young lost declined with age of nestlings (Bollinger et al. 1990).

Since the mid-1940s, the eastward expansion has reversed in northeastern U.S. and southern Ontario as agricultural lands have been abandoned, reverting to deciduous forest (Robbins et al. 1986, Hussell 1987). Sibley (1988) noted that declines had resulted from the replacement of grain crops by corn and alfalfa, despite the use of corn fields for breeding noted by other authors.

According to the NYSDEC Comprehensive Wildlife Conservation Strategy (CWCS) (2005), probably the most serious threat to the grasslands in NY would arise from failure to address the viability of dairy farming, especially smaller “family” farms. Grassland habitats are being lost due to conversion to development, row crops, more intensive agriculture, and reversion to shrublands and forests. As grasslands are lost, many of the remaining grasslands become even more scattered and isolated, further reducing their ability to function as part of the overall grassland ecosystem. Farming methods that result in more frequent and earlier mowing are a very serious threat. Many of the fire dependent pine barren type communities also support grassland species. Due to fire suppression, many of these habitats have undergone significant changes and no longer support grassland species.

A new study led by a Canadian toxicologist identified acutely toxic pesticides as the most likely leading cause of the widespread decline in grassland bird numbers in the United States. The 23-year assessment, which looked at five other causes of grassland bird decline besides lethal pesticide risk, including change in cropped pasture such as hay or alfalfa production, farming intensity or the proportion of agricultural land that is actively cropped, herbicide use, overall insecticide use, and change in permanent pasture and rangeland, concluded that lethal pesticides were nearly four times more likely to be associated with population declines than the next most likely contributor, changes in cropped pasture— an important component of habitat loss associated with agricultural lands (Mineau and Whiteside 2013).

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

Northern bobwhite populations on Long Island have declined over the past several decades to a level that can no longer sustain reasonable sport harvest opportunity. Currently, bobwhite hunting seasons on Long Island are established in law, and therefore the Department has no regulatory authority to adjust or close seasons there.

To change this, a bill would have to pass both houses of the legislature and be signed by the governor that amended ECL 11 0903(2) (a) to include "and bobwhite quail" and to revise 11 0903(2) (c) to strike "except on Long Island." Also, the bill would have to amend 11 0905(2) (d) and (e) under "Open Season" and "Bag Limit" to simply read "Fixed annually by regulation." These changes would give the Department full authority to annually adjust hunting regulations for quail statewide.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

Habitats must be actively managed to maintain an early-successional stage. A variety of management actions are known to increase populations, including planting of native grass buffers around agricultural fields, burning, strip-disking, and creation of forest openings.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
1. Land/Water Protection	Site/Area Protection
2. Land/Water Protection	Resource/Habitat Protection
3. Land/Water Management	Site/Area Management
4. Land/Water Management	Invasive/Problematic Species Control
5. Land/Water Management	Habitat and Natural Process Restoration
6. Education and Awareness	Training
7. Education and Awareness	Awareness & Communications
8. Law and Policy	Policies and Regulations

Table 3. Recommended conservation actions for northern bobwhite

VII. References

Brennan, Leonard A. 1999. Northern Bobwhite (*Colinus virginianus*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology. <http://bna.birds.cornell.edu/bna/species/397 doi:10.2173/bna.397>

Burger, L. W., E. W. Kurzejeski, L. D. Vangilder, T. V. Dailey, and J. H. Shulz. 1994a. Effects of harvest on population dynamics of upland game birds: are bobwhite the model? Trans. N. A. Wildl. Nat. Resour. Conf. 59:466-467.

Burger, L. W., M. R. Ryan, T. V. Dailey, and E. W. Kurzejeski. 1995b. Reproductive strategies, success, and mating systems of northern bobwhites in Missouri. J. Wildl. Manage. 59:417-426.

Bull, J. 1985. Birds of New York State. Cornell University Press, Ithaca, New York.

Curtis, P. D., B. S. Mueller, P. D. Doerr, C. F. Robinette, and T. DeVos. 1993. Potential polygamous breeding behavior in northern bobwhite. Proc. Nat. Quail Symposium 3:55-63.

Errington, P. L. and F. N. Hammerstrom, Jr. 1936. The northern bob-white's winter territory. Res. Bull. 201-301-443. Iowa Agric. Exp. Stn.

Kabat, C. and D. R. Thompson. 1963. Wisconsin quail, 1834-1962: population dynamics and habitat management. Wisconsin Conserv. Depa. Tech. Bull. no. 30.

Levine, E. 1988. Northern bobwhite, *Colinus virginianus*. Pages 132-33 in The Atlas of Breeding Birds in New York State. Cornell University Press, Ithaca, NY.

Marsden, H. M. 1961. Natural longevity record for a bobwhite. Auk 78:94.

McGowan, K.J. 2007. Regional summaries of the 107th Christmas Bird Count: New York. American Birds 61:57-59.

McGowan, K.J. 2008. Northern bobwhite, *Colinus virginianus*. Pages 144-45 *in* The Second Atlas of Breeding Birds in New York State (K.J. McGowan and K. Corwin, eds.). Cornell University Press, Ithaca, NY.

McGowan, K.J. 2011. Regional summaries of the 111th Christmas Bird Count: New York. American Birds 65:54-55.

Mineau, P. and M. Whiteside. 2013. Pesticide acute toxicity is a better correlate of U.S. grassland bird declines than agricultural intensification. PloS ONE 8: 1-8.

National Bobwhite Conservation Initiative. 2011. T. V. Dailey, D. F. McKenzie, D. E. Figert and J. G. Doty. State of the Bobwhite 2011 Report: Grassland Conservation at a Crossroads. National Bobwhite Technical Committee Technical Publication, Knoxville, TN.

NatureServe. 2012. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. <http://www.natureserve.org/explorer>. Accessed 7 June 2013.

New York State Department of Environmental Conservation (NYSDEC). 2005. New York State Comprehensive Wildlife Conservation Strategy. <http://www.dec.ny.gov/index.html>. Accessed 7 June 2013.

New York State Department of Environmental Conservation (NYSDEC). 2013. Best management practices for grassland birds. <http://www.dec.ny.gov/pubs/86582.html>. Accessed 7 June 2013.

Roseberry, J. L. and W. D. Klimstra. 1984. Population ecology of the bobwhite. Southern Illinois Univ. Press, Carbondale.

Rosene, W. 1969. The bobwhite quail: its life and management. Rutgers Univ. Press, New Brunswick, NJ.

Stoddard, H. L. 1931. The bobwhite quail: its life history and management. Charles Scribner's Sons, New York.

Taylor, J. S. 1992. Aspects of Northern Bobwhite reproductive biology in south Texas. Master's Thesis. Texas A&I Univ., Kingsville.

Originally prepared by	Kimberley Corwin
Date first prepared	May 10, 2012
First revision	July 2014 (Jenny Murtaugh)
Latest revision	December 14, 2023 (Frederick Hamilton)

Species Status Assessment

Common Name: Northern pintail **Date Updated:** January 19, 2024

Scientific Name: *Anas actua* **Updated By:** C. Hoh

Class: Aves

Family: Anatidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

Northern pintail was once one of the most abundant ducks in North America but the species has suffered a disturbing decline since the 1950s. In 2012, the breeding population was estimated at 3.5 million birds, substantially below the North American Waterfowl Management Plan objective of 5.5 million, and 13% below the long-term average of 4 million. More than any other North American waterfowl species, the northern pintail population has suffered from persistent drought and loss of grassland habitat in the Prairie Pothole Region. Populations have not responded to high water levels during the 1990s in the core breeding areas.

I. Status

a. Current legal protected Status

i. **Federal:** Not listed **Candidate:** No

ii. **New York:** SGCN

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** S1B, S3N **Tracked by NYNHP?:** No

Other Ranks:
-IUCN Red List: Least Concern

Status Discussion:

Northern pintail is a very local breeder in New York. As a migrant and winter visitant, it is locally common to very abundant in coastal areas. Inland, it is a rare to common winter visitant.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Choose an item.	Choose an item.	Choose an item.			Choose an item.
Northeastern US	Choose an item.	Choose an item.	Choose an item.			Choose an item.
New York	Choose an item.	Choose an item.	Choose an item.			Choose an item.

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
Connecticut	Choose an item.	Choose an item.	Choose an item.			Choose an item.
Massachusetts	Choose an item.	Choose an item.	Choose an item.			Choose an item.
New Jersey	Choose an item.	Choose an item.	Choose an item.			Choose an item.
Pennsylvania	Choose an item.	Choose an item.	Choose an item.			Choose an item.
Vermont	Choose an item.	Choose an item.	Choose an item.			Choose an item.
Ontario	Choose an item.	Choose an item.	Choose an item.			Choose an item.
Quebec	Choose an item.	Choose an item.	Choose an item.			Choose an item.

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

A Mid-Winter Waterfowl Survey is conducted annually on Long Island and Lake Champlain and the New York State Ornithological Association has conducted an annual January Waterfowl Count since 1955. A Breeding Waterfowl Plot Survey is conducted by DEC annually.

Trends Discussion *(insert map of North American/regional distribution and status):*

Northern pintail was rare in the Northeast in the early 1900s, but increased in the early 1920s. Breeding first occurred in New York in 1945, and by the late 1940s this duck was a regular breeder in the northeastern corner of Lake Ontario (Sandilands 1987b). Supplemented with releases of birds by the NYSDEC, the population expanded to include eight known sites by the 1970s. Bull (1974) called them, “at times our most numerous dabbling ducks.”

Christmas Bird Count data for New York show a declining trend from 1999 to 2009. Breeding Bird Atlas data for New York show a decline in occupancy of -71% from the first survey in 1980-85 to the second survey in 2000-05. A Mid-Winter Waterfowl Survey is conducted annually on Long Island and Lake Champlain and the New York State Ornithological Association has conducted an annual January Waterfowl Count since 1955. A Breeding Waterfowl Plot Survey is conducted by DEC annually. Populations fluctuate drastically in response to conditions in prairie breeding areas. Over the long term, however, the continental population of Northern pintail has declined significantly from 6 million birds in the early 1970s to less than 3 million in the late 1980s and early 1990s. In 2012, the population was estimated at 3.5 million, 13% below the long-term average of 4 million (1950 to 2009). Pintails are occasionally encountered during the Breeding Waterfowl Plot Survey in New York.

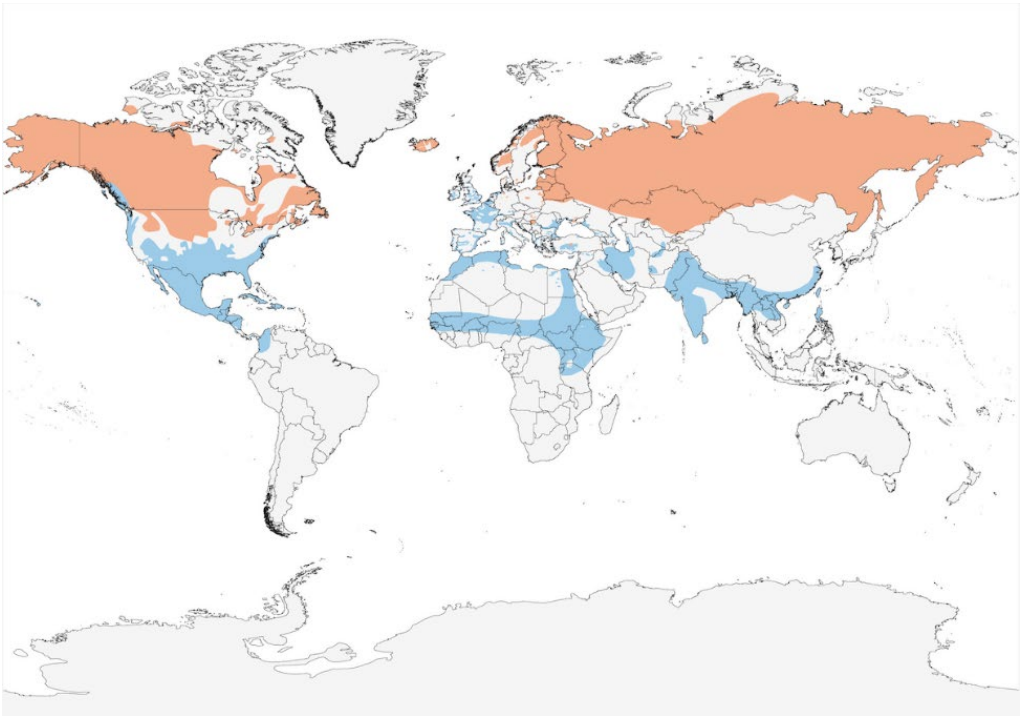

Figure 1. Distribution of northern pintail (Birds of the World 2024)

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

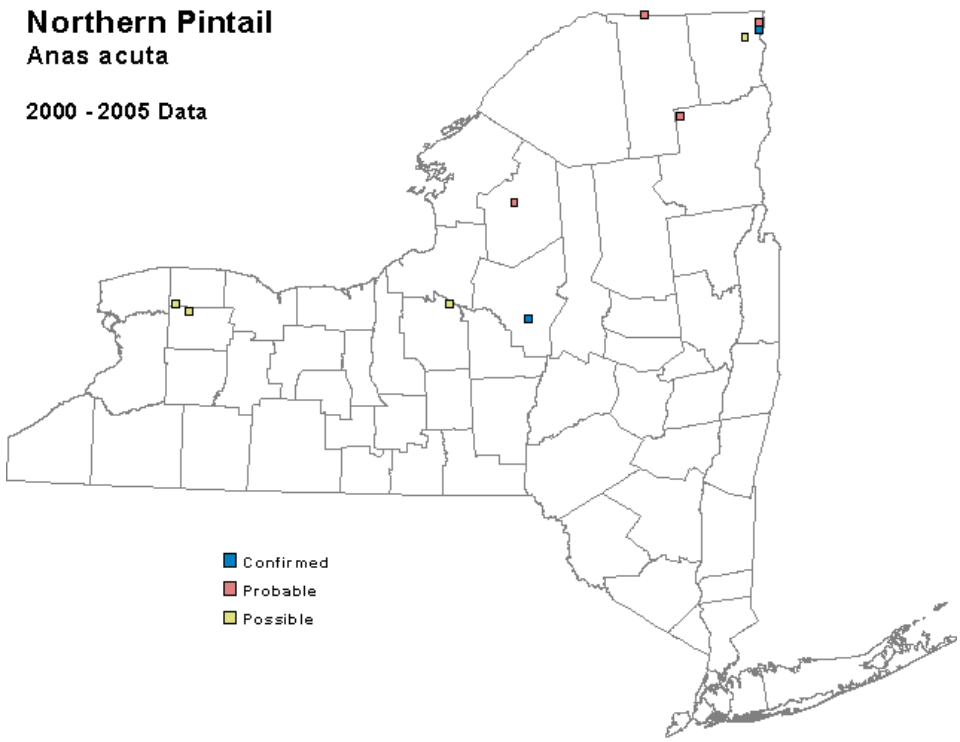

Figure 2. Breeding records of northern pintail during the second Breeding Bird Atlas (NYBBA2)

Years	# of Records	# of BBA Blocks	% of State
Pre-1980	_____	_____	_____
1980-1985	_____	_____	_____
2000-2005	_____	_____	_____
2020-2023	_____	_____	_____

Table 1. Records of northern pintail in New York.

Details of historic and current occurrence:

The first Breeding Bird Atlas documented occupancy in a total of 35 blocks statewide, three of which had Confirmed breeding records. Maximum high counts at Montezuma NWR include 6,000 in November 1967; 9,000 in March 1968; 10,000 in April 1970; 5,000 were reported at Oak Orchard WMA in April 1969.

The second Breeding Bird Atlas (2000-05) documented occupancy in a total of ten blocks statewide, only two of which had Confirmed breeding records. In 2003, a notable high county of 6,000 birds was observed at the Savannah Mucklands in Seneca County (Guthrie 2004).

The first known breeding record was in 1945 at Perch River WMA, Jefferson County. Marcotte (1998) notes 12 known breeding locations, all but one upstate. The second Breeding Bird Atlas had two Confirmed and four Probable breeding locations.

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Peripheral	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

1. Cultivated Crops
2. Freshwater Marsh
3. Wet Meadow/Shrub Swamp
4. Pasture/Hay

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
No	No	Unknown	

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

From Austin and Miller (1995): Northern pintails breed annually but may skip years when habitats are dry. Annual nest success and productivity vary with water conditions, predation, and weather. Renesting after loss of nest seems related to availability and stability of wetlands. Annual reproductive success varies greatly over breeding range, depending primarily on nest success (proportion of nests that produce one or more ducklings) and duckling survival rate. No information on lifetime reproductive success. Maximum longevity in the wild 21 yr 4 mo for California-banded adult male recovered in Idaho (Klimkiewicz and Futcher 1989).

VI. Threats *(from NY 2015 SWAP or newly described):*

Threats to NY Populations	
Threat Category	**Threat**
1. Agriculture & Aquaculture	Annual & Perennial Non-Timber Crops (intensification)
2. Agriculture & Aquaculture	Livestock Farming & Ranching (loss of pasture land)
3. Invasive & Other Problematic Species & Genes	Problematic Native Species (increased predators)
4. Climate Change & Severe Weather	Droughts
5. Climate Change & Severe Weather	Habitat Shifting & Alteration
6. Pollution	Agricultural & Forestry Effluents (runoff, contaminants)
7. Natural System Modifications	Dams & Water Management/Use
8. Residential & Commercial Development	Housing & Urban Areas (loss of wetlands)

Predators and farming operations destroy many thousands of Northern pintail nests annually; farming has also greatly reduced the amount of quality nesting cover available. It is generally believed that predator populations have increased over the last several decades and the pintail's propensity to nest in open areas makes them and their eggs easy targets for avian and terrestrial predators. While the numbers of trappers has declined in New York and elsewhere, there is much debate among waterfowl managers about the effectiveness of predator control on nesting success. Pintails are early nesters and

will initiate nesting and egg laying in agricultural fields prior to spring planting only to have the nest destroyed when the fields are prepped and planted. Recent changes in agricultural practices have reduced or even eliminated pasture land from dairy farm operations. The number of acres of farm land enrolled in the Conservation Reserve Program has declined in recent years and will continue to decline due to reduced funding for the program and increased demand for corn.

A prolonged drought in prairie nesting areas in the 1980s resulted in a sharp decrease in wintering birds at Montezuma NWR. Winter counts there fell from 10,000 birds in 1983 to 40 birds in 1986. The average fall maxima for the prior six years was 3,366; for the next six years it was 236 (Marcotte 1998).

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

Northern pintail is a game bird with an open season. The U.S. Fish and Wildlife Service adopted a harvest strategy for pintails in 2010 that is used annually to determine open or closed season and bag limit based upon the observed breeding population each spring. The harvest strategy allows for a closed season, an open season with a 1 bird daily bag limit, or an open season with a 2 bird daily bag limit, with a season length the same as the general duck season framework (U.S. Fish & Wildlife Service 2010). The bag limit for 2012 is 2 pintail per day for the entire 60 day duck season in New York and throughout the Atlantic Flyway. Prior to 2010, pintail harvest was occasionally subjected to season length restrictions in addition to bag limit restrictions. Harvest in New York and the Atlantic Flyway has remained relatively stable since 1999, with an average harvest in New York of about 2,600 birds.

Wetland habitats in New York are protected by the Freshwater Wetlands Act, Article 24 of the Environmental Conservation Law. However, this law only protects wetlands larger than 12.4 acres in size and largely exempts agricultural activities occurring in and adjacent to wetlands. It does not adequately protect Northern pintail or its habitat.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

McGowan (2008) notes that the creation of shallow impoundments at wildlife refuges and wildlife management areas as well as other manmade water bodies probably enabled this species to breed in New York, which is far from its core breeding area.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
1. Land/Water Protection	Site/Area Protection

2. Land/Water Protection	Resource/Habitat Protection
3. Land/Water Management	Site/Area Management
4. Land/Water Management	Habitat and Natural Process Restoration (pollution control)
5. Law/Policy Actions	Policy/Regulation Changes (hunting regulations, ocean dumping practices)
6. External Capacity Building	Alliance & Partnership Development

Table 2. Recommended conservation actions for northern pintail

VII. References

Austin, J.E. and M.R. Miller. 1995. Northern Pintail (*Anas acuta*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/163 doi:10.2173/bna.163

Bellrose, F. C. 1976. Ducks, Geese and Swans of North America. Stackpole Books, Harrisburg, PA.

Guthrie, A. 2004. Highlights of the season – Spring 2004. Kiingbird 54(3):206-12.

Klimkiewicz, M. K. and A. G. Futcher. 1989. Longevity records of North American birds. Supplement 1. J. Field Ornithol. 60:469-494.

Klimstra, J.D. et al., compiler. 2012. Atlantic Flyway harvest and population survey data book. U.S Fish and Wildlife Service, Laurel, MD.

Marcotte, R. 1998. Northern pintail, *Anas acuta*. Pages 158-59 in Bull's Birds of New York State (E. Levine, ed.). Cornell University Press, Ithaca, NY.

McGowan, K.J. 2008. Northern pintail, *Anas acuta*. Pages 110-11 in The Second Atlas of Breeding Birds in New York State (K.J. McGowan and K. Corwin, eds.). Cornell University Press, Ithaca, NY.

U.S. Fish and Wildlife Service. 2010. Northern Pintail Harvest Strategy 2010. U.S. Department of the Interior, Fish and Wildlife Service, Division of Migratory Bird Management, Washington, D.C.

Originally prepared by	Kimberley Corwin
Date first prepared	May 4, 2012
First revision	July 2014 (Jenny Murtaugh)
Latest revision	

Species Status Assessment

Common Name: Olive-sided flycatcher **Date Updated:** January 5, 2024

Scientific Name: *Contopus borealis* **Updated By:** Jed Hayden

Class: Aves

Family: Tyrannidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

Olive-sided flycatcher occurs across northern North America, breeding in high elevation spruce-fir northern hardwood forest, typically near standing water. Formerly known as *C. borealis*, this species is characteristic of a lowland boreal forest. In New York, where the population reaches the southeastern edge of the range, this flycatcher is restricted to the Adirondack Mountains, the Tug Hill Plateau, and the Catskill Mountains. Wintering occurs in the northwestern portion of South America.

The Breeding Bird Atlas in New York documented a 34% change in occupancy between 1980-85 and 2000-05. Both long-term (1966-2010) and short-term (2000-2010) trends documented by the Breeding Bird Survey are significantly negative in New York, in the Eastern region, and across the range. Glennon (2010) notes that olive-sided flycatcher is of significant conservation concern in the Adirondacks due to its low occupancy rates and relatively high rates of local extinction.

I. Status

a. Current legal protected Status

i. **Federal:** None **Candidate:** No

ii. **New York:** HPSGCN

b. Natural Heritage Program

i. **Global:** S4

ii. **New York:** S3B **Tracked by NYNHP?:** No

Other Ranks:

New York Natural Heritage Program – Watch List
Partners in Flight Priority I
USFWS – Species of Conservation Concern
SARA (Species at Risk Act) – Threatened
COSEWIC (Committee on the Status of Endangered Wildlife in Canada) - Threatened
IUCN Red list- Near Threatened

Status Discussion:

Olive-sided flycatcher is an uncommon to rare breeder across the Adirondacks and Tug Hill Plateau, rare and local, primarily at high elevations, in the Catskills and Rensselaer Hills. As a migrant, it is rare to uncommon.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Declining	Declining	1966-2023	None	No
Northeastern US	Yes	Declining	Declining		None	Yes
New York	Yes	Declining	Declining		None	Yes
Connecticut	Yes	Unknown	Unknown		None	Yes
Massachusetts	Yes	Declining	Declining	1966-2013	None	Yes
New Jersey	No	Choose an item.	Choose an item.			Choose an item.
Pennsylvania	No data	Unknown	Unknown		None	Yes
Vermont	Yes	Declining	Declining	1976-2007	None	Yes
Ontario	Yes	Declining	Declining	1966-2015	Special Concern provincially Threatened nationally	No
Quebec	Yes	Declining	Declining	1973-2012	Special Concern	No

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

A State Wildlife Grants project was completed in 2009 to quantify the status and habitat requirements of low elevation and high elevation boreal forest birds (Glennon 2010). The olive-sided flycatcher was one of 12 focus species during this project, which began in 2003 and continues today (Glennon 2023).

Trends Discussion *(insert map of North American/regional distribution and status):*

Breeding Bird Survey data for the United States show a significant long-term declining trend of 2.6% per year for 1966-2010 and a significant short-term declining trend of 1.8% per year for 2000-2010. The long-term and short-term trends in New York are each 8.0% per year, indicating a 97% loss from 1966 to 2010, although caution is advised due to low sample sizes (Sauer et al. 2011). The second Breeding Bird Atlas documented a decline in occupancy of 34% from 1980-85 to 2000-05. The number of blocks with confirmed breeding records dropped from 33 blocks during the first Atlas to 16 blocks during the second Atlas, a change of 52%. Losses in the Catskill Mountains were severe, with the species now absent from Greene County and the Delaware Hills of Sullivan County (Peterson 2008).

Paul Smith's College has conducted point counts for 12 boreal species at 59 sites in the Adirondack Park from 2007-2023. Occupancy modeling showed a consistent pattern of decline for olive-sided flycatcher. This species had an occupancy rate of 41% and a local extinction rate of 30%. Occupancy rates continued to decline through 2023 (Glennon 2023).

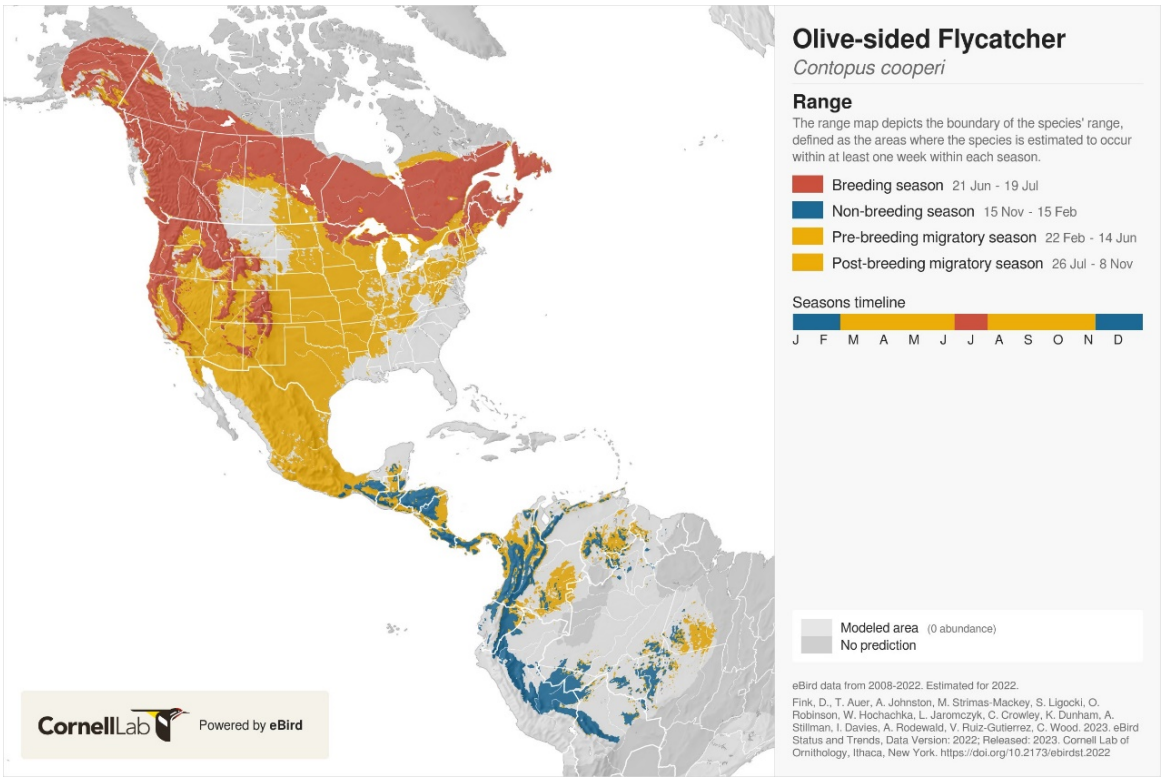

Figure 1. Olive-sided flycatcher distribution (eBird).

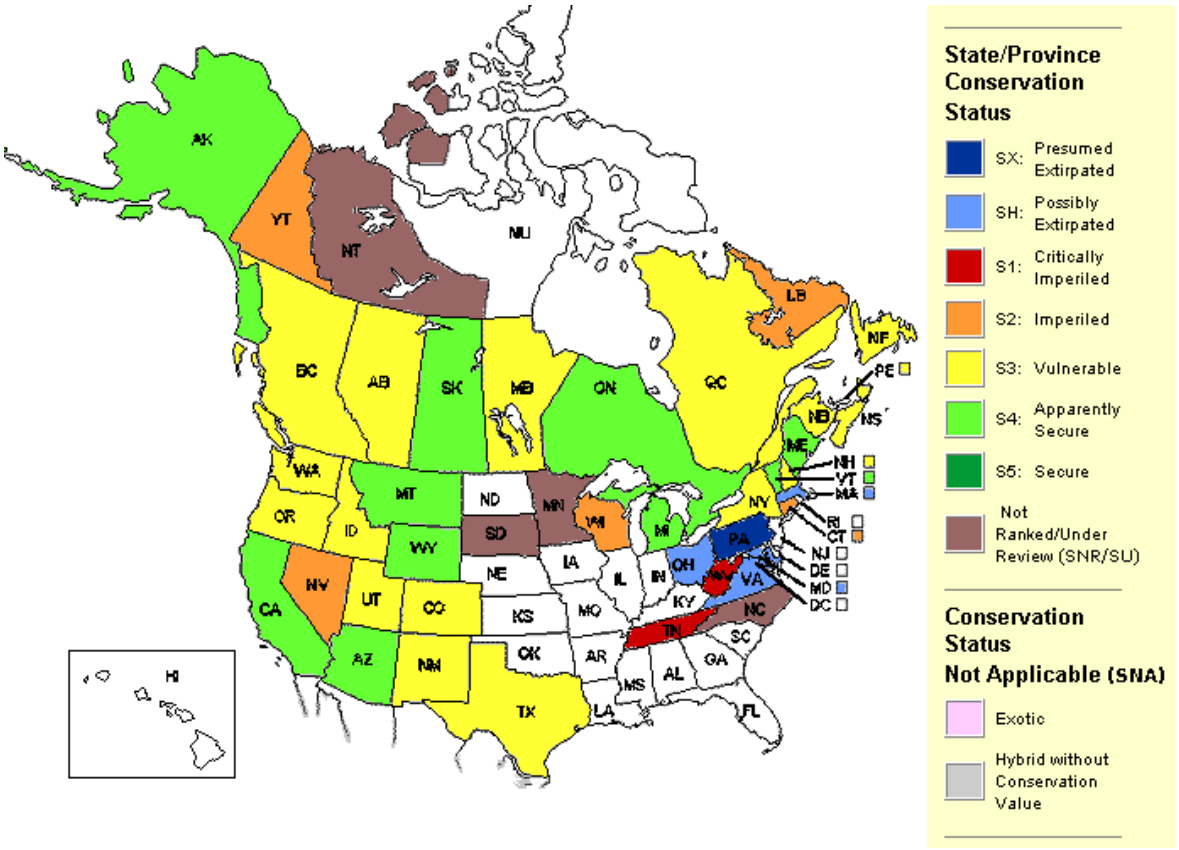

Figure 2. Conservation status of the olive-sided flycatcher

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

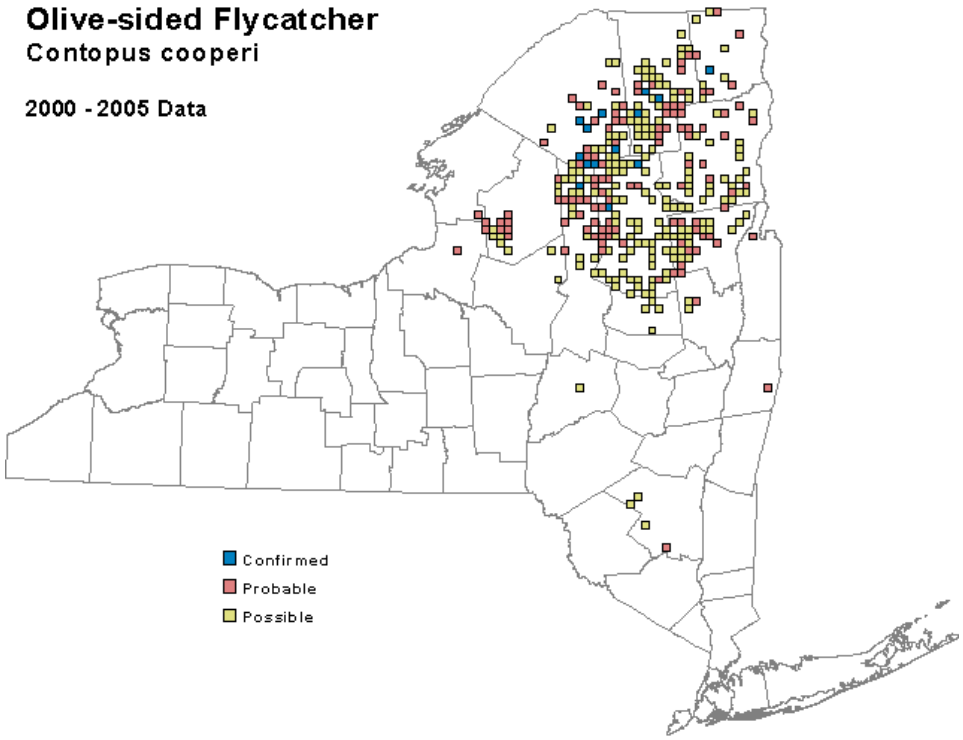

Figure 3. Olive-sided flycatcher occurrence in New York State during the second Breeding Bird Atlas

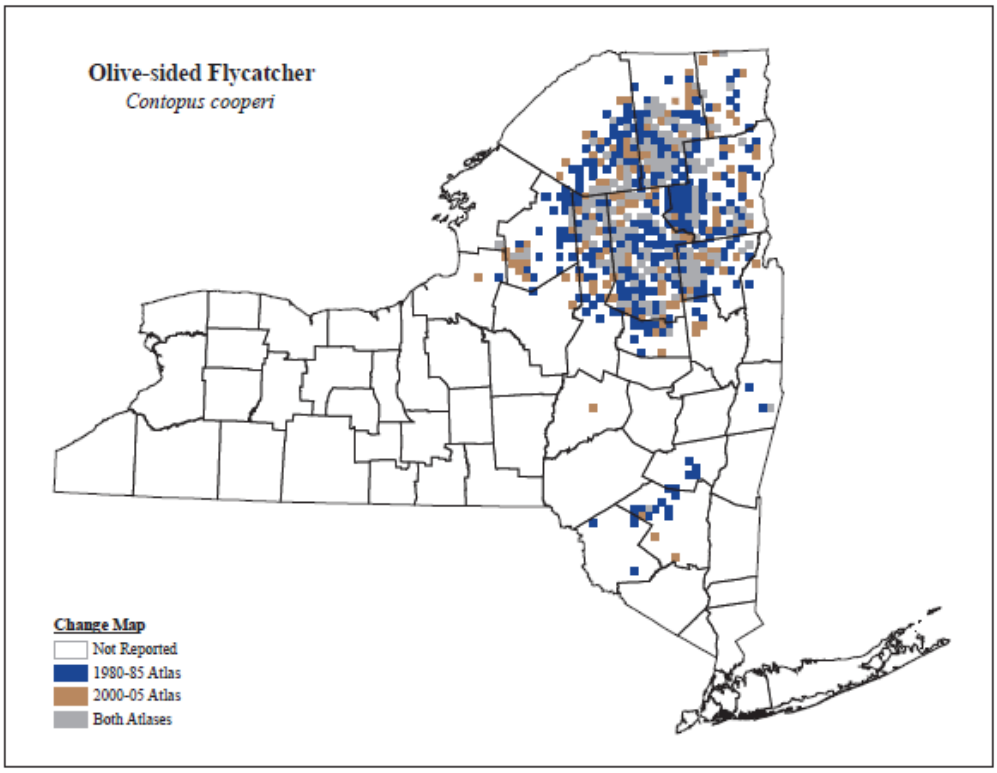

Figure 4. Change in olive-sided flycatcher occurrence in New York State between the first Breeding Bird Atlas and the second Breeding Bird Atlas (McGowan and Corwin 2008).

Years	# of Records	# of BBA Blocks	% of State
Pre-1980	_____	_____	_____
1980-1985	_____	479	8.9
2000-2005	_____	316	5.9
2020-2023	_____	144	2.5

Table 1. Records of olive-sided flycatcher in New York.

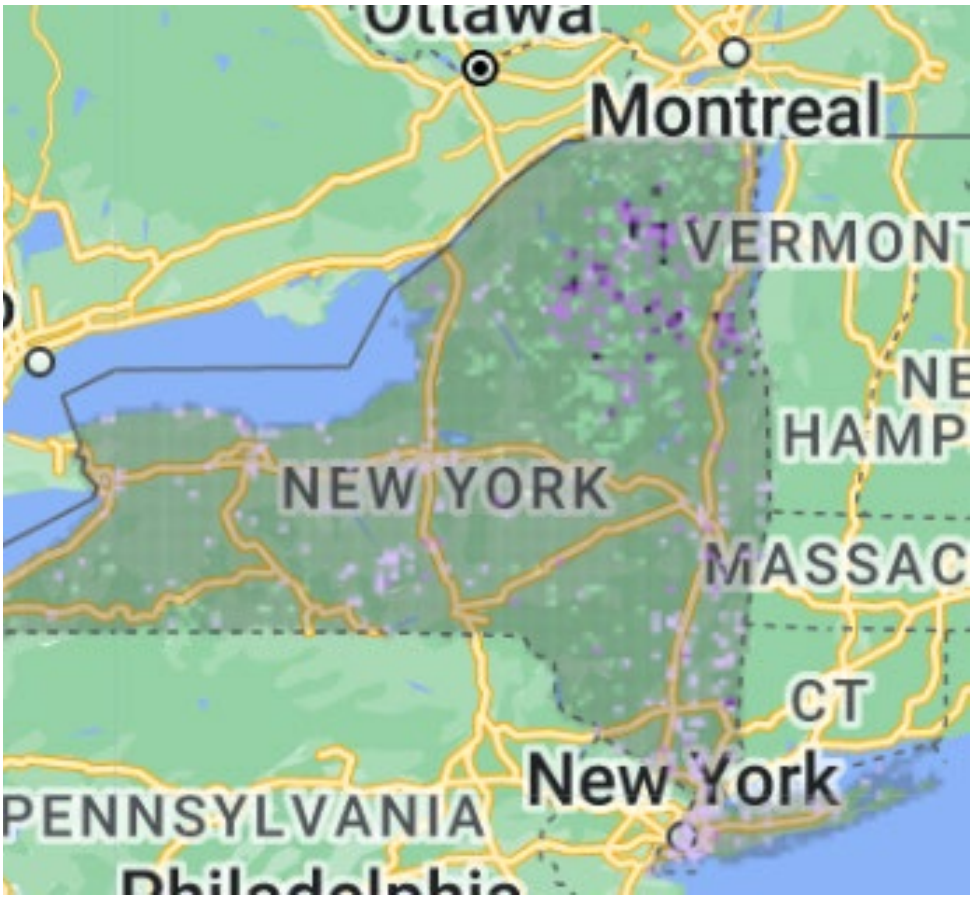

Figure 5. Breeding Bird Atlas 3 records of olive-sided flycatcher in New York (BBA-eBird).

Details of historic and current occurrence:

In New York, where the population reaches the southeastern edge of the range, this flycatcher is restricted to the Adirondack Mountains, the Tug Hill Plateau, and the Catskill Mountains.

The first BBA (1980-85) documented occupancy in 316 blocks, 9% of the survey blocks statewide (Andrle and Carroll 1988). The second BBA (2000-2005) documented occupancy in 267 blocks, 6% of the survey blocks statewide, a decrease of 2% since the first atlas.

The third BBA (2020-2025) is currently underway and utilizes a different number and layout of survey blocks across New York, making direct comparison with the first two Atlases difficult. There

were 5,333 blocks in the first and second BBA's and there are 5,710 blocks in the current BBA. To date, Olive-sided flycatchers have been documented in 144 blocks, 2.5% of survey blocks statewide during the third BBA (NYS BBA III Overview, 2023).

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Disjunct	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

- **a.** Mixed Northern Hardwoods
- **b.** Riparian
- **c.** Conifer Swamp Forest
- **d.** Mixed Hardwood Swamp
- **e.** Spruce-Fir Forest and Flats
- **f.** Mountain Spruce-Fir Forests
- **g.** Boreal Forested Peatland
- **h.** Open Acidic Peatlands
- **i.** Wet Meadow/Shrub Swamp

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
Yes	No	Increasing	~ last 30 years

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

Olive-sided flycatcher is a lowland boreal forest bird, breeding in coniferous or mixed deciduous forests, favoring edges and openings created by sphagnum bogs, burned over forest, swampy lake edges, and beaver meadows (Altman and Sallabanks 2000). Glennon (2010) found that olive-sided flycatcher showed a preference for floating bogs primarily, as well as grounded bogs, conifer swamps, and open river corridors. Peterson (2008) describes the favored habitat in New York as mountain tarns and quaking bogs, swampy lake shores, marshy streams, river backwaters, and beaver meadows surrounded by a forest of black or red spruce mixed with balsam fir, tamarack or eastern hemlock. Most records from the Catskills are from above 1500 feet (Peterson 1988). The habitat used by olive-sided flycatcher has remained stable in New York over the past 20 years, perhaps even increasing due to the increase in beaver populations.

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	Choose an item.	Choose an item.	Yes	Choose an item.	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

From Altman and Sallabanks (2000): Both sexes breed in first breeding season after hatching. One brood is raised per season. Overall annual productivity of this species is among the lowest of any North American songbird. There is no information on lifetime reproductive success.

Few data on adult productivity and survivorship. Recent MAPS (Monitoring Avian Productivity and Survivorship) data from two southwestern U.S. stations estimated survivorship of adult breeders at 0.87 (± 0.088 SE; n = 55 individuals captured).

VI. Threats *(from NY 2015 SWAP or newly described):*

From Altman and Sallabanks (2000):

Limiting factors for olive-sided flycatcher are conjectural and need study, especially on wintering grounds, and especially in light of significant population declines. Suggested limiting factors on breeding grounds include habitat loss through conversion to nonforest, alteration of habitat from forest management practices (e.g., some types of harvest, fire suppression), reduced availability and acquisition of food resources, and impacts on reproductive success from nest predation (Altman 1997). Maturation of the forest, particularly in areas where forest management is prohibited has probably also led to a loss of suitable habitat because the required openings are no longer present (Post 2006). Limiting factors on breeding grounds are likely exacerbated by the fact that the genus *Contopus* has the lowest reproductive rate of all passerine genera in North America. Thus, high survivorship is essential to maintain stable populations, but concern about habitat loss on wintering grounds makes high survivorship problematic.

Osborne et al. (2011) showed that the effects of mercury can be exacerbated in boreal species that use high-acid habitats such as peatlands.

At sites in the Adirondack Park, olive-sided flycatchers are more likely to colonize larger, more connected wetlands at higher latitudes, and more likely to disappear from smaller, more isolated wetlands at more southern locations (M. Glennon, pers. comm.).

Olive-sided flycatchers may have evolved to depend on natural disturbances, particularly forest fires, that create forest openings and naturally patchy habitat with abundant edge. Thus, fire suppression policies of last 50–100 yr may have reduced suitable habitat, especially for breeding (Hutto 1995).

Another potential limiting factor is availability of prey. This flycatcher shows high degree of specialization for flying insects, particularly hymenopterans. As a long-distance neotropical migrant, olive-sided flycatcher is vulnerable to climatic and environmental changes during migration. On breeding grounds, extreme weather (rain, snow, cold temperatures) that depresses activity, or reduces

availability, of flying insects could delay reproductive activities or affect nestling survival. Overall, declining bee populations are a threat to this species as well as other insectivorous birds.

As a boreal species, olive-sided flycatcher is susceptible to habitat shifts due to climate change (Field et al. 2007, Jenkins 2010) long-lived boreal ecosystems in the eastern U.S. will be among the most vulnerable to predicted changes in climate (Field et al. 2007). Olive-sided flycatcher was classified as "moderately vulnerable" to predicted climate change in an assessment of vulnerability conducted by the New York Natural Heritage Program (Schlesinger et al. 2011). Spraying of pesticides has been suggested, but not documented, as a potential threat on breeding grounds because it is detrimental to the food supply (Finch 1992).

Habitat loss or alteration on wintering grounds is suspected as one potential factor limiting populations (Altman 1997). Forests in foothills of the Andes Mountains have been extensively deforested (Robbins et al. 1992); 85% of Andean montane forests have been altered (Orejuela 1985).

Threats to NY Populations	
Threat Category	**Threat**
1. Residential & Commercial Development	Housing & Urban Areas
2. Pollution	Industrial & Military Effluents (mercury)
3. Natural System Modifications	Fire & Fire Suppression
4. Climate Change & Severe Weather	Habitat Shifting & Alteration
5. Biological Resource Use	Logging & Wood Harvesting
6. Pollution (migration, esp. NYC)	Excess Energy

Table 2. Threats to New York State population of olive-sided flycatcher

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

Olive-sided flycatcher is protected under the Migratory Bird Treaty Act of 1918. Most habitat is protected from development within forest areas of the Adirondack and Catskill Forest Preserves. The Freshwater Wetlands Act provides protection for wetlands greater than 12.4 acres in size under Article 24 of the NYS Conservation Law. The Adirondack Park Agency has authority to regulate smaller wetlands within the Adirondack Park.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

Forest harvest practices that retain snags and live trees (potential nest trees) help provide suitable habitat. In some areas, creation of forest openings could provide or improve habitat where such openings have become uncommon due to suppression of forest fires and maturation of the forest.

Ownership of lands in the “boreal core” of the Adirondacks—the northwest portion—falls into a large and diverse group of categories, ranging from parcels that are specifically protected to those that are undergoing active forestry. The effect of logging on olive-sided flycatcher and other boreal birds is unknown, making land protection opportunities of this region of the Adirondacks a priority (Glennon 2010).

The NY Comprehensive Wildlife Conservation Strategy (CWCS; NYSDEC 2005) states the need for a management plan for high-altitude conifer forest birds that incorporates the results of the 2004 State Wildlife Grant study on boreal forest birds (Glennon 2010). Conservation actions following IUCN taxonomy are categorized in the table below.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
1. Land/Water Protection	Resource and Habitat Protection
2. Land/Water Management	Site/Area Management
3. External Capacity Building	Alliance and Partnership Development

Table 3. Recommended conservation actions for olive-sided flycatcher.

VII. References

Altman, B. 1997. Olive-sided Flycatcher in western North America. Status review prepared for U.S. Fish and Wildl. Serv. Portland, OR.

Field, C.B., L.D. Mortsch,, M. Brklacich, D.L. Forbes, P. Kovacs, J.A. Patz, S.W. Running and M.J. Scott. 2007. North America. Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, M.L. Parry, O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson, Eds., Cambridge University Press, Cambridge, UK, 617-652.

Finch, D. M. 1992. Threatened, endangered, and vulnerable species of terrestrial vertebrates in the Rocky Mountain region. Gen. Tech. Rep. RM-215. U.S. Dept. Agric., For. Serv.

Glennon, M.J., 2010. Distribution and abundance of boreal birds in the Adirondack Park. Final Report to the New York State Department of Environmental Conservation. Wildlife Conservation Society, Saranac Lake, NY.

Glennon, M.J., 2023. Conservation of Boreal Birds in the Adirondack Park. Report to the New York State DEC.

Hutto, R. L. 1995. USFS Northern Region songbird monitoring program: distribution and habitat relationships. Region 1. Nov. 1995. Contract report to U.S. For. Serv.

Jenkins, J.J. 2010. Climate Change in the Adirondacks: The Path to Sustainability. Cornell University Press, Ithaca, NY.

NatureServe. 2013. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available http://www.natureserve.org/explorer. (Accessed: June 6, 2013).

New York State Department of Environmental Conservation (NYSDEC). 2005. New York State Comprehensive Wildlife Conservation Strategy. http://www.dec.ny.gov/index.html

Orejuela, J. E. 1985. Tropical forest birds of Colombia: a survey of problems and a plan for their conservation. Pages 95-114 *in* Conservation of tropical forest birds. (Diamond, A. W. and T. E. Lovejoy, Eds.) ICBP Tech. Publ. no. 4, Paston Press, Norwich, U.K.

Osborne, C. E, D. C. Evers, M. Duron, N. Schoch, D. Yates, D. Buck, O. P. Lane, and J. Franklin. 2011. Mercury Contamination within Terrestrial Ecosystems in New England and Mid-Atlantic States: Profiles of Soil, Invertebrates, Songbirds, and Bats. Report BRI 2011-09. Submitted to The Nature Conservancy – Eastern New York Chapter. Biodiversity Research Institute, Gorham, Maine.

Peterson, J. M. C. 1988. Olive-sided flycatcher (Contopus borealis). Pages 244-245 in The Atlas of breeding birds in New York State (R.F. Andrle and J.R. Carroll, Eds.). Cornell University Press, Ithaca, NY.

Peterson, J.M.C. 2008. Olive-sided flycatcher, Contopus cooperi. Pages 340-41 in The Second Atlas of Breeding Birds in New York State. Cornell University Press, Ithaca, NY.

Post, T. 2006. Species Group Report for Boreal Forest Birds, pp 19-26 of Appendix A1, Species Group Reports for Birds. In New York State Comprehensive Wildlife Conservation Strategy. Albany, NY. New York State Department of Environmental Conservation.

Robbins, C. S., J. W. Fitzpatrick, and P. Hamel. 1992. A warbler in trouble: *Dendroica cerulea*. Pages 549-562 *in* Ecology and conservation of Neotropical migrant landbirds. (Hagan III, J. M. and D. W. Johnston, Eds.) Smithson. Inst. Press, Washington, D.C.

Sauer, J. R., J. E. Hines, J. E. Fallon, K. L. Pardieck, D. J. Ziolkowski, Jr., and W. A. Link. 2011. The North American Breeding Bird Survey, Results and Analysis 1966 - 2010. Version 12.07.2011 USGS Patuxent Wildlife Research Center, Laurel, MD.

Schlesinger, M.D., J.D. Corser, K.A. Perkins, and E.L. White. 2011. Vulnerability of at-risk species to climate change in New York. New York Natural Heritage Program, Albany, NY.

Originally prepared by	Kimberley Corwin
Date first prepared	November 7, 2012
First revision	July 2014 (Jenny Murtaugh)
Latest revision	January 5, 2024 (Jed Hayden)

Species Status Assessment

Common Name: Osprey **Date Updated:** 1/25/2024

Scientific Name: *Pandion haliaetus* **Updated By:** Amy Mahar

Class: Birds

Family: Pandionidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

Ospreys breed in New York along coastal and inland shorelines where shallow water makes their fish prey more easily accessible. The second Breeding Bird Atlas shows breeding concentrated on Long Island—where nests are found along every shoreline—and at locations upstate including Lake Champlain, the St. Lawrence River, Oneida Lake, and the Finger Lakes. Possible records, which indicate the presence of a bird in appropriate habitat during the breeding season, appear in every county, a distinct change from the first Atlas when very few records were outside the Adirondack Mountains and the Coastal Lowlands.

During the 1950s to 1970, about 90% of the ospreys between New York City and Boston disappeared due to contamination from DDT. The ban on DDT in the 1970s combined with increasingly available artificial nest sites and hacking programs (including in the Allegheny Reservoir in the 1980s and Oak Orchard WMA in western NY during the 1990s) together with the osprey's ability to tolerate human activity near nests have allowed the population to rebound and even expand into formerly unoccupied habitat. Breeding Bird Survey trends show significantly increasing populations in the United States and in the Eastern region from 2000-2010.

I. Status

a. Current legal protected Status

i. **Federal:** Not listed **Candidate:** No

ii. **New York:** Special Concern, Delisting proposed (2019)

b. Natural Heritage Program

i. **Global:** G5 - Secure

ii. **New York:** S4B – Breeding Population Apparently Secure **Tracked by NYNHP?:** No

Other Ranks:

-IUCN Red List: Least Concern (2021)

- New York Natural Heritage Program – Watch List (2017)

- CITES – Appendix II

Status Discussion:

Osprey have regained their status as a common breeder near waterways and water bodies with sufficient fish populations.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Increasing	Increasing	2000-2010		Choose an item.
Northeastern US	Yes	Increasing	Increasing	2000-2010		No
New York	Yes	Increasing	Increasing	2000-2010	Special Concern	Yes
Connecticut	Yes	Increasing	Increasing	2000-2010		Yes
Massachusetts	Yes	Increasing	Increasing	2000-2010		No
New Jersey	Yes	Increasing	Increasing	2000-2010	Threatened	Yes
Pennsylvania	Yes	Increasing	Increasing	2000-2010	Threatened	Yes
Vermont	Yes	Increasing	Increasing	2000-2010		No
Ontario	Yes	Increasing	Increasing	2000-2010		Choose an item.
Quebec	Yes	Declining	Declining	2000-2010		Choose an item.

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

NYSDEC conducts a partial survey of nests on Long Island annually.

Trends Discussion *(insert map of North American/regional distribution and status):*

Osprey populations are increasing across the range, in the eastern United States, and in New York. Breeding Bird Survey data for North America show a significant increasing long-term trend of 2.5% per year for 1966-2010 and a non-significant increasing trend of 4.5% per year for 2000-2010. In the Eastern region, there is a significant long-term increasing trend of 3.4% per year and a nonsignificant increasing trend of 5.3% per year.

Data from the second Breeding Bird Atlas show an increase in occupancy of 147% from 1980-85 to 2000-05. The most obvious change was the appearance of possible records (bird observed in appropriate habitat during breeding season) in almost every county across the state, a notable change from the breeding concentrations in the Adirondack Mountains and the Coastal Lowlands twenty years before.

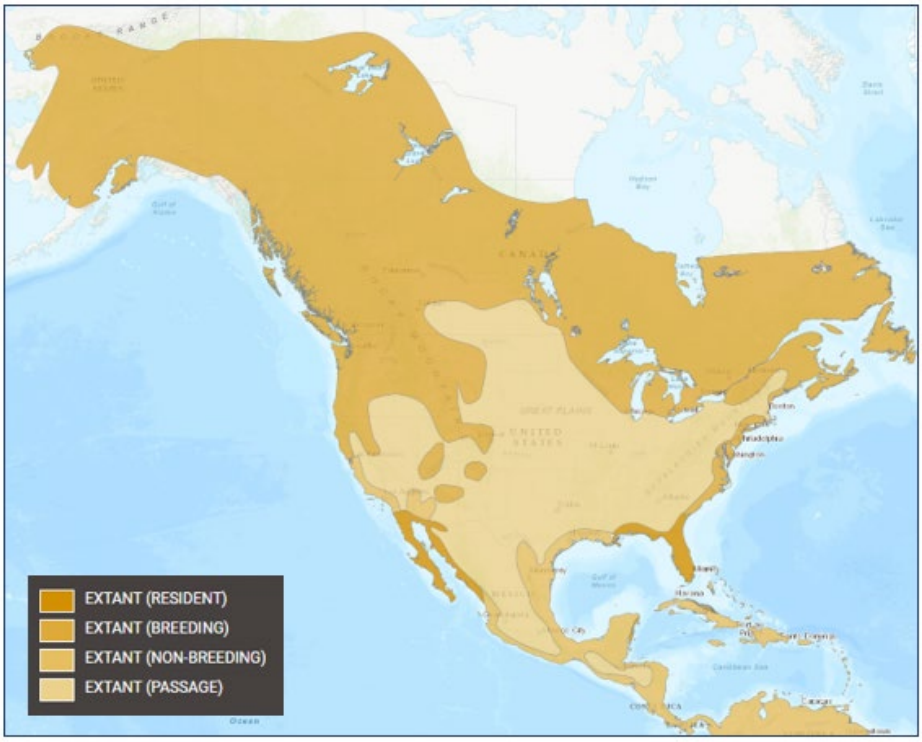

Figure 1. Osprey distribution in North America (IUCN Redlist 2024)

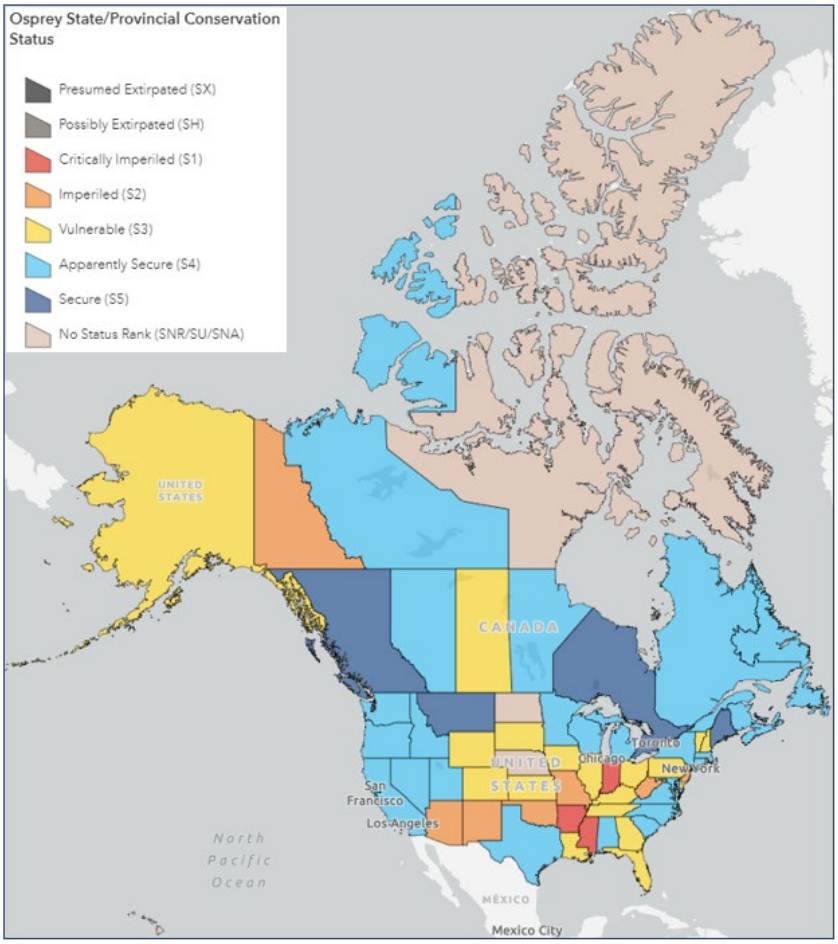

Figure 2. Osprey status in North America (NatureServe 2024)

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

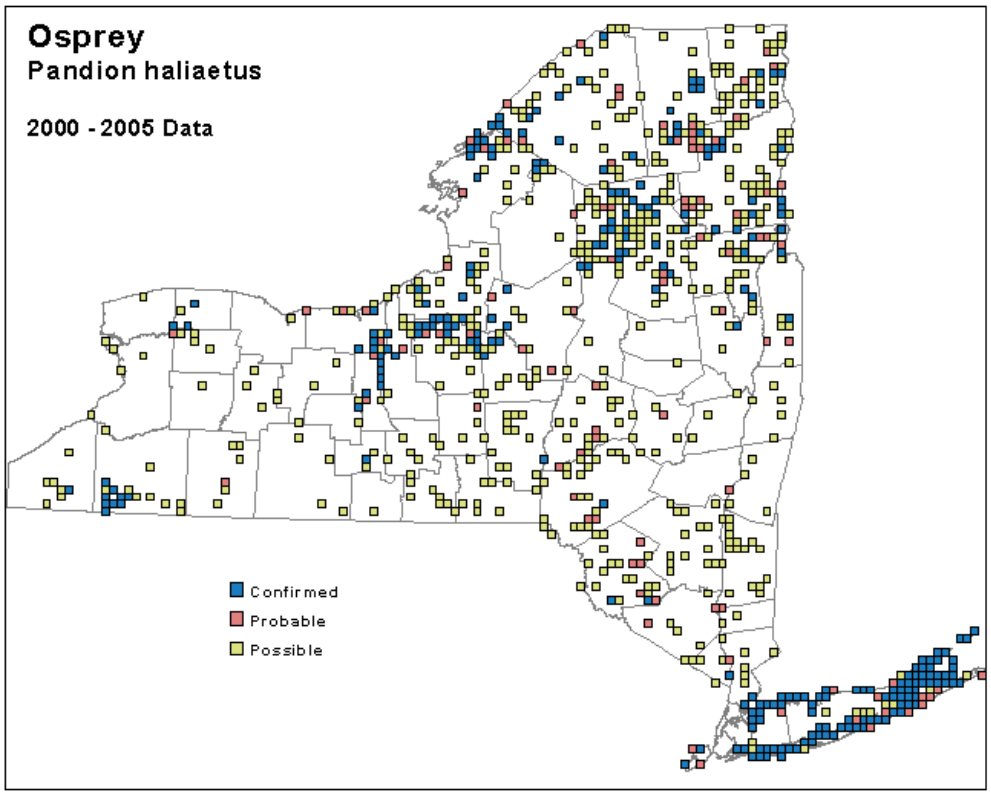

Figure 3. Records of osprey in New York (Breeding Bird Atlas 2005)

Years	# of Records	# of BBA Blocks	% of State
Pre-1980	_____	_____	_____
1980-1985	_____	335	6%
2000-2005	_____	826	15%
2020-2023	_____	_____	_____

Table 1. Records of osprey in New York.

Details of historic and current occurrence:

Spitzer (1980) reported that Long Island's nearly 500 active nests in 1940 had declined to fewer than 75 by 1970. The first Breeding Bird Atlas (1980-85) documented occupancy in 335 survey blocks statewide, or 6% of the state. The population was concentrated in the Adirondacks and on Long Island.

The second Breeding Bird Atlas (2000-05) documented occupancy in 826 survey blocks statewide, or 15% of the state. The population expanded across the entire state and occupancy increased by 147%. The number of blocks with confirmed records increased by 163%.

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Peripheral	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

1. Rocky Outcrop
2. Lake and River Shore/Beach
3. Maritime Dunes
4. Commercial/Industrial and Residential
5. Floodplain Forests
6. Freshwater Marsh
7. Estuarine, Brackish Intertidal, Tidal Wetland
8. Urban Structure Exterior

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
Yes	Yes	Stable	

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

Osprey are found along coastal and inland water bodies with abundant fish populations. Shallow water is required for hunting since this raptor catches its fish prey with its feet. Surrounding habitats may include mature forest, emergent marsh, sparsely-vegetated areas, or pine barrens.

Ospreys historically nested in dead tree snags and rocky cliffs but have adapted to using man-made structures of a large variety. The shift has been dramatic in some areas, with 90-95% of pairs building nests on channel markers, buildings, towers, power poles, and poles constructed exclusively for them. Occasionally, ospreys will nest on rocks on the ground (Carroll 1988, Poole et al. 2002).

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	Choose an item.	Choose an item.	Yes	Choose an item.	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

From Poole et al. (2002):
Osprey breeds annually, producing one brood per year. Based on a small sample (20 individuals identified as nesting and producing eggs for the first time) in an expanding population with abundant artificial nesting sites in southern New York and New England, Spitzer (1980) found 50% 3-year-olds, 30% 4-year-olds, and 20% 5-year-olds. Larger sample (45 additional breeders) in this region revealed a similar pattern, with mean age at first breeding 3.6 year (Poole 1984).

Extensive research has been conducted on annual success. In 2012, 61 active nests surveyed on Long Island produced 58 young (M. Scheibel, personal communication). The number of failed breeders varies greatly year to year within populations, and also greatly among populations. Food availability and weather have major impacts, but few data are available.

The estimated mortality among first year birds is 57%. This rate decreases to 18% annually after the first year (Newton 1979). Weather is a significant and poorly studied influence on breeding success; overall, fewer young are produced in years with heavy rainfall, especially during late incubation and early nestling stage, when young are vulnerable to chilling; loss of eggs greatest during rainy periods (Poole 1984).

Oldest known North American individuals reported to date: 25-year-old male (Spitzer 1980); 23-year-old female; 20+ year-old female (Postupalsky 1989). All were still breeding. Few survive to this age, however.

Females disperse farther than males between sites of fledging and first breeding, but only rarely do ospreys of either sex breed >50 km from their natal sites; year-to-year fidelity to breeding locales appears to be even higher (few move >10–15 km). Together these findings suggest that (1) growth or decline of a population is determined largely by local reproductive and survival rates and (2) ospreys are slow to colonize new areas.

VI. Threats *(from NY 2015 SWAP or newly described):*

Threats to NY Populations	
Threat Category	**Threat**
1. Pollution	Industrial & Military Effluents (mercury, lead)
2. Pollution	Garbage & Solid Waste (monofilament fishing line)
3. Transportation & Service Corridors	Utility & Service Lines (electrocution, tower collision)
4. Transportation & Service Corridors	Flight Paths (collision and wildlife control at JFK)

Nye (2008) noted that despite statewide increases, there have been local decreases on Gardiners Island, with the number of active pairs dropping from 56 pairs to 36 pairs in the period 1998-2001 (P. Spitzer unpublished data). The decline is thought to be a result of increased predation by great horned owls, limited nesting sites, and limited food resources exacerbated by increasing populations of double-crested cormorant.

Poole et al. (2002) notes that nearly all studies of osprey population dynamics have been on populations that were small relative to the resources available to them (food, nest sites). Building evidence suggests that food and nest sites are serious limiting factors in growing populations.

Other threats in New York include entanglement with monofilament fishing line, electrocution, and mercury contamination of prey (Nye 2008).

In the urban environment there are unique challenges such as nesting on power lines, bridges, and close proximity to New York City airports. In 2012, wildlife control staff at JFK International Airport killed 15 osprey that entered the runway airspace. The operators of the airport have since requested permission from the U.S. Fish & Wildlife Service to increase the allowable take of osprey (J. Pane per. comm.).

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

Osprey is protected under the Migratory Bird Treaty Act of 1918.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

Conservation actions following IUCN taxonomy are categorized in the table below.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
1. Land/Water Protection	Site/Area Protection
2. Land/Water Protection	Resource/Habitat Protection
3. Land/Water Management	Site/Area Management
4. Species Management	Species Recovery
5. Education & Awareness	Awareness & Communication
6. External Capacity Building	Alliance & Partnership Development

Table 2. Recommended conservation actions for osprey

The Comprehensive Wildlife Conservation Strategy (NYSDEC 2005) includes recommendations for the following actions for osprey.

Development rights acquisition:
____ Pursue conservation easements or outright purchase of essential osprey habitats.
Acquisition:
____ Pursue conservation easements or outright purchase of essential osprey habitats.
Educational signs:
____ Develop signs/displays and post where appropriate in essential habitat areas to inform the public of the need to protect the species and limit disturbance.
Fact sheet:
____ Develop materials and post where appropriate in essential habitat areas to inform the public of the need to protect the species and limit disturbance.
Habitat management:
____ Review and comment on any plans to ensure that any proposed actions would not be detrimental to essential osprey habitat or its use. Osprey nest platforms should be maintained and new ones placed when appropriate.
____ Encourage restoration and protection of Long Island salt marsh habitat through coordination with local NGOs and existing management plans.
Habitat monitoring:
____ Review and comment on any plans to ensure that any proposed actions would not be detrimental to essential osprey habitat.
Habitat research:
____ Conduct studies into habitat quality involving changes in fisheries populations, possible impact of increasing cormorant populations, etc. Support marine fishery investigations/research into critical forage species in the coastal region, i.e. winter flounder and menhaden.
Life history research:
____ Record notable new aspects of the species' ecology, especially pertaining to any local declines.
Other action:
____ Ensure that information on all new osprey nests are submitted to the Natural Heritage Program as appropriate.
Other management plan:
____ Prepare individual management plans as necessary.
Population monitoring:
____ Annually or periodically monitor the population (or certain regions of the population) to maintain a feel for the number of territorial pairs and reproductive outcome.
State land unit management plan:
____ Ensure needs of ospreys are incorporated into all UMPs where suitable habitat may exist.
Statewide baseline survey:
____ Periodically monitor the population and its reproductive outcome.

VII. References

Corwin, K. 2012. NYSDEC SWAP 2015 Species Status Assessment for Osprey. Prepared on May 14, 2012. Revised by Jenny Murtaugh, July 2014.

Newton, I. 1979. Population ecology of raptors. Buteo Books. Vermillion, SD, USA.

Nye, P. 2008. Osprey, *Pandion haliaetus*. Pages 186-87 in The Second Atlas of Breeding Birds in New York State (K.J. McGowan and K. Corwin, eds.). Cornell University Press, Ithaca, NY.

Spitzer, P.R. 1980. Dynamics of a discrete coastal breeding population of Ospreys in the northeastern USA, 1969-1979. Ph.D. dissertation, Cornell University, Ithaca, NY.

Poole, A. F. 1984. Reproductive limitations in coastal Ospreys: an ecological and evolutionary perspective. Unpubl. Ph.D. diss. Boston Univ. Boston, MA.

Poole, A.F., R.O. Bierregaard and M.S. Martell. 2002. Osprey (*Pandion haliaetus*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/683 doi:10.2173/bna.683

Postupalsky, S. 1989b. Osprey. Pages 297-313 *in* Lifetime reproduction in birds. (Newton, I., Ed.) Academic Press, London, U.K.

Originally prepared by	Kim Corwin
Date first prepared	May 14, 2012
First revision	July 2014 (Jenny Murtaugh)
Latest revision	January 25, 2024 (Amy Mahar)

Species Status Assessment

Common Name: Peregrine falcon **Date Updated:** 1/25/2024

Scientific Name: *Falco peregrinus* **Updated By:** Amy Mahar

Class: Birds

Family: Falconidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

Peregrine falcons, having become extirpated in the United States in the 1950s, have made an astonishing recovery across the range and in New York where breeding resumed in 1983. The ban on DDT in the early 1970s and a widespread reintroduction program (in which more than 6,000 birds were released) allowed populations to return to some historic breeding sites and even expand into new areas. In New York breeding occurs on bridges, towers, and buildings in urban settings as well as on cliff habitats in the Adirondack Mountains and vicinity.

The NYSDEC's annual survey of peregrine falcons documented 72 territorial pairs in 2013 and 52 successful pairs, which fledged a total of 122 young. The second Breeding Bird Atlas documented an increase in blocks with confirmed breeding records from 4 in 1980-85 to 68 in 2000-05. Similar increases have been documented in all adjacent states and Vermont has removed the species from its endangered species list.

I. Status

a. Current legal protected Status

i. **Federal:** Not listed **Candidate:** No

ii. **New York:** Endangered; Proposed downlisting to Special Concern (2019)

b. Natural Heritage Program

i. **Global:** G4 – Apparently Secure

ii. **New York:** S3B – Vulnerable Breeding Population **Tracked by NYNHP?:** Yes

Other Ranks:

- The peregrine falcon was removed from the Federal Endangered Species List in 1999.

-IUCN Red List: Least Concern (2021)

-NE Regional SGCN – Watchlist (Assessment Priority)

Status Discussion:

Once extirpated as a breeder in New York, the peregrine falcon is now a local breeder. It is a resident bird in the New York City area and in some upstate areas including Albany and Buffalo. Peregrines are a fairly common fall migrant on the outer coast and rare inland (Levine 1998).

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?

North America	Yes	Increasing	Increasing	1990s to present		Choose an item.
Northeastern US	Yes	Increasing	Increasing	1990s to present	Watchlist	No
New York	Yes	Increasing	Increasing	2000-2023	Endangered, S3B	Yes
Connecticut	Yes	Increasing	Increasing	2005-2015	Threatened, S1B	Yes
Massachusetts	Yes	Increasing	Increasing	Since breeding resumed in 1987	Special Concern, S2B, S3N	Yes
New Jersey	Yes	Stable	Stable		Endangered, S1B, S3N	Yes
Pennsylvania	Yes	Increasing	Increasing	1984-89 to 2004-08	Recovered Species, S1B, S5N, S4M	Yes
Vermont	Yes	Increasing	Increasing	Since early 1990s	Removed in 2005, S3B	Yes
Ontario	Yes	Increasing	Increasing	1981-85 to 2001-05	Special Concern, S4	Choose an item.
Quebec	Yes	Choose an item.	Choose an item.		SNA	Choose an item.

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

NYSDEC conducts nesting surveys annually.

Trends Discussion *(insert map of North American/regional distribution and status):*

Peregrine falcons were believed to breed at 50 locations in New York prior to the 1950s but by the 1960s the species was extirpated as a result of contamination by DDT (Bull 1974) in addition to a lack of enforced protection, falconers retrieving nestlings, and oologists taking eggs. Young captive birds were released in New York mainly from 1974 to 1988 (birds were released in Rochester in 1994). In 1983 nesting resumed on two bridges in New York City. Two breeding pairs returned to the Adirondacks in 1985. The first Breeding Bird Atlas documents these four breeding locations.

The second Breeding Bird Atlas (2000-05) documented an incredibly expanded population, showing confirmed breeding in 68 blocks statewide, a 1,600% increase in breeding. The NYSDEC's 2013 annual report on peregrine falcons states that the population continues to increase, with a total of 72 territorial pairs in 2013.

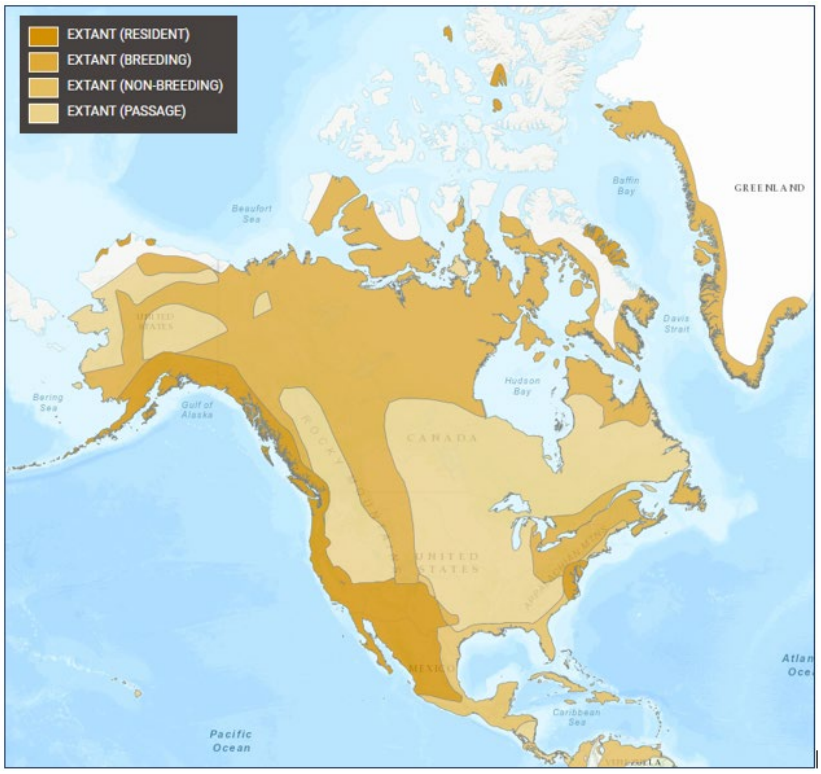

Figure 1. Peregrine falcon North American distribution (IUCN Redlist 2024)

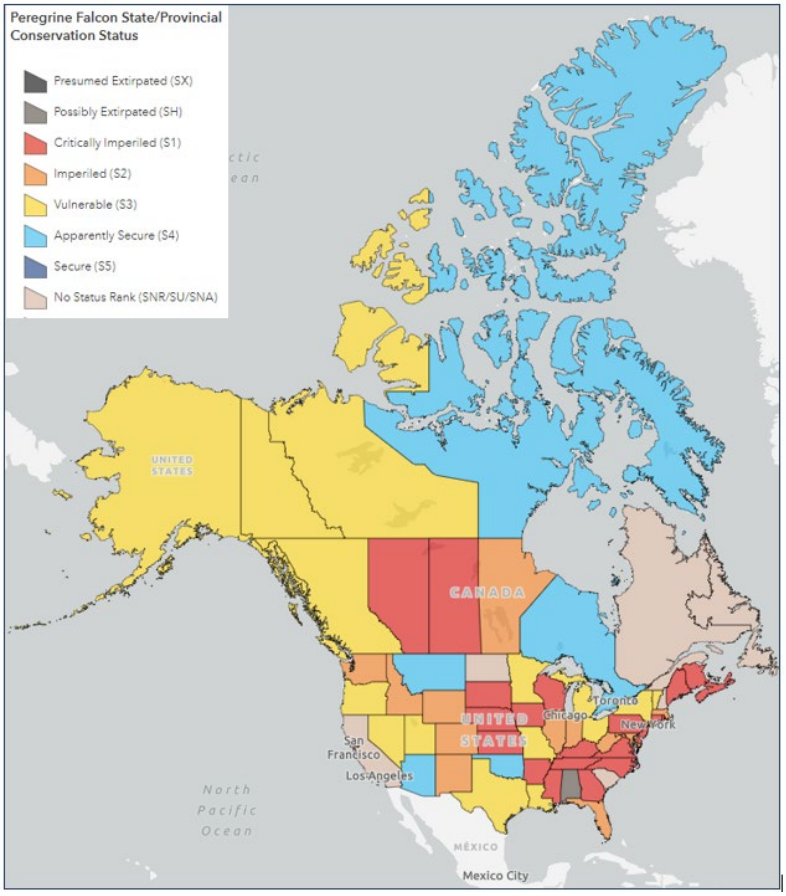

Figure 2. Peregrine falcon status (NatureServe 2024)

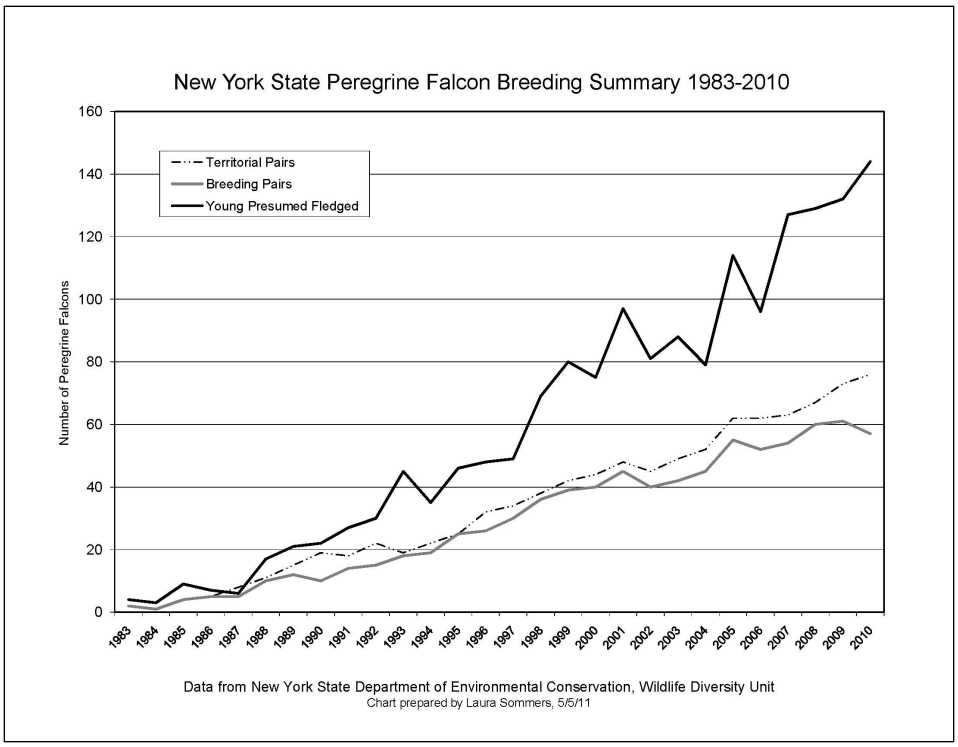

Figure 3. Trend in Peregrine falcon breeding in New York (Loucks 2011)

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

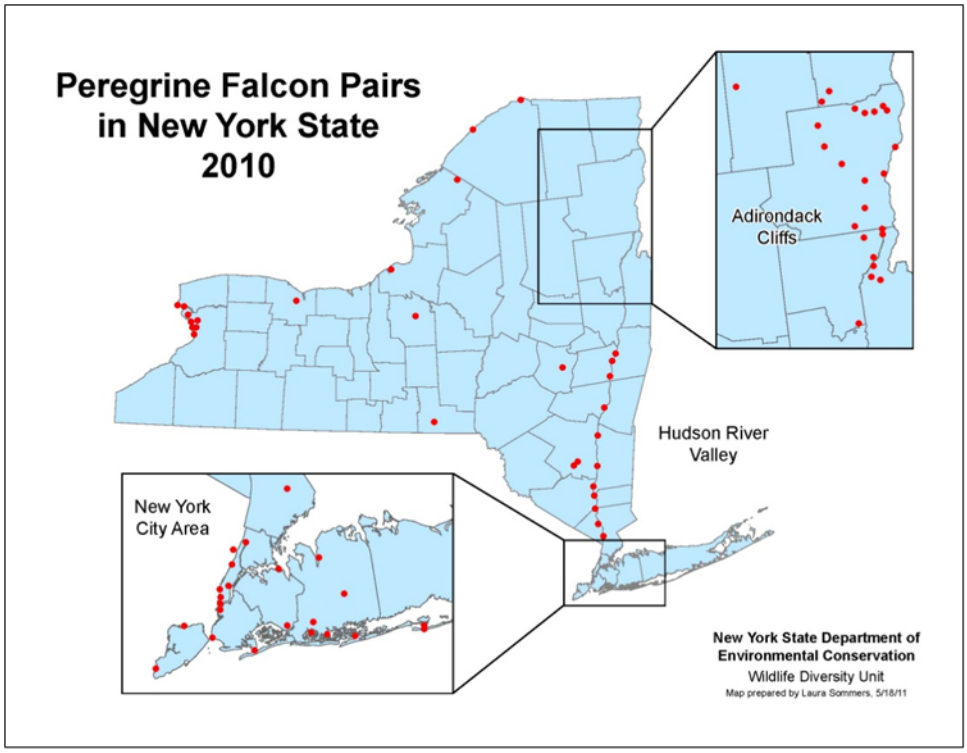

Figure 4. Location of peregrine falcon nests in New York (Loucks 2011)

Years	# of Records	# of BBA Blocks	% of State
Pre-1980			0%
1980-1985		17	<1%
2000-2005		111	2%
2020-2023	76 pairs		

Table 1. Records of peregrine falcon in New York.

Details of historic and current occurrence:

About 50 pairs of breeding peregrine falcons were thought to be present in New York before the 1950s, mostly in the Adirondacks, but also on some bridges and buildings. The last known successful breeding was in 1956 and the last known breeding attempt—an unmated adult at a nest—was in 1961 (Bull 1974). Breeding resumed in 1983 and the first Breeding Bird Atlas (1980-85) documented occupancy in a total of 17 survey blocks statewide, 4 of which included Confirmed breeding.

The second Breeding Bird Atlas (2000-05) documented occupancy in 111 survey blocks statewide, 68 of which had Confirmed breeding. Statewide occupancy increased by 553% and Confirmed breeding increased by 1,600%. In 2013, the NYSDEC reported 72 territorial pairs statewide (36 upstate, 36 downstate). A total of 122 young were fledged by 52 successful pairs.

Peregrine falcons breed in the New York City area and northward along the Hudson River where every major bridge as far north as Troy hosts a breeding pair. Nests are known in other urban areas as well, including Niagara Falls, Buffalo, Rochester, Syracuse, Binghamton, Albany, and Troy. Nesting also occurs in the Adirondack Mountains, eastern Adirondack Foothills, Champlain Valley, the Shawangunk and Catskill mountains, and the Hudson River Palisades. In recent years peregrine falcons have extended their range to include breeding throughout Long Island on buildings, bridges, and in coastal marshland.

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Core	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

1. Cliff and Talus
2. Commercial/Industrial and Residential
3. Freshwater Marsh
4. Floodplain Forests
5. Riparian
6. Coastal Marshland

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
Yes	Yes	Stable	

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

Peregrine falcons are found in a wide variety of habitats that provide avian prey and high cliff (or cliff-like) nest sites. In New York, nest heights outside of the Adirondacks range from 10-foot platforms in coastal salt marshes to a 693-foot bridge (C. Nadareski, pers. comm.). Over the past two decades, peregrines have established themselves as urban denizens, placing nests on urban structures that mimic cliffs, including buildings and bridges (Cade et al. 1996). Increasingly, peregrines have used other unconventional nest sites such as old common raven nests, nests on electric pylons, osprey nests, and cormorant nests on channel buoys, special towers in salt marshes, power plants, and heating stacks.

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	Choose an item.	Choose an item.	Yes	Yes	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

Peregrine falcons breed annually. Age at first breeding varies, depending on territory availability, which is in turn influenced by floater competition and breeder turnover. Females tend to breed a year earlier than males (Cade and Fyfe 1978, Ratcliffe 1993). Yearling females are more likely to breed than yearling males, although both sexes have bred successfully as yearlings (Wendt and Septon 1991, C. Nadareski, pers. comm.). First-year survival is not well known but generally assumed to be 40–50% of fledglings. In urban environments, the mortality rate is higher at 60-70+% during the first-year of life (C. Nadareski, pers. comm.). The annual mortality rate for sub-adults and adults is approximately 12% (The Peregrine Fund). Maximum longevity records for banded birds range from 16 to 20 years.

Annual breeding success in New York in 2013 was 2.3 young produced per successful breeding pair and reached a high of 3.7 young per successful nest in New York City in 1993 (NYSDEC 1994). The average annual breeding success in the past ten years is 2.4 young per successful breeding pair. In reintroduced eastern populations, natal dispersal of 29 females ranged from 0 to 752 km, with 18 (62%) >100 km; for 13 males, 0–1,117 km, with 8 (62%) >100 km (Barclay 1995). Female generally disperses farther than male from natal localities to breed.

Fledglings at cliffs may be killed prior to independence by other raptors, especially great horned owls and golden eagles, occasionally by mammalian predators, and they may also suffer disease and accidents. Other cliff-related causes of mortality may be a result of cliff-ledge flooding during the spring season (C. Nadareski, pers. comm.). Urban fledglings may have greater variety of post-fledging fatalities than fledglings in natural landscapes; deaths primarily from collisions with

automobiles, windows, buildings, and other human-made objects (e.g., cables, wires, and barbed wire fencing), falling into chimneys and air ducts, and drowning after falling from bridges (Cade and Bird 1990, Sweeney et al. 1997). Some of the urban fledgling mortality can be attributed to human disturbance causing premature flight (C. Nadareski, pers. comm.). Additional causes of urban fledgling fatalities have been attributed to avian diseases transmitted by feral pigeons (e.g., trichomoniasis or frounce, and herpesvirus), West Nile virus, lead poisoning, and organochlorine pesticides (e.g., chlordane, dieldrin, DDE, and PCBs) (NYS Wildlife Health Unit). Collisions also affect older age classes; in nonurban environments, face a variety of human-related hazards, including electrocution by utility lines, wire and fence collisions, shooting, and airplane strikes (Barclay and Cade 1983, Santa Cruz Predatory Bird Research Group unpubl.). In urban environments, causes of sub-adult and adult mortality also include trichomoniasis, organochlorine pesticides (as noted above), shooting, collisions with vehicles, and territorial battles (C. Nadareski, pers. comm.).

VI. Threats *(from NY 2015 SWAP or newly described):*

Threats to NY Populations	
Threat Category	**Threat**
1. Human Intrusions & Disturbance	Recreational Activities (rock climbing)
2. Residential & Commercial Development	Housing & Urban Areas (window strikes,)
3. Transportation & Service Corridors	Utility & Service Lines (powerlines)
4. Transportation & Service Corridors	Flight Paths (airplane strikes)
5. Pollution	Industrial & Military Effluents (DDE, PCBs)
6. Pollution	Agricultural & Forestry Effluents (organochlorine pesticides)
7. Biological Resource Use	Hunting & Collecting Terrestrial Animals (persecution)
8. Climate Change & Severe Weather	Temperature Extremes (nests washed off)
9. Transportation & Service Corridors	Roads & Railroads (vehicular strikes)
10. Human Intrusions & Disturbance	Work & Other Activities
11. Invasive & Other Problematic Species & Genes	Problematic Native Species (Trichinosis, West Nile)

Pairs vary greatly in responsiveness to human activities, depending partly on individual characteristics, partly on period of breeding cycle, and partly on environmental circumstances (Cade 1960). Pairs in remote locations are generally most reactive; those in urban areas or frequently visited sites become habituated to close human activities but are still susceptible to failure if disturbed at critical times. Rock-climbing, activity of researchers, or necessary maintenance at eyries is not usually detrimental when reasonable precautions are taken, but constant relationship-tending is necessary between people involved in these activities and resource managers.

Urban-dwelling peregrines may be killed or injured by flying into windows or other features of buildings while chasing prey, occasionally by collision with moving vehicles, including aircraft at airports; sometimes strike wires; recently fledged young sometimes fall down chimneys or are killed by air-conditioning equipment or other machinery on tops of buildings; young in nests on bridges often fall into water, significantly reducing productivity at such sites (Barclay and Cade 1983, Cade and Bird 1990, Bell et al. 1996). Premature fledging or falling due to human disturbance at urban nest sites continues to be an important issue. Human activities such as required inspections, ongoing or onset of new construction, security inspections, routine maintenance such as replacement of avian lighting, and general human curiosity have been documented at building(s) and bridge(s) locations (C. Nadareski, pers. comm.).

Peregrines are occasionally killed by eating birds poisoned by strychnine or other persistent toxic chemicals (see Porter et al. 1987) and from lead (primarily from chips of paint on bridges and buildings).

Details on causes of mortality and injury to urban peregrines are included in the discussion above under Species Demographics and Life History. A review of a sampling of 81 urban-dwelling peregrines from 2001 through mid-2013 (the majority of data collected within the past 5 years) shows the following causes of death or injury: vehicle strikes (24), avian diseases (5), building strikes (15), unknown impacts (11), airplane strikes (3), lead poisoning (3), pesticide poisoning (3), shooting (2), drowning (2), and other (2). This results in an additional threat, mortality from organochlorine pesticides. Data provided by The Port Authority on band recoveries from peregrines struck by aircraft at John F. Kennedy International Airport included 13 banded peregrine falcons, three of which were banded in New York. The balance were banded in Pennsylvania (4), Massachusetts (1), and at an unknown origin (5).

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

The peregrine falcon is listed as an endangered species in New York and is protected by Environmental Conservation Law (ECL) section 11-0535 and the New York Code of Rules and Regulations (6 NYCRR Part 182). A permit is required for any proposed project that may result in a take of a species listed as Threatened or Endangered, including, but not limited to, actions that may kill or harm individual animals or result in the adverse modification, degradation or destruction of habitat occupied by the listed species. This listing status provides vital protection from human disturbance such as rock-climbing, necessary bridge maintenance, and building roof repairs and façade maintenance, and airport operations during critical times of the breeding season.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

To ensure this species' continued success, NYSDEC stresses the need to build and foster partnerships with countless agencies, bridge authorities, building owners, and individuals who remain essential to the protection and management of this species. The majority of sites would probably not be successful without proactive management due to the need to restrict activity during critical periods of the breeding season. Seasonal cliff closures are necessary at some sites to ensure nesting success and bridge maintenance must be scheduled carefully.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated

subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
1. Land/Water Protection	Site/Area Protection
2. Land/Water Protection	Resource/Habitat Protection
3. Land/Water Management	Site/Area Management
4. Species Management	Species Recovery
5. External Capacity Building	Alliance & Partnership Development

Table 2. Recommended conservation actions for peregrine falcon

The Comprehensive Wildlife Conservation Strategy (NYSDEC 2005) includes recommendations for the following actions for peregrine falcon.

Development rights/Easement acquisition:
____ Pursue conservation easements or outright purchase of essential peregrine falcon habitats.

Educational signs:
____ Develop signs/displays and post where appropriate in essential habitat areas to inform the public of the need to protect the species and limit disturbance.

Fact sheet:
____ Develop materials and post where appropriate in essential habitat areas to inform the public of the need to protect the species and limit disturbance.

Habitat management:
____ Review and comment on any plans to ensure that any proposed actions would not be detrimental to essential peregrine falcon habitat or its use. Place nest boxes on bridges and buildings where appropriate, and maintain and replace as necessary. Promote the construction of nesting towers where appropriate.

Habitat monitoring:
____ Review and comment on any plans to ensure that any proposed actions would not be detrimental to essential peregrine falcon habitat or its use.

Habitat research:
____ Conduct radio-telemetry studies as well as field observations to determine essential peregrine falcon habitat.

Life history research:
____ Through population monitoring and banding, determine site-fidelity, turnover, migration and wintering movements, home-ranges, mortality, longevity, etc. of peregrine falcons.

Other action:
____ Ensure that all new peregrine falcon information is submitted to the Natural Heritage /BCD database.

Other management plan:
____ Prepare individual management plans as necessary.

Population monitoring:
____ Annually monitor and determine the number of territorial peregrine falcons and their reproductive outcome. Collect failed eggs and carcasses for analysis. Rehabilitate injured birds for release when possible.
____ Gather wintering information when possible.

State land unit management plan:

____ Ensure needs of peregrine falcons are incorporated into all UMPs where suitable habitat may occur.

Statewide baseline survey:

____ Annually monitor and determine the number of territorial peregrine falcons and their reproductive outcome.

Web page:

____ Keep the webpage current.

Additional recommendations for 2015 SWAP (C. Nadareski):

- Develop annual public relations between the state and property owners of the nest box location to assure access for monitoring and protection of the habitat.
- Life history research should include investigation of diet
- Population monitoring should include the following: Rehabilitation of young released into the wild should include captive hacking to assure successful fledging. Band all nestlings hatched in urban locations where possible to assure return of rehabilitated young back to nest sites.
- Distribute NYSDEC and cooperator contact information to facility management at urban nest sites including detailed protocol to wildlife rehabilitators throughout the state.

VII. References

Barclay, J. 1995. Patterns of dispersal and survival of eastern Peregrine Falcons derived from banding data. BioSys. Anal., Inc. Santa Cruz, CA.

Barclay, J. H. and T. J. Cade. 1983. Restoration of the Peregrine Falcon in the eastern United States. Bird Conserv. 1:3-37.

Bell, D. A., D. P. Gregoire, and B. J. Walton. 1996. Bridge use by Peregrine Falcons in the San Francisco Bay area. Pages 15-24 *in* Raptors in human landscapes. (Bird, D. M., E. E. Varland, and J. J. Negro, Eds.) Academic Press, New York.

Cade, T. J. 1960. Ecology of the Peregrine and Gyrfalcon populations in Alaska. Univ. of California Publ. Zool. 63:151-290.

Cade, T. J. and D. M. Bird. 1990. Peregrine Falcons, *Falco peregrinus*, in an urban environment: a review. Can. Field-Nat. 104:209-218.

Cade, T. J., J. H. Enderson, and J. Linthicum. 1996. Guide to management of Peregrine Falcons at the eyrie. The Peregrine Fund, Inc. Boise, ID.

Cade, T. J. and R. W. Fyfe. 1978. What makes Peregrine Falcons breed in captivity? Pages 251-262 *in* Endangered birds, management techniques for preserving threatened species. (Temple, S. A., Ed.) Univ. of Wisconsin Press, Madison.

Levine, E. 1998. Bull's Birds of New York State. Cornell University Press, Ithaca, NY.

Loucks, B.A. 1998. Peregrine falcon, *Falco peregrinus*. Pages 203-06 in Bull's Birds of New York State (E. Levine, ed.). Cornell University Press, Ithaca, NY.

Loucks, B.A. 2011. New York State Peregrine Falcons – 2010. NYS Department of Environmental Conservation, Albany, NY. Available at http://www.dec.ny.gov/docs/wildlife_pdf/2010peregrinereport.pdf

Porter, R. D., M. A. Jenkins, and A. L. Ganski. 1987. Working bibliography of the Peregrine Falcon. Sci. Tech. Ser. no. 9. Nat. Wildl. Fed. Washington, D.C.

Ratcliffe, D. 1993. The Peregrine Falcon. 2nd ed. T. and A. D. Poyser, Carlton, England.

Sweeney, S. J., P. T. Redig, and H. B. Tordoff. 1997. Morbidity, survival, and productivity of rehabilitated Peregrine Falcons in the upper midwestern U.S. J. Raptor Res. 31:347-352.

Wendt, A. M. and G. A. Septon. 1991. Notes on a successful nesting by a pair of yearling Peregrine Falcons *Falco peregrinus*. J. Raptor Res. 25:21-22.

White, C.M., N. J. Clum, T.J. Cade and W.G. Hunt. 2002. Peregrine Falcon (*Falco peregrinus*). The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/660 doi:10.2173/bna.660.

Originally prepared by	Kimberley Corwin
Date first prepared	May 15, 2012
First revision	December 2014 (Kimberley Corwin)
Latest revision	January 25, 2024 (Amy Mahar)

Species Status Assessment

Common Name: Pied-billed grebe **Date Updated:** January 4, 2024

Scientific Name: *Podilymbus podiceps* **Updated By:** Jed Hayden

Class: Aves

Family: Podicipedidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

One subspecies of pied-billed grebe occurs in New York: *Podilymbus podiceps podiceps*. It breeds in all of the United States, northward into southern Canada, and southward to all of Central America.

The pied-billed grebe is a Threatened species in New York. It is a rare and local breeder in the Ontario Plain, Great Lakes Plain, and Hudson Valley. Nesting occurs in freshwater wetlands with open shallow water and an abundance of aquatic emergent vegetation. The second Breeding Bird Atlas documented a 47% increase in occupancy from 1980-85 to 2000-05 with new records centered in Jefferson and St. Lawrence counties.

I. Status

a. Current legal protected Status

i. **Federal:** Not listed **Candidate:** No

ii. **New York:** Threatened; SGCN

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** S3B,S1N **Tracked by NYNHP?:** Yes

Other Ranks:

IUCN Red List Category: Least Concern

Status Discussion:

The pied-billed grebe is an uncommon local breeder; it is a common migrant, though more numerous in fall, and a rare but regular winter visitant in the lower Hudson Valley and Long Island.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Increasing	Increasing	2000-2023	None	Yes
Northeastern US	Yes	Declining	Unknown	2000-2023	None	Yes
New York	Yes	Increasing	Increasing	2000-2023	Threatened	Yes
Connecticut	Yes	Unknown	Unknown		Endangered	Yes
Massachusetts	Yes	Stable	Stable	1975-2011	Endangered	Yes

New Jersey	Yes	Unknown	Unknown		Endangered	Yes
Pennsylvania	Yes	Declining	Declining	1984-89 to 2004-08	No	Yes
Vermont	Yes	Declining	Declining	1976-2007	Special Concern	Yes
Ontario	Yes	Stable	Stable	1970-2021	No	No
Quebec	Yes	Stable	Stable	1970-2021	No	No

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

A three-year pilot study of the National Marshbird Monitoring Program was conducted from 2009-2011 at selected wetlands across the state. Surveys continued from 2010-2016. In addition, the Marsh Monitoring Program through Bird Studies Canada has long term marsh bird monitoring routes in the Great Lakes Basin part of New York. The pied-billed grebe is a target species in both survey protocols. The species is currently being surveyed by the current Breeding Bird Atlas.

Trends Discussion *(insert map of North American/regional distribution and status):*

The second Breeding Bird Atlas documented a 47% increase in occupancy statewide. Notable is the increase in Jefferson and St. Lawrence counties, mirrored by the increase in breeding reports in Ontario from the northeastern portion of Lake Ontario northward along the St. Lawrence River (McGowan 2008).

The Marsh Monitoring Program (Bird Studies Canada) shows a declining trend of -7.1% per year from 1995-2007 in the Great Lakes Basin (Archer and Jones 2009).

Pied-billed grebe is not well sampled by Breeding Bird Surveys (BBS); trend estimates should be viewed with caution. Most tended to be nonsignificant; the few significant trends were nearly equally divided between increases and declines. Strong numerical decline in the eastern U.S. has not been analyzed in detail; may reflect eutrophication of wetland habitats.

Marsh bird surveys performed by DEC from 2010-2016 showed that Pied-billed grebe abundance is increasing (Moore, B. A, et al.).

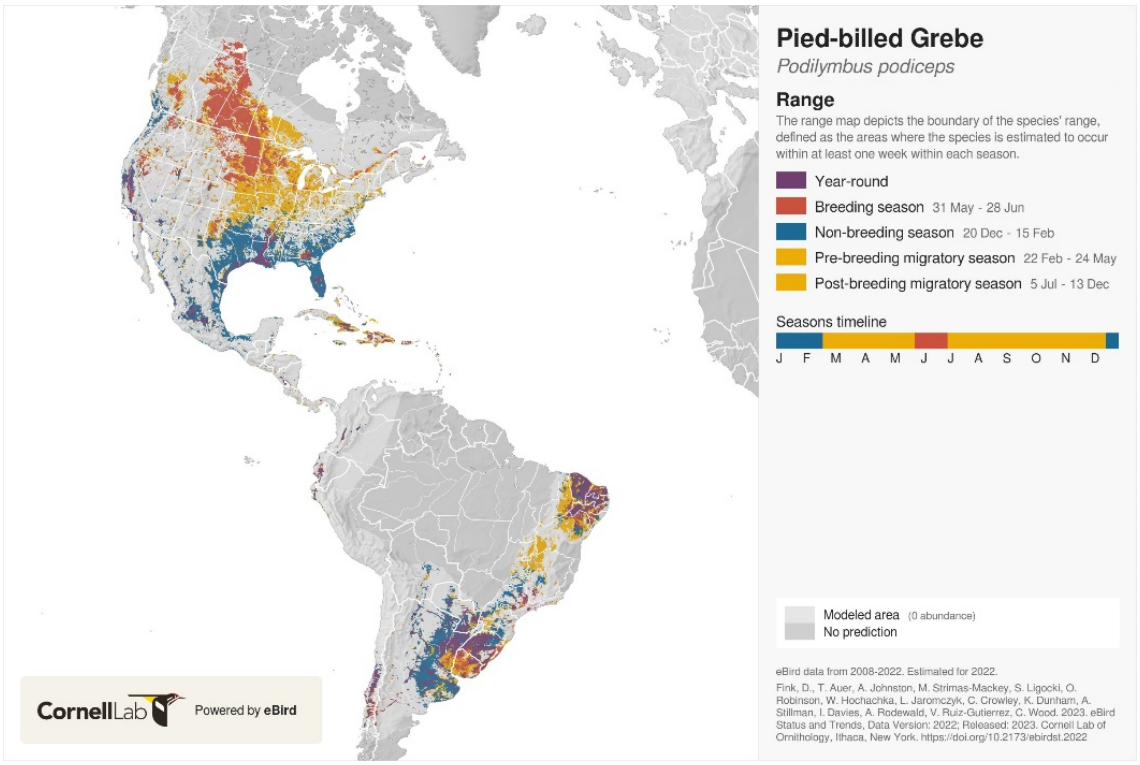

Figure 1. Pied-billed grebe distribution in the western hemisphere (eBird 2022)

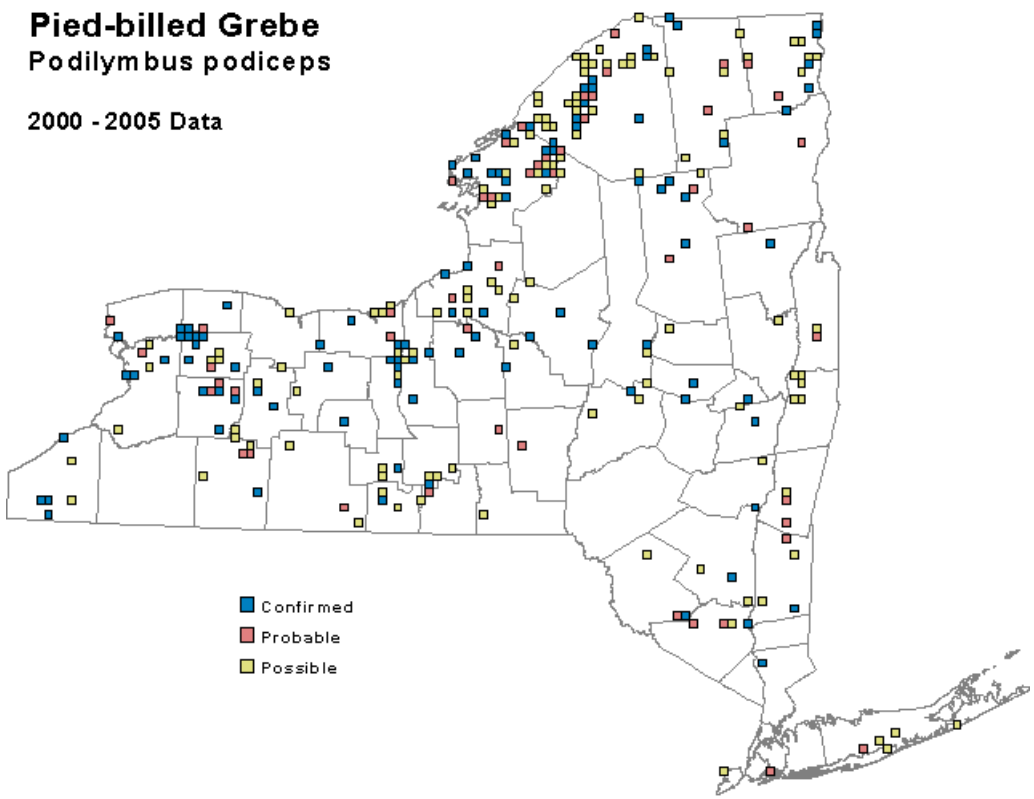

Figure 2. Pied-billed grebe occurrence in New York State during the second Breeding Bird Atlas (McGowan and Corwin 2008)

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

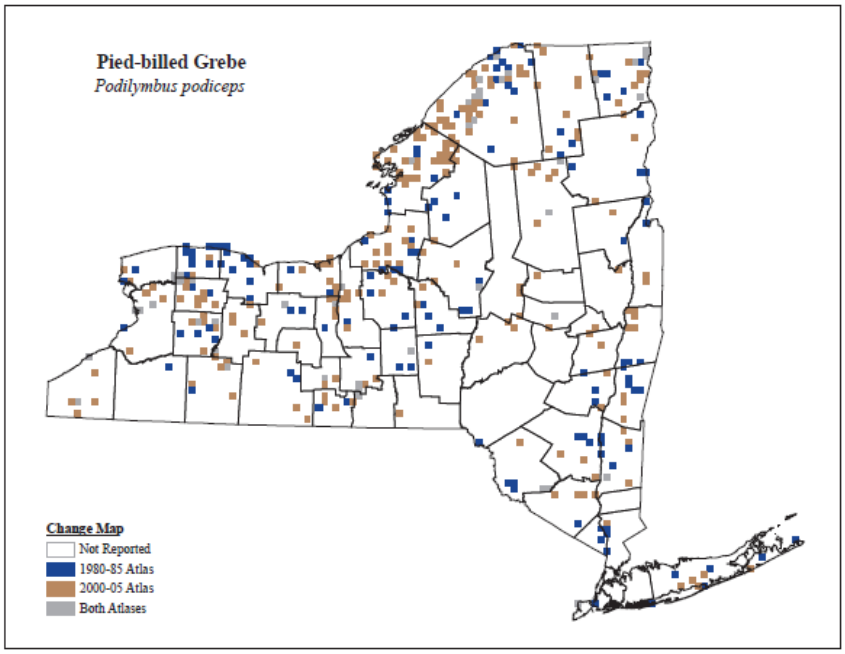

Figure 3. Change in Pied-billed Grebe occurrence in New York State between the first Breeding Bird Atlas and the second Breeding Bird Atlas (McGowan and Corwin 2008).

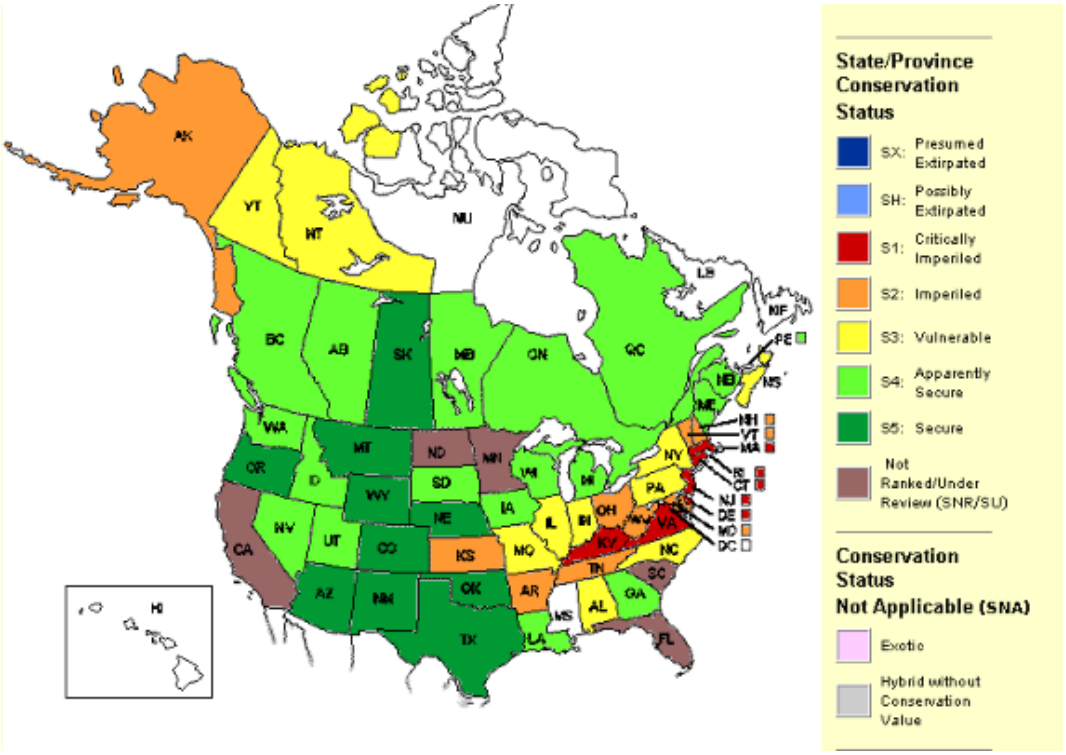

Figure 4. Conservation Status of the pied-billed grebe in North America (NatureServe 2016).

Years	# of Records	# of BBA Blocks	% of State
Pre-1980	_____	_____	_____
1980-1985	_____	182	3
2000-2005	_____	267	5
2020-2023	_____	265	4

Table 1. Records of pied-billed grebe in New York.

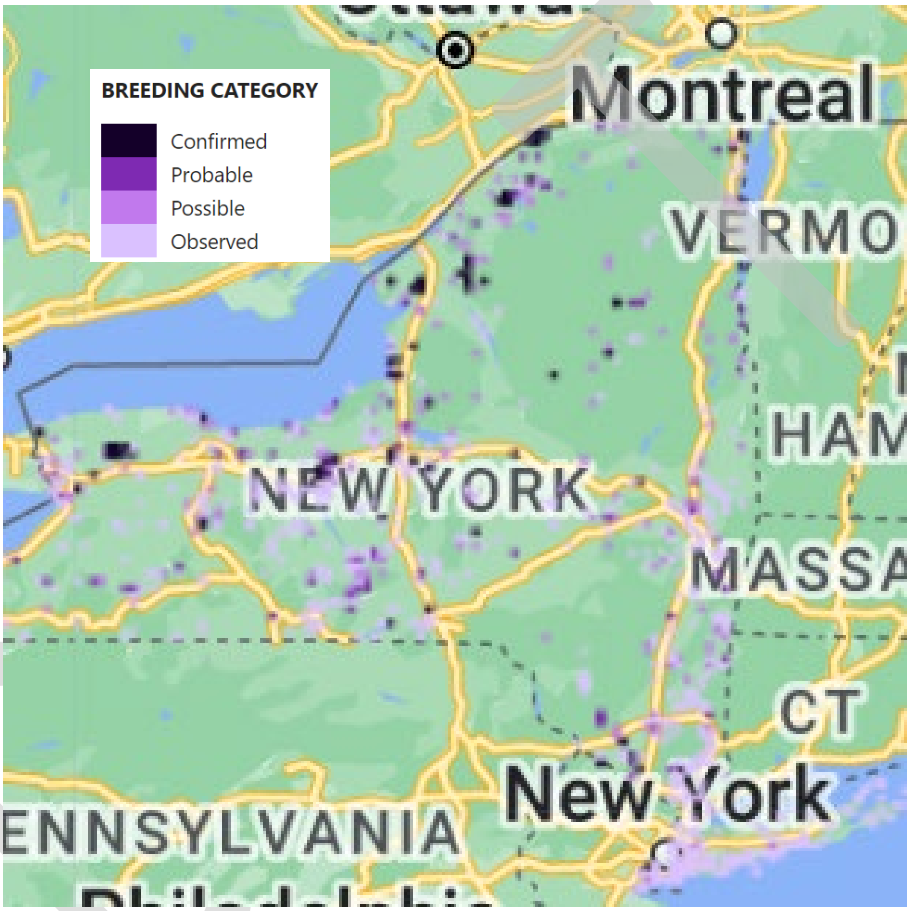

Figure 5. 2020-2025 eBird records of pied-billed grebe in New York

Details of historic and current occurrence:

The first BBA (1980-85) documented occupancy in 182 blocks, 3% of the survey blocks statewide (Andrle and Carroll 1988). The second BBA (2000-2005) documented occupancy in 267 blocks, 5% of the survey blocks statewide, an increase of 2% since the first atlas.

The third BBA (2020-2025) is currently underway and utilizes a different number and layout of survey blocks across New York, making direct comparison with the first tow Atlases difficult. There were 5,333 blocks in the first and second BBA's and there are 5,710 blocks in the current BBA. To date, Pied-billed grebes have been documented in 265 blocks, 4% of survey blocks statewide during the third BBA (NYS BBA III Overview, 2023).

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Core	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

1. Freshwater Marsh
2. Great Lakes Freshwater Estuary Marsh
3. Coastal Plain Pond

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
Yes	No	Stable	

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

Pied-billed grebes breed on seasonal or permanent ponds and other bodies of slow-moving or still water such as sluggish rivers and freshwater marshes where there is an abundance of emergent aquatic vegetation. The nest is floated on dense stands of dead or growing emergent vegetation. Open water areas are also important to pied-billed grebes.

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	Choose an item.	Choose an item.	Yes	Yes	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

No data are available for age at first breeding in wild birds, but captive birds laid eggs at 13–14 months of age (MacVean 1988, 1990). Annual success is difficult to determine, owing to differences in parameters reported. No data is available on lifetime reproductive success. Nest success is influenced by wind and wave action, water level fluctuations, predation of eggs or adult bird at nest, or damage to nest and loss of eggs as result of spawning activity of common carp. Chicks are extremely susceptible to drafts and chilling for first 2 weeks after hatching (McAllister

1963). Pied-billed grebe eggs and newly hatched young are preyed upon by raccoons, mink, snapping turtles, and various avian predators. Few data on lifespan and survivorship (Muller and Storer 1999). The species was reported a victim of botulism outbreak at Lake Michigan in 1963–1964 (Rosen 1971).

The population probably is regulated by availability of suitable nesting habitat and food, and possibly by winter habitat, but not studied. Productivity is influenced by nest destruction and egg loss (wind and waves, swamping, drought, predation on adults, eggs, and chicks, nest destruction by introduced species). The influence of eutrophication of wetlands remains to be studied.

VI. Threats *(from NY 2015 SWAP or newly described):*

Habitat degradation and destruction resulting from the draining, dredging, filling, pollution, and siltation of wetlands through the 1900s are the greatest threats facing the pied-billed grebe population.
Nests can be destroyed by alterations in water level (either flooding or drops in water level) or by wakes from motorized and non-motorized boats dislodging nests attached to emergent aquatic plants. In addition to these threats specific to nesting, pied-billed grebes are threatened by outright destruction of appropriate wetland habitats; decline and degradation of their prey populations; by pesticides in current use; and by the lingering effects of bioaccumulating pesticides used in the past.
Pied-billed grebes have been killed at TV towers during nocturnal flights. They are also killed by cars, sometimes after landing on roadway during heavy rainstorm at night. Grebes occasionally become entangled in fishing line. Wading birds tend to be susceptible to many diseases such as avian cholera, botulism, lice and mites, but little is known about the effects of disease and parasites on reproduction (NatureServe 2013).

Threats to NY Populations	
Threat Category	**Threat**
1. Residential & Commercial Development	Housing & Urban Areas (wetland fragmentation)
2. Residential & Commercial Development	Tourism & Recreation Areas (shoreline development)
3. Invasive & Other Problematic Species & Genes	Invasive Non-Native/Alien Species (purple loosestrife, phragmites)
4. Pollution	Agricultural & Forestry Effluents (runoff, siltation)
5. Pollution	Industrial & Military Effluents (acid deposition)
6. Natural System Modification	Other Ecosystem Modification (succession)
7. Natural System Modification	Dams & Water Management/Use
8. Climate Change & Severe Weather	Habitat Shifting & Alteration
9. Climate Change & Severe Weather	Storms & Flooding
10. Climate Change & Severe Weather	Drought
11. Invasive & Other Problematic Species & Genes	Problematic Native Species (botulism C)
12. Human Intrusions & Disturbance	Recreational Activities (boat wakes)

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

The pied-billed grebe is listed as a threatened species in New York and is protected by Environmental Conservation Law (ECL) section 11-0535 and the New York Code of Rules and Regulations (6 NYCRR Part 182). A permit is required for any proposed project that may result in a take of a species listed as Threatened or Endangered, including, but not limited to, actions that may kill or harm individual animals or result in the adverse modification, degradation or destruction of habitat occupied by the listed species.

Pied-billed grebe is protected under the Migratory Bird Treaty Act of 1918. The Freshwater Wetlands Act provides protection for wetlands greater than 12.4 acres in size under Article 24 of the NYS Conservation Law.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

In the Northeast, preservation of relatively large (>10 ha) wetlands with a mixture of dense, robust emergent vegetation, sub-emergent vegetation, and open water is the most urgent management need for pied-billed grebes. Wetland managers need to periodically reverse vegetative succession and open extensive stands of emergent vegetation while maintaining suitable habitats nearby to serve as alternate nesting areas during wetland manipulation. Complete drying during wetland drawdowns should be avoided to prevent die-offs of dragonflies and fish. Large, motorized boats should be excluded from marshes with nesting grebes to avoid flooding and capsizing of nest by wave action (Gibbs and Melvin 1992).

McGowan (2008) notes that the continued existence of pied-billed grebe in New York is closely tied to the protection of wetlands. Grebes undoubtedly benefit from preservation of habitat in wildlife management areas and federal refuges across the state.

Conservation actions following IUCN taxonomy are categorized in the table.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
1. Education and Awareness	Awareness & Communications
2. Education and Awareness	Training
3. Land/Water Protection	Site/Area Protection
4. Land/Water Protection	Resource/Habitat Protection

5. Land/Water Management	Site/Area Management
6. Land/Water Management	Invasive/Problematic Species Control

Table 3. Recommended conservation actions for pied-billed grebe

VII. References

Archer, R.W. and K. E. Jones. 2009. The Marsh Monitoring Program Annual Report, 1995-2007: annual indices and trends in bird abundance and amphibian occurrence in the Great Lakes basin. Bird Studies Canada, Port Rowan, ON.

Gibbs, J. P. and S. M. Melvin. 1992. Pied-billed Grebe, *Podilymbus podiceps*. Pages 31-49 *in* Migratory nongame birds of management concern in the Northeast. (Schneider, K. J. and D. M. Pence, Eds.) U.S. Dep. Inter., Fish and Wildl. Serv. Newton Corner, MA.

Macvean, S. R. 1988. Artificial incubation, captive-rearing and maintenance of Pied-billed Grebes in Guatemala. Master's Thesis. Colorado State Univ., Fort Collins.

Macvean, S. R. 1990. Breeding by first-year captive-reared Pied-billed Grebes. J. Field. Ornithol. 61:156-158.

Muller, Martin J. and Robert W. Storer. 1999. Pied-billed Grebe (*Podilymbus podiceps*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/410 doi:10.2173/bna.410

Mcallister, N. M. 1963. Ontogeny of behavior in five species of grebes. Ph.D. thesis. Univ. of British Columbia, Vancouver.

McGowan, K.J. 2008. Pied-billed grebe, *Podilymbus podiceps*. Pages 150-51 *in* The Second Atlas of Breeding Birds in New York State (K.J. McGowan and K. Corwin, eds.). Cornell Univ. Press, Ithaca, NY.

Moore, B. A., A. R. Beckmann Stewart, K. A. Yard. 2017. Seven Years of Marsh Bird Monitoring in New York State: 2010-2016. Unpublished Technical Report. New York State Department of Environmental Conservation, Albany, NY, USA.

NatureServe. 2013. NatureServe explorer: an online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. http://www.natureserve.org/explorer. Accessed: 6/27/2013.

Rosen, M. N. 1971. Botulism. Chapter 12, Pp. 100-117 *in* Infectious and parasitic diseases of wild birds. (Davis, J. W., R. C. Anderson, L. Karstad, and D. O. Trainer, Eds.) Iowa Univ. Press, Ames.

Therres, G.D. 1999. Wildlife species of regional conservation concern in the northeastern United States. Northeast Wildlife 54:93-100.

Originally prepared by	Kimberley Corwin
Date first prepared	May 16, 2012
First revision	July 2014 (Jenny Murtaugh)
Latest revision	

Species Status Assessment

Common Name: Prairie warbler **Date Updated:** January 10, 2024

Scientific Name: *Setophaga discolor* **Updated By:** Jed Hayden

Class: Aves

Family: Parulidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

Formerly in the genus *Dendroica*, prairie warbler was reclassified to *Setophaga* in 2011 (Chesser et al. 2011). Breeding occurs in the eastern United States and wintering occurs in Florida, Central America, and Bermuda, Bahamas, Greater Antilles, Virgin Islands, and the Cayman Islands. Prairie warblers have experienced widespread declines since about 1970, often being cited as one of the most seriously declining Neotropical migrants (Nolan et al. 1999). Expansions are evident, however, at the northern edge of the range, including in New York. The second Breeding Bird Atlas documented a 20% increase in occupancy from 1980-85 to 2000-05. Breeding Bird Survey data show increasing (though nonsignificant) short term (2000-2010) and long term trends (1966-2010) of 2.1% and 1.9% respectively.

Prairie warblers breed in dry upland early-successional habitats of a wide variety. It is unclear why this warbler is expanding its range while other birds that use this habitat are declining.

I. Status

a. Current legal protected Status

i. **Federal:** Not listed **Candidate:** No

ii. **New York:** SGCN

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** S5 **Tracked by NYNHP?:** No

Other Ranks:

-IUCN Red List – Least Concern

Partners in Flight – Tier I

National Audubon Society – Watch List

Status Discussion:

Prairie warbler is a common breeder on Long Island, the Hudson Valley, and the Appalachian Plateau. The distribution is expanding northward in New York except at higher elevations. It is a locally common to rare migrant.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Declining	Stable	1966-2015	None	No
Northeastern US	Yes	Declining	Declining	2000-2010	None	Yes
New York	Yes	Increasing	Increasing	1980-2023	None	Yes
Connecticut	Yes	Declining	Declining	2000-2010	None	Yes
Massachusetts	Yes	Declining	Declining	1966-2002	None	Yes
New Jersey	Yes	Declining	Declining	2000-2010	None	Yes
Pennsylvania	Yes	Declining	Declining	1984-88, 2004-08	None	Yes
Vermont	Yes	Increasing	Increasing	1976-2007	None	Yes
Ontario	Yes	Stable	Stable	1981-2005	None	No
Quebec	No	Choose an item.	Choose an item.			No

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

The Albany Pine Bush Preserve Commission (APBPC) conducts regular, shrubland/early successional bird species monitoring including periodic breeding season point count surveys in the Albany Pine Bush (Albany County). The APBPC also initiated prairie warbler demography research in the Preserve and supports a MAPS (Measurements in Avian Productivity and Survivorship) station to understand how Preserve management influences long-term breeding season bird population dynamics. This work at the Albany Pine Bush demonstrated that prairie warblers are the single best avian indicator of high-quality pitch pine – scrub oak barrens (Gifford et al. 2010).

Trends Discussion *(insert map of North American/regional distribution and status):*

This species often cited as example of alarming decline among Neotropical migrants. Declines are apparent across the range. The short term BBS trend (2000-2010) for the Eastern region shows a significant decrease of -1.14% per year; the long-term trend (1966-2010), also significant, is -2.2% per year.

However, expansion has occurred in the northern edges of the range, including New York and Vermont. In New York, the short term (2000-2010) trend is a nonsignificant 2.10% increase per year; long-term (1966-2010) is a nonsignificant increase of 1.99% per year. The second Breeding Bird Atlas (2000-05) documented a 20% increase in occupancy since the first Atlas in 1980-85. The distribution expanded northward except in higher elevations, with the greatest expansion evident west of the Catskills on the Appalachian Plateau (Smith 2008).

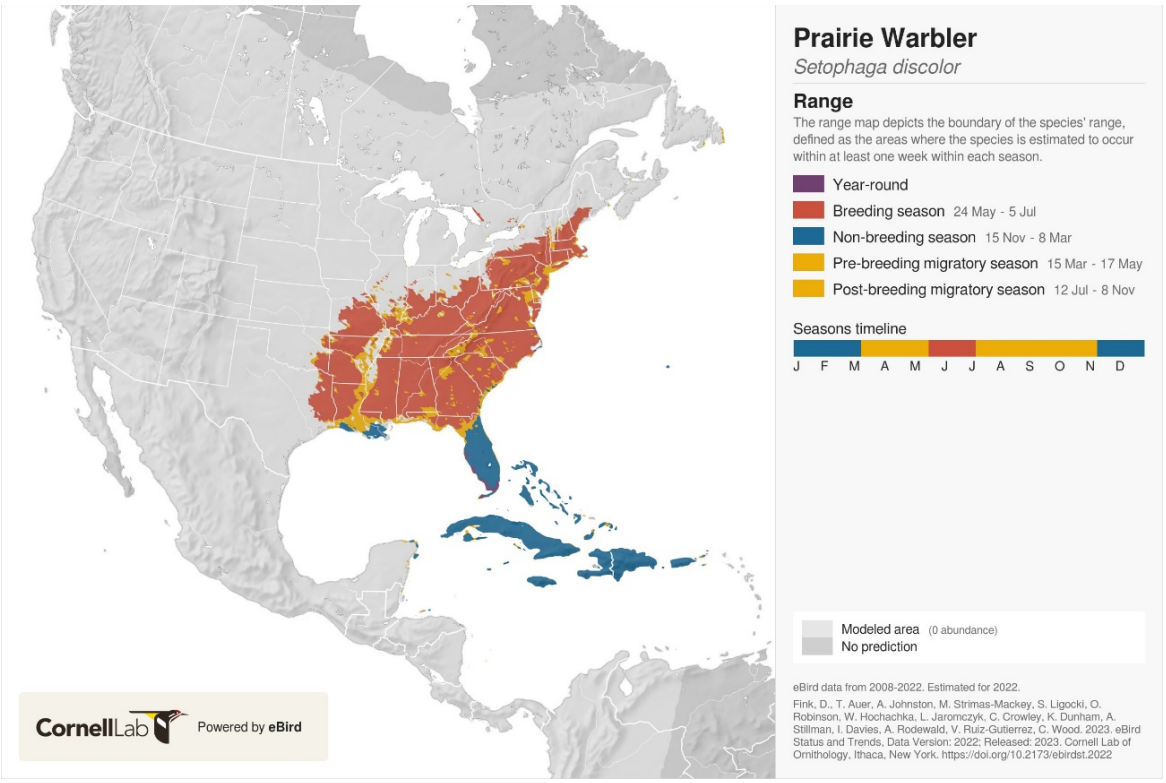

Figure 1. Prairie warbler distribution in North America (Source: eBird).

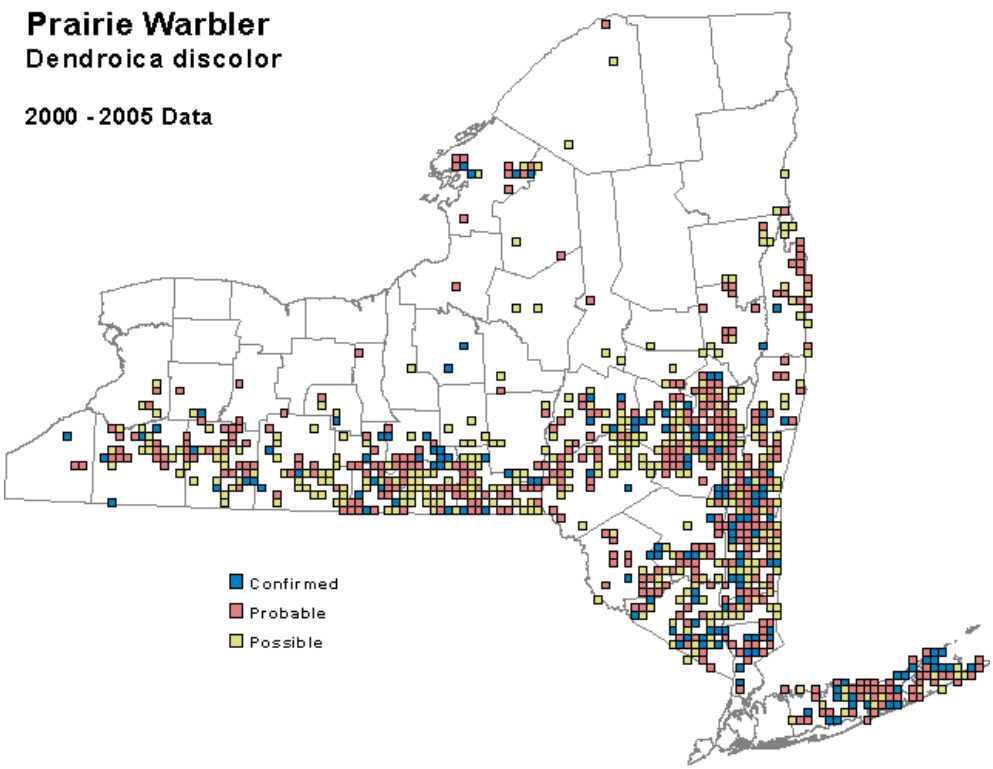

Figure 2. Prairie warbler occurrence in New York State during the second Breeding Bird Atlas (McGowan and Corwin 2008).

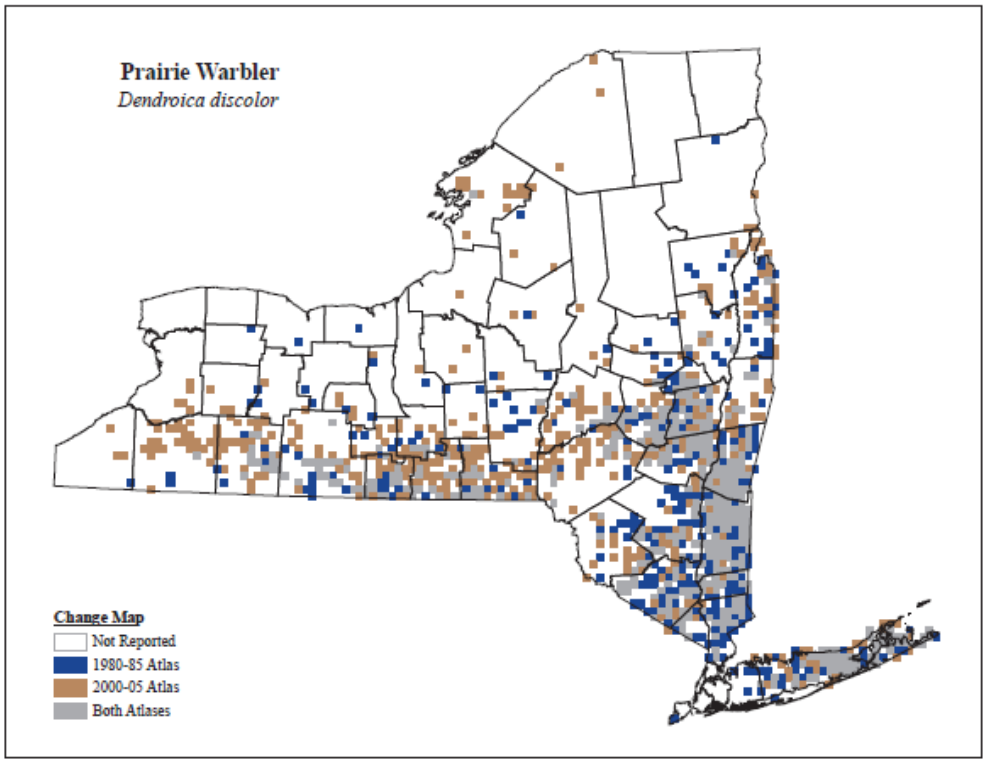

Figure 3. Change in Prairie warbler occurrence in New York State between the first Breeding Bird Atlas and the second Breeding Bird Atlas.

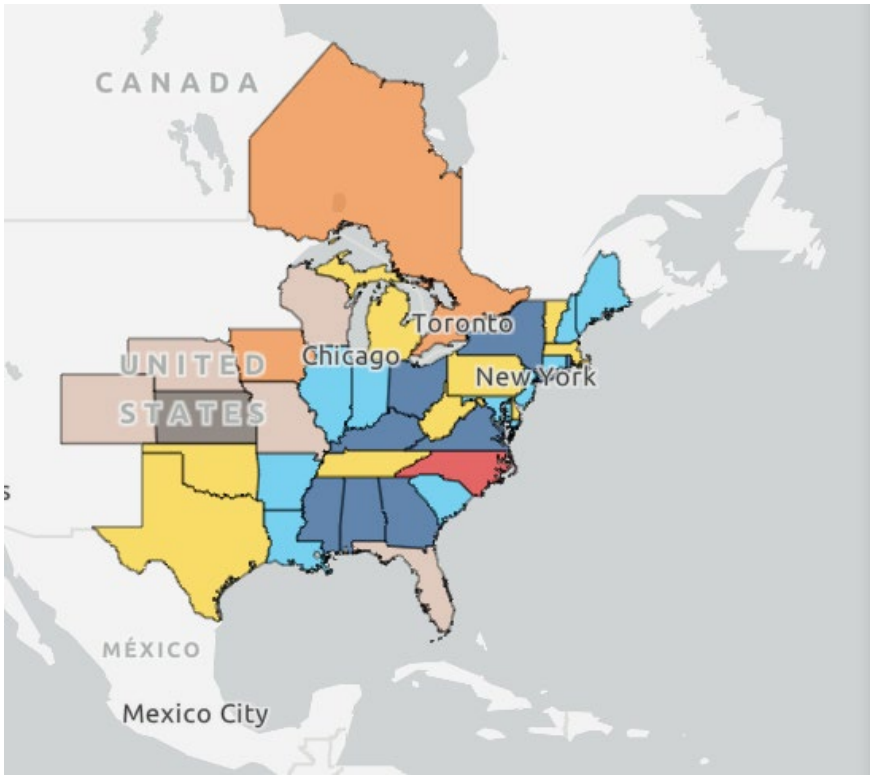

Figure 4. Conservation status of the prairie warbler in North America (NatureServe 2023).

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

Years	# of Records	# of BBA Blocks	% of State
Pre-1980	_____	_____	_____
1980-1985	_____	731	14
2000-2005	_____	857	16
2020-2023	_____	675	12

Table 1. Records of prairie warbler in New York.

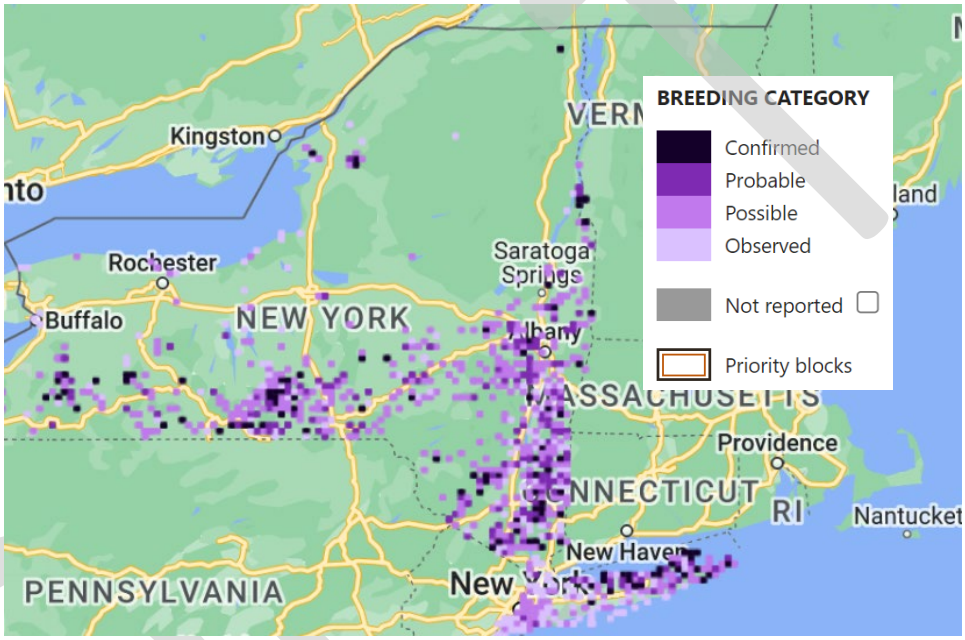

Figure 5. Breeding Bird Atlas 3 records of prairie warbler in New York (BBA-ebird).

Details of historic and current occurrence:

The first Breeding Bird Atlas (BBA) (1980-85) documented occupancy in 731 blocks, 14% of the survey blocks statewide (Andrle and Carroll 1988). The second BBA (2000-05) documented occupancy in 857 blocks, 16% of the survey blocks statewide, and increase of 2% since the first atlas (McGowan and Corwin 2008).

The third BBA (2020-05) is currently underway and utilizes a different number and layout of survey blocks across New York, making direct comparison with the first two Atlases difficult. There were 5,333 blocks in the first and second BBA's, and there are 5,710 blocks in the current BBA. To date, Prairie warbler has been documented in 675 blocks, 12% of survey blocks statewide during the third BBA (NYS BBA III Overview, 2023).

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Peripheral	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

1. Pine Barrens
2. Coastal Coniferous Barrens
3. Plantation and Disturbed Land Pioneer Forest
4. Native Barrens and Savanna
5. Powerline
6. Old Field Managed Grasslands
7. Non-native Shrublands

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
No	Yes	Declining	Approx the last 70 years

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

Prairie warblers breed in dry upland early-successional, regenerating hardwood forest, old field, shrub/dune, upland shrub habitats; prefers open canopy (however uses closed canopy palustrine forest in Mid-Atlantic breeding areas). Smith (2008) describes the habitat as having a "savannah-like appearance with widely-spaced woody plants of low stature interspersed with grasses and forbs." Levine (1998) noted that though prairie warblers are rare at high elevations, breeding has been documented at the Connecticut Hill WMA in Tompkins County at an elevation of about 2,100 feet.

Ecological communities on Long Island that are frequently occupied include dwarf pine plains, pitch pine-scrub oak barrens, pitch pine-oak-heath woodlands, successional red cedar woodland, and pitch pine-oak forest (Edinger et al. 2002). Powerline rights-of-way are a frequently-used habitat. Several ecological communities support prairie warblers in the Albany Pine Bush including pitch pine scrub oak barrens, powerline rights-of-way, and successional old fields and regenerating forests that include low-woody cover. Abundances were highest in frequently managed pitch pine – scrub oak barrens characterized by a discontinuous/patchy scrub oak canopy that is less than 2 meters tall (Albany Pine Bush Preserve Commission, unpublished data).

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	Choose an item.	Choose an item.	Yes	Choose an item.	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

From Nolan et al. (1999):

All young (≤1 yr) females, and probably all young males, breed. Older birds breed annually. Calculated lifetime production = 5.4 independent young (based on Nolan 1978). Prefledging mortality is very high; mortality from post-fledging to independence is about 18%; from independence to first breeding season, 61%; 35%/yr thereafter. Some independent young remain briefly near natal site; may join siblings and unrelated juveniles. Of 246 fledglings in Indiana, 26 (both sexes, ages 46–78 d) were seen on study area after independence. A banded male was recaptured at age ≥10 yr, 3 mo (Kennard 1975). Probably all surviving male adults return to previous year's territory. Of 105 adult females, 19 returned to study area in one or more years following banding in Indiana (Nolan 1978).

Nest success (fledged young) in Albany in 2010 was 53.8% (n=13), with an additional 23.3% of PRAW nests fledging brown-headed cowbirds. Mean territory size in Albany (n=70) is 1.56 acres (0.6ha) but ranged from 0.4 – 3.3 acres (0.16-1.34ha). Annual survival rates appear high in Albany where the three-year average annual re-sight rate for banded adult males was 57.1 percent (n = 119); 33.3% 2 years post banding; 10.3 % 3 years post initial banding. It is unlikely that all surviving males returning to the Albany study area were found, suggesting survival rates are higher than the re-sight rates reported. (APBPC unpublished data).

VI. Threats *(from NY 2015 SWAP or newly described):*

From Nolan et al. (1999): Threats to prairie warbler are typical of early-successional species. Since colonial times, deforestation has created extensive breeding habitat, much of which is now lost to urbanization and reforestation. The direct role of humans in places where abundance has declined is unclear. On breeding grounds, active habitat destruction and land uses that permit forest regeneration (e.g., suppression of fire) may be factors.

Wildland fire suppression may be an important threat in New York. Pitch pine scrub oak barrens are likely the most stable prairie warbler habitats and potential population sources in New York, especially at sites with active habitat management programs. In Albany abundance and distribution went up with management strategies designed to maintain and restore pitch pine scrub oak barrens. Additionally, not all dry shrubland habitat may be equally preferred. Prairie warblers in Albany responded favorably to a habitat management designed to reduce shrub cover and height. While occupancy appears to remain stable prairie warbler density increased when management created low patchy shrubland habitat; abundance was reduced in closed canopy thickets. Patchiness may be important, especially for females who often nested within a meter of an opening in the scrub oak canopy (Albany Pine Bush Preserve Commission, unpublished data).

Threats to NY Populations	
Threat Category	**Threat**
1. Residential & Commercial Development	Housing & Urban Areas

2. Natural Systems Modifications	Fire & Fire Suppression (fire suppression)
3. Natural Systems Modifications	Other Ecosystem Modification (succession)
4. Invasive & Other Problematic Species & Genes	Problematic Native Species (cowbird parasitism)
5. Pollution	Agriculture & Forestry Effluents (spraying on powerlines)
6. Energy Production & Mining	Renewable Energy (collisions with buildings, cell towers, turbines)

Table 2. Threats facing prairie warblers in New York State.

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

Prairie warbler is protected under the Migratory Bird Treaty Act of 1918.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

Protection and management of native pine barrens and related habitats are important for prairie warblers in New York. Programs like New York's Landowner Incentive Program, NRCS early successional grants, and early successional habitat creation and maintenance on our state WMAs can certainly benefit prairie warblers and not be exorbitant in cost. Conservation actions following IUCN taxonomy are categorized in the table below.

The Comprehensive Wildlife Conservation Strategy (NYSDEC 2005) includes recommendations for early-successional forest/shrubland birds, which includes prairie warbler.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) -
https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
1. Land/Water Protection	Site/Area Protection
2. Land/Water Protection	Resource/Habitat Protection
3. Land/Water Management	Site/Area Management

4. Land/Water Management	Invasive/Problematic Species Control
5. Land/Water Management	Habitat and Natural Process Restoration
6. Education and Awareness	Training
7. Education and Awareness	Awareness & Communications
8. Law and Policy	Policies and Regulations

Table 3. Recommended conservation actions for prairie warbler.

VII. References

Bried, J.T., K.E. Langwig, A.A. DeWan, and N.A. Gifford. 2011. Habitat associations and survey effort for shrubland birds in an urban pine barrens preserve. Landscape Urban Planning 99:218-225.

Chesser, R.T., R.C. Banks, F. K. Barker, C. Cicero, J.L. Dunn, A.W. Kratter, I.J. Lovett e, P.C. Rasmussen, J. V. Remsen, Jr., J. D. Rising, D.F. Stotz, and K. Winker. 2011. Fifty-second supplement to the American Ornithologists' Union Checklist of North American Birds. Auk 128(3):600-613.

Edinger, G.J., D.J. Evans, S. Gebauer, T.G. Howard, D.M. Hunt, and A.M. Olivero (eds.). 2002. Ecological Communities of New York State. Second Edition. A revised and expanded edition of Carol Reschke's Ecological Communities of New York State. (Draft for review). New York Natural Heritage Program, NYS Department of Environmental Conservation, Albany, NY.

Gifford, N.A., J.M. Deppen, and J.T. Bried. 2009. Importance of an urban pine barrens for the conservation of early-successional shrubland birds. Landscape Urban Plan. 94:54-62.

Kennard, J. H. 1975. Longevity records of North American birds. Bird-Banding 46:55-73.

NatureServe. 2023. NatureServe Explorer. https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.103980/Setophaga_discolor. Accessed (January 10, 2024)

Nolan, Jr., V. 1978. The ecology and behavior of the Prairie Warbler, *Dendroica discolor*. Ornithol. Monogr. 26:1-595.

Nolan Jr., V., E. D. Ketterson and C. A. Buerkle. 1999. Prairie Warbler (*Setophaga discolor*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/455 doi:10.2173/bna.455

Smith, C.S. 2008. Prairie warbler, *Dendroica discolor*. Pages 500-501 *in* The second Atlas of breeding birds in New York State (K.J. McGowan and K. Corwin, eds.). Cornell Univ. Press, Ithaca, NY.

Originally prepared by	Kimberley Corwin
Date first prepared	May 18, 2012
First revision	July 2014 (Jenny Murtaugh)
Latest revision	

Species Status Assessment

Common Name: Red-headed woodpecker **Date Updated:** January 18, 2024

Scientific Name: *Melanerpes erythrocephalus* **Updated By:** Jed Hayden

Class: Aves

Family: Picidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

Red-headed woodpeckers occur in the eastern two-thirds of the United States; some populations are sedentary while others migrate. They use a variety of open deciduous woodlands with groves of decaying trees. Bull (1964) noted two distinct habitat types in New York: open woods with a park-like character, and open wooded swamps and bottomlands.

Though red-headed woodpeckers have exhibited substantial increases and decreases in population size over the past 200 years, their sharp and severe decline over the last 20 years is alarming. In New York, the second Breeding Bird Atlas documented a 76% decline in occupancy from 1980-85 to 2000-05. Breeding Bird Survey data for New York show declining trends of 9.1% per year since 1980. Trends in the Eastern U.S. are less severe though significant, at 2.4% per year since 1980.

I. Status

a. Current legal protected Status

i. **Federal:** None **Candidate:** No

ii. **New York:** Special Concern; SGCN

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** S2?B **Tracked by NYNHP?:** Yes

Other Ranks:
-IUCN Red List: Secure

Partners in Flight – Priority I

Status Discussion:

The red-headed woodpecker is a locally uncommon resident and breeder in New York; some individuals migrate, and others are sedentary. Red-headed woodpecker is ranked as Critically Imperiled in Quebec, Vermont, Massachusetts, and Connecticut. It is ranked as Imperiled in New York and New Jersey, and as Apparently Secure in Pennsylvania and Ontario.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Declining	Declining	2000-2010	None	No
Northeastern US	Yes	Declining	Declining	2000-2010	None	No

New York	Yes	Declining	Declining	1980-2005	Special Concern	Yes
Connecticut	Yes	Declining	Declining	1965-2020	Endangered	Yes
Massachusetts	Yes	Declining	Unknown	1975-2011	None	No
New Jersey	Yes	Declining	Declining	2000-2010	Threatened	Yes
Pennsylvania	Yes	Declining	Declining	1984-2008	None	Yes
Vermont	Yes	Declining	Declining	1976-2007	None	No
Ontario	Yes	Declining	Declining	1981-2005	Special Concern; Threatened Nationally	No
Quebec	Yes	Declining	Declining	1984-2012	Special Concern; Threatened Nationally	No

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

Breeding Bird Atlas

Trends Discussion *(insert map of North American/regional distribution and status):*

Drastic changes in red-headed woodpecker populations have been noted during the past 200 years, with periods of great abundance and periods when extinction seemed imminent (Smith et al. 2000). Breeding Bird Survey data for the Eastern region show a significant decline of 0.8% per year from 2001 to 2011 and a significant decline of 2.4% per year since 1980 (Sauer et al. 2012).

Breeding Bird Survey data for New York show a non-significant decline of 8.8% per year from 2001 to 2011 and a significant decline of 9.1% per year since 1980. The second Breeding Bird Atlas in New York documented a change in occupancy of 76% from 1980-85 to 2000-05. Losses occurred in every ecozone except the Coastal Lowlands, but the broad distribution remained essentially the same.

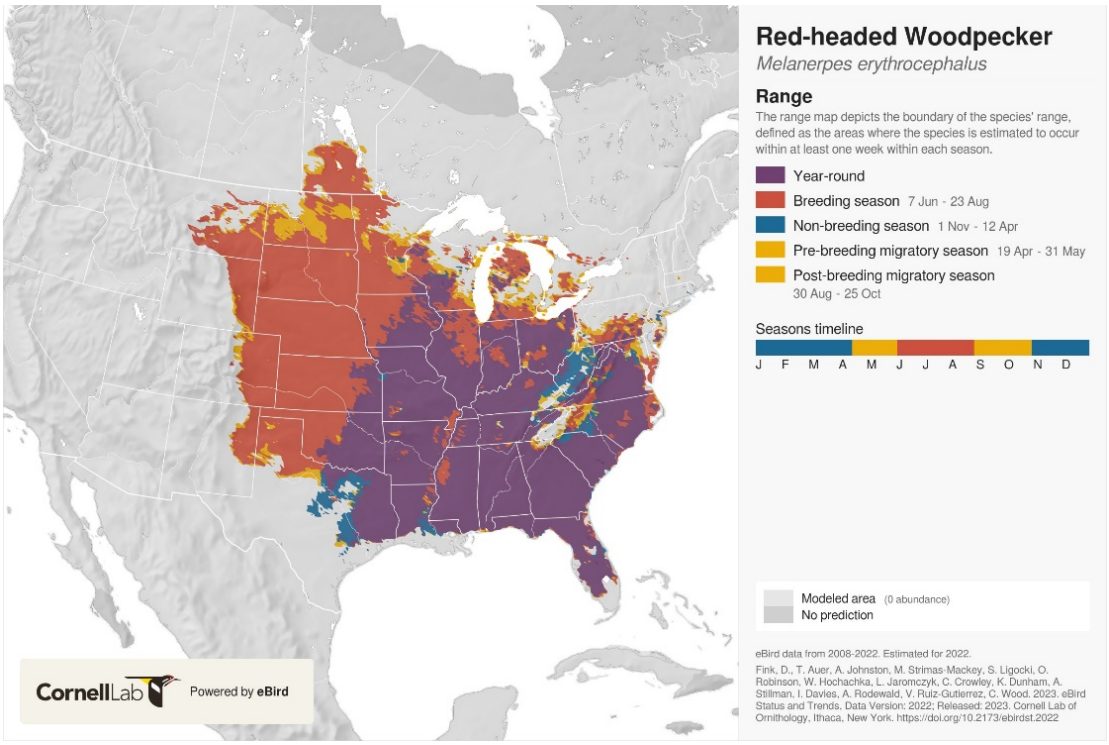

Figure 1. Red-headed woodpecker distribution in North America (eBird)

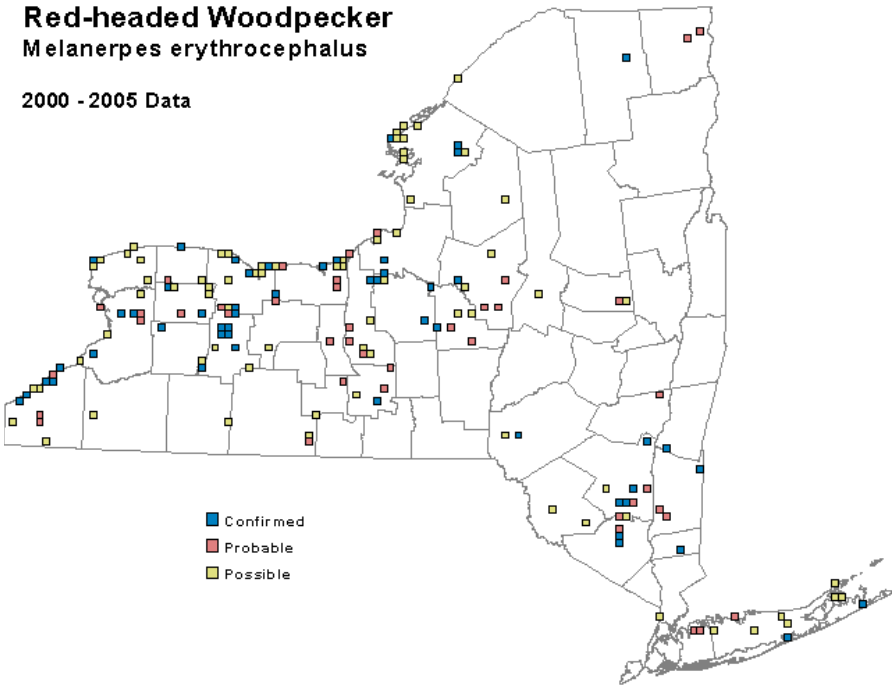

Figure 2. Red-headed woodpecker occurrence in New York State during the second Breeding Bird Atlas (McGowan and Corwin 2008).

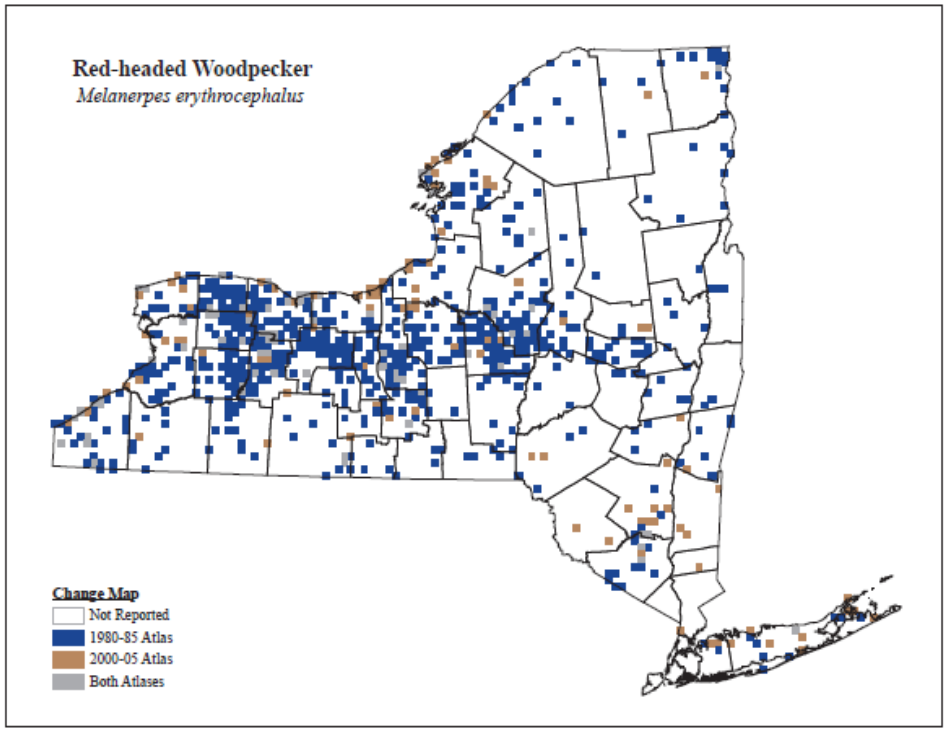

Figure 3. Change in Red-headed woodpecker occurrence in New York State between the first Breeding Birds Atlas and the second Breeding Bird Atlas (McGowan and Corwin 2008)

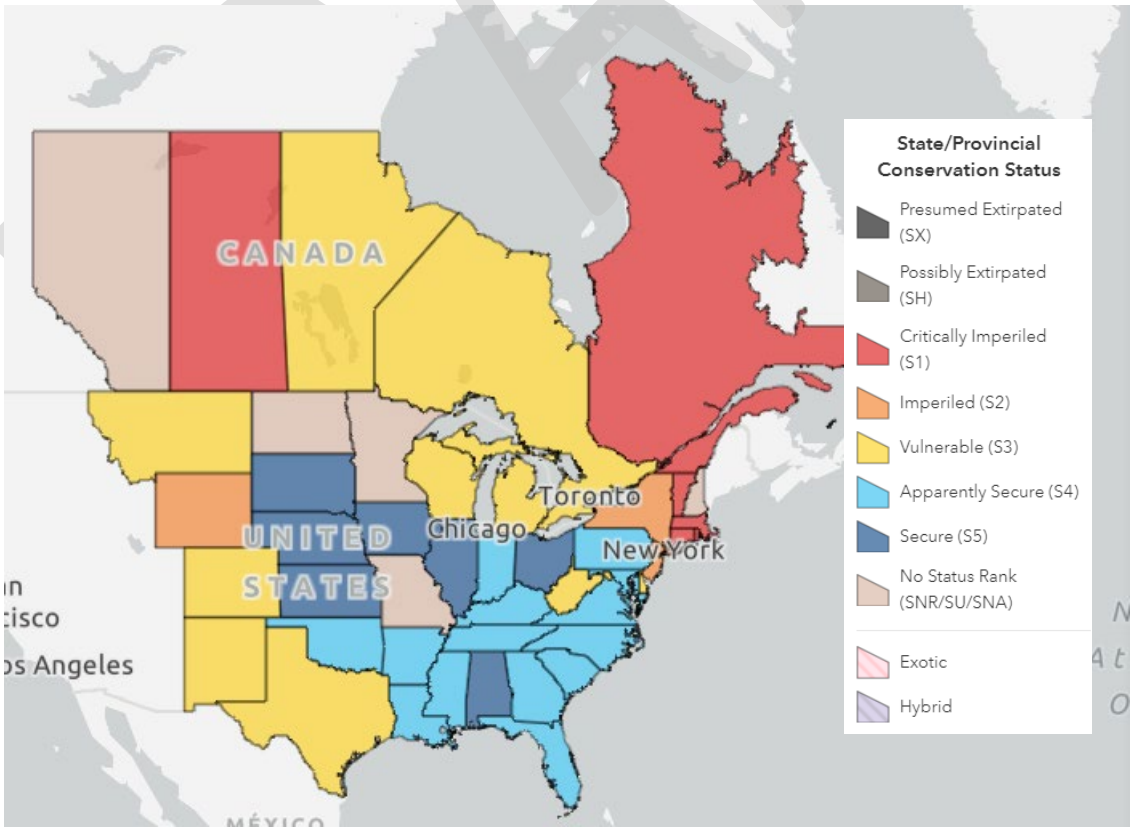

Figure 4. Conservation status of red-headed woopecker in North America (NatureServe 2023)

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

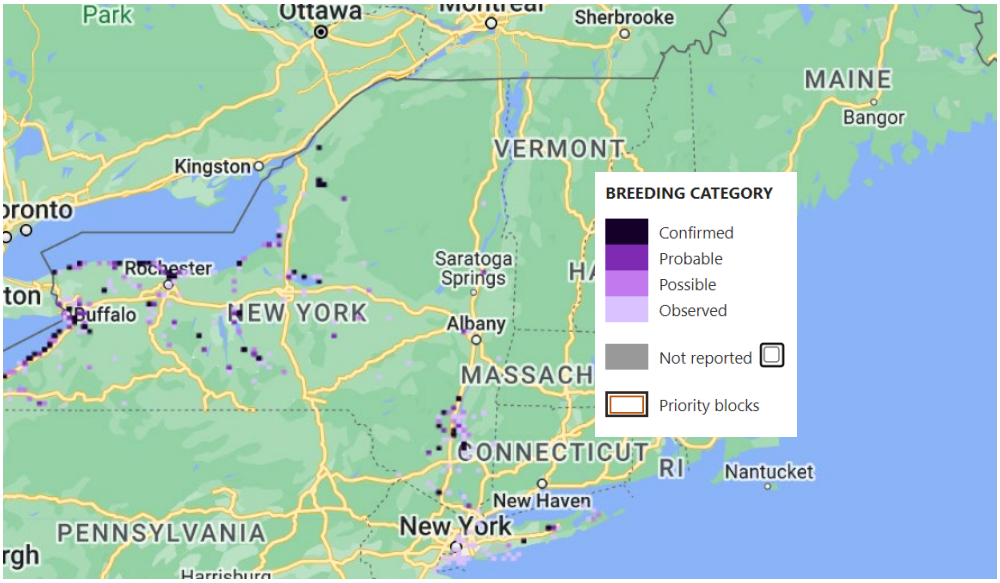

Figure 5. Records of red-headed woodpecker in New York (NYS BBA III Map, 2023)

Years	# of Records	# of BBA Blocks	% of State
Pre-1980	_____	_____	_____
1980-1985	_____	691	13
2000-2005	_____	167	3
2020-2023	_____	125	2

Table 1. Records of red-headed woodpecker in New York.

Details of historic and current occurrence:

The first Breeding Bird Atlas (BBA) (1980-85) documented occupancy in 691 blocks, 13% of the survey blocks statewide (Andrle and Carroll 1988). The second BBA (2000-05) documented occupancy in 167 blocks, 3% of the survey blocks statewide, a decrease of 10% since the first atlas (McGowan and Corwin 2008).

The third BBA (2020-25) is currently underway and utilizes a different number and layout of survey blocks across New York, making direct comparison with the first two Atlases difficult. There were 5,333 blocks in the first and second BBAs, and there are 5,710 blocks in the current BBA. To date, red-headed woodpecker has been documented in 125 blocks, 2% of survey blocks statewide during the third BBA (NYS BBA III Overview, 2023).

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Peripheral	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

1. Oak Forest
2. Hardwood Swamp
3. Floodplain Forest
4. Native Barrens and Savanna
5. Mixed Northern Hardwoods
6. Urban and Recreational Grasses

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
No	No	Declining	

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

Red-headed woodpeckers are found in a variety of open deciduous woodland habitats where dead and dying trees are available, including groves of beech or oak, orchards, parks, forest edges, and open wooded swamps, as well as parks and open country with scattered trees (Smith et al. 2000).

Bull (1964) notes two distinct habitat types in New York: (1) open woodlands with park-like characteristics such as golf courses and along roadsides with scattered large trees, and (2) open wooded swamps and river bottoms in which dead trees stand in water, such as beaver ponds.

McGowan (2008) noted that the creation of flooded habitat by increasing beaver populations does not appear to have helped populations of red-headed woodpecker.

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	Choose an item.	Choose an item.	Yes	Yes	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

Very little data are available on nesting success (Smith et al. 2000), though the success of fledging at least one young is reported to be 78% (Martin 1995). Studies calculating fledging success reported that 50% to 80% successfully fledged at least one young. The longevity record for red-headed woodpecker is a bird banded in Michigan that was recovered 9 years, 11 months later (Clapp et al. 1983). Annual adult survivorship has been estimated at 62% (Martin 1995).

VI. Threats *(from NY 2015 SWAP or newly described):*

Threats to NY Populations	
Threat Category	**Threat**
1. Natural System Modifications	Other Ecosystem Modifications (removal of snags)
2. Biological Resource Use	Logging & Wood Harvesting
3. Natural System Modification	Dams & Water Management/Use (channelization)
4. Agriculture & Aquaculture	Annual & Perennial Non-Timber Crops (intensification)
5. Invasive & Other Problematic Species & Genes	Problematic Native Species (nest site competition)
6. Transportation & Service Corridors	Roads & Railroads (road kill)

Habitat in urban areas is lost when trees are pruned and dead branches are removed (Pulich 1988). In rural areas, habitat is lost to cutting of firewood, clear-cutting, agricultural development, and channeling of rivers (Ehrlich et al. 1992, Melcher 1998). Other factors contributing to habitat loss in the eastern U.S. include reforestation, the loss of small orchards, the loss of chestnut trees, and the change in agricultural practices that include removal of hedgerows and the use of monoculture.
Bull (1964) noted that the introduced European starling (*Sturnus vulgaris*) is a fierce competitor with red-headed woodpecker for natural nesting cavities, but Smith et al. (2000) noted that red-headed woodpeckers compete successfully with starlings.

Population declines noted during the 19th century were attributed to the increased use of automobiles and resulting road kills (Bull 1964), though the impact of this threat on the population is now debated (Smith et al. 2000).
In an assessment of vulnerability to predicted climate change conducted by the New York Natural Heritage Program, red-headed woodpecker was identified as a second-priority species whose sensitivity should be assessed in the future (Schlesinger et al. 2011).
Acid rain could be a threat to forest health and therefore, this species suite (NYSDEC 2005).

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

Red-headed woodpecker is protected by the Migratory Bird Treaty Act.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

As with other cavity-nesting birds, availability of snags for nesting and roosting appears to be a factor of prime importance in conservation and management of red-headed woodpeckers, thus programs that focus on the creation or maintenance of snags should be of most benefit. In addition, presence of open area for fly-catching appears important. Fire has positive and negative effects; while burning may create nest snags, it also destroys existing nest snags as well (Smith et al. 2000). Habitat management in the Albany Pine Bush Preserve, which includes burning and cutting, has been beneficial and should be continued.

Low levels of forest management that include patches of light harvesting will benefit ground and shrub nesting species. Some areas of moderate or even aged management would also be beneficial to many species by providing food and cover, although the majority of the forest needs to be in a relatively mature state. Efforts should also include minimizing the effects of fragmentation on habitats due to development, and on implementing population control of white-tailed deer in areas where deer populations are affecting forest regeneration and species composition (NYSDEC 2005).

Research is needed on area-sensitivity and habitat requirements of some species in this suite, and further research should be conducted on the effects of logging on forest interior birds. The public should be educated on the benefits and need for forest management to enhance populations of ground and shrub nesting forest breeding birds on public and private lands (NYSDEC 2005). Conservation actions following IUCN taxonomy are categorized in the table below.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) -
https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
Land/Water Protection	Site/Area Protection
Land/Water Protection	Resource/Habitat Protection
Land/Water Management	Site/Area Management
Land/Water Management	Habitat/Natural Process Restoration

Table 2. Recommended conservation actions for red-headed woodpeckers

The Comprehensive Wildlife Conservation Strategy (NYSDEC 2005) includes recommendations for the following actions for deciduous/mixed forest birds, which includes red-headed woodpecker.

Habitat management:

____ Minimize the effects of fragmentation of habitats due to human development.

____ Implement population control of whitetail deer in areas where deer populations are affecting forest regeneration and species composition.

Habitat research:

____ Research effects of logging on "forest interior" birds.

Other action:

____ Educate the public on the benefits and need for forest management to enhance populations of ground and shrub nesting forest breeding birds on public and private lands.

____ Educate the public on the benefits and need for forest management on public and private lands.

VII. References

Bull, J. 1964. Birds of the New York area. Harper and Row, New York, NY.

Clapp, R. B., M. K. Klimkiewicz, and A. G. Futcher. 1983. Longevity records of North American birds: Columbidae through Paridae. J. Field Ornithol. 54:123-137.

Ehrlich, P. R., D. S. Dobkin, and D. Wheye. 1992. Birds in jeopardy. Stanford Univ. Press, Stanford, CA.

Bull, J. 1964. Birds of the New York area. Harper and Row, New York, NY.

Clapp, R. B., M. K. Klimkiewicz, and A. G. Futcher. 1983. Longevity records of North American birds: Columbidae through Paridae. J. Field Ornithol. 54:123-137.

Ehrlich, P. R., D. S. Dobkin, and D. Wheye. 1992. Birds in jeopardy. Stanford Univ. Press, Stanford, CA.

Fink, D., T. Auer, A. Johnston, M. Strimas-Mackey, S. Ligocki, O. Robinson, W. Hochachka, L. Jaromczyk, C. Crowley, K. Dunham, A. Stillman, I. Davies, A. Rodewald, V. Ruiz-Gutierrez, C. Wood. 2023. eBird Status and Trends, Data Version: 2022; Released: 2023. Cornell Lab of Ornithology, Ithaca, New York. https://doi.org/10.2173/ebirdst.2022

Martin, T. E. 1995. Avian life history evolution in relation to nest sites, nest predation, and food. Ecol. Monogr. 65:101-127.

Melcher, B. 1998. Red-headed Woodpecker. Pages 250-251 in Colorado breeding bird atlas. (Kingery, H. E., Ed.) Colorado Bird Atlas Partnership and Colorado Div. Wildl. Denver.

New York State Department of Environmental Conservation (NYSDEC). 2005. New York State Comprehensive Wildlife Conservation Strategy. <http://www.dec.ny.gov/index.html>. Accessed 14 June 2013.

Pulich, W. M. 1988. The birds of North Central Texas. Texas A&M Press, College Station.

Schlesinger, M.D., J.D. Corser, K.A. Perkins, and E.L. White. 2011. Vulnerability of at-risk species to climate change in New York. New York Natural Heritage Program, Albany, NY.

Smith, K.G., J.H. Withgott and P.G. Rodewald. 2000. Red-headed Woodpecker (Melanerpes erythrocephalus), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/518 doi:10.2173/bna.518

Martin, T. E. 1995. Avian life history evolution in relation to nest sites, nest predation, and food. Ecol. Monogr. 65:101-127.

Melcher, B. 1998. Red-headed Woodpecker. Pages 250-251 in Colorado breeding bird atlas. (Kingery, H. E., Ed.) Colorado Bird Atlas Partnership and Colorado Div. Wildl. Denver.

Originally prepared by	Kimberley Corwin
Date first prepared	June 5, 2012
First revision	July 2014 (Jenny Murtaugh)
Latest revision	January 18, 2024 (Jed Hayden)

Species Status Assessment

Common Name: Red-shouldered hawk **Date Updated:** January 18, 2024

Scientific Name: *Buteo lineatus* **Updated By:** Jed Hayden

Class: Aves

Family: Accipitridae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

Red-shouldered hawks breed primarily in the eastern half of the United States, occurring as year-round residents across much of the range. Breeding also occurs in a narrow band along the west coast. This is a hawk of extensive, mature, mixed forest. In New York, red-shouldered hawks are found in bottomland hardwood forests, riparian habitats, and flooded swamps as well as in upland forests.

Peterson and Crocoll (1992) postulated that reforestation of former agricultural land in Northeast may result in re-establishment of red-shouldered hawks in some areas; this appears to have happened in New York. Breeding Bird Survey (BBS) trends are data deficient but show significant short- and long-term population increases rangewide and in the Appalachian, New England/Mid-Atlantic, and Eastern regions (Sauer et al. 2017). The second Breeding Bird Atlas documented a 23% increase in occupancy from 1980-85 to 2000-05. Similar increases have been documented throughout the Northeast. Preliminary data from the first year of the third BBA (2020) documented breeding behavior at 286 blocks (J. Hart, pers. comm. 2020; eBird 2020).

I. Status

a. Current legal protected Status

i. **Federal:** None **Candidate:** No

ii. **New York:** Special Concern; SGCN

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** S4B **Tracked by NYNHP?:** No

Other Ranks:

New York Natural Heritage Program – Watch List

USFWS – Migratory Nongame Bird of Management Concern

North American Bird Conservation Initiative (NABCI) Conservation Concern Score 8 (of 20)

IUCN – Least Concern

Audubon New York Priority Forest Bird

Status Discussion:

Red-shouldered hawk is an uncommon breeder in New York, but it is increasing in most upstate areas. It is a common to very common migrant. In spring, it is most numerous along the shores of the Great Lakes; in fall, in the Hudson Valley. In winter it occurs casually throughout the state except in the Adirondacks (Crocoll 1998).

It is ranked as Vulnerable in Pennsylvania, as Imperiled in Vermont, and Critically Imperiled in New Jersey (NatureServe 2020). The IUCN Red List status is Least Concern and with an increasing global population trend (Birdlife International 2016).

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Increasing	Increasing	1966-2015	None	No
Northeastern US	Yes	Increasing	Increasing	1966-2015	None	No
New York	Yes	Increasing	Increasing	1966-2015	Special concern	Yes
Connecticut	Yes	Increasing	Increasing	1966-2015	None	Yes
Massachusetts	Yes	Increasing	Increasing	1966-2015	None	No
New Jersey	Yes	Increasing	Increasing	1966-2015	Endangered	Yes
Pennsylvania	Yes	Increasing	Increasing	1966-2015	None	Yes
Vermont	Yes	Declining	Declining	1966-2015	None	Yes
Ontario	Yes	Stable	Stable	1966-2015	None	No
Quebec	Yes	Increasing	Increasing	1966-2015	None	No

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

Nest habitat monitoring around several individual nests in central New York occurred until 2019 as part of a timber harvest management project (S.T. Crocoll, pers. comm.). DEC continues to conduct a small number of call-broadcast surveys each year on WMAs where forest habitat management is proposed. Annual migration monitoring occurs at several hawkwatch locations across the state.

Trends Discussion *(insert map of North American/regional distribution and status):*

The second Breeding Bird Atlas in New York documented a 23% increase in red-shouldered hawk occupancy from 1980-85 to 2000-05. Increases were apparent in the Hudson Valley, Catskill Peaks, western Appalachian Plateau, Oswego Lowlands, and Tug Hill Transition. This hawk disappeared from the Coastal Lowlands in the past 20 years, suggesting that the marginal population there could not survive the pressures of extensive human development (Crocoll 2008). Breeding Bird Survey data for New York are sparse, as the protocol is not always reliable for hawks, but they show no significant trend over the past 20 years. Breeding Bird Survey trends for North America show a significant increase in red-shouldered hawk abundance of 2.7% per year from 1966 to 2015 and a significant increase of 2.7% per year from 2005 to 2015. Trends for the Eastern BBS region are similar (Sauer et al. 2017).

The Raptor Population Index (RPI) based on spring migration counts at New York locations shows significant trends from 2009-2019 of 6.39% per year at the Ripley Hawk Watch and nonsignificant trends during the same timeframe of -9.24% per year at Hamburg Hawk Watch, -6.20% per year at Braddock Bay Bird Observatory, and -0.40% per year at Derby Hill Bird Observatory. RPI based on fall migration from 2009-2019 show nonsignificant trends of -2.66% per year at Franklin Hill, 7.04% per year at Mount Peter, 0.80% per year at Hook Mountain, and 9.86% per year at Chestnut Ridge (Brandes et al. 2016, Crewe et al. 2016).

The population in Ontario has been stable over the last 10 to 20 years but it is small and depressed relative to its historic abundance (Crewe and Badzinski 2006).

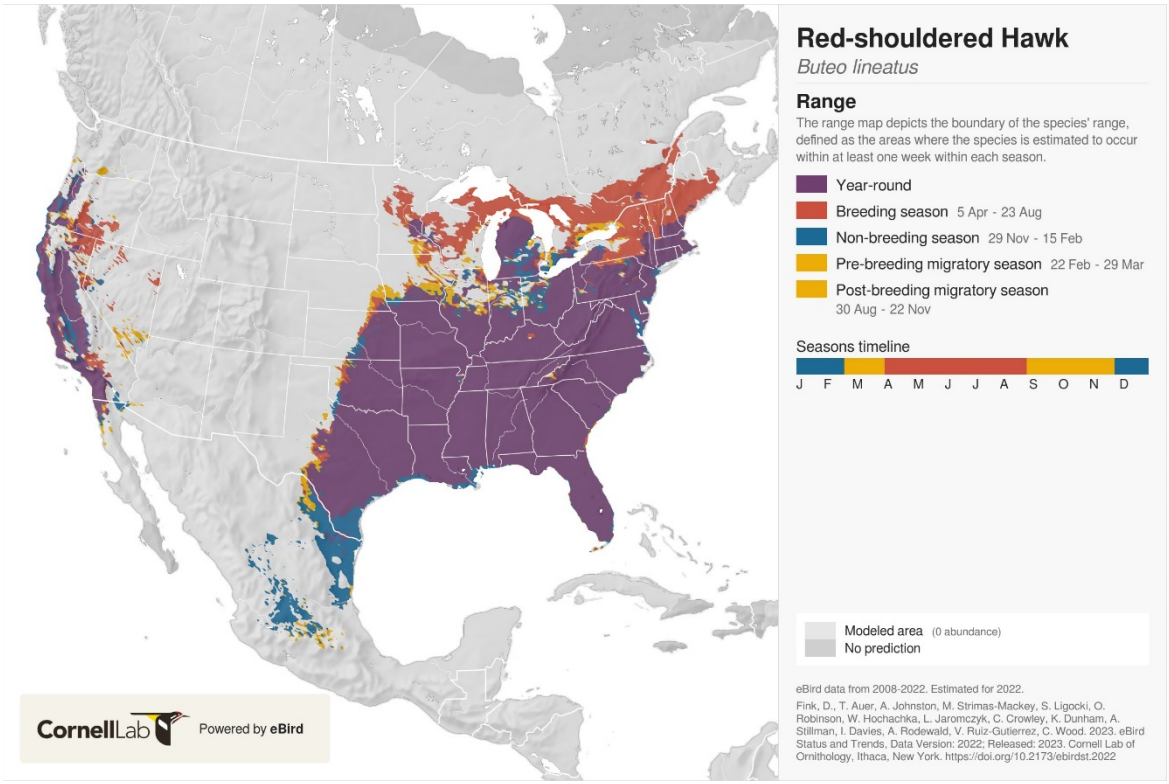

Figure 1. Red-shouldered hawk distribution in North America (eBird 2022)

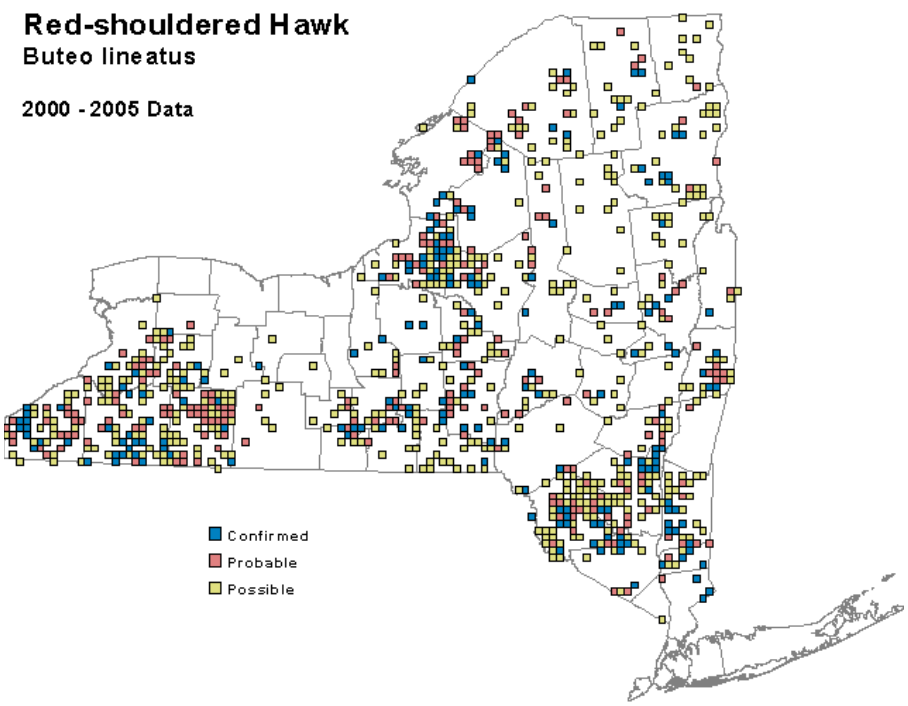

Figure 2. Red-shouldered occurrence in New York during the second Breeding Bird Atlas (McGowan and Corwin 2008)

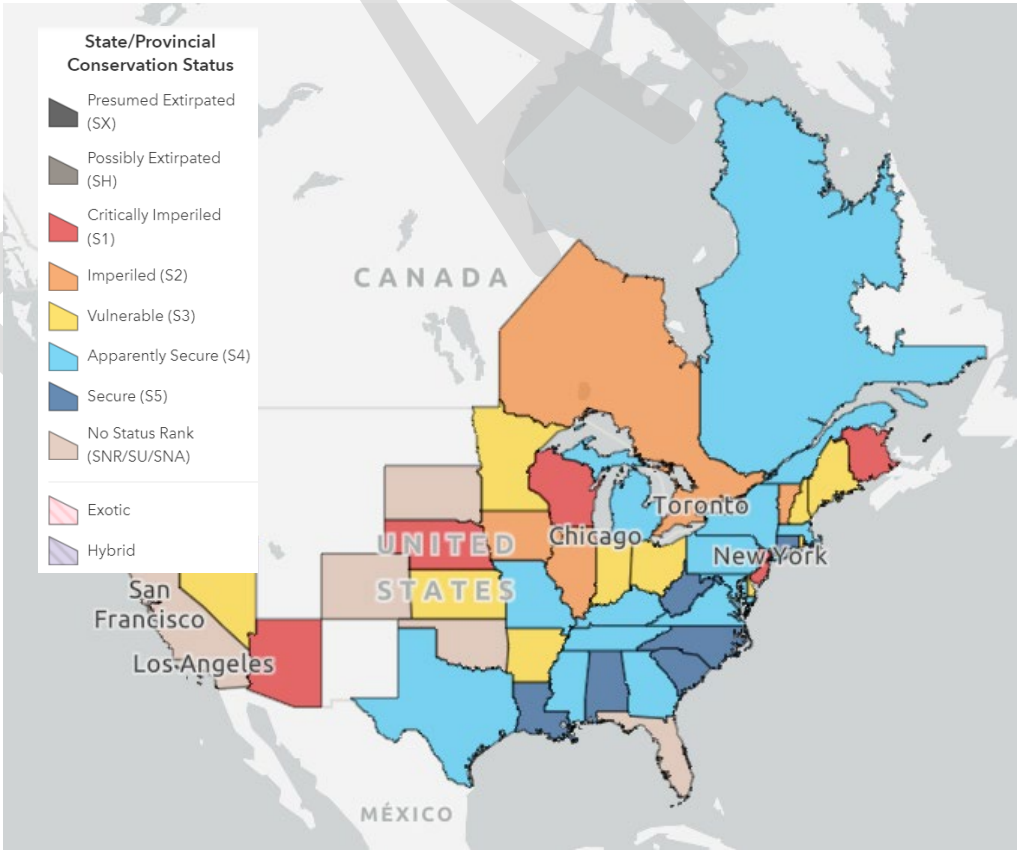

Figure 3. Conservation status of red-shouldered hawk in North America (NatureServe 2023).

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

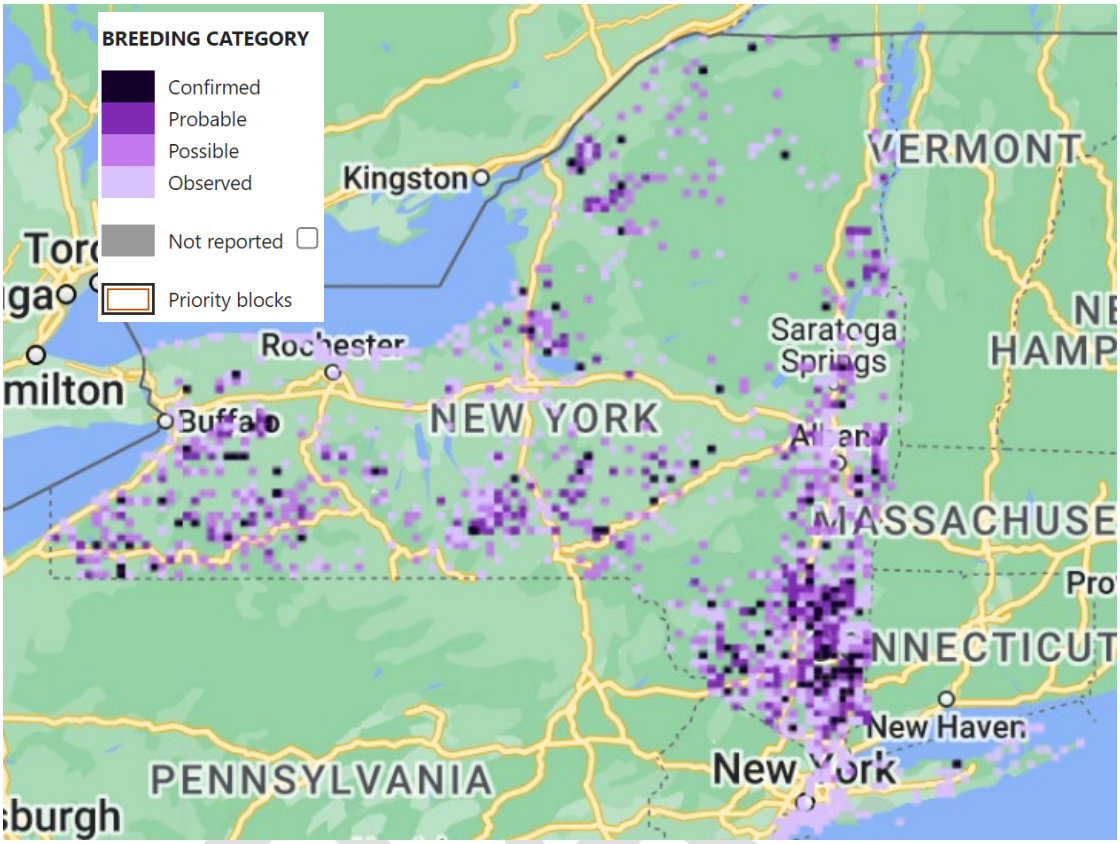

Figure 4. Records of red-shouldered hawk in New York (NYS BBA III Map, 2023)

Years	# of Records	# of BBA Blocks	% of State
Pre-1980			
1980-1985		702	13
2000-2005		865	16
2020-2023		716	12

Table 1. Records of red-shouldered hawk in New York.

Details of historic and current occurrence:

The first Breeding Bird Atlas (1980-85) documented occupancy in 702 survey blocks,15% of the survey blocks statewide (Andrle and Carroll 1988). The second Breeding Bird Atlas (2000-05) documented occupancy in 865 survey blocks statewide, 16% of the survey blocks statewide, not a significant change since the first atlas (McGowan and Corwin 2008).

The third BBA (2020-25) is currently underway and utilizes a different number and layout of survey blocks across New York, making direct comparison with the first two Atlases difficult. There were 5,333 blocks in the first and second BBAs, and there are 5,710 blocks in the current BBA. To date,

red-shouldered hawk has been documented in 716 blocks, 12% of survey blocks statewide during the third BBA (NYS BBA III Overview, 2023).

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Core	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

1. Mixed Northern Hardwoods
2. Plantation and Disturbed Land Pioneer Forests
3. Oak Forest
4. Floodplain Forest
5. Riparian
6. Hardwood Swamp

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
No	No	Stable	

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

Red-shouldered hawk is a bird of extensive, mature forests with a preference for bottomland hardwood forests, riparian areas, and flooded swamps (Dykstra et al. 2008). It prefers large expanses of habitat. Breeding red-shouldered hawks have adapted to suburban areas and are able to nest successfully provided there is forest cover in the landscape (Dykstra et al. 2020).

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	Choose an item.	Choose an item.	Yes	Yes	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

Red-shouldered hawks usually do not breed until ≥ 1 year old, but yearlings have been reported breeding with adults (Henny et al. 1973, Wiley 1975, Apanius 1977). Females are more common as yearling breeders than males, and pairs appear to breed once per year. Nest success and

number of fledglings produced per nest vary widely and annually; variables include food supply and timing of nesting. Some populations at the northern edge of the species' range have very low productivity (McLeod 1996), possibly due to decreased food supply and spring ice and snowstorms. Data available to calculate lifetime reproductive success are insufficient (Dykstra et al. 2008).

In one study of 899 nestlings banded 1955-2002 in southwestern Ohio and northern Kentucky, analyses indicated 50% mortality by age 1.2 yr, 75% by 2.4 yr, and 95% by 5.2 yr (Dykstra et al. 2004). The longevity record is a female at least 25 years and 10 month old that was banded and later photographed in California (BBL 2020).

In addition to predation, mortality is caused by trapping, shooting, and road kills (Keran 1981). High wind may dislodge nests or blow down nest trees, causing failure (Wiley 1975, Dijak et al. 1990, J. Jacobs pers. comm.). Indirect nest failure may be caused by timber harvest activity near an active nest (S.T. Crocoll, pers. obs.).

VI. Threats *(from NY 2015 SWAP or newly described):*

Threats to NY Populations	
Threat Category	**Threat**
1. Human Intrusions & Disturbance	Recreational Activities
2. Biological Resource Use	Logging & Wood Harvesting (disturbance, fragmentation, increased competition)
3. Invasive & Other Problematic Species & Genes	Problematic Native Species (competition with other raptors-GHOW, RTHA)
4. Pollution	Industrial & Military Effluents (industrial chemicals i.e. fracking)
5. Transportation & Service Corridors	Roads & Railroads (vehicular collision, fragmentation)
6. Residential and Commercial Development	Housing and Urban areas (destruction/loss of
7. Climate Change & Severe Weather	Habitat Shifting & Alteration

From Dykstra et al. (2008):
Nest failure has been caused by human disturbance near the nest, logging and other forestry practices, and climbing of nest trees and removal of young for falconry (Wiley 1975). Disturbance from human activities was thought to have caused red-shouldered hawks to retreat into remote areas in the Pequannock watershed of New Jersey (Bosakowski and Smith 1989). Others, however, have found this species to be tolerant of human presence around nest sites (Bloom and McCrary 1996, Wheeler 2003a, G. Johnson and J. Bednarz pers. comm.).

Cutting of large contiguous forest tracts is thought to have brought declines of breeding populations in several areas (Brown 1971, Woodrey 1986, Hands et al. 1989, Preston et al. 1989, Peterson and Crocoll 1992). Break-up of contiguous forest into small blocks of forest surrounded by other habitat has created habitat more suitable to the larger and more aggressive great horned owl and red-tailed hawk, the red-shouldered hawk's closest competitor (Bednarz and Dinsmore 1981, 1982, Bryant 1986). Even selective thinning of forest has favored great horned owls in Wisconsin, reducing numbers of red-shouldered hawks there.

Several insecticides and industrial chemicals have been found in eggs, body tissues, and blood: DDE, DDD, DDT, dieldrin, heptachlor epoxide, hexochlorobenzine, mercury, chlordane, dieldrin, Furadan 10, organochlorine and polychlorinated biphenyls, brodifacoum (rodenticide), lead, and microplastics (Havera and Duzan 1986, Hands et al. 1989, Weir et al. 2018, Slabe et al. 2019, Carlin et al. 2020). Eggshell thinning has been less extensive in red-shouldered hawks than in other raptors. Adults have died from a combination of chlordane, heptachlor epoxide, and dieldrin (Blus et al. 1983) and Furadan 10 (Balcomb 1983).

The National Audubon Society's climate vulnerability assessment found that, under the +3.0 °C scenario, the red-shouldered hawk had an overall species vulnerability status of "stable" with climate-related threats including habitat loss from increased wildfire and urbanization as well as decreased nesting success due to spring heat waves (National Audubon Society 2019).

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

The red-shouldered hawk is protected by the Migratory Bird Treaty Act.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) -
https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
Land/Water Protection	Resource/Habitat Protection
Land/Water Management	Site/Area Management
Land/Water Management	Habitat/Natural Process Restoration

Table 2. Recommended conservation actions for red-shouldered hawk

The Comprehensive Wildlife Conservation Strategy (NYSDEC 2005) includes recommendations for the following actions for forest breeding raptors, which includes red-shouldered hawk.

Habitat management:

____ Habitat management for all these species (except the golden eagle, which is effectively extirpated as a breeder) is largely unknown and it is therefore important to experiment with different techniques. Examples include different cutting regimes and different buffer distances (and potentially fire management where appropriate), in both hardwoods and conifers (plantations and native).

VII. References

Apanius, V. 1977. Red-shouldered Hawks in juvenile plumage nest successfully. Auk 94(3):585-585.

Balcomb, R. 1983. Secondary poisoning of Red-shouldered Hawks with carbofuran. Journal of Wildlife Management 47(4):1129-1132.

Bird Banding Laboratory (BBL). 2020. Longevity Records of North American Birds. Version 2019.2. Patuxent Wildlife Research Center. US Geological Survey. Laurel, MD.

Bednarz, J. C. and J. J. Dinsmore. 1981. Status, habitat use, and management of Red-shouldered Hawks in Iowa. Journal of Wildlife Management 45(1):236-241.

Bednarz, J. C. and J. J. Dinsmore. 1982. Nest sites and habitat of Red-shouldered Hawks Buteo lineatus and Red-tailed Hawks Buteo jamaicensis in Iowa USA. Wilson Bulletin 94(1):31-45.

BirdLife International. 2016. Buteo lineatus. The IUCN Red List of Threatened Species 2016: e.T22695883A93531542. https://dx.doi.org/10.2305/IUCN.UK.2016-3.RLTS.T22695883A93531542.en. Downloaded on 04 November 2020.

Bloom, P. H., Michael D. McCrary, David M. Bird, Daniel E. Varland, and Juan Jose Negro. 1996. The urban Buteo: Red-shouldered Hawks in southern California. Pages 31-39 in Raptors in human landscapes: Adaptations to built and cultivated environments. (Varland, D. E. and Negro, J. J., Ed.). Academic Press Limited, London.

Blus, L. J., O. H. Pattee, C. J. Henny, and R. M. Prouty. 1983. 1st Records Of Chlordane-Related Mortality In Wild Birds. Journal of Wildlife Management 47(1):196-198.

Bosakowski, T. and D. G. Smith. 1989. Survey of the woodland raptor community in the Pequannnock Watershed. Ph.D. dissertation, Rutger University.

Brandes, D., D. Oleyar, S. Hoffman, and L. Goodrich. The Raptor Population Index, 2016 Regional Trend Summaries and Conservation Assessments. Available at http://rpi-project.org/2016/assessments2013.php

Brown, W. H. 1971. Winter population trends in the red-shouldered hawk. American Birds 25(5):813-817.

Bryant, A. A. 1986. Influence of selective logging on Red-shouldered Hawks, Buteo-lineatus, in Waterloo region, Ontario, 1953-1978. Canadian Field-Naturalist 100(4):520-525.

Carlin, J., C. Craig, S. Little, M. Donnelly, D. Fox, L. Zhai, L. Walters. 2020. Microplastic accumulation

in the gastrointestinal tracts in birds of prey in central Florida, USA. Environmental Pollution. DOI: 10.1016/j.envpol.2020.114633.

Clapp, R. B., M. K. Klimkiewicz, and J. H. Kennard. 1982. Longevity records of North American birds – Gaviidae through Alcidae. Journal of Field Ornithology 53(2):81-124.

Crewe, T. and D. Badzinski. 2006. Red-shouldered and spring woodpecker survey. 2005 Final Report. Published by Bird Studies Canada, Port Rowan, ON.

Crewe, T., P. Taylor, D. Lepage, L. Goodrich, J. Brown, and J. Sodergren. The Raptor Population Index, 2016 Analysis Methods and Trend Results. Available at http://rpi-project.org/2016/

Crocoll, S. T. 1998. Red-shouldered Hawk, Buteo lineatus. Pages 191-193 in Bull's Birds of New York State (E. Levine, ed.). Cornell University Press, Ithaca, NY.

Crocoll, S.T. 2012. Raptor management on New York State forests. Unpublished report. New York State Department of Environmental Conservation, Albany, NY.

Dijak, W. D., B. Tannenbaum, and M. A. Parker. 1990. Nest-site characteristics affecting success and reuse of Red-shouldered Hawk nests. Wilson Bulletin 102(3):480-486.

Dykstra, C. R., J. L. Hays, and S. T. Crocoll. 2020. Red-shouldered Hawk (Buteo lineatus), version 1.0. In Birds of the World (A. F. Poole, Editor). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.reshaw.01 Dykstra, C. R., J. L. Hays, M. M. Simon, J. B. Holt, G. R. Austng, and F. B. Daniel. 2004. Dispersal and mortality of Red-shouldered Hawks banded in Ohio. Journal of Raptor Research 38(4):304-311.

Dykstra, C.R, J.L. Hays, M.M. Simon, A.R. Wegman, L.R. Dykstra, and K.A. Williams. 2020. Habitat and weather conditions influence reproductive rates of suburban and rural Red-shouldered Hawks Buteo lineatus. International Journal of Avian Science. https://doi.org/10.1111/ibi.12877.

Farmer, C. J., R. J. Bell, B. Drolet, L. J. Goodrich, E. Greenstone, D. Grove, D. J. T. Hussell, D. Mizrahi, F. J. Nicoletti, and J. Sodergren. 2008. Trends in autumn counts of migratory raptors in northeastern North America, 1974-2004. Pages 179-215 in K. L. Bildstein, J. P. Smith, E. Ruelas Inzunza, and R. R. Veit (eds.) , State of North America's birds of prey. Nuttall Ornithological Club and American Ornithologists' Union, Cambridge, MA and Washington, D.C.

Fink, D., T. Auer, A. Johnston, M. Strimas-Mackey, O. Robinson, S. Ligocki, B. Petersen, C. Wood, I. Davies, B. Sullivan, M. Iliff, S. Kelling. 2020. eBird Status and Trends, Data Version: 2018; Released: 2020. Cornell Lab of Ornithology, Ithaca, New York. https://doi.org/10.2173/ebirdst.2018

Hands, H. M., R. D. Drobney, and M. R. Ryan. 1989. Status of the Red-shouldered Hawk in the north-central United States. U.S. Dept. Interior, Fish and Wildlife Serv.

Havera, S. P. and R. E. Duzan. 1986. Organochlorine and PCB residues in tissues of raptors from Illinois, 1966-1981. Bulletin of Environmental Contamination and Toxicology 36(1):23-32.

Henny, C. J., F. C. Schmid, E. M. Martin, and L. L. Hood. 1973. Territorial behavior, pesticides, and population ecology of Red-shouldered Hawks in central Maryland, 1943-1971. Ecology 54(3):545-554.

Keran, D. 1981. The incidence of man-caused and natural mortalities to raptors. Raptor Research 15(4):108-112.

McLeod, M. A. 1996. Red-shouldered Hawk habitat use and response to call-playback surveys in north-

central Minnesota., University of Minnesota, St Paul, MN.

National Audubon Society. 2019. How climate change will reshape the range of the red-shouldered hawk. Online: https://www.audubon.org/field-guide/bird/red-shouldered-hawk#bird-climate-vulnerability.

NatureServe. 2020. NatureServe Explorer [web application]. NatureServe, Arlington, Virginia. Available https://explorer.natureserve.org/. Accessed November 17, 2020.Naylor, B.J., J.A. Baker, and K.J. Szuba, 2004. Effects of forest management practices on red-shouldered hawks in Ontario. Forestry Chronicle. 80(1):54-60.North American Bird Conservation Initiative (NABCI). 2016. State of North America's Birds. Online: https://www.stateofthebirds.org/2016/resources/species-assessments/

Peterson, J. M. and S. T. Crocoll. 1992. Red-shouldered Hawk, Buteo lineatus. in Migratory nongame birds of management concern in the northeast. (Schneider, K. J. and Pence, D. M., Ed.).US. Dept. Inter., Fish and Wildlife Serv., Newton Corner, MA.

Preston, C. R., C. S. Harger, and H. E. Harger. 1989. Habitat use and nest-site selection by Red-shouldered Hawks in Arkansas. Southwestern Naturalist 34(1):72-78.

Rosenberg, K. V., J. A. Kennedy, R. Dettmers, R. P. Ford, D. Reynolds, J.D. Alexander, C. J. Beardmore, P. J. Blancher, R. E. Bogart, G. S. Butcher, A. F. Camfield, A. Couturier, D. W. Demarest, W. E. Easton, J.J. Giocomo, R.H. Keller, A. E. Mini, A. O. Panjabi, D. N. Pashley, T. D. Rich, J. M. Ruth, H. Stabins, J. Stanton, T. Will. 2016. Partners in Flight Landbird Conservation Plan: 2016 Revision for Canada and Continental United States. Partners in Flight Science Committee. 119 pp. Available online: https://partnersinflight.org/resources/the-plan/

Rosenberg, K. V., A. M. Dokter, P. J. Blancher, J. R. Sauer, A. C. Smith, P. A. Smith, J. C. Stanton, A. Panjabi, L. Helft, M. Parr, and P. P. Marra. 2019. Decline of North American avifauna. Science 366:120-124. DOI: 10.1126/science.aaw1313

Sauer, J. R., D. K. Niven, J. E. Hines, D. J. Ziolkowski, Jr, K. L. Pardieck, J. E. Fallon, and W. A. Link. 2017. The North American Breeding Bird Survey, Results and Analysis 1966 - 2015. Version 2.07.2017 USGS Patuxent Wildlife Research Center, Laurel, MD.

Slabe, V., J. Anderson, J. Cooper, P. Ortiz, A. Wrona, M. Jensen, J. Buchweitz, T. Katzner. 2019. Lead exposure of red-shouldered hawks during the breeding season in the Central Appalachians, USA. Bulletin of Environmental Contamination & Toxicology 103(6):783-788.

Treyger, S.M. and M.F. Burger. 2017. Forest management for New York birds: a forester's guide. Audubon, NY.

Weir, S.M., J.F. Thomas, and D.N. Blauch. 2018 Investigating spatial patterns of mercury and rodenticide residues in raptors collected near the Charlotte, NC, USA, metropolitan area. Environmental Science & Pollution Research 25(33): 153-161.

Wiley, J. W. 1975. Nesting and reproductive success of Red-tailed Hawks and Red-shouldered Hawks in Orange County, California, 1973. Condor 77(2):133-139.

Woodrey, M. S. 1986. Characteristics of Red-shouldered Hawk nests in southeast Ohio. Wilson Bulletin 98(3):466-469.

Originally prepared by	Kimberley Corwin
Date first prepared	May 29, 2012
First revision	January 27, 2014 (Samantha Hoff)

Second revision	December 10, 2020 (Katherine Yard)
Latest revision	January 18, 2024 (Jed Hayden)

Species Status Assessment

Common Name: Ruddy duck **Date Updated:** January 19, 2024

Scientific Name: *Oxyura jamaicensis* **Updated By:** J. O'Connor and C. Hoh

Class: Aves

Family: Anatidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

Ruddy ducks nest in dense emergent vegetation around the edges of marshes and ponds that also provide areas of open water. About 86% of the ruddy duck population in North America breeds in the Prairie Pothole Region of the Great Plains. Scattered populations occur in the eastern United States, and New York is at the far eastern edge of the distribution. Long-term population trends in the United States are currently increasing or stable. In New York and other northeastern states, as well as Ontario, ruddy ducks have become more numerous in the past 30 years. But while populations in upstate New York have increased, ruddy duck appears to have been lost from Long Island. Elsewhere, breeding occurs in virtually any location where open water and emergent vegetation exist (McGowan 2008). Historic and current breeding locations in New York are on managed lands including Montezuma WMA and Jamaica Bay Refuge.

I. Status

a. Current legal protected Status

i. **Federal:** Not listed **Candidate:** No

ii. **New York:** SGCN

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** S1 **Tracked by NYNHP?:** Yes

Other Ranks:
-IUCN Red List: Least Concern

Status Discussion:

Ruddy duck is a rare and local breeder in New York. During winter is it locally numerous on Long Island. Populations in the core of the range are secure while states on the edge of the range, including New York and Massachusetts, rank ruddy duck as critically imperiled.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Increasing	Increasing	1955-2023		No
Northeastern US	Yes	Increasing	Increasing	1980-2010		No
New York	Yes	Increasing	Increasing	1980-2005		Yes
Connecticut	Yes	Stable	Unknown	1980-2010		No

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
Massachusetts	Yes	Increasing	Unknown	1980-2010		No
New Jersey	Yes	Increasing	Unknown	1980-2010		No
Pennsylvania	Yes	Increasing	Increasing	1984-2008		Yes
Vermont	Yes	Unknown	Unknown			No
Ontario	Yes	Increasing	Increasing	1981-2005		No
Quebec	Yes	Stable	Stable	1984-2012		No

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

The New York State Ornithological Association has conducted an annual January Waterfowl Count since 1955. A Breeding Waterfowl Plot Survey is conducted by DEC annually.

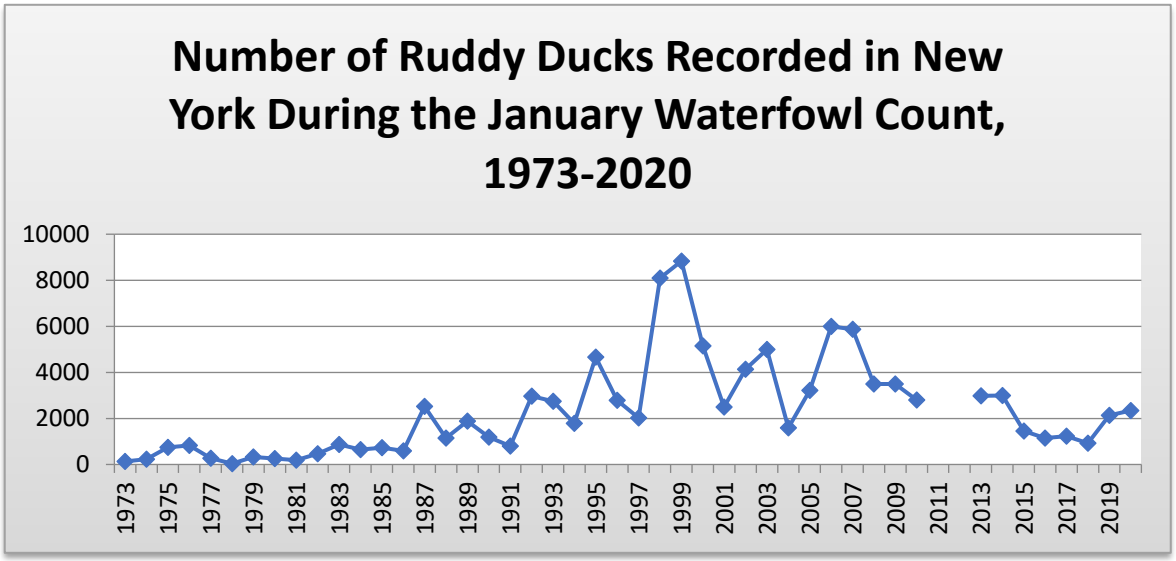

Figure 1. Number of ruddy ducks observed during the January waterfowl count in New York 1973-2020 (NYSOA Waterfowl Count www.nybirds.org/projwaterfowl.htm)

Trends Discussion *(insert map of North American/regional distribution and status):*

The size of the ruddy duck breeding population correlates positively with wetland abundance on the Prairie Pothole breeding grounds (Batt et al. 1989). The breeding population is not estimated every year during the annual Waterfowl Breeding Population and Habitat Survey, but ruddy ducks are counted and included in the total duck breeding population estimate for the traditional survey area (Zimpfer et al. 2012). Overall trends suggest that ruddy duck breeding populations in the United States and Canada are increasing by roughly 0.9% per year. The North American population is currently estimated at about 1.2 million birds.

Increases in ruddy duck have been documented in Ontario, Massachusetts, New Jersey, and Pennsylvania during the past 20 years. In Ontario, reports of ruddy duck during the second Breeding Bird Atlas (2001-05) were more than double the number of reports during the first Atlas, 20 years prior to that.

The Breeding Bird Atlas in New York documented an increase in occupancy of ruddy ducks from 1980-85 to 2000-05; the number of survey blocks with records increased by 157%. Despite the increase in observations, only one of the locations where breeding was known during the first Atlas (Montezuma NWR) hosted breeding birds during the second Atlas. Jamaica Bay—the former regular breeding location for ruddy ducks—had one or two pairs in 2004 but breeding was not documented. DiCostanzo (1998) suggested that the increasingly brackish nature of West Post at Jamaica Bay WR had made it unsuitable for ruddy duck nesting.

The NYSOA January Waterfowl Count documented an increase in wintering birds from 1973 to 2009. The average number of individuals for 1973-2008 was 2,353 while the average for 1999-2008 was 4,578. The average number of individuals for 1973-1982 was 349.

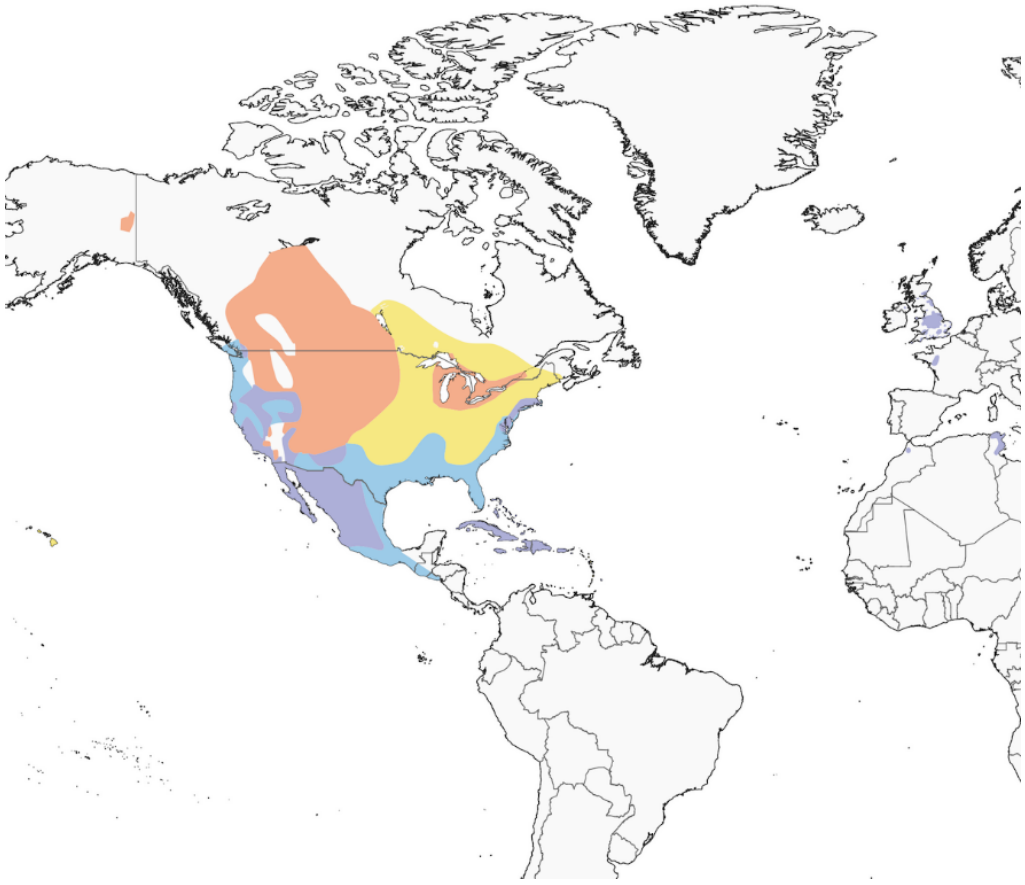

Figure 2. Distribution of the ruddy duck (Birds of the World, 2024)

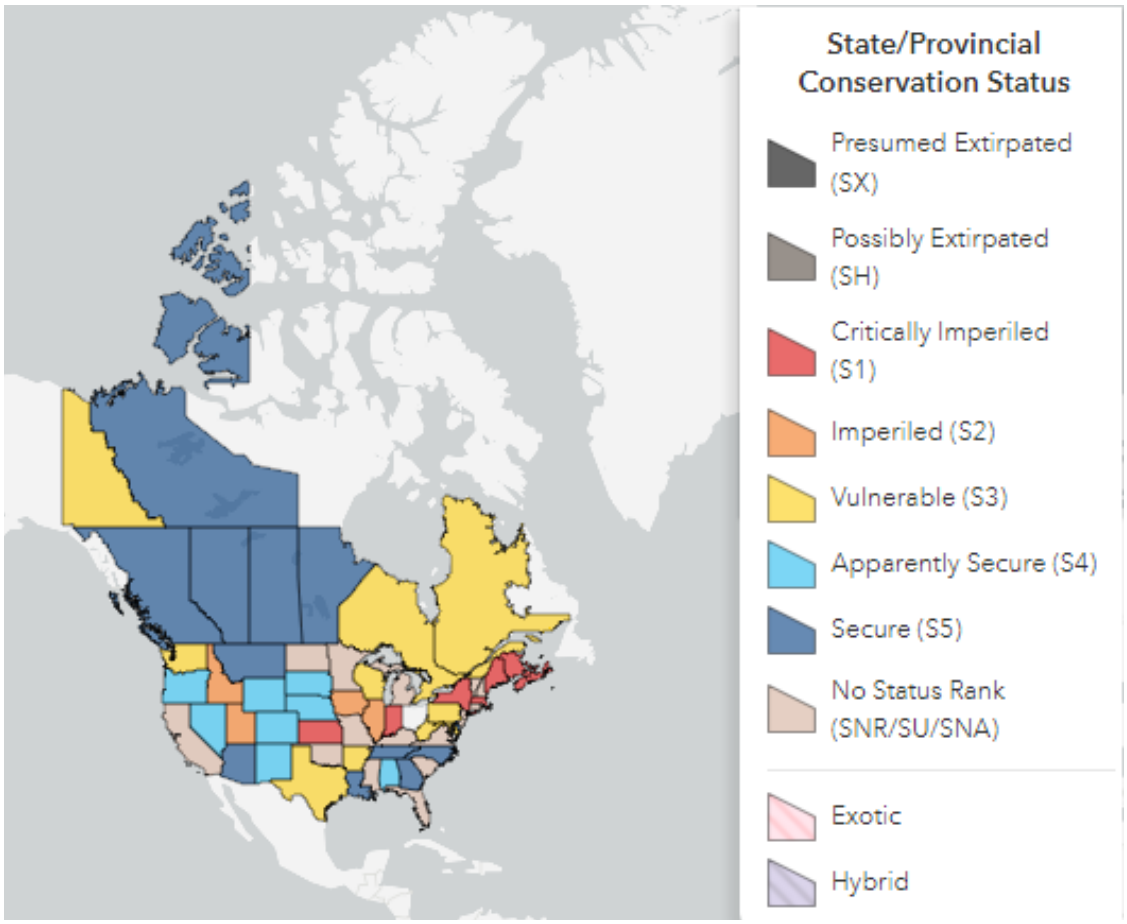

Figure 3. Conservation status of ruddy duck in North America (NatureServe)

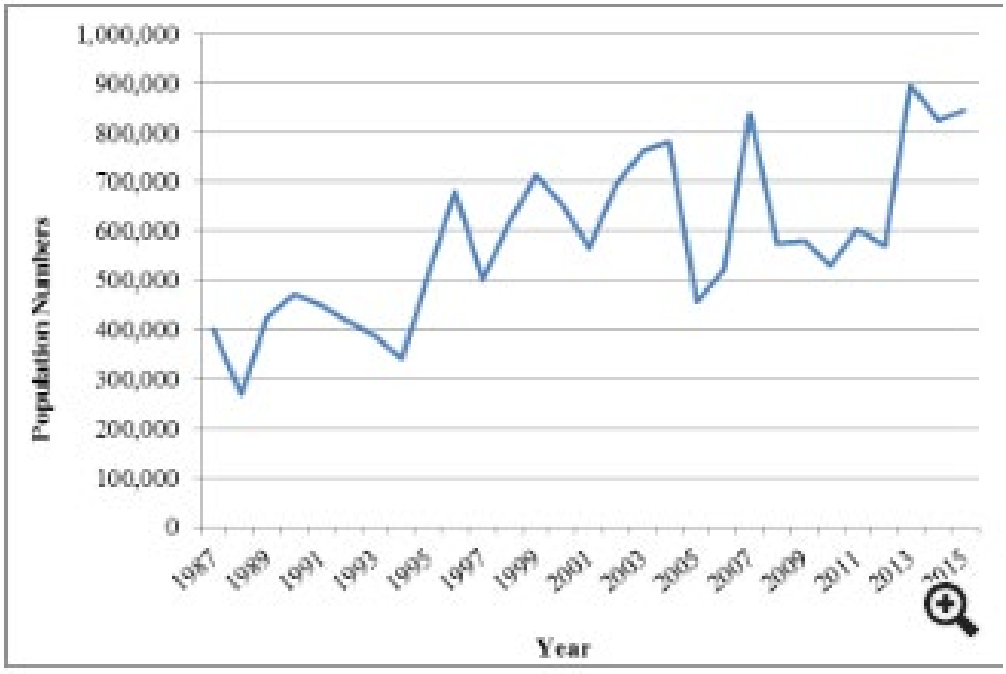

Figure 4. Ruddy duck population trend in the traditional survey area from 1987-2015 (U.S. Fish & Wildlife Service 2016)

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

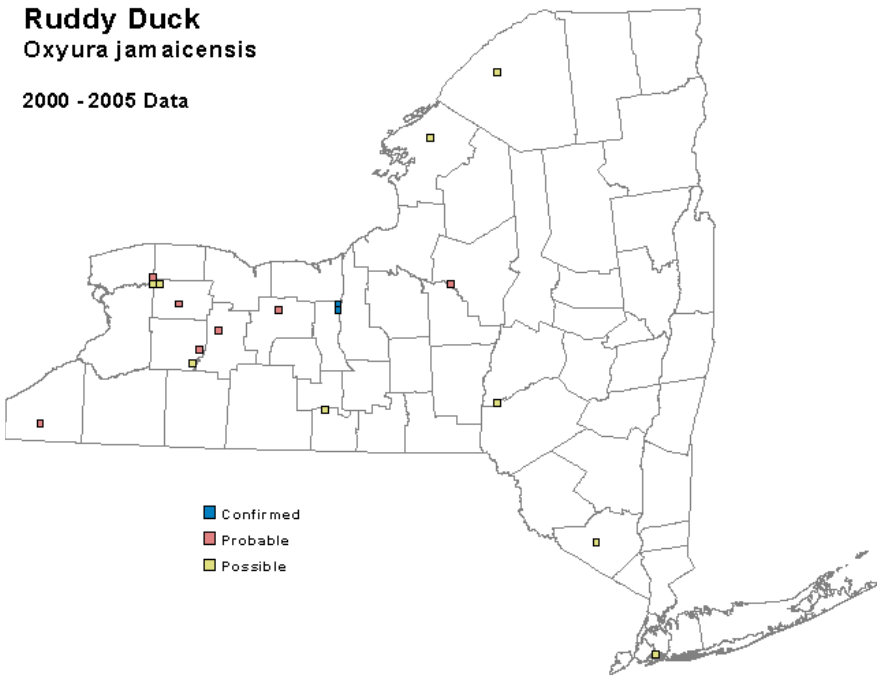

Figure 5. Breeding observations of ruddy duck in New York, 2000-2005 (NYBBA2)

Years	# of Records	# of BBA Blocks	% of State
Pre-1980	_____	_____	_____
1980-1985	_____	7	<1%
2000-2005	_____	18	<1%
2020-2023	_____	_____	_____

Table 1. Records of ruddy duck in New York.

Details of historic and current occurrence:

Jamaica Bay Wildlife Refuge historically hosted the largest concentration of breeding ruddy ducks from 1955 to 1985 with a peak of 40 nesting pairs in 1963 (DiCostanzo 1998). The first Breeding Bird Atlas (1980-85) documented ruddy ducks in a total of 7 blocks, with Confirmed breeding at three locations: Montezuma NWR, Jamaica Bay WR, and Patchogue Bay (Suffolk County).

The second Breeding Bird Atlas (2000-05) documented ruddy ducks in a total of 18 blocks, with Confirmed breeding only at Montezuma NWR.

McGowan (2008) notes that ruddy duck has no established population in New York but that isolated incidents of breeding can be expected virtually anywhere in the state where open water and emergent vegetation exist.

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Peripheral	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

1. Freshwater Marsh
2. Wet Meadow/Shrub Swamp
3. Estuarine, Brackish Shallow Subtidal, Aquatic Bed
4. Estuarine, Brackish Intertidal, Tidal Wetland
5. Great Lakes Freshwater Estuary Marsh
6. Coastal Plain Pond

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
Choose an item.	Choose an item.	Unknown	

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

Ruddy ducks breed in large managed and unmanaged marsh systems, stock ponds, reservoirs, and deep natural basins. All wetlands used tend to have extensive emergent vegetation and enough open water for landing and taking flight (Savard et al. 1994, Murkin et al. 1997).

Historic and current breeding areas are on managed lands where water levels can be controlled.

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	Choose an item.	Choose an item.	Yes	Yes	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

Both males and females are thought to breed during their first year. Pairs nesting in temperate regions raise only one brood. There is no information on lifetime reproductive success. Maximum life span reported is 13 yr 7 mo (Clapp et al. 1982). No estimates of adult or juvenile survival rates. Ruddy ducks are susceptible to avian botulism and avian cholera (Joyner 1977). Little information is available on

predation, but females are possibly more susceptible due to increased exposure as a result of female-only incubation.

Among adults, known avian predators include red-tailed hawk and great horned owl. Known mammalian predators include mink, raccoon, and red fox. Among ducklings, observed predation by black-crowned night-heron, and ring-billed gull (Joyner 1975). Mammalian predators include mink and raccoon. American crows, mink, long-tailed weasel, and raccoon (Low 1941) take eggs.

VI. Threats *(from NY 2015 SWAP or newly described):*

Threats to NY Populations	
Threat Category	**Threat**
1. Climate Change & Severe Weather	Droughts
2. Invasive & Problematic Species & Genes	Non-native & Alien species

Wetland drainage and degradation, through grazing, burning, farming practices, etc., have continuing negative impacts on the habitat available to ruddy ducks. Recent advances in tile drainage have led to an increase in the conversion of wetland and marginal farmland to crop land.

Drought, especially long-term drought, in the prairie pothole region could impact the wintering population of ruddy ducks in New York.

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: x **No:** **Unknown:**

If yes, describe mechanism and whether adequate to protect species/habitat:

Ruddy duck is a game bird with an open season. The hunting season length and daily bag limit could be modified, or the season could be closed. Currently, the spring breeding population is not estimated annually and there is not a specific harvest strategy in place; however, harvest appears to be quite low in the Atlantic Flyway, and across the United States. For 2012, the hunting season length in New York is 60 days and 6 ruddy ducks may be harvested per day. Harvest in New York rarely exceeds 500 ruddy ducks per year and averages about 250. Since 1999, the average harvest in the Atlantic Flyway as been approximately 13,000. An estimated 55,000 ruddy ducks were harvested in the entire United States in 2010 and about 47,000 in 2011 (Raftovich et al. 2012).

Wetland habitats in New York are protected by the Freshwater Wetlands Act, Article 24 of the Environmental Conservation Law. However, this law only protects wetlands larger than 12.4 acres in size and largely exempts agricultural activities occurring in and adjacent to wetlands. It does not adequately protect ruddy duck habitat.

All current and historic breeding sites are on publicly managed land where water levels and emergent vegetation can be controlled.

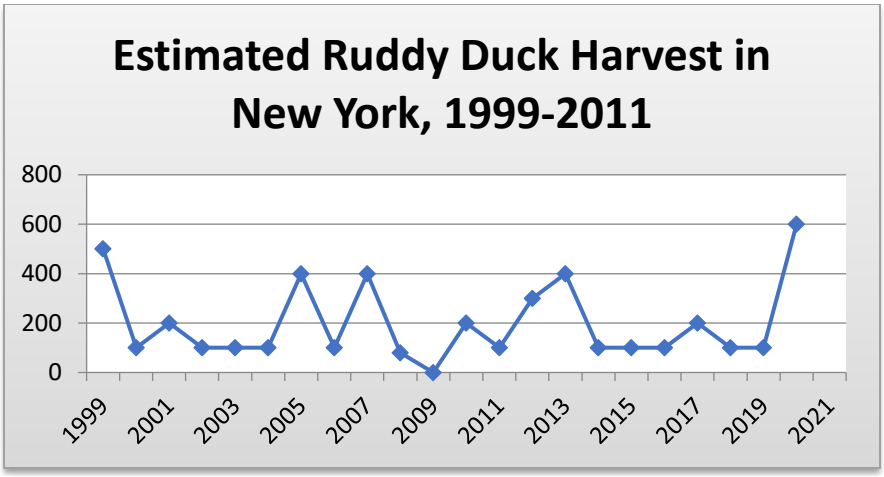

Figure 6. Estimated annual harvest of ruddy duck in New York, 1999-2011 (USFWS)

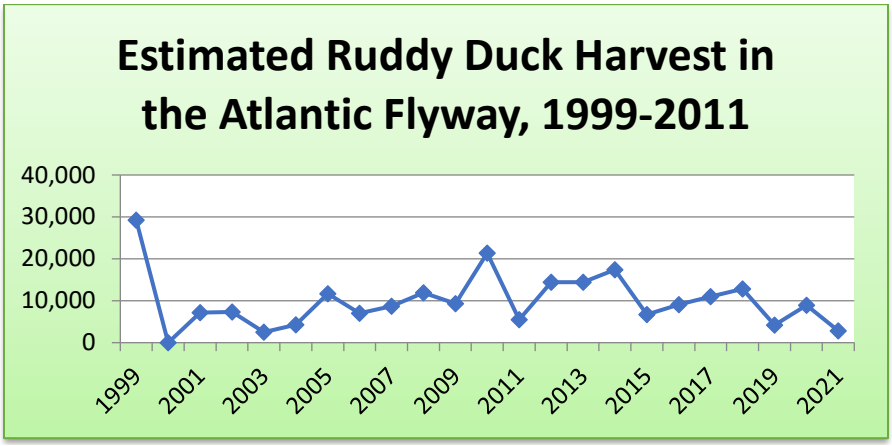

Figure 7. Estimated annual harvest of ruddy duck in the Atlantic Flyway, 1999-2011 (USFWS)

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

Preservation of or inability to drain semipermanent and permanent wetlands has probably benefited the species. Habitat manipulation on Wildlife Management Areas and National Wildlife Refuges has also benefited this species.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
1. Land/Water Protection	Site/Area Protection
2. Land/Water Protection	Resource/Habitat Protection

3. Land/Water Management	Site/Area Management
4. Law & Policy	Policies & Regulations

Table 2. Recommended conservation actions for ruddy duck

VII. References

Batt, B. D. J., M. G. Anderson, C. D. Anderson, and F. D. Caswell. 1989. The use of prairie potholes by North American ducks. Pages 204-227 *in* Northern prairie wetlands. (van der Valk, A., Ed.) Iowa State Univ. Press, Ames.

Brua, R. B. 2002. Ruddy Duck (*Oxyura jamaicensis*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/696 doi:10.2173/bna.696.

Clapp, R. B., M. K. Klimkiewicz, and J. H. Kennard. 1982. Longevity records of North American birds: Gaviidae through Alcidae. J. Field Ornithol. 53:81-124.

DiCostanzo, J. 1998. Ruddy duck, *Oxyura jamaicensis*. Pages 177-78 in Bull's Birds of New York (E. Levine, ed.). Cornell University Press, Ithaca, NY.

Joyner, D. E. 1975. Nest parasitism and brood-related behavior of the Ruddy Duck (*Oxyura jamaicensis rubida*). Phd Thesis. Univ. of Nebraska, Lincoln.

Joyner, D. E. 1977. Behavior of Ruddy Duck broods in Utah. Auk 94:343-349.

Klimstra, J.D. et al., compiler. 2012. Atlantic Flyway harvest and population survey data book. U.S Fish and Wildlife Service, Laurel, MD.

Low, J. B. 1941b. Nesting of the Ruddy Duck in Iowa. Auk 58:506-517.

McGowan, K.J. 2008. Ruddy duck, *Oxyura jamaicensis*. Pages 130-31 in The Second Atlas of Breeding Birds in New York State (K.J. McGowan and K. Corwin, eds.). Cornell University Press, Ithaca, NY.

Murkin, H. R., E. J. Murkin, and J. P. Ball. 1997. Avian habitat selection and prairie wetland dynamics: A 10-year experiment. Ecol. Applic. 7:1144-1159.

New York State Department of Environmental Conservation (NYSDEC). 2005. New York State Comprehensive Wildlife Conservation Strategy. http://www.dec.ny.gov/index.html

Raftovich, R.V., K.A. Wilkins, S.S. Williams, and H.L. Spriggs. 2012. Migratory Bird Hunting Activity and Harvest during the 2010 nad 2011 Hunting Seasons. U.S. Fish and Wildlife Service, Laurel, Maryland.

Roberts, A. J. et al., compiler. 2022. Atlantic Flyway harvest and population survey data book. U.S Fish and Wildlife Service, Laurel, MD.

Savard, J. P. L., W. S. Boyd, and G. E. J. Smith. 1994. Waterfowl-wetland relationships in the aspen parkland of British Columbia: comparison of analytical methods. Hydrobiologia 279/280:309-325.

Zimpfer, N.L., W.E. Rhodes, E.D. Silverman, G.S. Zimmerman, and K.D. Richkus. 2012. Trends in duck breeding populations, 1955-2012. U.S. Fish and Wildlife Service Administrative Report, Laurel, Maryland.

Originally prepared by	Kimberley Corwin
Date first prepared	June 11, 2012
First revision	January 27, 2014 (Samantha Hoff)
Latest revision	

Species Status Assessment

Common Name: Ruffed grouse **Date Updated:** January 8, 2024

Scientific Name: *Bonasa umbellus* **Updated By:** Evan Wills

Class: Birds

Family: Phasianidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

A popular and important game bird, the ruffed grouse is found in deciduous and coniferous forests of North America, occurring most abundantly in a mosaic of habitats that includes regenerating forests and shrub habitat. The range extends coast-to-coast across central Canada, and in the East as far southward as North Carolina. New York is well within this distribution and ruffed grouse are present year-round.

As many as 15 subspecies of ruffed grouse are recognized in North America; three, and possibly a fourth occur in New York. *B. u. umbellus* is the dominant subspecies present, while *togata* and *helmei* are recognized in central parts of the state, and Long Island respectively. A fourth subspecies, *monticola*, is the grouse of the Appalachians and occurs in the southwestern corner of New York.

Ruffed grouse are known to have cyclic population trends at approximately 10-year intervals (Bump et al. 1947), primarily in response to increased pressure from avian predators during periods of low snowshoe hare populations. However, these cycles are somewhat less prevalent in the Northeast than in midwestern and northern populations. Data from NYSDEC hunter surveys over the past two decades do not illustrate 10-year cycles in New York. Whether this is because declining habitat quantity and quality have disrupted the cycle, or whether these habitat factors are "masking" a cycle that would normally occur during optimal habitat conditions is not known. Alternately, there may be population cycles operating at a geographic scale larger (e.g., the northeastern U.S.) or smaller (e.g., the St. Lawrence Valley) than currently being measured. Northeastern populations have declined in the past 20 years.

In New York, the second Breeding Bird Atlas showed a change of -18% from 1980-85 to 2000-05. The five-year average take/hunter from the New York State Small Game Hunter Survey declined from 2.8 birds/hunter in 1982-86 to 1.8 birds/hunter in 2006-10 (-36%).

I. Status

a. Current legal protected Status

i. **Federal:** Not Listed **Candidate:** No

ii. **New York:** SGCN

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** S5 **Tracked by NYNHP?:** No

Other Ranks:

-IUCN Red List: Least Concern

Status Discussion:

Ruffed grouse is a common resident throughout New York except in metropolitan areas and in agricultural areas in the Great Lakes Plain.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Declining	Declining	1980-2023		Yes
Northeastern US	Yes	Declining	Declining	1980-2023		Yes
New York	Yes	Declining	Declining	1980-2023		Yes
Connecticut	Yes	Declining	Declining	1980-2015		Yes
Massachusetts	Yes	Declining	Declining	1980-2023		No
New Jersey	Yes	Declining	Declining	1980-2019		Yes
Pennsylvania	Yes	Declining	Declining	1980-2015		Yes
Vermont	Yes	Declining	Declining	1989-2023		Yes
Ontario	Yes	Stable	Stable	1970-2021		No
Quebec	Yes	Stable	Stable	1984-2012		No

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

DEC coordinates two surveys and collects grouse parts from hunter-killed birds. The Cooperator Ruffed Grouse Hunting Log asks grouse hunters to record the number of birds flushed per hour of hunting effort. The Ruffed Grouse Drumming Survey asks turkey hunters to record all drumming male grouse observed while they are afield during the month of May. We hope that, when viewed over time and various spatial scales, both of these surveys will help us identify trends in grouse distribution and abundance. The grouse parts collection allows us to evaluate the age and sex composition of the harvest and estimate recruitment (number of young per adult female) for different regions of the state.

In 2007, DEC initiated a cooperative research project with SUNY Environmental Science & Forestry to determine fall-winter survival and mortality of ruffed grouse in two areas of New York State with relatively high hunting pressure and different degrees of habitat fragmentation. This study was the first assessment of ruffed grouse survival and harvest mortality in New York in more than 50 years. We monitored fall-winter survival of 169 radio-marked ruffed grouse at two study areas in New York differing in forest age and composition.

Trends Discussion*:*

Breeding Bird Survey data for New York show a nonsignificant increase of 0.73% per year from 1980 to 2010 and a nonsignificant increase of 0.65% per year from 1966 to 2010. Rangewide, BBS data show a nonsignificant trend of 0.85% per year from 1980 to 2010, and a nonsignificant trend of 0.24% per year from 1966 to 2010.

The Breeding Bird Atlas documented the disappearance of ruffed grouse from Long Island since 1980-85; only one survey block was reported to have ruffed grouse. Occupancy dropped notably from the Hudson Valley and surrounding highlands as well. These changes are thought to be the result of increased development and reforestation.

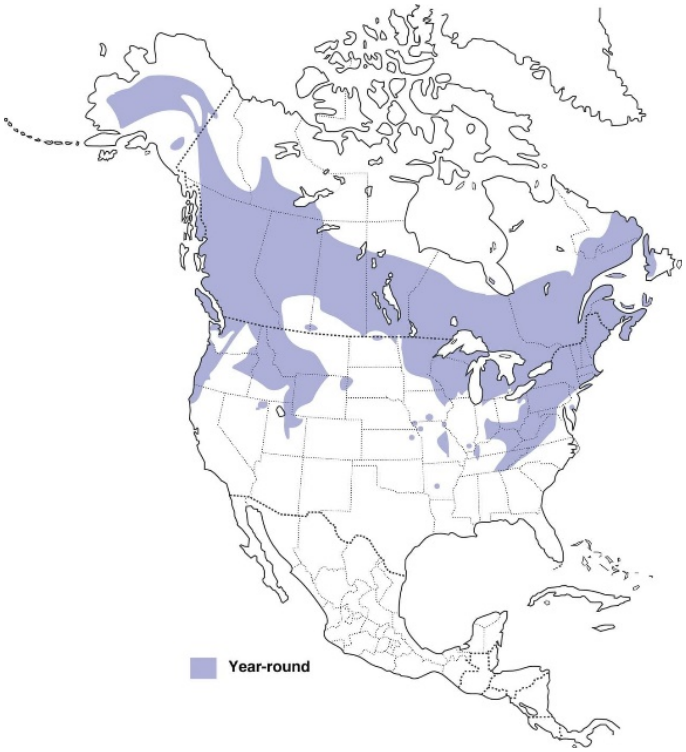

Figure 1. Range of the ruffed grouse in North America (The Cornell Lab of Ornithology, All about Birds 2023)

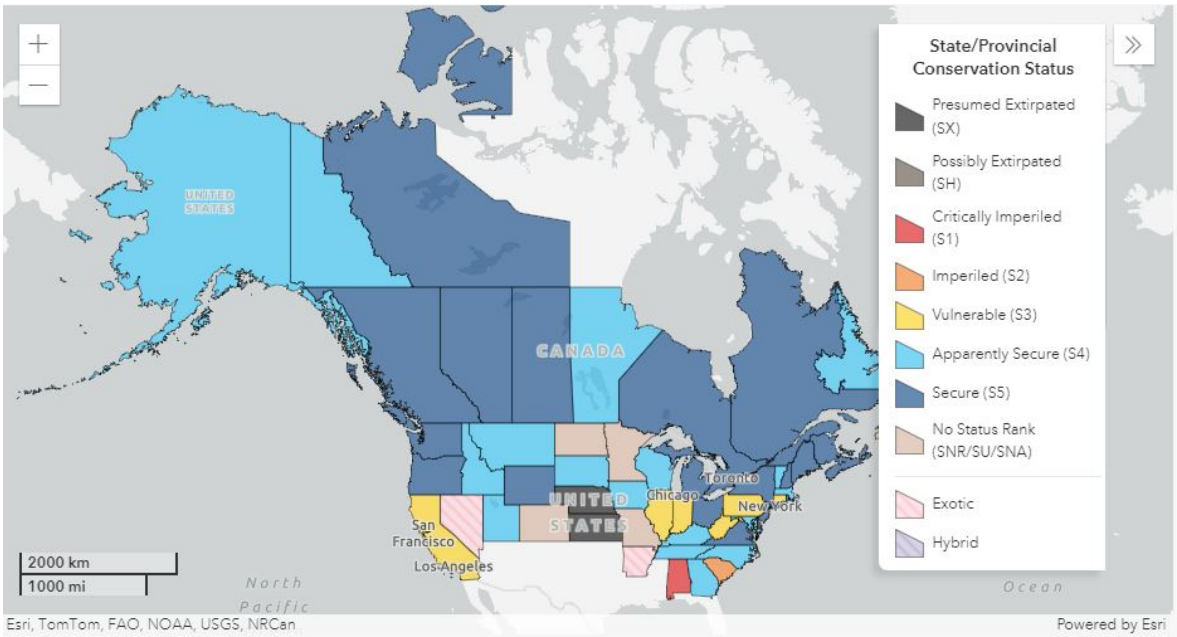

Figure 2. Conservation status of the ruffed grouse in North America (NatureServe 2024).

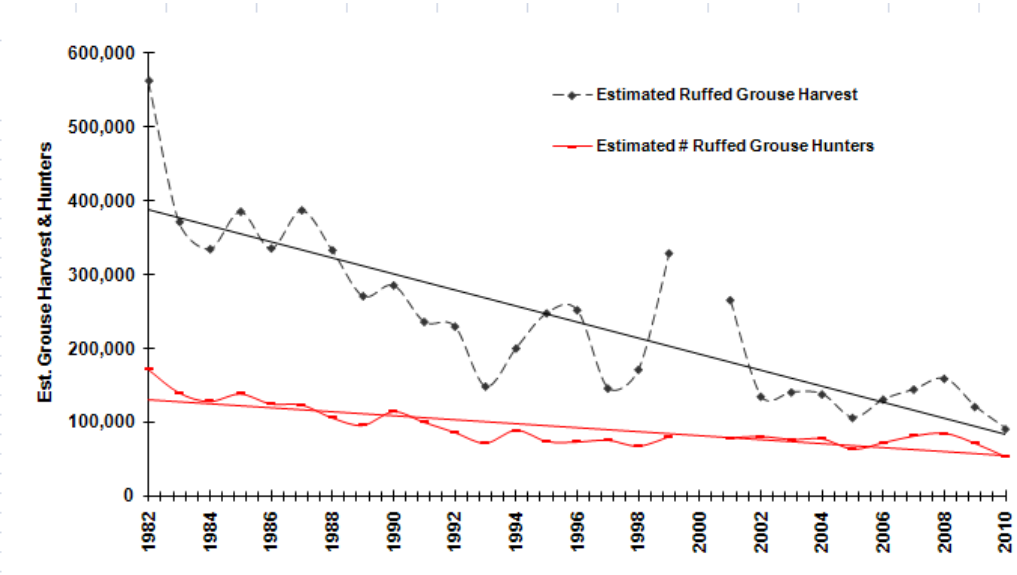

Figure 3. Estimated number of grouse harvested and number of hunters in New York (NYSDEC files).

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

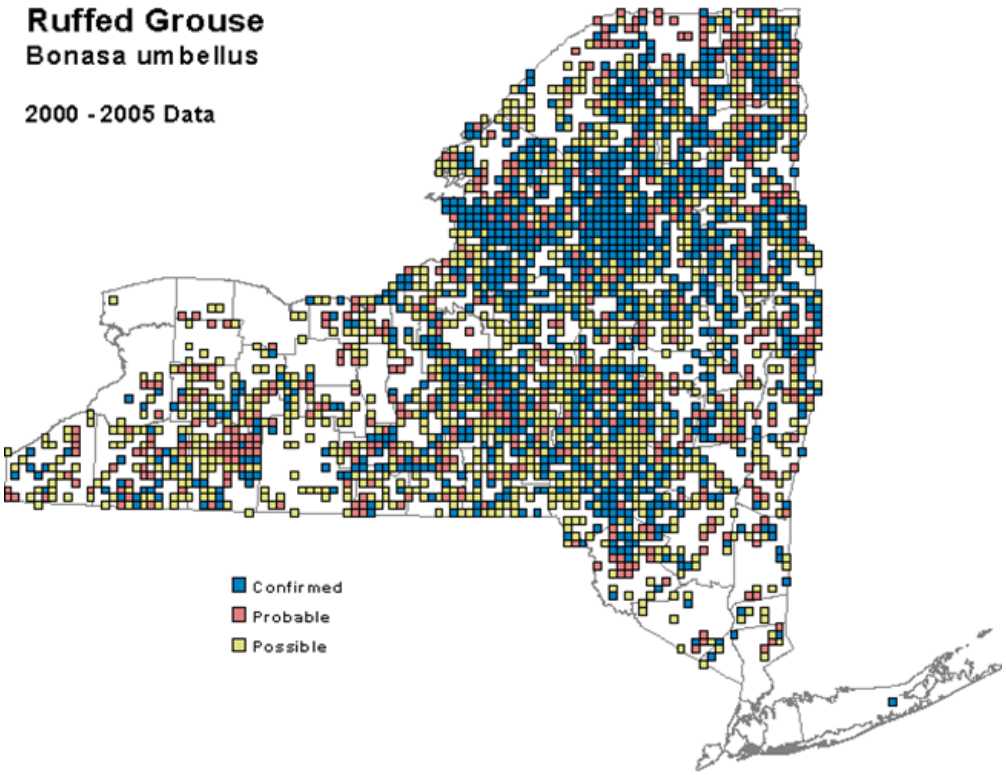

Figure 4. Ruffed grouse occurrence in New York State during the second Breeding Bird Atlas (NYSDEC 2023)

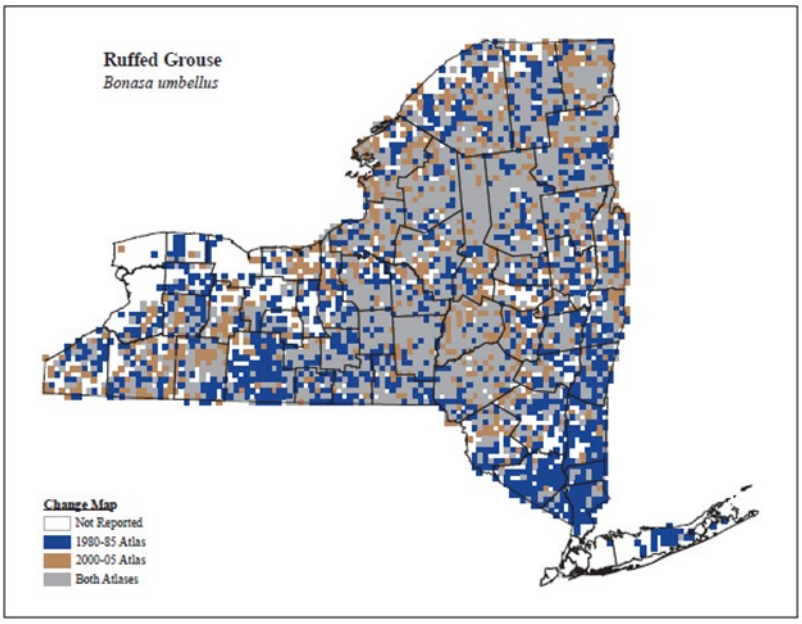

Figure 5. Change in ruffed grouse occurrence in New York State between the first Breeding Bird Atlas and the second Breeding Bird Atlas (McGowan and Corwin 2008).

Years	# of Records	# of BBA Blocks	% of State
Pre-1980	_____	_____	70-75%
1980-1985	_____	_____	_____
2000-2005	_____	_____	_____
2020-2023	_____	_____	_____

Table 1. Records of ruffed grouse in New York.

Details of historic and current occurrence:

Ruffed grouse reached their peak numbers in New York during in the mid-1960s through the mid-1970s (M. Schiavone, pers. comm.). The first Breeding Bird Atlas (1980-85) documented occupancy in 3,152 survey blocks statewide.

The second Breeding Bird Atlas (2000-05) documented occupancy in 2,579 survey blocks statewide, a change of -18% in 20 years. Ruffed grouse have essentially disappeared from Long Island and the Hudson Valley and surrounding highlands. A third breeding bird atlas is currently underway.

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Core	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

1. Oak-Pine Forest
2. Oak Forest
3. Mixed Northern Hardwoods
4. Plantation and Disturbed Land Pioneer Forests
5. Powerline
6. Old Field Managed Grasslands

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
No	No	Declining	Since 1950s (early successional habitats)

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

Ruffed grouse prefer a mix of regenerating forest and shrub habitat. Maturing forest habitats are used for nesting, sapling/pole stage hardwood forest habitats are used for breeding, and very young regenerating forests are used for brood rearing. A mosaic of these habitat types adjacent to each other results in greatest productivity and survival. The availability of drumming logs is an important component of the habitat for male breeding displays.

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	Choose an item.	Choose an item.	Yes	Yes	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

Females nest at one year of age and every spring afterwards. About half of males nest do not hold a territory or drum. Success of first nests varies by year and location; apparent success, i.e., proportion of nests found already under way that hatched, was 61.4% in New York (range 38.9–75.4%, *n* = 1,431) (Bump et al. 1947). Mean lifetime reproductive success (based on 20 radio-marked hens in Wisconsin) has been estimated at 9.3 chicks. Average annual survival rates of

adult males rangewide is about 34% but varies by age class, region, habitat, and phase of population cycle (Rusch et al. 2000).

Predation, including hunting by humans, is the largest source of mortality. Avian predation increases during periods when snowshoe hare populations are low. Males are usually faithful to breeding territory among years; the female does not defend a territory nor is faithful to a breeding site. Females are also resident but are more likely to shift breeding sites or winter home ranges (Rusch et al. 2000).

A recent study in New York found that fewer than 11% of radio-marked grouse (Skrip et al. 2011) were killed by hunters. Predation, particularly by raptors, was the largest source of mortality. Seasonal survival (fall to spring) ranged from almost 40% to slightly over 50% (Rusch et al. 2000).

VI. Threats *(from NY 2015 SWAP or newly described):*

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

Ruffed grouse is a popular game bird with an open hunting season. Bag limits can be manipulated in response to population changes. However, recent research indicates that current harvest levels are quite low and it is unlikely that restricting hunting seasons would result in significant increases in abundance (Skrip et al. 2011).

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

Wildlife managers are encouraged to work with foresters and conservation groups to harvest small blocks of timber (2-4 hectares; 5-10 acres) that will encourage reproduction of aspen and other early-successional plants in a mosaic pattern. The Ruffed Grouse Recovery Plan states a goal of returning populations to 1980 levels by 2025. Conservation actions following IUCN taxonomy are categorized in the table below.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) -
https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
1. Land/Water Protection	Site/Area Protection
2. Land/Water Protection	Resource/Habitat Protection

3. Land/Water Management	Site/Area Management
4. Land/Water Management	Invasive/Problematic Species Control
5. Land/Water Management	Habitat and Natural Process Restoration
6. Education and Awareness	Training
7. Education and Awareness	Awareness & Communications
8. Law & Policy	Policies & Regulation

Table 3. Recommended conservation actions for ruffed grouse

The Comprehensive Wildlife Conservation Strategy (NYSDEC 2005) includes recommendations for early-successional forest/shrubland birds, which includes ruffed grouse.

Curriculum development:

____ Educate public to the benefits and need for early successional habitat including even-aged management.

Easement acquisition:

____ Implement a Landowner Incentive Project for early successional birds that will direct $600,000 per year at conserving and creating habitat for early successional forest/shrub birds.

Habitat management:

____ Work with Utilities to manage ROWs in a manner that will provide for maximum benefit to early successional species.

____ Double the amount of early successional forest and shrub habitat on public and private land through sound planned management.

____ Increase early successional management on public and private lands.

____ Maintain, restore, and enhance fire adapted ecosystems. Increase use of prescribed fire in fire adapted ecosystems.

____ Promote management of Utility ROWs that will provide the maximum benefit to shrub bird species.

Habitat monitoring:

____ Precisely monitor trends of all species, in particular those that are not currently adequately monitored.

____ Complete an inventory and analysis for high priority focus species that identifies core habitats (highest abundance) and geographic areas (where appropriate).

Habitat research:

____ Determine effects of viburnam leaf beetle on early successional forest/shrub habitats and species utilizing them.

Population monitoring:

____ Encourage full completion of BBS routes.

Statewide management plan:

____ Develop a management plan that provides guidance on maintaining, enhancing and restoring early successional forest/shrub bird species.

Other actions:

____ Develop better mechanisms for directing federal (NRCS and USFWS) funding programs into early successional forest/shrub habitats.

____ Develop BMPs for forest management in riparian areas that recognize the critical need maintain, enhance and restore early successional forest/shrub habitat in these areas.

VII. References

Bump, G., R. W. Darrow, F. C. Edminster, and W. F. Crissey. 1947. The Ruffed Grouse: life history, propagation, management. New York State Conserv. Dep. Albany.

NatureServe. 2012. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. <http://www.natureserve.org/explorer>. Accessed 2 July 2013.

New York State Department of Environmental Conservation (NYSDEC). 2005. New York State Comprehensive Wildlife Conservation Strategy. <http://www.dec.ny.gov/index.html>. Accessed 2 July 2013.

Skrip, M.M., W.F. Porter, B.L. Swift, and M. Schiavone. 2011. Fall-Winter Survival of Ruffed Grouse in New York State. Northeastern Naturalist 18(4):395-410.

Rusch, D. H., S. Destefano, M. C. Reynolds and D. Lauten. 2000. Ruffed Grouse (*Bonasa umbellus*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/515 doi:10.2173/bna.515

https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.102687/Bonasa_umbellus

https://extapps.dec.ny.gov/cfmx/extapps/bba/bbaMaps.cfm?bndcode=RUGR&order=2&year=2000&comp=1

https://dec.ny.gov/things-to-do/hunting/small-game/ruffed-grouse

Originally prepared by	Kimberley Corwin
Date first prepared	June 12, 2012
First revision	January 28, 2014 (Samantha Hoff)
Latest revision	

Species Status Assessment

Common Name: Rusty blackbird **Date Updated:** January 11, 2024

Scientific Name: *Euphagus carolinus* **Updated By:** Jed Hayden

Class: Aves

Family: Icteridae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

Greenberg and Droege's (1999) publication detailing the severe decline of rusty blackbirds marked the beginning of a period of heightened attention to the species. In 2005 the International Rusty Blackbird Technical Working Group was organized to focus research on this poorly-known species and to address its mysterious decline.

Over the past 40 years, rusty blackbird populations have shown rangewide cumulative declines of 85% to 95% as illustrated by Breeding Bird Survey and Christmas Bird Count data (Greenberg et al. 2011). The second Breeding Bird Atlas in New York documented a 23% decline in occupancy across the state from 1980-85 to 2000-05. Acute declines continue.

Rusty blackbird reaches the southern limit of its boreal distribution in New York, occurring in the Adirondack region as an isolated population; the nearest breeding population is 130 miles to the east in northern Vermont. Breeding occurs in a variety of wetland habitats that are associated with coniferous and mixed forest, such as bogs and beaver ponds. Two subspecies of rusty blackbird are recognized: *E. carolinus* breeds in New York while *E. nigrans* breeds in the eastern Canadian provinces (Crowell 1998). New York is at the northern edge of the wintering range. Hobson et al. (2010) found isotopic evidence for use of two distinctive flyways: birds that breed in Alaska and central Canada winter in the Mississippi Alluvial Valley while birds that breed in eastern Canada winter in the Atlantic Coastal Plain. A potentially smaller, geographically-isolated Atlantic Flyway population was also identified by Hobson et al. (2010), and appears to be susceptible to the local extirpations observed in New England, the Maritime Provinces, and the southern boreal zone (including NY) (Greenberg and Matsuoka 2010).

Status

a. Current legal protected Status

i. **Federal:** None **Candidate:** No

ii. **New York:** Special Concern; HPSGCN

b. Natural Heritage Program

i. **Global:** G4

ii. **New York:** S2B **Tracked by NYNHP?:** Yes

Other Ranks:

Partners in Flight – Watch List

USFWS – Bird of Conservation Concern

Audubon Watch List - Yellow

COSEWIC – Special Concern

IUCN – Red List of Threatened Species

Status Discussion:

Rusty blackbird is an uncommon breeder in New York, occurring only in the Adirondack Mountains. In western New York, it is a very common and locally very abundant migrant. During winter, rusty blackbirds are rare but local, especially near the coast. Rusty blackbirds are ranked as Imperiled in New York and Critically Imperiled in Massachusetts. Populations are considered Vulnerable in Vermont.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Declining	Declining	1966-2023	None	No
Northeastern US	Yes	Declining	Declining	2000-2010	None	Yes
New York	Yes	Declining	Declining	2000-2023	Special Concern	Yes
Connecticut	No	Choose an item.	Choose an item.			No
Massachusetts	No	Choose an item.	Choose an item.		None	Yes
New Jersey	No	Choose an item.	Choose an item.			No
Pennsylvania	No	Choose an item.	Choose an item.		None	No
Vermont	Yes	Declining	Declining		Special Concern	Yes
Ontario	Yes	Declining	Declining	2004-14	Special Concern	No
Quebec	Yes	Declining	Declining	1984-2012	None	No

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

The Wildlife Conservation Society has conducted surveys for boreal breeding birds at approximately 60 locations in the Adirondack Park since 2003 (Glennon 2010). Rusty blackbird is one of 12 target species.

Trends Discussion *(insert map of North American/regional distribution and status):*

Breeding Bird Survey data show a survey-wide population decline of 12.5% per year from 1966 to 2005. This trend corresponds to a 95% loss of the population since 1966 and represents one of the largest population declines documented by the BBS (Greenberg et al. 2011). An analysis of early ornithological literature by Greenberg and Droege (1999) suggests that rusty blackbird was declining well before the advent of the Breeding Bird Survey in 1966. In addition to long-term declines, more recent range retractions have been documented in central and western Canada (see Greenberg and Matsuoka 2010) and Maine (Powell 2008).

Population trends in Quebec show an important annual fluctuation in the number of rusty blackbirds recorded, which suggests that this species could be cyclic (Savard et al. 2011) but a severe long-term decline has also been documented by both the Breeding Bird Survey and Christmas Bird Counts.

Christmas Bird Count data for North America from 1966 to 2005 show a decline of 4.5% per year, a rate that would result in a population decline of 85% over that period (Greenberg et al. 2011). COSEWIC (2006) notes that despite the limitations of the CBC data (counts may be underestimated because rusty blackbirds mix with groups of similar species), it is the best indication of population trends for rusty blackbird because most of the wintering area is surveyed.

In New York Crowell (1998) noted rusty blackbird as an uncommon breeder that was however “evidently increasing.” The second Breeding Bird Atlas documented a 23% decline in occupancy from 1980-85 to 2000-05. Breeding Bird Survey data for New York show a nonsignificant decline of 1.5% per year from 1966 to 2010 and a nonsignificant decline of 1.4% per year from 2000 to 2010. The nearest breeding population—in northern Vermont—declined by 23% from 1976-81 to 2003-07.

Glennon (2023) reported precipitous declines in Rusty blackbirds in the Adirondack Park from 2007-2022, with the species occurring at only 18% of surveyed sites.

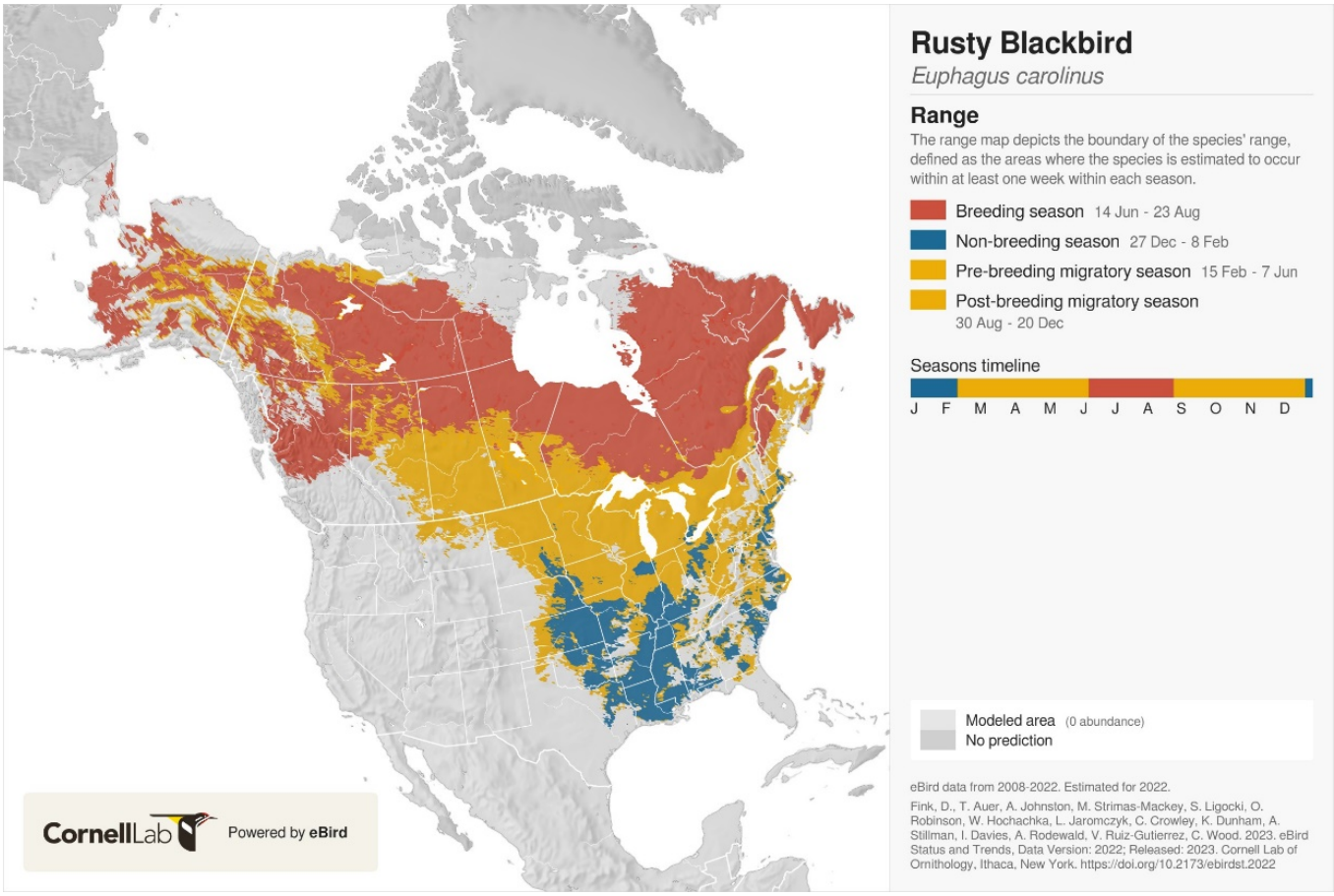

Figure 1. Rusty blackbird distribution in North America (eBird)

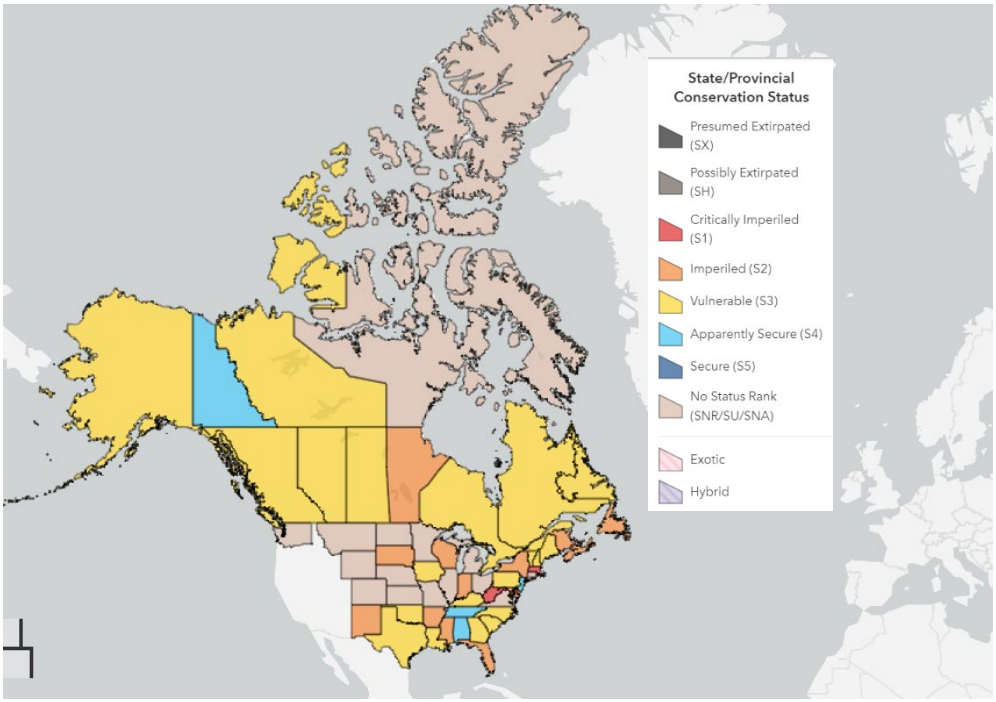

Figure 2. Conservation status of the rusty blackbird in North America (NatureServe 2023).

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

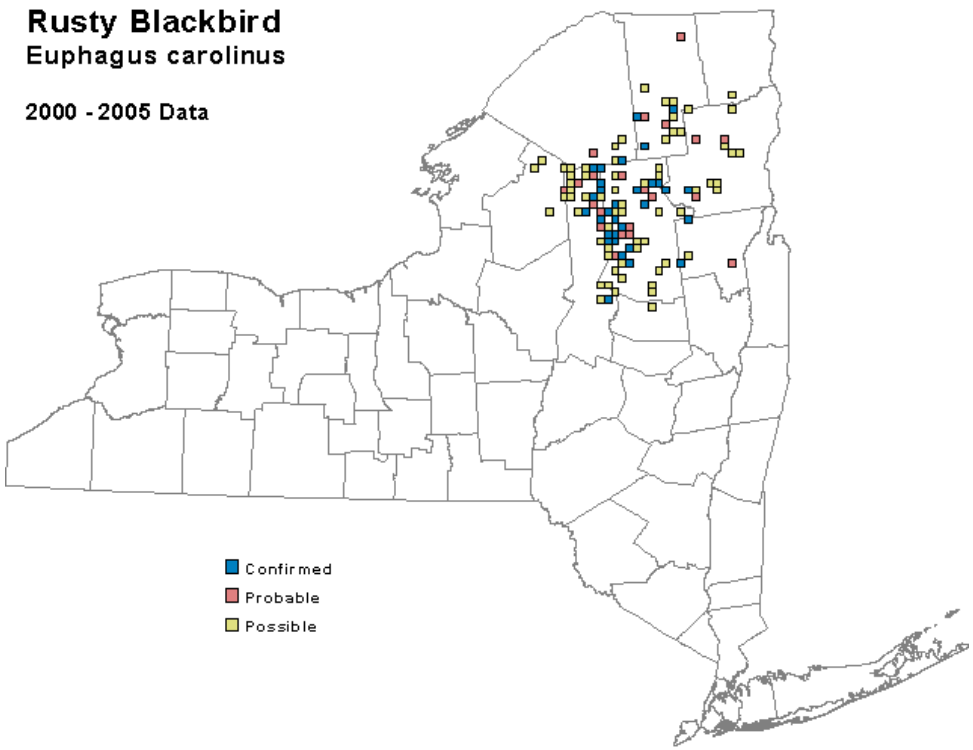

Figure 3. Rusty blackbird occurrence in New York State during the second Breeding Bird Atlas (McGowan and Corwin 2008)

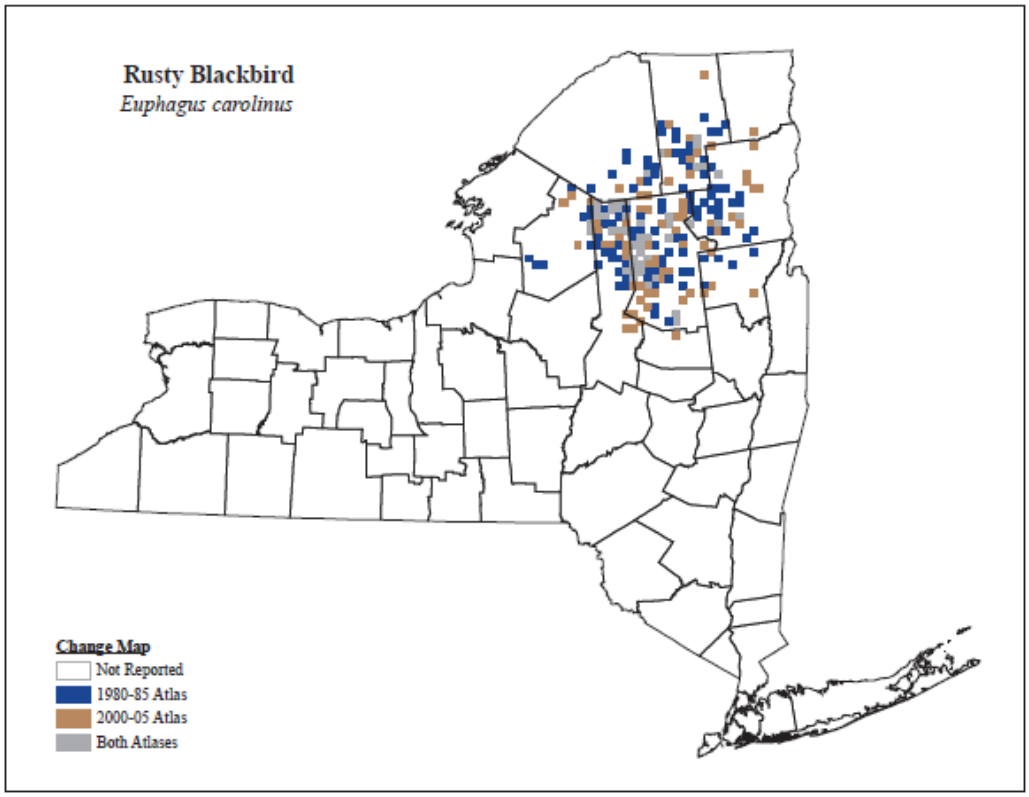

Figure 4. Change in rusty blackbird occurrence in New York State between the first Breeding Bird Atlas (McGowan and Corwin).

Years	# of Records	# of BBA Blocks	% of State
Pre-1980	_____	_____	_____
1980-1985	_____	151	2.8
2000-2005	_____	117	2.2
2020-2023	_____	316	5.5

Table 1. Records of rusty blackbird in New York.

Details of historic and current occurrence:

The first Breeding Bird Atlas (BBA) (1980-85) documented occupancy in 151 blocks, 2.8% of the survey blocks statewide (Andrle and Carroll 1988). The second BBA (2000-05) documented occupancy in 117 blocks, 2.2% of the survey blocks statewide, not a significant change since the first atlas (McGowan and Corwin 2008).

The third BBA (2020-25) is currently underway and utilizes a different number and layout of survey blocks across New York, making direct comparison with the first two atlases difficult. There were 5,333 blocks in the first and second BBAs, and there are 5,710 blocks in the current BBA. To date, Rusty blackbirds have been documented in 316 blocks, 5.5% of survey blocks statewide during the third BBA (NYS BBA III Overview, 2023).

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Disjunct	~130 miles

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

a. Riparian
b. Conifer Forest Swamp
c. Mixed Hardwood Swamp
d. Open Acidic Peatlands
e. Wet Meadow / Shrub Swamp

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
No	No	Stable	

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

The rusty blackbird's breeding distribution corresponds to the boreal forest. The species is closely associated with water and can thus be found in a variety of habitats where these characteristics converge, including fens, alder-willow bogs, muskeg, beaver ponds, as well as forest opening such as the swampy edges of lakes and streams.

Rusty blackbirds have been referred to as "loosely colonial" (Orians 1985) though few colonies have been located. Powell (2008) found one such colony in Maine and speculated that colonial nesting was more common historically.

Peterson (1988) noted that rusty blackbirds in New York breed in boreal bogs, ponds, and swamps—often with standing dead snags—surrounded by forest. Powell (2008) documented the use of small, stunted conifers (primarily spruce) at the edges of wetlands for nesting, areas that result in low predation rates.
During the winter, rusty blackbirds are rare and local, but occur regularly along the coast in wooded swamps and other wetlands, and occasionally visiting bird feeders (Crowell 1998).

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	Choose an item.	Choose an item.	Yes	Choose an item.	Choose an item.

Column options

First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

From Avery (1995):

The age at first breeding is probably 1 year. There are not many studies that measure hatching success, but it appears to be high. One brood per year is probable, but re-nesting following nest failure is likely. A bird banded in Arkansas on 6 Apr 1931 was shot on 30 Jan 1939, for a life span of at least 8 yr, 9 mo (Cooke 1942). The nest failure rate appears to be low, but transition to independence could be a critical period. Predation by owls, accipters, and other raptors occurs, but impact on populations is not known. Substantial mortality to local populations may occur when rusty blackbirds are in mixed-species winter roosts subjected to blackbird control in the southern United States (Stickley et al. 1986).
In New England populations, Powell (2008) estimated the average rate of nest success to be 62%.
Recent research suggests that rusty blackbirds have low site fidelity. Also, as early breeders, rusty blackbirds may be missed in bird surveys conducted in May or June when rusty blackbirds are quietly on nests.

VI. Threats *(from NY 2015 SWAP or newly described):*

The effects of exurban development on wildlife in the Adirondack Park have been studied by the Wildlife Conservation Society. A pattern has been observed in which the introduction of houses and roads into the landscape via residential development brings in a different set of predators and competitors that previously occurred in lower numbers (e.g., common grackle, red-winged blackbird). The combined effect of these changes tend to favor certain kinds of species over others—omnivores over insectivores, residents over migrants, generalists over habitat specialists (especially interior forest specialists), and tree nesters over ground nesters (Reed et al. 2012, Glennon and Kretser 2013). Rusty blackbird is a more specialized species that may compete with, or suffer higher predation from, the more common ones for which exurban development creates habitat.
Rusty blackbirds in the Adirondack Park are noted to colonize wetlands farther away from human infrastructure and are more likely to abandon wetlands closer to human infrastructure (M. Glennon, pers. comm.).

Within its breeding range in the boreal forest, this species could be affected by habitat alterations linked to global climate change (such as drying of wetlands) and to intensive forestry (Greenberg and Matsuoka 2010), as well as acidification of wetlands, and mercury contamination. Rusty blackbird was classified as “presumably stable” in regard to predicted climate change in an assessment of vulnerability conducted by the New York Natural Heritage Program (Schlesinger et al. 2011). However, McClure et al. (2012) found that the rusty blackbird’s southern range has shifted northward by an average of 143km since 1966. Their work showed a disproportionate decline in low-latitude areas, which is indicative of a climate-induced retraction.

Rusty blackbird populations in the Northeast have blood mercury concentrations averaging 0.9ppm, high enough to generate concern with respect to negative reproductive effects (Osborne et al. 2011). Intense efforts made beginning in the 1960s to control grackle and blackbird numbers—these species were considered important agricultural pests—also affected rusty blackbirds. Between 1974 and 1992, red-winged blackbird and European starling control programs were responsible for the extermination of 100,000 rusty blackbirds, which was 1% of the total number of birds killed in roosts (Dolbeer et al.

1997). Luscier et al. (2010) documented winter use of wetland forests as well as agricultural areas in which rusty blackbirds supplement their invertebrate diet with weed seeds and waste grains. Greenberg and Matsuoka (2010) also note the potential negative effects of disease (West Nile virus) and increasing raptor populations in the post-DDT era to struggling rusty blackbird populations. Wetland forests in the Mississippi Valley Flood Plain and the Atlantic Coastal Plain are important wintering areas for rusty blackbird (Greenberg and Droege 1999, Hamel et al. 2009). The conversion of the wetland forests in these areas for agriculture and urban development is considered one of the most significant factors in the decline of the rusty blackbird (Greenberg and Droege 1999). Between 1950 and 1980, more than 25% of flood plain forests along the Mississippi were converted (Hefner and Brown 1984). Qualitative analysis by Hamel et al. (2009) suggests that recent loss of forested wetlands in the Southeast has not been as steep as the decline in rusty blackbird populations over the same period. They state that it is therefore premature to conclude that loss of nonbreeding habitat is the primary cause of population decline, though it likely has contributed.

Threats to NY Populations	
Threat Category	**Threat**
1. Residential & Commercial Development	Housing & Urban Areas (competition from other blackbirds)
2. Biological Resource Use	Logging & Wood Harvesting (habitat degradation)
3. Pollution	Industrial & Military Effluents (mercury)
4. Biological Resource Use	Hunting & Collecting Terrestrial Animals (nuisance control)
5. Invasive & Other Problematic Species & Genes	Problematic Native Species (increased raptor, grackle populations)
6. Climate Change & Severe Weather	Habitat Shifting & Alteration

Table 2. Threats to rusty blackbirds in New York State.

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

Effective in 2011, the USFWS changed regulations on blackbird nuisance control programs to remove rusty blackbird from the list of birds for which no permit is required "because of long-term evidence of population declines throughout much of their range." The new regulations state that a permit must be obtained to control rusty blackbirds, nontoxic shot or bullet must be used, and control actions must be reported.

The provision in the Migratory Bird Treaty Act had a special provision about blackbirds: "A federal permit shall not be required to control yellow-headed, red-winged, rusty, and Brewer's blackbirds, cowbirds, all grackles, crows, and magpies when found committing or about to commit depredations

upon ornamental or shade trees, agricultural crops, livestock, or wildlife, or when concentrated in such numbers and manner as to constitute a health hazard or other nuisance..."

In New York, the Environmental Conservation Law does not specifically address rusty blackbirds: "Red-winged blackbirds, common grackles and cowbirds destroying any crop may be killed during the months of June, July, August, September and October by the owner of the crop or property on which it is growing or by any person in his employ."

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

The Rusty Blackbird Technical Working Group was organized in 2005. In 2009, this group started a “Rusty Blackbird Blitz,” an annual 17-day survey period to document population size and trends. Powell et al. (2010) investigated the implications of rusty blackbirds nesting in the regenerating edges of logged wetlands and concluded that in these regenerating areas, rusty blackbirds may be subject to "equal preference" ecological traps and thus experience a nearly 70% reduction in nest survival due to increased predation rates. Powell et al. (2010) suggest that buffers 75 m wide around the perimeter of suitable wetlands should increase the daily nest survival rate.
The NY Comprehensive Wildlife Conservation Strategy (CWCS; NYSDEC 2005) states the need for a management plan for high-altitude conifer forest birds that incorporates the results of the 2004 State Wildlife Grant study on boreal forest birds (Glennon 2010). Conservation actions following IUCN taxonomy are categorized in the table below.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
1. Land/Water Protection	Site/Area Protection
2. Land/Water Protection	Resource/Habitat Protection
3. Land/Water Management	Site/Area Management
4. External Capacity Building	Alliance and Partnership Development

Table 3. Recommended conservation actions for rusty blackbirds.

VII. References

Avery, M.L. 1995. Rusty Blackbird (Euphagus carolinus), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America http://bna.birds.cornell.edu/bna/species/200 doi:10.2173/bna.200

Cooke, M. T. 1942. Returns from banded birds-some longevity records of wild birds. Bird-Banding 1 3:110-119.

COSEWIC. 2006. COSEWIC assessment and status report on the Rusty Blackbird Euphagus carolinus in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 28 pp. (www.sararegistry.gc.ca/status/status_e.cfm).

Crowell, K.L. 1998. Rusty blackbird, Euphagus carolinus. Pages 549-550 in Bull's Birds of New York State (E. Levine, ed.). Cornell University Press, Ithaca, NY.

Dolbeer, R.A., D.F. Mott, and J.L. Belant. 1997. Blackbirds and starlings killed at winter roosts from PA-14 applications, 1974-1992: implications for regional population management. Proc. East. Wildl. Damage Meant. Conf. 7:77-86.

Ellison, W. G. 1990. The status and habitat of the Rusty Blackbird in Caledonia and Essex counties. Vermont Fish Wildl. Dep. Woodstock.

Glennon, M. 2010. Distribution and abundance of boreal birds in the Adirondack Park. Final Report to the New York State Department of Environmental Conservation. Wildlife Conservation Society, Saranac Lake, NY.

Glennon, M.J., and H.E. Kretser. 2013. Size of the ecological impact zone associated with exurban development in the Adirondack Park, New York. Landscape and Urban Planning 112:10-17.

Glennon, M.J. 2023. Conservation of Boreal Birds in the Adirondack Park: Report to the New York State Department of Environmental Conservation. Federal Aid Grant W-173-G.

Greenberg, R. and S. Droege. 1999. On the decline of the Rusty Blackbird and the use of ornithological literature to document long-term population trends. Conserv. Biol. 13:553-559.

Greenberg, R. and S. M. Matsuoka. 2010. Rusty Blackbird: mysteries of a species in decline. Condor 112:770–777.

Greenberg, R., D. W. Demarest, S. M. Matsuoka, C. Mettke-Hofmann, D. Evers, P. B. Hamel, J.

Luscier, L. L. Powell, D. Shaw, M. L. Avery, K. A. Hobson, P. J. Blancher, and D. K. Niven. 2011. Understanding declines in Rusty Blackbirds. Pp. 107– 126 in J. V. Wells (editor). Boreal birds of North America: a hemispheric view of their conservation links and significance. Studies in Avian Biology (no. 41), University of California Press, Berkeley, CA.

Hamel, P. B., D. De Steven, T. Leininger, and R. Wilson. 2009. Historical trends in Rusty Blackbird nonbreeding habitat in forested wetlands, pp. 341–353. In T. D. Rich, C. Arizmendi, D. W. Demarest, and C. Thompson [eds.], Tundra to Tropics: Connecting Birds, Habitats and People. Proceedings of the 4th International Partners in Flight Conference, 13–16 February 2008. McAllen, TX. Partners in Flight.

Hobson, K.A., R. Greenberg, S.L. Van Wilgenburg, and C. Mettke-Hofmann. 2010. Migratory connectivity in the rusty blackbird: isotopic evidence from feathers of historical and contemporary specimens. The Condor 112(4):778-788.

Lusci er, J. D., S. E. Lehnen, and K. G. Smith. 2010. Habitat occupancy by Rusty Blackbirds wintering in the lower Mississippi Alluvial Valley. Condor 112:841–848.

McClure, C.J.W., B.W. Rolek, K. McDonald, and G.E. Hill. 2012. Climate change and the decline of a once common bird. Ecology and Evolution 2(2):370-78.

NatureServe. 2023. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available http://www.natureserve.org/explorer. (Accessed: January 11, 2024).

New York State Breeding Bird Atlas III overview (NYS BBA III Overview). 2023. New York State Checklist Overview. https://ebird.org/atlasny/state/US-NY. Accessed (January 11, 2024).

New York State Department of Environmental Conservation (NYSDEC). 2005. New York State Comprehensive Wildlife Conservation Strategy. http://www.dec.ny.gov/index.html

Orians, G. H. 1985. Blackbirds of the Americas. University of Washington Press, Seattle, WA.

Osborne, C., D. Evers, M. Duron, N. Schoch, D. Yates, O. Lane, D. Buck, I. Johnson, and J. Franklin. 2011. Mercury contamination within terrestrial ecosystems in New England and Mid-Atlantic states: profiles of soil, invertebrates, songbirds, and bats. BRI Report 2011-09.

Powell, L. L., T. P. Hodgman, W. E. Glanz, J. Osenton, and C. Fisher. 2010. Habitat use and nest survival of Rusty Blackbirds in New England: does timber harvest adjacent to wetlands create ecological traps? Condor 112 (4):800-809.

Reed, S.E., H.E. Kretser, M.J. Glennon, L. Pejchar, and A. M. Merenlender. 2012. Faunal biodiversity at the urban-rural interface: current knowledge, research priorities, and planning strategies. Chapter 6 in D. N. Laband, B. G. Lockaby, and W. C. Zipperer, eds. Urban-Rural Interfaces: Linking People and Nature. American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America, Madison, WI. 332pp.

Savard, J-P. L., M. Cousineau, and B. Drolet. 2011. Exploratory Analysis of Correlates of the Abundance of Rusty Blackbirds (Euphagus carolinus) during Fall Migration. Ecoscience 18(4):402-408.

Schlesinger, M.D., J.D. Corser, K.A. Perkins, and E.L. White. 2011. Vulnerability of at-risk species to climate change in New York. New York Natural Heritage Program, Albany, NY.

Shaw, D., S.M. Matsuoka, A. Nelson, and J.A. Johnson. 2011. Estimates of Apparent Adult Survival among Nesting Rusty Blackbirds. Pages 5-8 in Assessing the Value of Department of Defense Lands in Alaska to a Declining Species, the Rusty Blackbird (D. Shaw, S.M. Matsuoka, and J.A. Johnson, eds.). DoD Legacy Project # 10-337. Arlington, VA.

Stickley, Jr., A. R., D. J. Twedt, J. F. Heisterberg, D. F. Mott, and J. F. Glahn. 1986. Surfactant spray system for controlling blackbirds and starlings in urban roosts. Wildl. Soc. Bull. 14:412-418.

Originally prepared by	Kimberley Corwin
Date first prepared	November 7, 2012
First revision	January 28, 2014 (Samantha Hoff)
Latest revision	

Species Status Assessment

Common Name: Scarlet tanager **Date Updated:**

Scientific Name: *Piranga olivacea* **Updated By:**

Class: Aves

Family: Cardinalidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

The scarlet tanager is found in extensive mature forests of a wide variety, especially those with maples and oaks. It breeds throughout the eastern half of the United States, though only reaching the northernmost parts of Louisiana, Mississippi, Alabama, and Georgia. Wintering populations are found in South America. In New York, scarlet tanager breeds in every county though it is less widespread in the agricultural regions of the Great Lakes Plain and the most highly developed urban areas of the Coastal Lowlands.

Breeding Bird Survey protocol document this species well, although it is unclear whether source-sink dynamics related to forest fragmentation may influence BBS data. Data for North America show no change in abundance from 1966 to 2010 or for the shorter period of 2000 to 2010. BBS data for New York show slight declines for long-term and short-term trends while Breeding Bird Atlas data show no change in occupancy since the mid to late 1980s (McGowan and Corwin 2008).

I. Status

a. Current legal protected Status

i. **Federal:** Not listed **Candidate:** No

ii. **New York:** Not listed; SGCN

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** S5 **Tracked by NYNHP?:** No

Other Ranks:
IUCN Red List: Least Concern

Status Discussion:

Scarlet tanager is widespread across New York, breeding in every county except in the New York City metropolitan area. It is a common and widespread migrant. Scarlet tanager is ranked as Secure or Apparently Secure in all adjacent states and provinces.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Stable	Stable	2000-2010	Not listed	Choose an item.
Northeastern US	Yes	Stable	Stable	2000-2010	Not listed	Choose an item.
New York	Yes	Stable	Stable	BBA: 1980-85 to 2000-05	Not listed	Yes
Connecticut	Yes	Declining	Unknown	2000-2010	Not listed	Yes
Massachusetts	Yes	Declining	Stable	BBS: 2000-10; BBA: 1975-79 to 2007-11	Not listed	No
New Jersey	Yes	Increasing	Stable	2000-2010	Not listed	Yes
Pennsylvania	Yes	Declining	Stable	BBS: 1966-2010; BBA:1984-89 to 2004-08	Not listed	Yes
Vermont	Yes	Declining	Stable	BBS: 1966-2010; BBA: 1976-81 to 2003-07	Not listed	No
Ontario	Yes	Stable	Stable	2000-2010	Not listed	Choose an item.
Quebec	Yes	Declining	Declining	BBS: 1966-2012; BBA: 1984-89 to 2012	Not listed	Choose an item.

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

None currently. Project Tanager was conducted from 1993 to 1996 at 2,000 study sites across North America to gain an understanding of area-sensitivity and provide recommendations for protecting forest-interior species.

Trends Discussion *(insert map of North American/regional distribution and status):*

Breeding Bird Survey protocol lends well to this forest-breeding bird and trends are significant in most areas. BBS data for North America show no change in abundance for both short-term or long-term trends. BBS data for Connecticut and Massachusetts show significant long-term declining trends of -2.2% and -1.2% per year respectively; short-term trends for both states are still negative (-2.5% and -1.2%) but become non-significant. The Massachusetts Breeding Bird Atlas shows an increase in occupancy of 8% since the mid-1970s. Pennsylvania and Vermont also show a stable distribution (BBA data) but declining abundance (BBS data).

BBS data for New York from 1966 to 2010 show a significant long-term decline of -1.4% per year and a non-significant short-term decline of -0.2% per year from 2000-2010. New York Breeding Bird Atlas data from 1980-85 to 2000-05 show a stable rate of occupancy with detection in 81% of survey blocks during both periods. Lowe and Hames (2008) analyzed BBS data for the Adirondack region from 1980 to 2005 and found a significant declining trend of -3.9% per year.

In recent years, however, forest fragmentation and source-sink population dynamics related to fragmentation have become increasingly important and may influence BBS data (Mowbray 1999); i.e., it remains unclear whether BBS surveyors are often recording unmated males in forest fragments too small for breeding territories, unmated second-year males in areas of high population density who are unable to attract females (Roberts and Norment 1999), and breeding pairs in woodlots whose nests are unlikely to produce successful broods because of nest predation and brood parasitism (Robinson et al. 1995, Brawn and Robinson 1996).

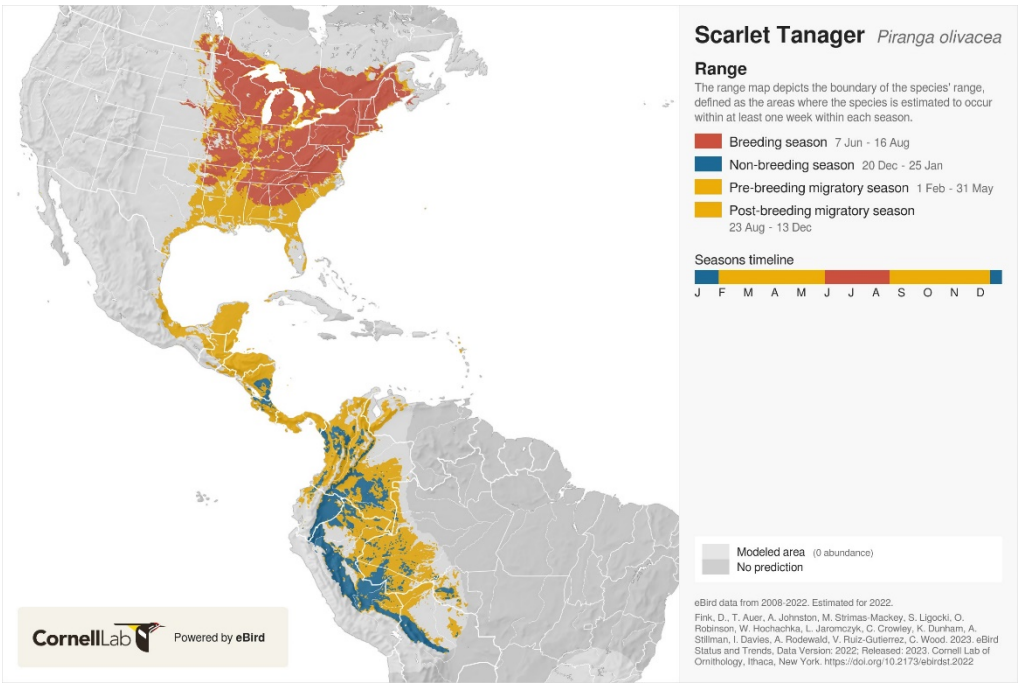

Figure 1. Scarlet tanager distribution (eBird 2022)

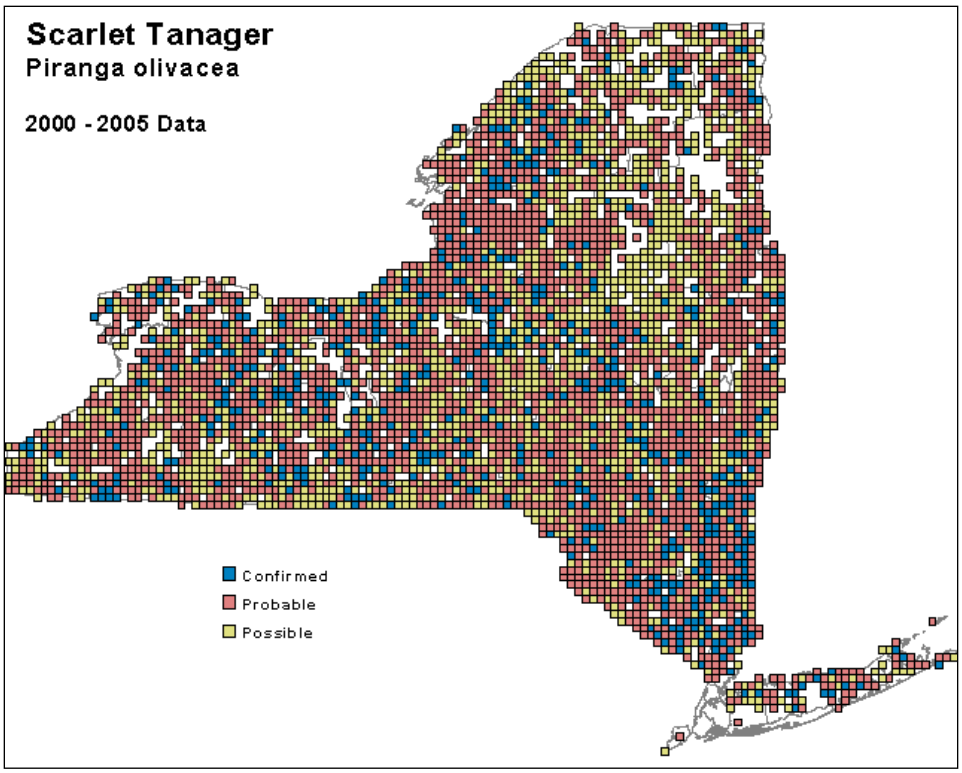

Figure 2. Scarlet tanager occurrence in New York State during the second Breeding Bird Atlas (McGowan and Corwin 2008).

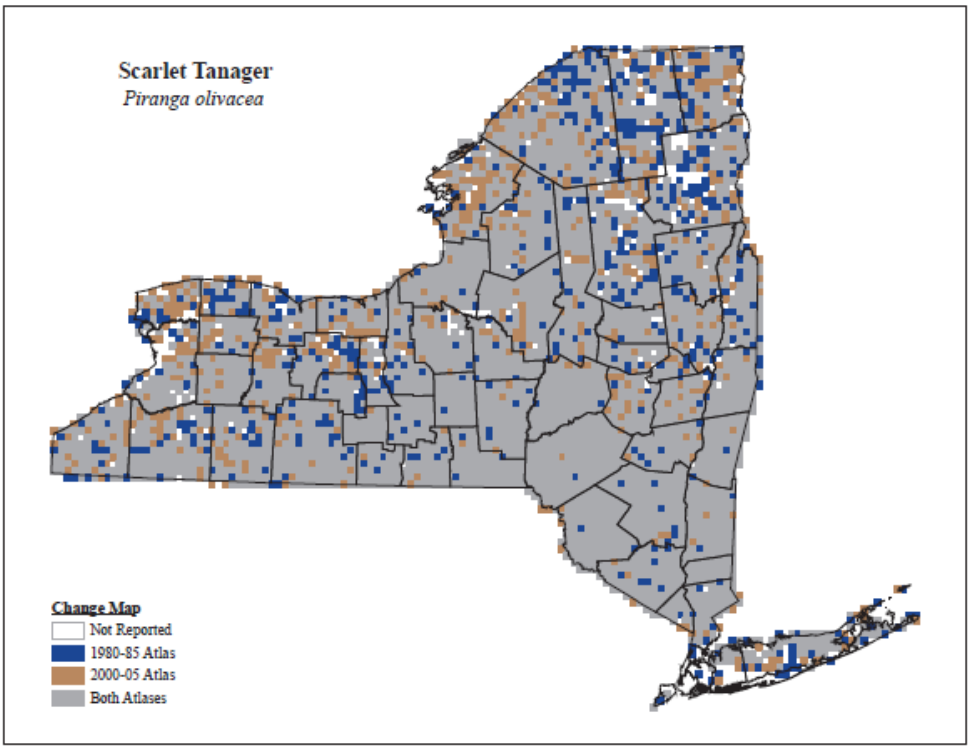

Figure 3. Change in scarlet tanager occurrence in New York State between the first Breeding Bird Atlas and second Breeding Bird Atlas (McGowan and Corwin 2008).

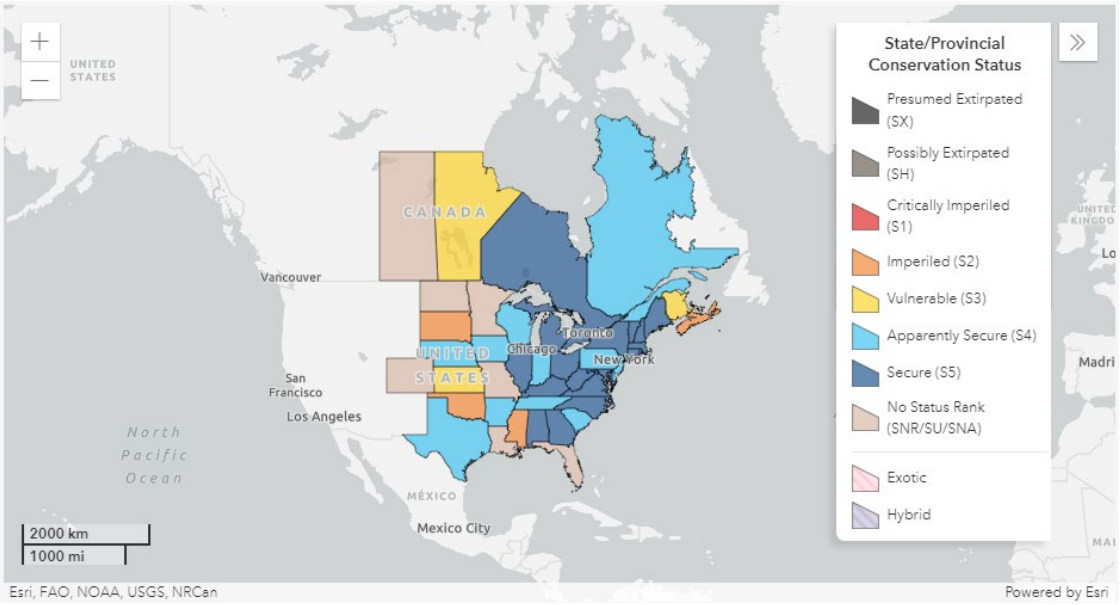

Figure 4. Conservation status of scarlet tanager in North America (NatureServe 2023).

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

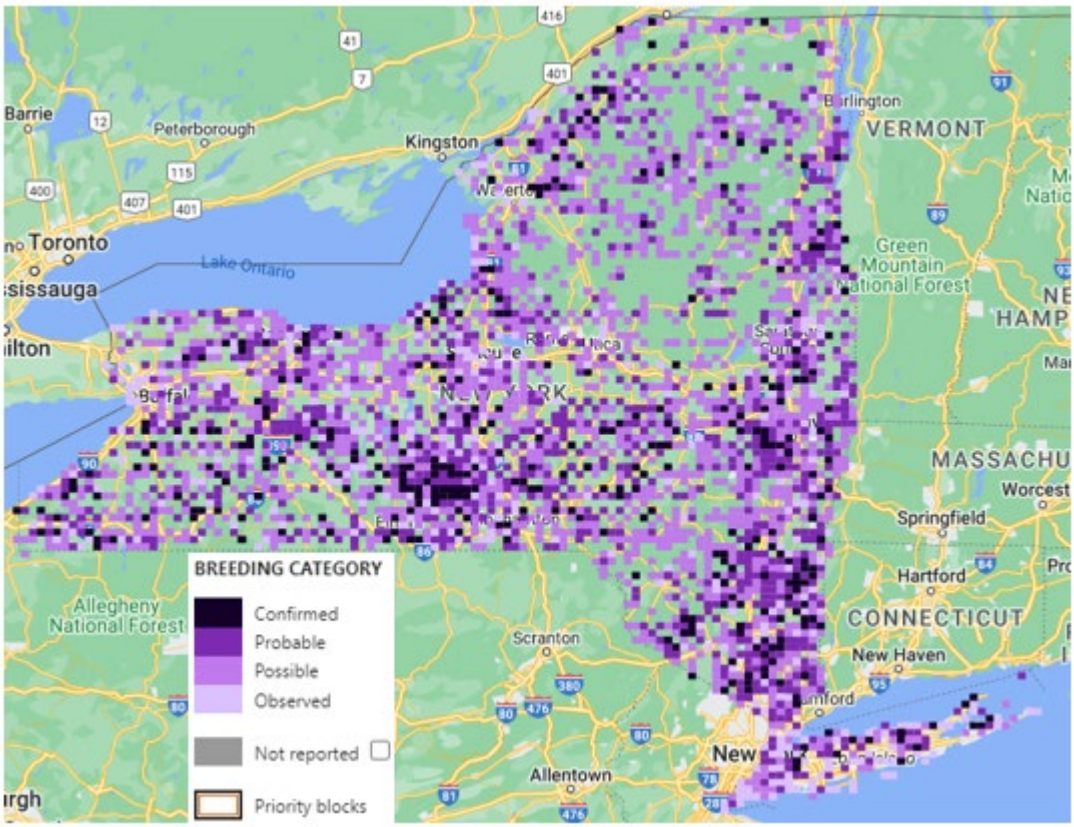

Figure 5. Records of scarlet tanager in New York (NYS BBA III Map, 2023)

Years	# of Records	# of BBA Blocks	% of State
Pre-1980			
1980-1985		4,299	81%
2000-2005		4,338	81%
2020-2023		2,661	47%

Table 1. Records of scarlet tanager in New York.

Details of historic and current occurrence:

The first Breeding Bird Atlas (BBA) (1980-85) documented occupancy in 4,299 blocks, 81% of the survey blocks statewide (Andrle and Carroll 1988). The second BBA (2000-05) documented occupancy in 4,338 blocks, 81% of the survey blocks statewide, not a significant change since the first atlas (McGowan and Corwin 2008).

The third BBA (2020-25) is currently underway and utilizes a different number and layout of survey blocks across New York, making direct comparison with the first two Atlases difficult. There were 5,333 blocks in the first and second BBAs, and there are 5,710 blocks in the current BBA. To date, scarlet tanager has been documented in 2,661 blocks, 47% of survey blocks statewide during the third BBA (NYS BBA III Overview, 2023).

Scarlet tanagers are found throughout New York except in the agricultural areas of the Great Lakes Plain and in metropolitan areas.

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Core	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

a. Oak-Pine Forest
b. Oak forest
c. Coastal Hardwoods
d. Mixed Northern Hardwoods
e. Plantation and Disturbed Land Pioneer Forests
f. Hardwood Swamp
g. Floodplain Forests

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
No	No	Stable	

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

Scarlet tanagers breed in expansive mature forests of a wide variety, especially those forests with maples and oaks. They are area-sensitive, though the degree of sensitivity declines as forest density increases. Productivity is highest in areas that are at least 70% forested (Rosenberg et al. 1999). Although scarlet tanagers typically avoid forest edges, they will also breed in parks and orchards, and in large trees in suburban areas.

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	Choose an item.	Choose an item.	Yes	No	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

Both male and female scarlet tanagers breed in their first year. Little information is available on hatching or fledging success (Mowbray 1999. In western New York (Roberts and Norment 1999), pairing success differed significantly among forest size classes. Pairing success was high (>75%) in all forest size classes that contained tanagers and was 100% in continuous forest plots >1,000 ha. Fledging success increased significantly with area of forest patch and differed significantly among forest-patch classes; no fledglings were present in forest patches <10 ha; there was a 22% fledging success rate in forest patches 10–50 ha; 39% fledging success in forest patches 50–150; and 64% fledging success in forest sites >1,000 ha. The maximum life span for the species is at least 10 years, 1 month (Klimkiewicz and Futcher 1987).

Few data are available on breeding site fidelity. In central Illinois, 50% of banded birds (n = 4) were recaptured on the breeding grounds the following year (Robinson 1992). Birds have not been monitored after fledging; anecdotal reports suggest they remain in, or near, territory until they migrate. There is no conclusive evidence of second broods.

VI. Threats *(from NY 2015 SWAP or newly described):*

Threats to NY Populations	
Threat Category	**Threat**
1. Residential & Commercial Development	Housing & Urban Areas
2. Biological Resource Use	Logging & Wood Harvesting
3. Agriculture & Aquaculture	Annual & Perennial Non-Timber Crops (intensification)
4. Invasive & Other Problematic Species & Genes	Problematic Native Species (cowbird parasitism)
5. Energy Production & Mining	Oil & Gas Drilling (fracking)
6. Climate Change & Severe Weather	Storms & Flooding
7. Energy Production & Mining	Renewable Energy (wind turbines)
8. Pollution	Airborne pollutants (mercury)

Explanations for trends in local and regional abundance of scarlet tanager include successional changes in habitat structure, variation in arthropod abundance, forest fragmentation, and source-sink population dynamics (Brawn and Robinson 1996, Villard et al. 1999).

As a forest-interior species, scarlet tanager is sensitive to forest fragmentation on breeding grounds (Robbins 1980, Robbins et al. 1989, Porter 1996, Roberts and Norment 1999). Their presence depends on the amount of fragmentation, size of forest patch, forest configuration, and degree of patch isolation. Throughout eastern North America, occurrence is significantly correlated with overall amount of fragmentation; probability of finding breeding tanagers <0.50 in highly fragmented sites (Rosenberg et al. 1999). Reduced reproductive success in fragmented forests appears to result from high rates of nest predation and brood parasitism by cowbirds and generalist species. In many fragmented landscapes, reproductive rates are low enough to suggest scarlet tanager populations function as reproductive sinks (Robinson et al. 1995, Brawn and Robinson 1996, Bollinger et al. 1997).

The effects of exurban development on wildlife in the Adirondack Park have been studied by the Wildlife Conservation Society. A pattern has been observed in which the introduction of houses and roads into the landscape via residential development brings in a different set of predators and competitors that previously occurred in lower numbers (e.g., blue jay, American crow, gray squirrel). The combined effect of these changes tend to favor certain kinds of species over others – omnivores over insectivores, residents over migrants, generalists over habitat specialists (especially interior forest specialists), and tree nesters over ground nesters (Glennon and Kretser 2013, Reed et al. In Press). Scarlet tanager is more specialized species that must compete with, or suffer higher predation from, the more common ones for which exurban development creates habitat.

There is uncertainty whether BBS data are influenced by the effects of fragmentation on source/sink population dynamics. BBS surveyors may document non-breeding males in forest patches too small to support successful breeding, or unmated second-year males in forests where density of males is too high for them to attract a mate (Mowbray 1999).

Scarlet tanagers appear to be susceptible to harsh weather early in the breeding season. Populations declined 30% in New Hampshire and 50% in Maine in 1974, following a week of unusually cold, wet weather at the beginning of the breeding season.

In an assessment of vulnerability to predicted climate change conducted by the New York Natural Heritage Program, scarlet tanager was identified as a second-priority species whose sensitivity should be assessed in the future (Schlesinger et al. 2011).

Neotropical migrants face additional threats on wintering grounds and during migration including loss and degradation of wintering habitat, exposure to unregulated contaminants, and collision with various structures such as powerlines, towers, and turbines. In some areas, hunting remains a problem. As a night-migrating songbird, scarlet tanagers are susceptible to mortality from striking lighted towers and buildings (Stevenson and Anderson 1994, Goodrich et al. 2002).

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

Scarlet tanager is protected under the Migratory Bird Treaty Act of 1918.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

Forest tracts that are at least 7,500 acres in size should be preserved and landscapes that are at least 70% forested are most beneficial to scarlet tanagers and tend to minimize the adverse effect of intrusion by brown-headed cowbirds (Rosenberg et al. 1999). Prevention of further habitat loss, and preservation and restoration of extensive forested areas on breeding grounds, should be primary management strategy (Robbins et al. 1989, Robinson et al. 1995, Villard et al. 1999).

Efforts should also include minimizing the effects of fragmentation on habitats due to development, and on implementing population control of white-tailed deer in areas where deer populations are affecting forest regeneration and species composition (NYSDEC 2005).

Conservation actions following IUCN taxonomy are categorized in the table below.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
Land/Water Protection	Site/Area Protection
Land/Water Protection	Resource/Habitat Protection
Land/Water Management	Site/Area Management

Land/Water Management	Invasive/Problematic Species Control
Education & Awareness	Awareness & Communications

Table 2. Recommended conservation actions for scarlet tanager

The Comprehensive Wildlife Conservation Strategy (NYSDEC 2005) includes recommendations for the following actions for deciduous/mixed forest birds, which includes scarlet tanager.

Habitat management:
____ Minimize the effects of fragmentation of habitats due to human development.
____ Implement population control of whitetail deer in areas where deer populations are affecting forest regeneration and species composition.
Habitat research:
____ Research effects of logging on "forest interior" birds.
Other action:
____ Educate the public on the benefits and need for forest management to enhance populations of ground and shrub nesting forest breeding birds on public and private lands.
____ Educate the public on the benefits and need for forest management on public and private lands.
Population monitoring:
____ BBS appears adequate for most species.

VII. References

Bollinger, E. K., B. D. Peer, and R. W. Jansen. 1997. Status of Neotropical migrants in three forest fragments in Illinois. Wilson Bull. 109:521-526.

Brawn, J. D. and S. K. Robinson. 1996. Source-sink population dynamics may complicate the interpretation of long-term census data. Ecology 77:3-12.

Corwin, K. 2013. NYSDEC SWAP 2015 Species Status Assessment for scarlet tanager. Prepared on June 25, 2012. Revised by Samantha hoff on January 27, 2014.

Glennon, M.J., and H.E. Kretser. 2013. Size of the ecological effect zone associated with exurban development in the Adirondack Park, N.Y. Landscape and Urban Planning 112:10-17.

Goodrich, L., M. Brittingham, J. Bishop, and P. Barber. 2002. Wildlife habitat in Pennsylvania: past, present future. Report to state resources agencies, 236 pp.,(www.dcnr.state.pa.us).

Klimkiewicz, M. K. and A. G. Futcher. 1987. Longevity records of North American birds: Coerebinae through Estrildidae. J. Field Ornithol. 58:318-333.

Mowbray, T.B. 1999. Scarlet Tanager (*Piranga olivacea*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/479 doi:10.2173/bna.479

NatureServe. 2023. NatureServe Explorer. Page last published 12/1/2023. https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.101306/Piranga_olivacea. Accessed December 29, 2023.

New York State Breeding Bird Atlas III Map (NYS BBA III Map). 2023. https://ebird.org/atlasny/explore. Accessed December 29, 2023.

New York State Breeding Bird Atlas III Overview (NYS BBA III Overview). 2023. New York Checklist Overview. https://ebird.org/atlasny/state/US-NY. Accessed December 29, 2023.

New York State Department of Environmental Conservation (NYSDEC). 2005. New York State Comprehensive Wildlife Conservation Strategy. Albany, NY. https://extapps.dec.ny.gov/docs/wildlife_pdf/cwcs2005.pdf

Porter, T. W. 1996. Habitat selection by the Scarlet Tanager *Piranga olivacea*, in the Manistee National Forest. Master's Thesis. Central Michigan Univ., Mt. Pleasant.

Reed, S.E., H.E. Kretser, M.J. Glennon, L. Pejchar, and A.M. Merenlender. 2013. Faunal biodiversity at the urban-rural interface: current knowledge, research priorities, and planning strategies. Pages 99-114 in B.G. Lockaby, W. Zipperer and D.N. Laband, editors. Urban-Rural Interfaces: Linking People and Nature, American Society of Agronomy, Madison, WI.

Roberts, C. and C. J. Norment. 1999. Effects of plot size and habitat characteristics on breeding success of Scarlet Tanagers. Auk 116:73-82.

Robbins, C. S. 1980. Effect of forest fragmentation on breeding bird populations in the piedmont of the mid-Atlantic region. Atlantic Nat. 33:31-36.

Robbins, C. S., D. K. Dawson, and B. A. Dowell. 1989. Habitat area requirements of breeding forest birds of the Middle Atlantic states. Wildl. Monogr. 103.

Robinson, S. K. 1992. Population dynamics of breeding Neotropical migrants in a fragmented Illinois landscape. Pages 408-418 *in* Ecology and conservation of Neotropical migrant landbirds. (Hagan III, J. M. and D. W. Johnson, Eds.) Smithsonian Inst. Press, Washington, D.C.

Robinson, S. K., F. R. Thompson III, T. M. Donovan, D. R. Whitehead, and J. Faaborg. 1995. Regional forest fragmentation and the nesting success of migratory birds. Science 267:1987-1990.

Rosenberg, K. V., R. W., Rohrbaugh, Jr., S. E. Barker, J. D. Lowe, R. S. Hames, and A. A. Dhondt. 1999. A land manager's guide to improving habitat for Scarlet Tanagers and other forest interior birds. The Cornell Lab of Ornithology. 23 pp.

Schlesinger, M.D., J.D. Corser, K.A. Perkins, and E.L. White. 2011. Vulnerability of at-risk species to climate change in New York. New York Natural Heritage Program, Albany, NY.

Stevenson, H. M., and B. H. Anderson. 1994. The birdlife of Florida. University Press of Florida, Gainesville.

Villard, M. A., M. K. Trzcinski, and G. Merriam. 1999. Fragmentation effects on forest birds: relative influence of woodland cover and configuration on landscape occupancy. Conserv. Biol. 13:774-783.

Originally prepared by	Kimberly Corwin
Date first prepared	June 25, 2012
First revision	January 27, 2014 (Samantha Hoff)
Latest revision	Transcribed with minor updates December 29, 2023

Species Status Assessment

Common Name: Snowy egret **Date Updated:** 12/14/2023

Scientific Name: *Egretta thula* **Updated By:** M. Oberkircher

Class: Aves

Family: Areidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

The snowy egret is at the northern edge of its breeding range in New York. It nests colonially with other waterbird species in trees and shrubs, mostly on coastal islands. After heavy persecution during the late 1800s when the species was almost extirpated by plume hunters, breeding resumed in New York in 1949 and the species increased rapidly—even expanding its historic distribution—along the Atlantic Coast through the late 1970s. Declines were noted across the Northeast beginning in the 1980s and populations have fluctuated considerably since then.

The number of breeding pairs on New York's Coastal Lowlands fluctuated from 2010 to 2020 without a notable trend, yet the number of pairs and colonies remain below peak densities from the 1970s. Despite its ability to recolonize areas after extirpation, snowy egrets remain susceptible to habitat loss and human disturbance as well as increased predation from nearby human activity.

I. Status

a. Current legal protected Status

i. **Federal:** Not Listed **Candidate:** No

ii. **New York:** SGCN

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** S2S3 **Tracked by NYNHP?:** Yes

Other Ranks:

-IUCN Red List: Least Concern

-Partners in Flight: 7 out of 20

Status Discussion:

Snowy egret is a locally common and abundant breeder on Long Island and rare in the winter. Inland, it is rare but regular during any month. One pair has been observed at Motor Island on the Niagara River, but breeding has not been documented.

Snowy egret is ranked as Imperiled in New York and Massachusetts. It is ranked as Critically Imperiled in Connecticut, and as Vulnerable in New Jersey.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Increasing	Unknown			Choose an item.
Northeastern US	Yes	Declining	Unknown		Watchlist (Assessment Priority)	No
New York	Yes	Stable	Stable			Yes
Connecticut	Yes	Unknown	Unknown		Threatened	Yes
Massachusetts	Yes	Declining	Increasing			Yes
New Jersey	Yes	Declining	Declining		Special Concern	Yes
Pennsylvania	No	Choose an item.	Choose an item.			No
Vermont	No	Choose an item.	Choose an item.			No
Ontario	No	Choose an item.	Choose an item.			No
Quebec	No	Choose an item.	Choose an item.			No

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

The NYSDEC conducts surveys for snowy egrets every three years as part of the Long Island Colonial Waterbird Survey. The NYC Audubon Harbor Heron Nesting Survey project conducts interim surveys every year and full surveys every three years.

Trends Discussion *(insert map of North American/regional distribution and status):*

Breeding Bird Survey data for North America show increasing long-term (1966-2021) and short-term (1992-2021) trends of 1% and 1.2% per year respectively.

The population appears to be stable in Maryland (Robbins and Blom 1996) and perhaps increasing in Massachusetts (Veit and Petersen 1993). However, the species declined or disappeared as a breeder in many parts of the Northeast and Midwest from the mid-1970s to the 1990s. In 1978, 1,228 pairs nested in 21 colonies on Long Island, NY. By 1985, only 650 pairs nested in 15 colonies (Andrle and Carroll 1988). A similar decline in New Jersey from 3,178 individuals in 27 colonies to 1,343 in 26 colonies has also occurred (Walsh et al. 1999).

Colonial Waterbird Surveys on Long Island—conducted every three years—show fluctuations in the number of breeding pairs, but no notable increasing or declining trend is apparent from 2000 to 2022. The 2010 survey documented 476 pairs at 12 active sites while the 2022 survey found 487 pairs at 11 sites. The NY/NJ Harbor Herons survey has also seen no real trend in abundance with 308 pairs documented on 4 islands in 2007 and 284 pairs seen on four islands in 2022. South Brother (an island testing high for heavy metal and organic contaminants in herring gull eggs) has declined from 134 pairs in 2007 to 57 pairs in 2022.

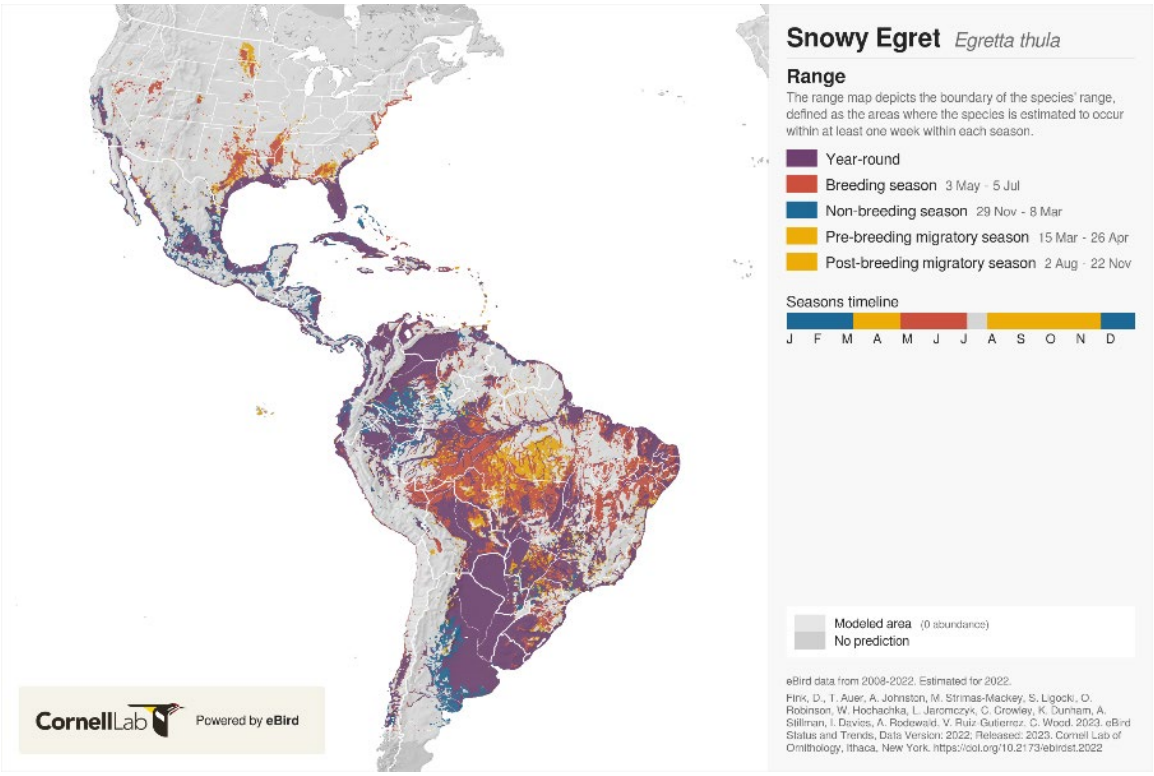

Figure 1. Snowy egret range (eBird)

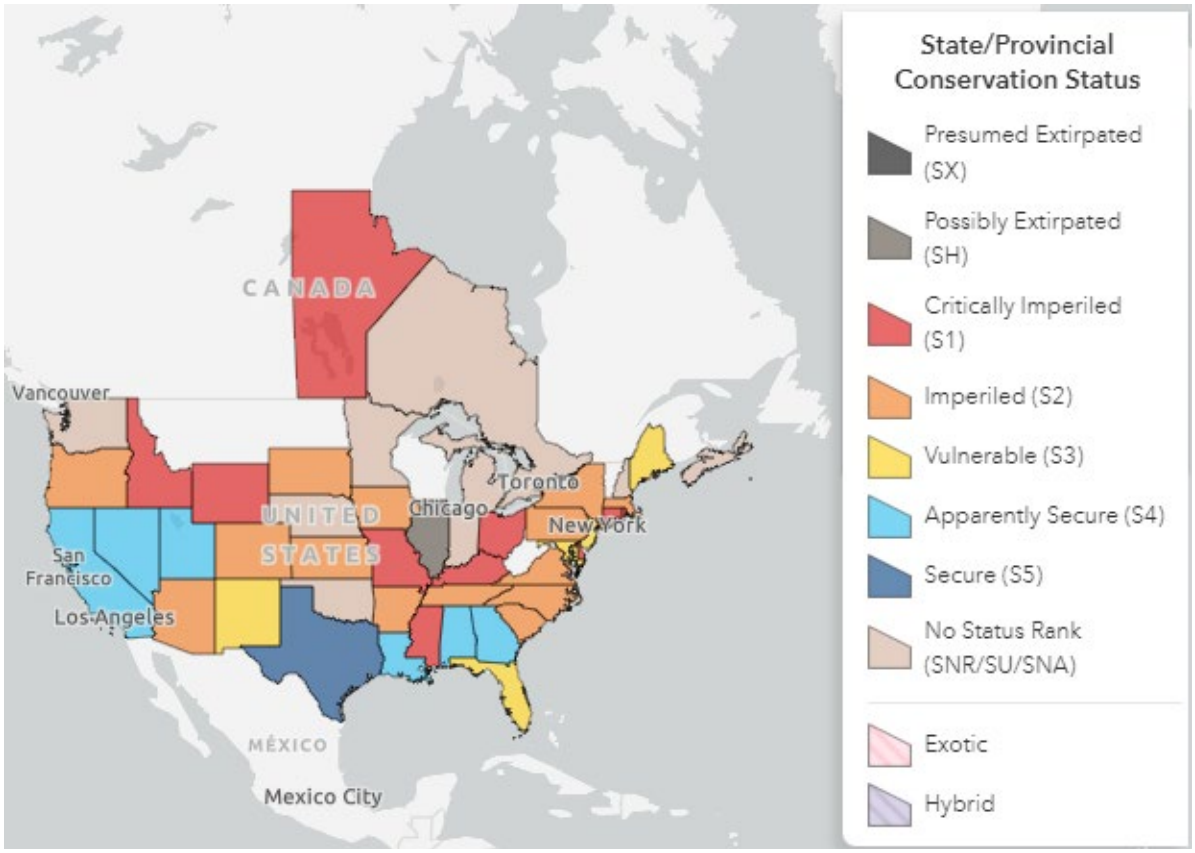

Figure 2. Conservation status of snowy egret in North America (NatureServe)

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

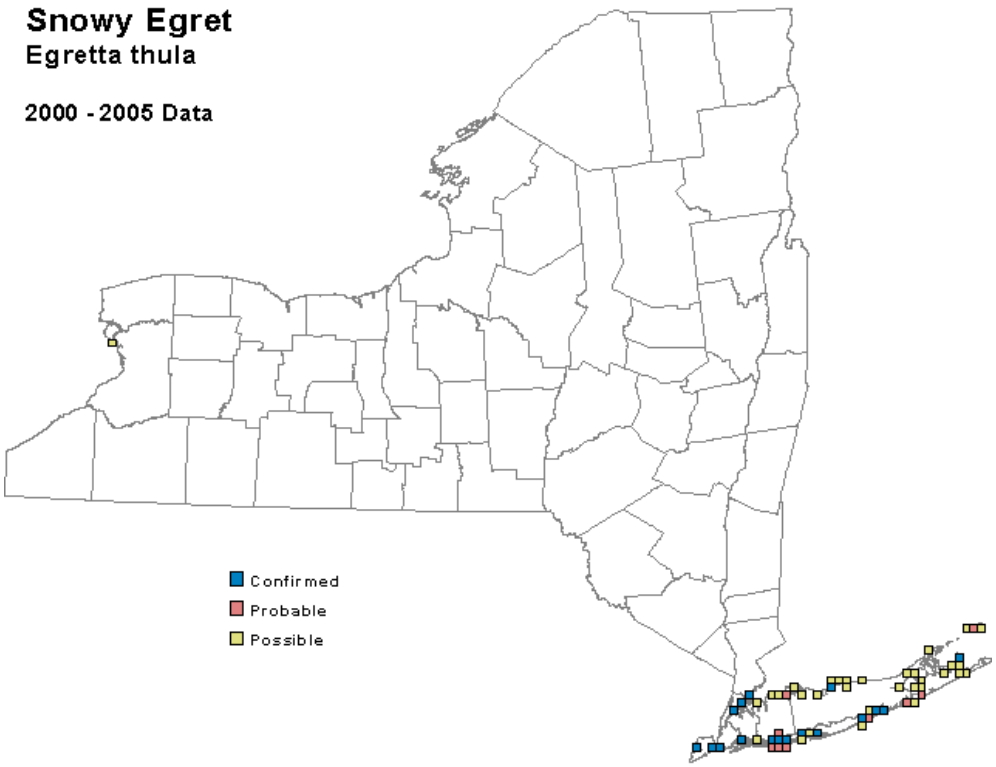

Figure 3. Snowy egret occurrence in New York State during the second Breeding Bird Atlas (McGowan and Corwin 2008).

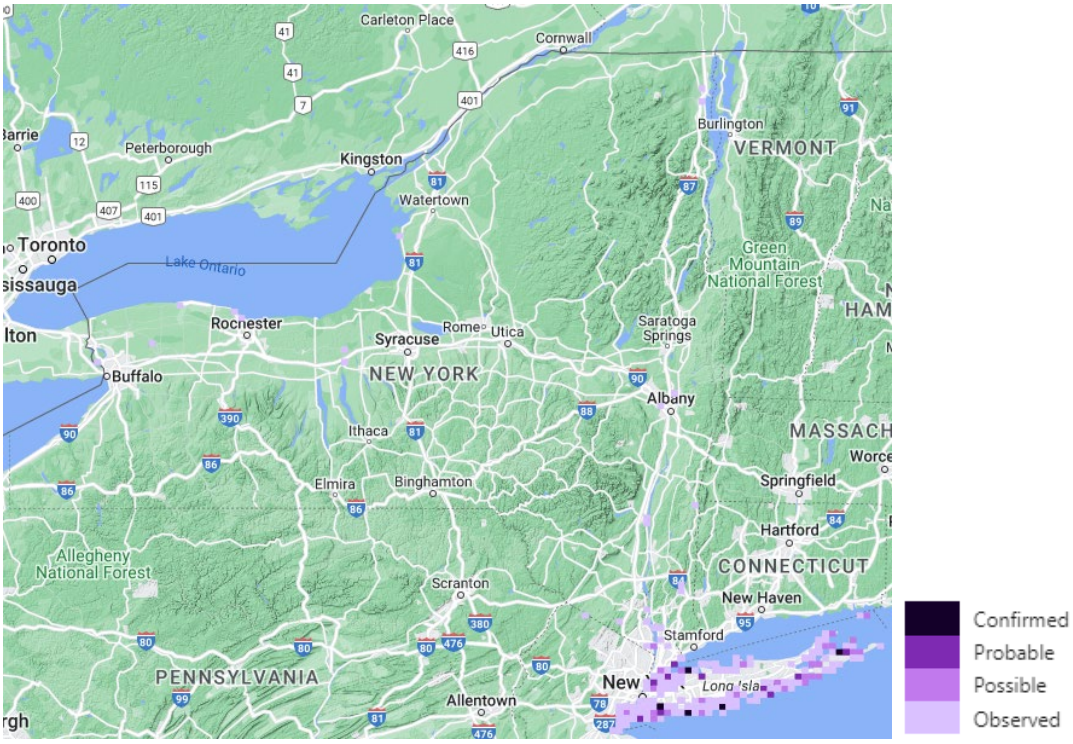

Figure 4. Records of snowy egret in New York (NYS BBA III Map, 2023)

Years	# of Records	# of BBA Blocks	% of State
Pre-1980			
1980-1985		94	2%
2000-2005		58	1%
2020-2023		42	<1%

Table 1. Records of snowy egret in New York.

Details of historic and current occurrence:

"Not abundant but by no means uncommon" is the description provided by Giraud (1844) for snowy egrets, which bred locally on the Coastal Lowlands. Breeding was not recorded again until 1949 when two nests were found at Oak Orchard Beach, Suffolk County (Bull 1964). Rapid recolonization followed and the number of breeding pairs peaked in 1977 at 1,401 pairs (see Peterson 1988).

The Long Island Colonial Waterbird Survey documented 487 breeding pairs at 11 active sites in 2022. Survey totals in previous years are as follow: 664 pairs in 2004, 503 pairs in 2007, 476 pairs in 2010 and 529 pairs in 2013. In 2000, a snowy egret pair was documented at the Motor Island Colony on the Niagara River, though breeding was not confirmed (Watson 2001).

The first Breeding Bird Atlas (BBA) (1980-85) documented occupancy in 94 blocks, 2% of the survey blocks statewide (Andrle and Carroll 1988). The second BBA (2000-05) documented occupancy in 58 blocks, 1% of the survey blocks statewide, a decline of 38% since the first atlas (McGowan and Corwin 2008).

The third BBA (2020-25) is currently underway and utilizes a different number and layout of survey blocks across New York, making direct comparison with the first two Atlases difficult. There were 5,333 blocks in the first and second BBAs, and there are 5,710 blocks in the current BBA. To date, snowy egret has been documented in 42 blocks, <1% of survey blocks statewide during the third BBA (NYS BBA III Overview, 2023).

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Peripheral	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

1. Marine Intertidal Gravel/Sand Beach
2. Maritime Dunes
3. Riparian
4. Freshwater Marsh
5. Wet Meadow/Shrub Swamp
6. Estuarine, Brackish Intertidal, Tidal Wetland

7. Marine Dredge Spoil Shore
8. Estuarine, Brackish Intertidal, Benthic Geomorphology, Tidal Creek

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
Yes	No	Declining	Long-term decline since early 1900s

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

Snowy egrets nest colonially with other waterbirds in small trees and shrubs on coastal areas including offshore islands, but also along open areas of rivers, lakes, salt and freshwater marshes, marine intertidal zones, and maritime beaches (Budliger and Kennedy 2005). Birds feed in small salt-marsh pools to large freshwater marshes. The remarkable population expansion in the latter half of the 1900s was largely into estuarine habitats and inland along large river drainages (Peterjohn and Rice 1991).

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	Yes	No	Yes	No	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

While most individuals breed in their second year, some breed in their first year. There are no data for lifetime reproductive success. One brood is raised each season (Parsons and Master 2000). In New York, successful nests produced 1.5 nestlings/nest surviving to age 14 d (St. Clair Raye and Burger 1979).

One banded individual recovered in Utah was 22 yr, 10 mo old (Jackson 1982). Mean annual mortality rate of adults throughout the U.S. is 52.4%, estimated from band recoveries (Ryder 1978). Broken eggs resulting from DDE contamination has been reported (Findholt 1984). Starvation was also the leading cause of death in chicks 8–10 d old in Delaware Bay (Parsons 1985).

Nestlings in Massachusetts most vulnerable to inclement weather at about 1.3 wk of age (Parsons 1985). Three birds banded as nestlings on Long Island, NY, were recovered as subadults in the West Indies 2,400–3,200 km from natal site (Davis 1968). During average and poor weather years in a Massachusetts colony, species was inferior to black-crowned night-heron in producing

fledglings; in years of favorable weather, snowy egrets produced more young than black-crowned night-heron (Parsons 1985).

VI. Threats *(from NY 2015 SWAP or newly described):*

From Parsons and Master (2000):

Habitat loss and degradation is the primary threat for coastal wetland species. Of 127 million acres of wetlands existing in the United States during colonial times, 100 million have been drained as of the late 1970s (Curry-Lindahl 1978). Coastal wetlands are particularly important to snowy egrets in the eastern and southern United States. (Custer and Osborn 1978). Herons that utilize pursuit or chase behaviors, like the snowy egret, are more specialized and selective than searchers (Kushlan 1978). These behaviors are energetically expensive, requiring snowy egrets to spend proportionately more time feeding than other species must spend (Kent 1986). Thus, they may be particularly sensitive to environmental influences that affect prey density and availability.

Nest-site competition with cattle egrets (Burger 1978) and with black-crowned night-herons (Parsons and Master 2000) has been linked with snowy egret declines. The night-heron population has risen 78% during the same time span. Since the 1970s, abundance has declined by 25 to 30% in the northeastern United States. Increased predation at semi-isolated nesting sites has largely redistributed birds to true islands, which may be limiting.

In New York Harbor, 10% of 54 nestling regurgitations included inert material such as resin pellets and styrofoam (Parsons and Master 2000). Loss of foraging habitat as a result of oil spills in New York Harbor led to significant nestling mortality from starvation (Parsons 1994). On Long Island, threats include flooding, erosion, human activity, and predation (New York Natural Heritage Program 2007).

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

Snowy egrets are protected by the Migratory Bird Treaty Act.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

Protection of habitat from disturbance and degradation. Limiting predation and human activity using predator exclosures, visitor education, and by posting restricted signs in breeding and foraging areas would also be beneficial. Any habitat restoration efforts should consider increasing the availability of pool and open water habitat, as foraging habitat availability may be a limiting factor for egrets (Trocki and Paton 2006). Another consideration for the management of breeding Snowy Egrets is the use of buffers around colonies to reduce flushing responses to human disturbance (Peters and Otis 2006).

From Parsons and Master (2000): Snowy egrets demonstrated an impressive capacity to expand into recently vacated and entirely new coastal regions after persecution from plume hunters stopped around the turn of the twentieth century. Information available at the end of the century suggests nesting sites, while protected from direct human intrusion in most cases, are not safe

from human commensals (raccoons, feral cats, etc.) unless located on islands. Therefore, numerous historical nesting sites located on coastal spits and peninsulas increasingly abandoned in favor of more completely isolated sites on islands. Populations may be limited by availability of suitable island nesting sites within feasible commuting distance (<10 km) to adequate foraging wetlands.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
1. Land/Water Protection	Site/Area Protection
2. Land/Water Protection	Resource/Habitat Protection
3. Land/Water Management	Site/Area Management
4. External Capacity Building	Alliance & Partnership Development

Table 2. Recommended conservation actions for snowy egret

VII. References

Andrle, R. F. and J. R. Carroll. 1988. The atlas of breeding birds in New York State. Cornell Univ. Press, Ithaca, NY.

Bernick, A. 2007. NYC Audubon Harbor Herons Project: 2007 Nesting survey. Accessed July 17, 2012. http://www.harborestuary.org/reports/Nesting_Survey.pdf

BirdLife International. 2016. *Egretta thula*. *The IUCN Red List of Threatened Species* 2016: e.T22696974A93595536. https://dx.doi.org/10.2305/IUCN.UK.2016-3.RLTS.T22696974A93595536.en. Accessed on 03 January 2024.

Corwin, K. 2012. NYSDEC SWAP 2015 Species Status Assessment for snowy egret. Prepared on July 17, 2012. Revised December 2014.

Curry-Lindahl, K. 1978. Conservation and management problems of wading birds and their habitats: a global overview. Pages 83-99 *in* Wading birds. (Sprunt IV, A., J. C. Ogden, and S. Winckler, Eds.) Natl. Audubon Soc. Res. Rep. no. 7.

Curley, S.R., 2022. New York City Audubon's Harbor Herons Project: 2022 Nesting Survey Report. New York City Audubon, New York, NY.

Custer, T. and R. Osborn. 1978. Feeding habitat use by colonially-breeding herons, egrets, and ibises in North Carolina. Auk 95:733-743.

Davis, T. H. 1968. Winter recoveries of Snowy Egrets banded on Long Island, New York, USA. Bird-Banding 39:317.

eBird data from 2008-2022. Estimated for 2022. Fink, D., T. Auer, A. Johnston, M. Strimas-Mackey, S. Ligocki, O. Robinson, W. Hochachka, L. Jaromczyk, C. Crowley, K. Dunham, A. Stillman, I. Davies, A. Rodewald, V. Ruiz-Gutierrez, C. Wood. 2023. eBird Status and Trends, Data Version: 2022; Released: 2023. Cornell Lab of Ornithology, Ithaca, New York. https://doi.org/10.2173/ebirdst.2022

Findholt, S. L. 1984. Organochlorine residues, egg shell thickness and reproductive success of Snowy Egrets *Egretta thula* nesting in Idaho, USA. Condor 86:163-169.

Jackson, J. A. 1982. Longevity records of North American birds: Gaviidae through Alcidae. J. Field Ornithol. 53(2):91-93.

Kent, D. M. 1986. Foraging efficiency of three egrets. Colon. Waterbirds 9:81-85.

Kushlan, J. A. 1978a. Feeding ecology of wading birds. Pages 249-297 *in* Wading birds. (Sprunt IV, A., J. C. Ogden, and S. Winckler, Eds.) Natl. Audubon Soc. Res. Rep. no. 7, New York.

NatureServe. 2023. NatureServe Explorer. Page last published 12/1/2023. https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.100485/Egretta_thula. Accessed 1/3/2024.

New York Natural Heritage Program. 2023. Online Conservation Guide for *Egretta thula*. Available from: https://guides.nynhp.org/snowy-egret/. Accessed December 13, 2023.

New York State Breeding Bird Atlas III Overview (NYS BBA III Overview). 2023. New York Checklist Overview. https://ebird.org/atlasny/state/US-NY. Accessed 12/14/2023.

Parsons, K. C. 1985. Proximate and ultimate effects of weather on two heron species in Massachusetts. Phd Thesis. Rutgers Univ. New Brunswick, NJ.

Parsons, K. C. 1994. The Arthur Kill oil spills: biological effects in birds. Pages 215-237 *in* Before and after an oil spill. (Burger, J., Ed.) Rutgers Univ. Press, New Brunswick, NJ.

Parsons, K. C. and T. L. Master. 2000. Snowy egret (*Egretta thula*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/489 doi:10.2173/bna.489

Peterjohn, B. G. and D. L. Rice. 1991. The Ohio breeding bird atlas. Ohio Dept. of Nat. Resour. Columbus, OH.

Peters, K.A. and D.L. Otis. 2006. Wading bird resonse to recreational boat traffic: does flushing translate into avoidance? Wildlife Society Bulletin 34(5): 1383-1391.

Robbins, C. S. and E. A. T. Blom. 1996. Atlas of the breeding birds of Maryland and the District of Columbia. Univ. of Pittsburgh Press, Pittsburgh, PA.

Ryder, R. A. 1978. Breeding, distribution, movements and mortality of Snowy Egrets in North America. Pages 197-205 *in* Wading birds. (Sprunt IV, A., J. C. Ogden, and S. Winckler, Eds.) Natl. Audubon Soc. Res. Rep. no. 7, New York.

St. Clair Raye, S. and J. Burger. 1979. Behavioral determinants of nestling success of snowy egrets *Leucophoyx thula*. Am. Midl. Nat. 102:76-85.

Trocki, C.L. and P.W.C. Paton. 2006. Assessing habitat selection by foraging egrets in salt marches at multiple spatial scales. Wetlands 26:307-312.

Veit, R. R. and W. R. Petersen. 1993. Birds of Massachusetts. Massachusetts Audubon Soc. Lincoln.

Walsh, J., V. Elia, R. Kane, and T. Halliwell. 1999. Birds of New Jersey. New Jersey Audubon Soc. Bernardsville.

Watson, W. 2001. Upstate New York's first great egret colony. Kingbird 51(3):648-60.

Originally prepared by	Kimberley Corwin
Date first prepared	July 17,2012
First revision	December 2014
Latest revision	December 14, 2023 (M. Oberkircher)

Species Status Assessment

Common Name: Spruce grouse **Date Updated:** December 29, 2023

Scientific Name: *Falcipennis canadensis* **Updated By:** Angelena Ross

Class: Aves

Family: Phasianidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

The spruce grouse is a member of the order Galliformes and is included in the genus *Falcipennis*. The spruce grouse is distributed in a transcontinental band across North America that generally conforms to the extent of the boreal forest biome (Aldrich 1963). In New York, the species is a year-round resident, occurring in isolated patches of lowland coniferous forest patches dominated by black spruce (*Picea mariana*), tamarack (*Larix laricina*), and balsam fir (*Abies balsamea*). The species is found exclusively within the northwestern and northcentral Adirondack Park in St. Lawrence and Franklin counties. The New York spruce grouse population has a metapopulation structure, exhibiting source-sink dynamics, with occupied subpopulations tending to be located closer to other colonizing sources (Fritz 1979). From 2002-2012, the population was restricted to 13 of 32 occupied boreal forest patches that were occupied in 1976, and one additional patch that had never been previously confirmed occupied (Ross et al. 2016). The range contraction from the 1970s to 2012 represented a greater than 50% loss in occupied patch numbers and a 71% reduction in the aerial extent of the species' distribution (Ross et al. 2016). However, since translocations of spruce grouse began in 2013, there have been an additional five patches with at least transient occupancy, many of which had not been confirmed occupied since the 1980s.

I. Status

a. Current legal protected Status

i. **Federal:** Not listed **Candidate:** no

ii. **New York:** Endangered, SGCN

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** S2 **Tracked by NYNHP?:** Yes

Other Ranks:
-IUCN Red List: Least Concern

The spruce grouse is listed as Endangered in New York and Vermont, Threatened in Wisconsin, a Species of Special Concern in Michigan and New Hampshire, and the hunting is closed in Maine (designated at SGCN) and Nova Scotia ("Protected"). Nature Serve 2.0 lists spruce grouse as Imperiled in New York and Michigan, Critically Imperiled in Vermont and Wisconsin, Vulnerable in New Hampshire, Apparently Secure in Quebec, and secure in Ontario. Partners in Flight lists spruce grouse as a Stewardship Species and a Species of Continental Importance.

Status Discussion:

The spruce grouse is common throughout most of its continental range. It is regarded as a G5 or globally secure species throughout the main portion of its range in northern Canada (NatureServe

2023). However, recent eBird trends indicate a 21% (80% CI = - 24.3 to -16%) range wide decline from 2012-2022 (https://science.ebird.org/en/status-and-trends/species/sprgro/trends-map <accessed: 3 January 2024). Because of low local population densities, hunting is restricted or banned in some states and provinces.

In New York, the spruce grouse is a very rare, local and uncommon resident and breeder in the Adirondack Mountain Region. It is restricted exclusively to lowland boreal forest patches in the northcentral and northwestern section of the Adirondack Region.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Declining	Choose an item.	1980-2023		Choose an item.
Northeastern US	Yes	Declining	Declining	1976-2023		Choose an item.
New York	Yes	Declining	Declining	1987-2023		Yes
Connecticut	No	Choose an item.	Choose an item.			Choose an item.
Massachusetts	Choose an item.	Choose an item.	Choose an item.			Choose an item.
New Jersey	Choose an item.	Choose an item.	Choose an item.			Choose an item.
Pennsylvania	Choose an item.	Choose an item.	Choose an item.			Choose an item.
Vermont	Yes	Declining	Declining			Yes
Ontario	Yes	Declining	Stable	2012-2022		No
Quebec	Yes	Declining	Stable	2012-2022		No

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

The New York Spruce Grouse Recovery Plan calls for regular monitoring of historically occupied and new potential sites at three-year intervals. NYSDEC staff surveyed 21 of 32 historically occupied patches in 2011, 28 (+8 not historically occupied) were surveyed at least once during 2013-2016; 22 (+2 not historically occupied) were surveyed in 2017-2019, and 21 (+2 not historically occupied) in 2021-2023; A. Ross, unpublished data).

The Wildlife Conservation Society has conducted surveys for boreal breeding birds at a number of locations in the Adirondack Park since 2003 (Glennon 2010). The spruce grouse is one of 12 target species; however, the monitoring methods employed in that study are anticipated to capture only incidental spruce grouse observations.

Trends Discussion *(insert map of North American/regional distribution and status):*

New York is at the southeastern edge of the range and represents a disjunct population. Over the past 20 years, the Adirondack spruce grouse population has experienced a greater than 50% reduction in numbers of occupied sites and a 71% reduction in the areal extent of the species' range (Ross et al. 2016). In 1987, there were an estimated 175 – 315 spruce grouse present in the

state; this number was likely closer to 175 individuals (Bouta 1991). In 1999, the species was added to the NYS Endangered Species List. By 2006, only 14 of 32 sites occupied from 1976-1987 (Fritz 1977, Bouta 1991) and one new site were occupied (Ross and Johnson 2008) and there were probably less than 75 – 100 adult spruce grouse in the state (Ross and Johnson, unpublished data).

Population viability analysis (PVA) modeling (Ross 2018) indicates that lack of action will likely lead to the species' extirpation in New York, since forests in areas occupied by spruce grouse are aging to the point where they may no longer provide the necessary requirements for the species. The PVA indicated that the probability of extinction was 84.8% over 100 years and the average time to first extinction was 23.06 years (SE = 0.93 years) using Adirondack population data (A. Ross, unpublished data). Absolute results of PVA, such as time to extinction, should be used cautiously, as models are best used to test different management actions against one another and highlight data deficiencies. Such a sensitivity analyses best allows us to learn where to direct conservation efforts. PVA Sensitivity Analyses results conducted by A. Ross (unpublished data) indicated that the population is sensitive to changes in mortality, forest carrying capacity, and reduction in genetic diversity, measures of which can be productively changed by improving habitat conditions and translocating spruce grouse from areas in which spruce grouse are more genetically diverse into New York.

The Wildlife Conservation Society conducted point counts for 12 boreal species at 80 sites in the Adirondack Park from 2007-2009 (Glennon 2010). Fewer than five detections were obtained for spruce grouse, which prevented occupancy modeling.

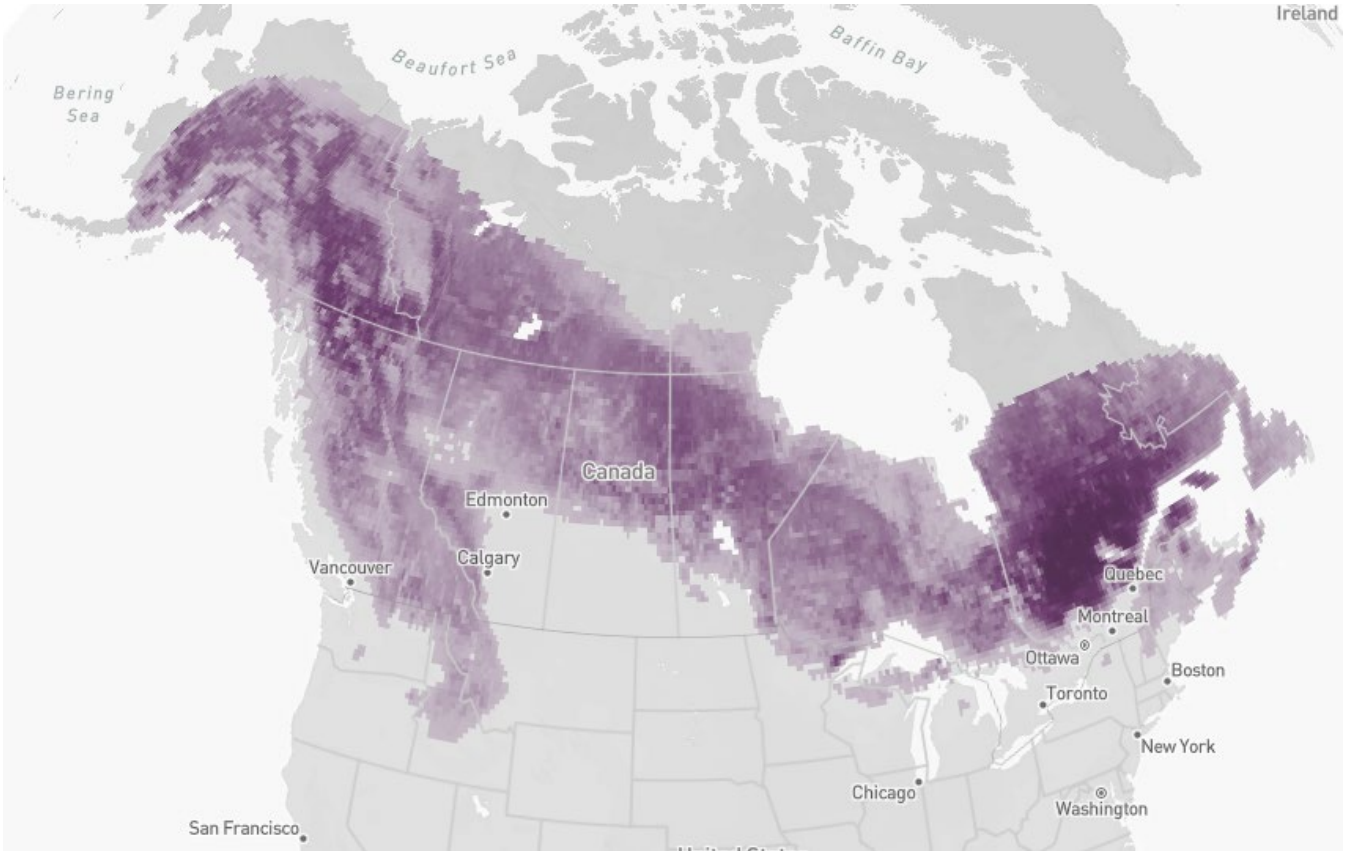

Figure 1. Distribution of spruce grouse in North America (from eBird).

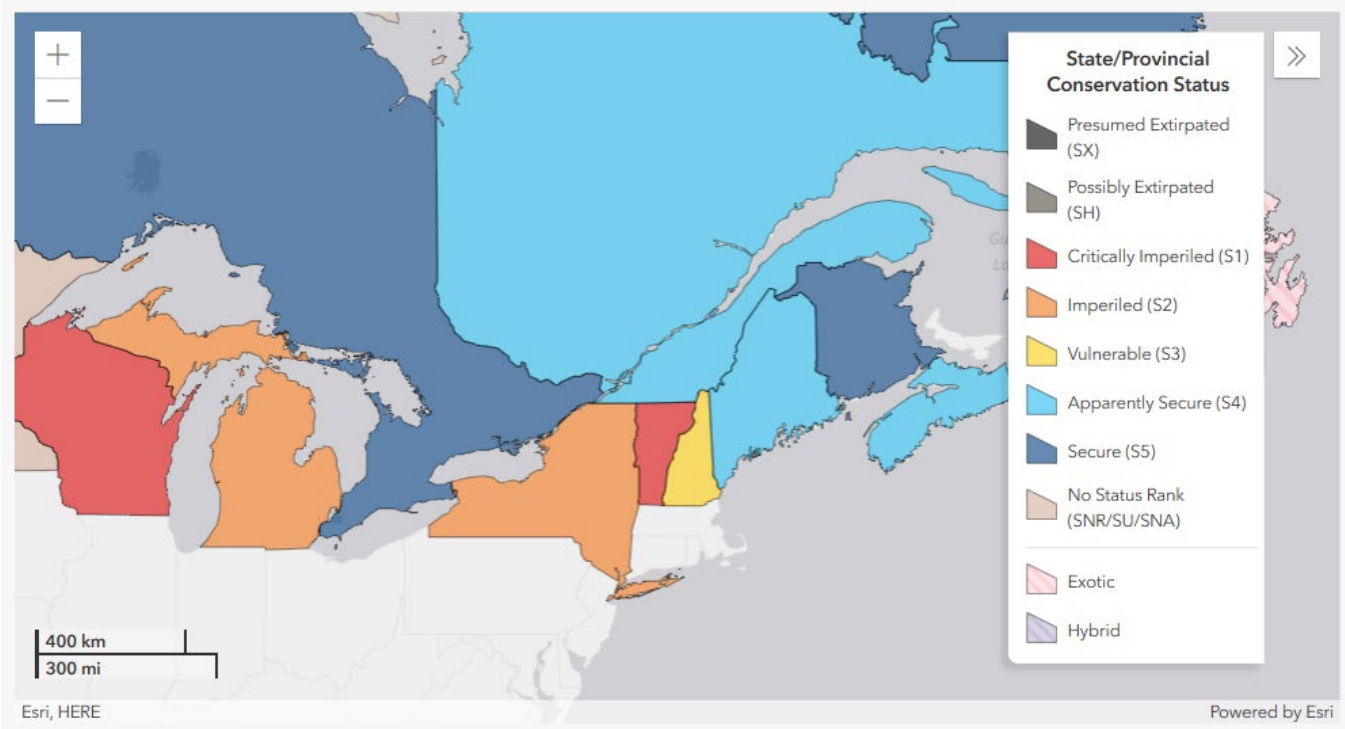

Figure 2. Conservation status of spruce grouse in North America (NatureServe 2023).

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

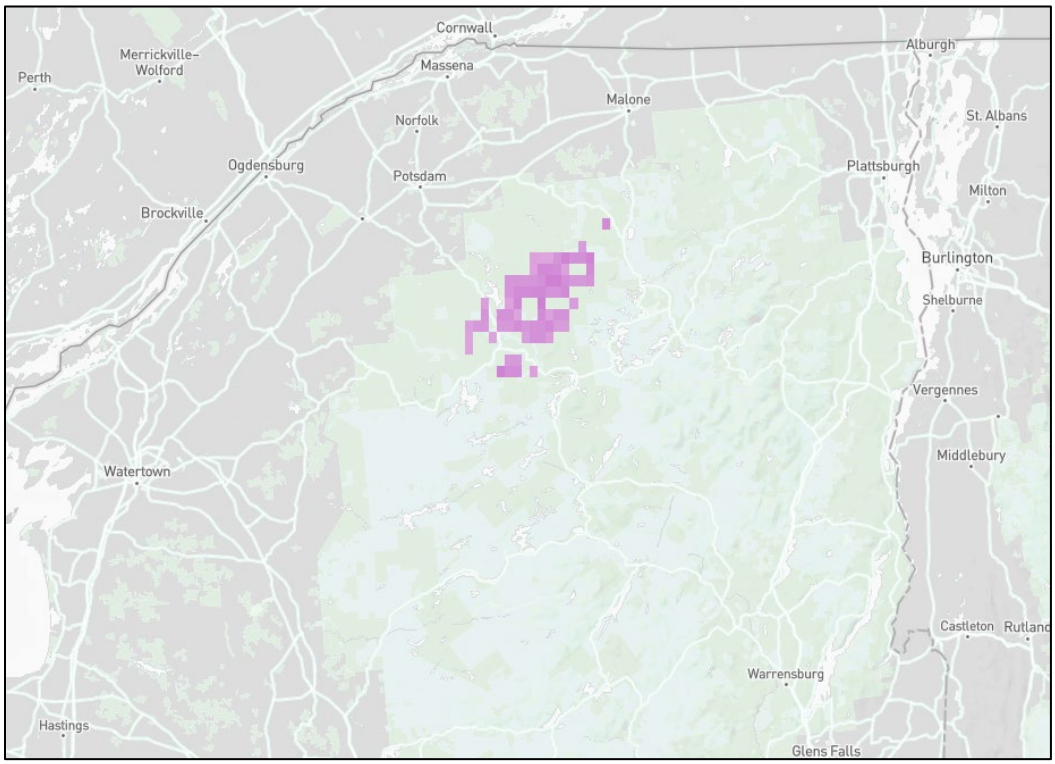

Figure 3. Spruce grouse distribution in New York (eBird 2023).

Years	# of Records	# of BBA Blocks	% of State
Pre-1980	32		<25%
1980-1985		27	<5%
2000-2005	15	20	<5%
2020-2023	16		<5%

Table 1. Records of spruce grouse in New York.

Details of historic and current occurrence:

In 2010, 15 of the 32 historically occupied sites from 1976-1987 (Fritz 1977, Bouta 1991) had extant subpopulations. There was also one newly occupied site (Ross and Johnson 2008) at the time. In 1987, there were 175-315 individuals thought to be present in the Adirondack Park; However, by 2010, there were probably fewer than 100 adult spruce grouse in the state (Ross and Johnson, unpublished data [2012]). Translocations that had begun in 2013 have likely moved these numbers upwards, although it is difficult to develop an estimate without more information. In more recent surveys taking place from 2020-2023, there were 16 distinct locations with evidence of spruce grouse presence.

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Disjunct	280 km

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

In New York, the spruce grouse is restricted to 15 small, isolated subpopulations located exclusively within the northwestern and northcentral section of the Adirondack Park in St. Lawrence and Franklin counties. Eleven subpopulations are located on private lands and four are located on state-owned lands that are part of the Adirondack Forest Preserve in the Raquette Boreal, Saranac Lakes, and Debar Mountain state land management units. The species is declining in the northeastern USA. The populations in Quebec and Ontario are each about 280 km away.

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

Spruce grouse occur in the Northern Appalachian – Boreal forest ecoregion. The species is an indicator of lowland boreal forests. Presence of spruce grouse is also an indicator for the American three-toed woodpecker, black-backed woodpecker, Cape May warbler, bay-breasted warbler, Lincoln's sparrow, Canada Jay, boreal chickadee, palm warbler, and a host of other boreal obligates.

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
Yes	Yes	Declining	

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

In New York the species is restricted to isolated populations within lowland coniferous forests. These isolated populations occur at fringes of bogs and water courses and tend to be associated with peatlands. Throughout their range, the spruce grouse is associated with a short-needled conifer overstory having dense life foliage on low-hanging branches and is dominated by an ericaceous understory (Soule 1992). There is evidence that spruce grouse show some changes in habitat use seasonally (Keppie 1977, Allan 1985), in which denser conifer stands are used more often in winter. These shifts may result from dietary shifts and seasonal changes in canopy cover after tamarack needles are shed. In New York, the spruce grouse inhabits coniferous forests dominated by black spruce and tamarack with lesser components of balsam fir and white pine, although historically the species also inhabited areas dominated by red spruce in upland forests.

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	Choose an item.	Choose an item.	Yes	Yes	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

The spruce grouse has a polygynous reproductive system and mating begins in early to mid-April and continues through the end of May. Spruce grouse breed during their first year of life with varying success. Chick growth has been shown to be negatively affected by the spruce budworm pesticide *Bacillus thuringiensis kurstaki*, primarily due to loss of caterpillar larvae in their diets (Norton et al. 2001).

Sex ratios have generally been reported (5 studies) as 1:1 (summarized in Boag and Schroeder 1992). In New York, 82% of females attempted to nest with 75% success (Ross et al. 2022). Mean annual adult survival in the Adirondacks was observed to be 71% over the period 2002 - 2019 (Ross et al 2022). Researchers observed one male spruce grouse alive, 11 years after he was banded as a juvenile (Ross, unpublished data). Robinson (1980) reported the oldest male at 13 years and the oldest female at 5.5 years among 315 banded birds in Michigan. The spruce grouse has a diversity of predators that, in sum, may have significant impacts on both productivity and mortality.

VI. Threats *(from NY 2015 SWAP or newly described):*

In New York, the loss and fragmentation of habitat by selective logging of softwoods in the late 1800s and early 1900s has been noted as a major factor in the species' historical decline, as these practices usually led to an increase in the more prolific hardwood species (Bouta and Chambers 1990, Jenkins 2004). Spruce budworm outbreaks have led to the further loss of conifer forest (Fox 1895, Fox 1902). Erecting dams to facilitate floating softwoods downstream to be milled exacerbated the problem by flooding large tracts of lowland coniferous forests (e.g., Lows Lake and Stillwater Reservoir), thus increasing fragmentation and the loss of habitat. Changes in species composition and structure of these even-aged coniferous stands due to natural succession resulting from previous logging activity may be an important factor in the declines (Bouta 1991; Ross and Johnson, unpublished data). The even-aged structure of spruce forests that have reestablished may be approaching a successional stage that is too old and homogenous in character to be persistently occupied by spruce grouse.

Since 2012, several radio-collared spruce grouse have died of West Nile Virus (A. Ross, unpublished data). It is unknown whether spruce grouse are carriers of the virus or are susceptible to high levels of mortality from the disease. Elevated ruffed grouse mortality has been suggested as a contributor to West Nile Virus infection in Appalachia (Stauffer et al. 2018).

The spruce grouse was classified as "highly vulnerable" to predicted climate change in an assessment of vulnerability conducted by the New York Natural Heritage Program (Schlesinger et al. 2011). Osborne et al. (2011) showed that the effects of mercury can be exacerbated in boreal obligate species, especially in those that occur in high-acid communities such as peatlands (e.g., spruce grouse and boreal obligate songbirds).

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) -
https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
Land/water protection	Resource & habitat protection (secure easements)

Land/water management	Site/area management (manage forests, control acid rain) Invasive/problematic species control (West Nile Virus, reduce spraying chemicals that control spruce budworm outbreaks)
Species management	Harvest management (accidental harvest) Implement actions identified in the recovery plan
Species re-introduction	Reintroduction and supplementation
Ex-situ conservation	Captive breeding/artificial propagation (if necessary)
Education & awareness	Awareness & communications (to reduce accidental harvest) Implement actions identified in the recovery plan
Law & policy	Policies and regulations (consider temporary closure of grouse season where accidental harvest persists) Compliance and enforcement (NY-level: increase enforcement on accidental harvest)
Livelihood, economic & other incentives	Conservation payments (where habitat management would otherwise not take place)

Table 3. Recommended conservation actions for spruce grouse

VII. References

Aldrich, J.W. 1963. Geographic orientation of North American Tetraoninae. J. Wildl. Manage. 27(4):529-545.

Allan, T.A. 1985. Seasonal changes in habitat use by Maine spruce grouse. Can. J. Zool. 63:2738-2742.

Boag, D.A., and M.A. Schroeder. 1992. Spruce grouse. In The birds of North America, No. 5 (A. Poole, P. Stettenheim, and F. Gill, Eds.). Philadelphia: The Academy of Natural Sciences; Washington, D.C.: The American Ornithologists' Union.

Bouta R.P., and R.E. Chambers. 1990. Status of threatened spruce grouse populations in New York: a historical perspective. Pp 82-91 in (R.S. Mitchell, C.J. Sheviak and D.J. Leopold, eds.) Ecosystem management: rare species and significant habitats. New York State Mus. Bull. 471.

Bouta, R.P. 1991. Population status, historical decline, and habitat relationships of spruce grouse in the Adirondacks of New York. M.S. Thesis, SUNY College of Environmental Science and Forestry, Syracuse, New York. 117pp.

Fox, W.F. 1895. The Adirondack black spruce. Forest Commission, State of New York, Albany.

Fox, W.F. 1902. A History of the Lumber Industry in the State of New York. U.S. Dept of Agriculture, Bureau of Forestry, Bulletin 34. Washington D.C.

Fritz, R.S. 1977. The distribution and population status of the spruce grouse in the Adirondacks. M.S. Thesis, SUNY College of Environmental Science and Forestry, Syracuse, New York. 115pp.

Fritz, R.S. 1979. Consequences of insular population structure: distribution and extinction of Spruce Grouse populations. Oecologia 42:57–65

Glennon, M. 2010. Distribution and abundance of boreal birds in the Adirondack Park. Final Report to the New York State Department of Environmental Conservation. Wildlife Conservation Society, Saranac Lake, NY.

Jenkins, J. 2004. The Adirondack atlas: a geographic portrait of the Adirondack Park. Syracuse Univ. Press, Syracuse, New York. 275pp.

Keppie, D.M. 1977. Snow cover and the use of trees by spruce grouse in autumn. Condor 79:382-384.

NatureServe. 2023. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available http://www.natureserve.org/explorer. (Accessed: December 28, 2023).

New York State Department of Environmental Conservation (NYSDEC). 2005. New York State Comprehensive Wildlife Conservation Strategy. http://www.dec.ny.gov/index.html

Norton, M.L., J.F. Bendell, L.I. Bendell-Young, and C.W. LeBlanc. 2001. Secondary effects of the pesticide Bacillus thuringiensis kurstaki on chicks of spruce grouse (Dendragopus canadensis). Arch. Environ. Contam. Toxicol. 41:369-373.

Osborne, C. E, D. C. Evers, M. Duron, N. Schoch, D. Yates, D. Buck, O. P. Lane, and J. Franklin. 2011. Mercury Contamination within Terrestrial Ecosystems in New England and Mid-Atlantic States: Profiles of Soil, Invertebrates, Songbirds, and Bats. Report BRI 2011-09. Submitted to The Nature Conservancy – Eastern New York Chapter. Biodiversity Research Institute, Gorham, Maine.

Ross, A.M. 2018. Conservation of spruce grouse: population viability, population management, and management of habitat in lowland boreal forests of New York. Ph.D. Dissertation. Clarkson University, Potsdam, New York USA.153pp.

Ross, A.M., and G. Johnson. 2008. Spruce grouse in lowland boreal forests of New York State: distributions, movements and habitat. Final Report: State Wildlife Grant T-2 Project 1. New York State Dept. of Environ. Cons. Albany, New York 144pp.

Ross, A.M., and G. Johnson. 2012. Recovery Plan for New York State Populations of Spruce Grouse (Falcipennis canadensis). New York State Department of Environmental Conservation, Albany, New York. 83pp.

Ross, A.M., G. Johnson, T.A. Langen. 2022. Long distance spruce grouse translocations as an effective means of population recovery in New York. Journal of Wildlife Management 87(2): 1-17. https://doi.org/10.1002/jwmg.22346

Schlesinger, M.D., J.D. Corser, K.A. Perkins, and E.L. White. 2011. Vulnerability of at-risk species to climate change in New York. New York Natural Heritage Program, Albany, NY.

Soule, J. 1992. Species management abstract: spruce grouse. The Nature Conservancy, Arlington, Virginia.

Stauffer, G.E., D.A.W. Miller, L.M. Williams, and J. Brown. 2018. Ruffed grouse population declines after introduction of West Nile virus. Journal of Wildlife Management 82(1):165-172.

Originally prepared by	Kimberley Corwin
Date first prepared	April 5, 2012
First revision	January 28, 2014 (Samantha Hoff)
Latest revision	December 29, 2023 (Angelena Ross)

Species Status Assessment

Common Name: Surf scoter **Date Updated:** January 19, 2024

Scientific Name: *Melanitta perspicillata* **Updated By:** C. Hoh

Class: Aves

Family: Anatidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

The surf scoter—a little-studied sea duck with an open season—breeds in the boreal forest in Alaska and the Northwest Territories and spends winters along the Atlantic and Pacific coasts. Atlantic Coast populations winter from Newfoundland southward to Virginia with the highest concentrations occurring along the New York and New Jersey coastlines and in the Chesapeake Bay. Smaller numbers winter on the Great Lakes. In New York, surf scoters are abundant on the ocean and Long Island Sound, particularly on the eastern end. The highest count of wintering surf scoters in New York from 1973 to 2008 was more than 13,000 individuals in 2001.

Reliable trends for Atlantic Coast populations are lacking, but the ratio of young to adults declined from 1961 through the 1990s and the long-term North American population trend is thought to be decreasing. In New York, the January Waterfowl Count has documented increasing numbers of wintering surf scoter since 1973.

I. Status

a. Current legal protected Status

i. **Federal:** Not listed **Candidate:** No

ii. **New York:** SGCN

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** SNRN **Tracked by NYNHP?:** No

Other Ranks:
-IUCN Red List: Least Concern

Status Discussion:

Surf scoter is a common to abundant migrant and winter visitant on the coast. It occurs inland infrequently.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Choose an item.	Choose an item.	Choose an item.			Choose an item.

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
Northeastern US	Choose an item.	Choose an item.	Choose an item.			Choose an item.
New York	Choose an item.	Choose an item.	Choose an item.			Choose an item.
Connecticut	Choose an item.	Choose an item.	Choose an item.			Choose an item.
Massachusetts	Choose an item.	Choose an item.	Choose an item.			Choose an item.
New Jersey	Choose an item.	Choose an item.	Choose an item.			Choose an item.
Pennsylvania	Choose an item.	Choose an item.	Choose an item.			Choose an item.
Vermont	Choose an item.	Choose an item.	Choose an item.			Choose an item.
Ontario	Choose an item.	Choose an item.	Choose an item.			Choose an item.
Quebec	Choose an item.	Choose an item.	Choose an item.			Choose an item.

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

A Mid-Winter Waterfowl Survey is conducted annually on Long Island and Lake Champlain and the New York State Ornithological Association has conducted an annual January Waterfowl Count since 1955, however these surveys do not include the open ocean. A Sea Duck Survey had been conducted in the Atlantic Flyway, including NY, in the 1990s and early 2000s.

Trends Discussion *(insert map of North American/regional distribution and status):*

A reliable breeding population estimate for surf scoter does not exist. Their breeding habitat is only partially surveyed, and is conducted prior to peak nesting. Their nesting habits also make them difficult to survey. A rough estimate is 600,000 to 1,000,000 individuals, the majority of which breed in the western portion of their range.

From Savard et al. (1998): Trends for all scoter species combined (mostly surf and white-winged) indicate a decline of about 50% since the 1950s in western North America. The decline is most evident in the northern boreal forest regions of western Canada and Alaska. Causes of the apparent decline are unknown.

From 1955 to 1992 in eastern North America, estimates of scoter breeding population (data not available for individual species) declined significantly at approximately 1% annually (USFWS 1993), but midwinter surveys (1973–1992) provided no evidence for trends in wintering populations in U.S. portion of Atlantic Flyway (USFWS 1993).

Harvest estimates indicate that 25,000-30,000 surf scoters are taken annually by sport hunters in the U.S. and Canada, with 80-90% of that harvest occurring in the Atlantic Flyway. The number of immatures per adult in the Atlantic Flyway harvest has decreased significantly from 1961 to 1993, suggesting either an increase in adult female mortality or a decrease in productivity (Krementz et al. 1997). In response to the long-term decrease, restrictions have been imposed on the U.S. harvest in the Atlantic Flyway. This change has perhaps been successful, as the ratio of immature to adult increased from 2006 to 2010 (Raftovitch et al. 2011).

The U.S. Fish and Wildlife Service conducted The Sea Duck Survey in the Atlantic Flyway in the 1990s and early 2000s. This mid-winter survey was conducted over the open ocean about 3 miles offshore from Nova Scotia to Florida. The number of surf scoters recorded in New York waters during the survey varied greatly, from a high of 2,194 to a low of 8; along the entire length of the survey route, a high of 22,711 surf scoters and low of 2,523 were observed. No statistically significant population trend is apparent in the results of this survey (Sea Duck Joint Venture 2003).

January Waterfowl Count data has shown an increase in the number of surf scoters wintering in New York from 1973 to 2008.

Figure 1. Distribution of the surf scoter in North America (Birds of the World, 2024)

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

Years	# of Records	# of BBA Blocks	% of State
Pre-1980	_____	_____	_____
1980-1985	_____	_____	_____
2000-2005	_____	_____	_____
2020-2023	_____	_____	_____

Table 1. Records of surf scoter in New York.

Details of historic and current occurrence:

In the winter of 1930, coastal maximum numbers of scoters were reported at Montauk with 25,000 on 1 January and 120,000 on 16 March. The NYSOA January Waterfowl Count reported an average of 931 wintering birds for the ten-year period from 1973 to 1982.

The NYSOA January Waterfowl Count reported an average of 6,047 wintering birds from 1999 to 2008 with a high count of 12,622 birds in 2004. From 1973 to 2008, the average number of wintering birds was 3,107.

The North American surf scoter population is estimated at 600,000 to 1,000,000 individuals. In New York, this species occurs as a wintering bird, primarily along the Coastal Lowlands and infrequently along the Great Lakes. Non-breeding birds are occasionally encountered in spring and summer months and even recorded by DEC staff on Long Island during the Breeding Waterfowl Plot Survey in April and May, though in low numbers.

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Peripheral	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

1. Estuarine, Brackish Shallow Subtidal
2. Marine, Shallow Subtidal
3. Great Lakes Deepwater Community
4. Large/Great River

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
No	No	Stable	

Column options

Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

Wintering occurs along coastal areas, primarily in the marine littoral zone, though also in bays and on freshwater lakes and rivers.

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Choose an item.	Yes	Choose an item.	Choose an item.	Yes	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

Savard et al. (1998): Little was known of the surf scoter's life history until the 1990s. It likely breeds at 2–3 years of age. Some adults do not breed every year. Like most seaducks, surf scoter is long-lived and has low reproductive output (Goudie et al. 1994, Krementz et al. 1997). Reproductive success is generally high. The species is highly sensitive to adult mortality, so hunting and accidental deaths due to fishing nets or oiling can have significant impact on the population.

VI. Threats *(from NY 2015 SWAP or newly described):*

Threats to NY Populations	
Threat Category	**Threat**
1. Biological Resource Use	Hunting & Collecting Terrestrial Animals (hunting)
2. Invasive & Other Problematic Species & Genes	Invasive Non-Native/Alien Species (problems associated with zebra and quagga mussels)
3. Pollution	Industrial & Military Effluents (oil spills)
4. Energy Production & Mining	Renewable Energy (offshore wind towers)

From Savard et al. (1998): On average (1961–1993), approximately 18,000 individuals are taken by hunters each year in U.S., but these surveys are conservative; there was a maximum estimate of a little more than 35,000 birds in 1975 (Bartonek 1994). On average, about 80% of U.S. harvest occurs in the Atlantic Flyway. Surf scoter population health is highly sensitive to adult mortality, so vulnerable to overhunting (Kehoe 1994); accidental deaths due to fishing nets or oiling can also have significant impact on the population. Surf scoters are susceptible to oil contamination and are highly vulnerable to

the effects of oiling. Heavy-metal contamination may also affect reproductive success and survival of surf scoters.

From NatureServe (2012): Urbanization and industrialization of many coastal bays and estuaries have degraded some winter habitat; chemical contamination and heavy metal accumulation of winter food supplies possibly may be affecting reproductive success of some populations (Kehoe 1994).

In general, wintering waterbirds face threats from loss of habitat to coastal wetlands, activities that result in large scale alteration of bay or ocean substrates (dredging, sand mining, development of barrier islands, etc.), direct mortality from collisions with structures, various contaminants, or intensive human disturbance.

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

Surf scoter is a game species with an open hunting season. The hunting season length and daily bag limit could be modified or the season could be closed. Currently, there is not a specific harvest strategy in place for surf scoter, and all species of scoter are managed together as "scoters." In the Atlantic Flyway, "sea ducks" (scoters, eiders, and long-tailed ducks) are managed as underutilized species capable of additional harvest opportunity, where within designated special sea duck hunting areas a 107 day hunting season may be allowed with a daily bag limit of 7 ducks (but only 4 may be scoters). In all other areas, sea ducks may be harvested during the regular duck hunting season with a bag limit of 6 per day (but only 4 may be scoters). Even with this abundant hunting opportunity, harvest of surf scoter is relatively low, when compared to other species of ducks. Of the three species of scoters, surf scoters are harvested in higher numbers throughout the Atlantic Flyway because of their tendency to winter along more of the coast and farther south than black scoters and white-winged scoters. Since 1999, surf scoter harvest has averaged 1,200 in New York and about 22,000 in the Atlantic Flyway. Estimated harvest of all species of scoters in the United States was 46,187 in 2010 and 62,086 in 2011; in Canada it was 12,330 in 2010 and 9,030 in 2011 (Raftovich et al. 2012).

In New York, the 2012 hunting season for "scoters" includes a 60 day season with a 4 per day bag limit for all of upstate New York and inland waters of Long Island, and a 107 day season with a 4 per day bag limit for the coastal waters of Long Island in the Special Sea Duck Hunting Area. While most of the scoter harvest in New York occurs in the special sea duck hunting area, between a quarter and a third of the annual harvest comes from inland locations such as the Great Lakes, Niagara River, St. Lawrence River, and Lake Champlain.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

Reliable techniques for monitoring population size and trends across the surf scoter's range need to be developed and implemented. Continued support of the Sea Duck Joint Venture should lead to improved knowledge and management of the species.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated

subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
1. Land/Water Management	Site/Area Management
2. Land/Water Management	Habitat and Natural Process Restoration (pollution control)
3. Law/Policy Actions	Policy/Regulation Changes (hunting regulations, ocean dumping practices)
4. External Capacity Building	Alliance & Partnership Development

Table 2. Recommended conservation actions for surf scoter

VII. References

Bartonek, J. C. 1994. Waterfowl harvests and status, hunter participation and success, and certain hunting regulations in the Pacific Flyway and United States. 1994 Pacific Flyway Data Book, U.S. Fish and Wildl. Serv. Portland, OR.

Goudie, R. I., S. Brault, B. Conant, A. V. Kondratyev, M. R. Petersen, and K. Vermeer. 1994. The status of sea ducks in the north Pacific rim: toward their conservation and management. Trans. 59th N. Am. Wildl. Nat. Resour. Conf.

Kehoe, P. 1994. Status and information needs of sea ducks in the Atlantic Flyway. Prepared by the Ad Hoc Sea Duck Committee. 71+ pp.

Klimstra, J.D. et al., compiler. 2012. Atlantic Flyway harvest and population survey data book. U.S Fish and Wildlife Service, Laurel, MD.

Krementz, D. G., P. W. Brown, F. P. Kehoe, and C. S. Houston. 1997. Population dynamics of White-Winged Scoters. J. Wildl. Manage. 61:222-227.

NatureServe. 2012. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available http://www.natureserve.org/explorer. (Accessed: July 19, 2012).

Raftovich, R.V., K.A. Wilkins, S.S Williams, H.L. Spriggs, and K.D. Richkus. 2011. Migratory bird hunting activity and harvest during the 2009 and 2010 hunting seasons. U.S. Fish and Wildlife Service, Laurel, Maryland, USA.

Raftovich, R.V., K.A. Wilkins, S.S. Williams, and H.L. Spriggs. 2012. Migratory Bird Hunting Activity and Harvest during the 2010 and 2011 Hunting Seasons. U.S. Fish and Wildlife Service, Laurel, Maryland.

Sea Duck Joint Venture. 2003. Species status reports. Available at http://seaduckjv.org/meetseaduck/bs.html (Accessed February 14, 2012).

Savard, Jean-Pierre L., Daniel Bordage and Austin Reed. 1998. Surf Scoter (*Melanitta perspicillata*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/363 doi:10.2173/bna.363

Sweet, P.R. 1998. Surf scoter, *Melanitta perspicillata*. Pages 168-69 in Bull's birds of New York State (E. Levine, ed.). Cornell University Press, Ithaca, NY.

U.S. Fish and Wildlife Service. 1993. Status of sea ducks in eastern North America. U.S. Fish and Wildl. Serv., Office of Migratory Bird Management, Laurel, MD.

Originally prepared by	Kimberley Corwin
Date first prepared	July 19, 2012
First revision	January 28, 2014 (Samantha Hoff)
Latest revision	

Species Status Assessment

Common Name: Tennessee warbler **Date Updated:**

Scientific Name: *Leiothlypis peregrina* **Updated By:**

Class: Aves

Family: Parulidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

Formerly placed into the genus Vermivora, the Tennessee warbler was reclassified into the genus Oreothlypis in 2010. This warbler breeds only in Canada and the northernmost parts of the United States, where it nests in boreal habitats. Wintering occurs in Central America, giving this warbler the "neotropical migrant" status that results in vulnerability to healthy populations.

In New York, the Tennessee warbler nests in the Adirondack Mountains in young mixed deciduous and coniferous forests with a boreal plant assemblage. The population is disjunct from the main distribution to the north. It is one of several warbler species whose occurrence is strongly linked to periodic outbreaks of the spruce budworm. The Breeding Bird Atlas documented Tennessee warbler in fewer than 1% of survey blocks statewide. Occupancy shifted from 1980-85 to 2000-05 and the number of survey blocks with confirmed breeding dropped from 5 to 1. The six breeding records documented during the two Atlas surveys represent the only known nesting of Tennessee warbler in the state since New York's first record in 1926 (see Peterson 2008).

I. Status

a. Current legal protected Status

i. **Federal:** Not listed **Candidate:** No

ii. **New York:** Not listed; SGCN

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** S2 **Tracked by NYNHP?:** Yes

Other Ranks:

Partners in Flight Stewardship Species
IUCN Red List Category: LC - Least concern

Status Discussion:

Tennessee warbler is a rare breeder in New York, occurring locally in the Adirondack Mountains region. There are fewer than ten breeding records in New York and a nest has never been found. It occurs cyclically as a very common to uncommon migrant. It is usually most common during spring in western and central New York.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Increasing	Unknown	2000-2010		Choose an item.
Northeastern US	Yes	Increasing	Unknown	2000-2010		Choose an item.
New York	Yes	Unknown	Unknown			Yes
Connecticut	Yes	Unknown	Unknown		Not listed	No
Massachusetts	Yes	Unknown	Unknown		Not listed	No
New Jersey	Yes	Unknown	Unknown		Not listed	No
Pennsylvania	Yes	Unknown	Unknown		Not listed	No
Vermont	Yes	Unknown	Unknown		Not listed	No
Ontario	Yes	Increasing	Stable	1981-85 to 2001-05	Not listed	Choose an item.
Quebec	Yes	Increasing	Stable	2000-2010	Not listed	Choose an item.

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

The Wildlife Conservation Society has conducted surveys for boreal breeding birds at a number of sites in the Adirondack Park since 2003 (Glennon 2010). Tennessee warbler is one of 12 target species.

Trends Discussion *(insert map of North American/regional distribution and status):*

Short-term fluctuations in numbers and local distributions appear to be dictated by insect outbreaks in boreal forests, especially those of spruce budworms (see Rimmer and McFarland 1998).

Breeding Bird Survey data for North America, for Canada, and for the Eastern BBS all show a slight increasing trend of 0.3% per year from 2000 to 2010. The long-term trend for each of each of these regions is a slight decline of -0.5% per year (1966 to 2010). BBS data for New York are not sufficient to show a reliable trend.

Tennessee warbler has always been a rare breeder in New York. The first confirmed nesting was documented in 1926 and breeding was not confirmed again until the first Breeding Bird Atlas surveys in 1980-85 when adults were observed feeding young in five different blocks. The second Atlas provided one additional breeding confirmation (feeding young), and still an actual nest has never been found in the state (Peterson 2008a). Breeding was confirmed again in 2008 via the observation of an adult feeding young (Peterson 2008b).

The Wildlife Conservation Society conducted point counts for 12 boreal species at 59 sites in the Adirondack Park from 2007-2011. Fewer than five detections were obtained for Tennessee warbler, which prevented occupancy modeling.

Figure 1: Distribution of Tennessee warbler in North America (Birds of North America Online)

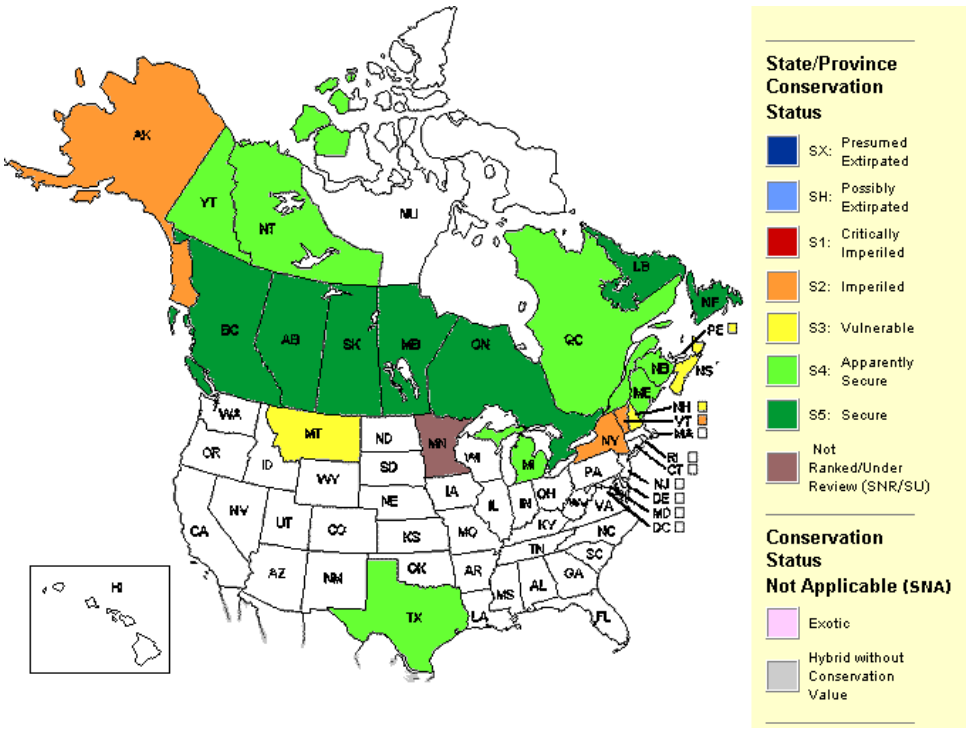

Figure 2: Conservation status of Tennessee warbler in North America (Birds of North America online)

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

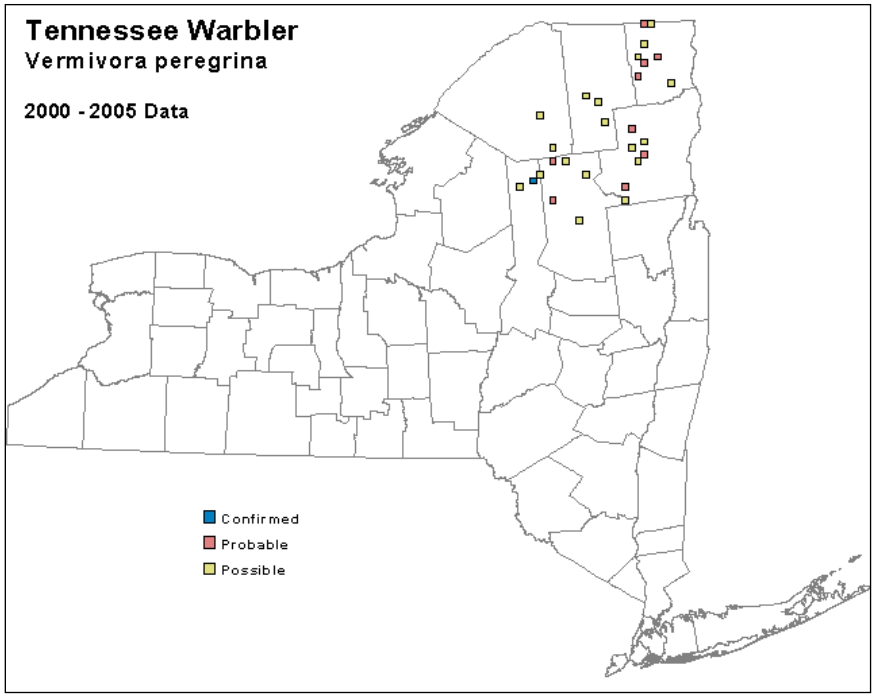

Figure 3. Tennessee warbler occurrence in New York State during the second Breeding Bird Atlas (McGowan and Corwin 2008).

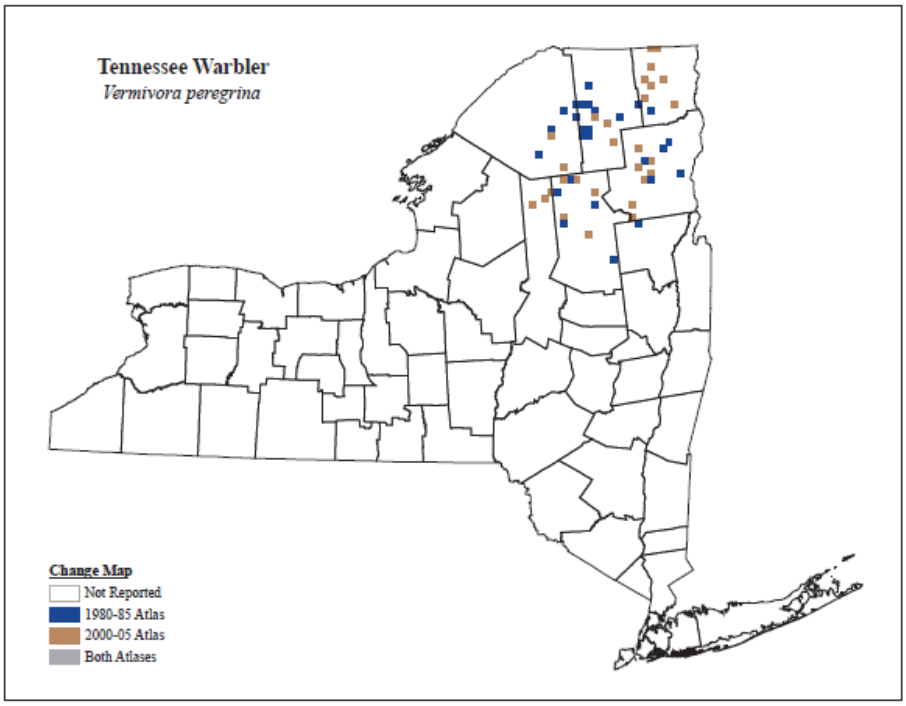

Figure 4. Change in Tennessee warbler occurrence in New York State between the first Breeding Bird Atlas and the second Breeding Bird Atlas (McGowan and Corwin 2008).

Years	# of Records	# of BBA Blocks	% of State
Pre-1980	_____	_____	_____
1980-1985	_____	27	4%
2000-2005	_____	28	4%
2020-2023	_____	_____	_____

Table 1. Records of Tennessee warbler in New York.

Details of historic and current occurrence:

First confirmed breeding in New York in 1926. Five more breeding confirmations were documented during the Breeding Bird Atlas (1980-85). Occupancy was documented in a total of 27 survey blocks.

The second Breeding Bird Atlas (2000-05) documented confirmed breeding in only one survey block. Occupancy was documented in a total of 28 survey blocks; none of the records were from the same blocks as during the first Atlas.

About 80% of the Tennessee warbler breeding population occurs in Canada, where it is one of the most abundant warblers. The nearest population to New York's birds occurs in the Green Mountains of Vermont (about 100 miles to the east) where breeding has been infrequent and sporadic. The core breeding population lies about 250 miles to the north of the Adirondack population in southern Quebec.

Boreal bird surveys conducted by the Wildlife Conservation Society in the Adirondack Park since 2003 located Tennessee warbler in only six locations.

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Disjunct	~250 miles

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

a. Spruce-Fir Forest and Flats

b. Conifer Forest Swamp

c. Mixed Hardwood Swamp

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
No	No	Stable	

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

Tennessee warbler breeds in boreal habitats, favoring young second growth. In northernmost portions of the eastern U.S., it prefers coniferous bogs dominated by black spruce and tamarack, with some white cedar, birch, poplar, alder, and ericaceous shrubs (Palmer 1949, Bull 1974, Laughlin and Kibbe 1985, Brewer et al. 1991). Peterson (1988) described its habitat in the Adirondacks: "…somewhat wet areas of young deciduous growth, often aspen, with a mixture of balsam fir, spruce, or tamarack, northern shrubs and often a ground cover of sphagnum mosses." Relatively open areas are used, with edge provided by roads, power lines, or other forest clearings.

On wintering grounds, the Tennessee warbler has a strong affinity for coffee plantations.

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	Choose an item.	Choose an item.	Yes	Choose an item.	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

From Rimmer and McFarland (1998): Very little is known of the demographics or life history of Tennessee warbler. Larger clutches may be produced during outbreaks of spruce budworm (Morse 1989). One nest in James Bay, Ontario is thought to have been depredated by skunk. Other possible nest predators include gray jay, red squirrel, pine marten, and weasel. Some site fidelity may occur but there have been few banding studies to document this. Individuals are known to return to the same wintering areas in successive years. Increased food supply seems to trigger population increases, both by immigration and by increase clutch sizes.

VI. Threats *(from NY 2015 SWAP or newly described):*

Peterson (2008a) suggested that forests replanted with black spruce and jack pine are less desirable for Tennessee warbler because these tree species are less preferred by spruce budworm, the warbler's primary food source.

Osborne et al. (2011) showed that the effects of mercury can be exacerbated in boreal species such as that use high-acid habitats such as peatlands such as Tennessee warbler.

As a boreal bird, the Tennessee warbler is susceptible to the predicted long-term reduction of the boreal forest in New York due to climate change. In an assessment of vulnerability to predicted climate change conducted by the New York Natural Heritage Program, Tennessee warbler was identified as a second-priority species whose sensitivity should be assessed in the future (Schlesinger et al. 2011).

Tennessee warblers have been killed during migration by collisions with TV towers and other tall lighted structures.

Aerial spraying for insect control that occurs in Canada reduces budworm populations. Spraying of insecticides can affect the foraging behavior of Tennessee warbler and perhaps affects clutch size and hatching rates (Rimmer and McFarland 1998).

Threats to NY Populations	
Threat Category	**Threat**
1. Transportation & Service Corridors	Roads & Railroads (fragmentation)
2. Transportation & Service Corridors	Utility & Service Lines (collision with towers)
3. Biological Resource Use	Logging & Wood Harvesting
4. Climate Change & Severe Weather	Habitat Shifting & Alteration
5. Pollution	Air-borne Pollutants (acid rain, mercury)
6. Pollution (migration, esp. NYC)	Excess Energy
7. Residential & Commercial Development	Housing & Urban Areas (fragmentation)
8. Natural System Modifications	Other Ecosystem Management (insect spraying)

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

Tennessee warbler is protected under the Migratory Bird Treaty Act of 1918.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

Maintenance or promotion of shade coffee plantations on wintering grounds, especially those maximizing structural and floristic diversity and avoiding intensive management, such as trimming and pesticide application, are likely to benefit Tennessee warbler. The NY Comprehensive Wildlife Conservation Strategy (CWCS; NYSDEC 2005) states the need for a management plan for high-altitude conifer forest birds that incorporates the results of the 2004 State Wildlife Grant study on boreal forest birds (Glennon 2010). Conservation actions following IUCN taxonomy are categorized in the table below.

The CWCS also includes recommendations for the following actions for boreal forest birds, which includes Tennessee warbler (NYSDEC 2005).

Habitat management:

____ Cooperate with private landowners to encourage land management strategies that favor spruce grouse, olive-sided flycatcher and other species dependent on early successional boreal forests.

Habitat monitoring:

____ Conduct field studies to determine causes for declines of species known to be declining.

Habitat research:

____ Complete an inventory and analysis of the distribution and abundance of boreal species.

Population monitoring:

____ Develop a long term monitoring program to determine population trends of boreal forest birds.

State land unit management plan:

____ Review Department wildfire management for Forest Preserve lands.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
Land/Water Protection	Site/Area Protection
Land/Water Protection	Resource/Habitat Protection
Land/Water Management	Site/Area Management

Table 3. Recommended conservation actions for Tennessee warbler

VII. References

Brewer, R., G. A. McPeek, and R. J. Adams, Jr. 1991. The atlas of breeding birds of Michigan. Michigan State Univ. Press, East Lansing.

Bull, J. 1974. Birds of New York state. Doubleday, Garden City, NY.

Glennon, M. 2010. Distribution and abundance of boreal birds in the Adirondack Park. Final Report to the New York State Department of Environmental Conservation. Wildlife Conservation Society, Saranac Lake, NY.

Laughlin, S. B. and D. P. Kibbe. 1985. The atlas of breeding birds of Vermont. Univ. Press of New England, Hanover.

Morse, D. H. 1989. American warblers. Harvard Univ. Press, Cambridge, MA.

New York State Department of Environmental Conservation (NYSDEC). 2005. New York State Comprehensive Wildlife Conservation Strategy. http://www.dec.ny.gov/index.html

Osborne, C. E, D. C. Evers, M. Duron, N. Schoch, D. Yates, D. Buck, O. P. Lane, and J. Franklin. 2011. Mercury Contamination within Terrestrial Ecosystems in New England and Mid-Atlantic States: Profiles of Soil, Invertebrates, Songbirds, and Bats. Report BRI 2011-09. Submitted to The Nature Conservancy – Eastern New York Chapter. Biodiversity Research Institute, Gorham, Maine.

Palmer, R. S. 1949. Maine birds. Mus. Comp. Zool., Harvard Univ., Cambridge, MA.

Peterson, J.M.C. 1988. Tennessee Warbler (*Vermivora peregrina*). Pages 362-363 in The atlas of breeding birds in New York State (R.F. Andrle and J.R. Carroll, Eds.). Cornell University Press, Ithaca, NY.

Peterson, J.M.C. 2008a. Tennessee warbler, *Vermivora peregrina*. Pages 474-75 in The second atlas of breeding birds in New York State (K.J. McGowan and K. Corwin, eds.). Cornell University Press, Ithaca, NY.

Peterson, J.M.C. 2008b. Region 7--- Adirondack-Champlain. Kingbird 58(4):386-91.

Rimmer, C. C. and K. P. Mcfarland. 1998. Tennessee Warbler (*Oreothlypis peregrina*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/350 doi:10.2173/bna.350

Schlesinger, M.D., J.D. Corser, K.A. Perkins, and E.L. White. 2011. Vulnerability of at-risk species to climate change in New York. New York Natural Heritage Program, Albany, NY.

Originally prepared by	Kimberley Corwin
Date first prepared	November 8, 2012
First revision	January 28, 2014 (Samantha Hoff)
Latest revision	Transcribed with minor updates February 28, 2024

Species Status Assessment

Common Name: Tricolored heron **Date Updated:** January 23, 2024

Scientific Name: *Egretta tricolor* **Updated By:** M. Oberkircher

Class: Aves

Family: Areidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

Tricolored heron breeds in coastal areas along the Gulf and Atlantic coasts, most abundantly in the Gulf states, but occurring as far north as southern Maine. In New York, this heron breeds in small numbers alongside other waterbirds, using islands with small trees and shrubs for nesting, and nearby wetlands for foraging. Tricolored heron was first recorded breeding in New York in 1955 and numbers increased through the mid-1980s. In 2010, there were 10 breeding pairs at 4 sites; this number is more than 50% below the average number of pairs documented from 1985 to 1996. In New York Harbor, this species has consistently nested at low numbers since 1985.

I. Status

a. Current legal protected Status

i. **Federal:** Not Listed **Candidate:** No

ii. **New York:** SGCN

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** S2 **Tracked by NYNHP?:** Yes

Other Ranks:
-IUCN Red List: Least Concern

-Partners in Flight: 11 out of 20

Status Discussion:

Tricolored heron is an uncommon breeder on Long Island and in the New York-New Jersey Harbor, and an uncommon summer visitant. It is rare elsewhere in the state during spring and summer.

Tricolored heron is extirpated in Massachusetts. It is ranked as Critically Imperiled in Connecticut and as Vulnerable in New Jersey.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Declining	Declining			Choose an item.
Northeastern US	Yes	Unknown	Unknown		Watchlist	No

New York	Yes	Stable	Declining			Yes
Connecticut	Yes	Unknown	Unknown			No
Massachusetts	No	Choose an item.	Choose an item.			No
New Jersey	Yes	Declining	Declining			Yes
Pennsylvania	No	Choose an item.	Choose an item.			No
Vermont	No	Choose an item.	Choose an item.			No
Ontario	No	Choose an item.	Choose an item.			No
Quebec	No	Choose an item.	Choose an item.			No

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

Surveys are conducted every three years during the NYSDEC's Colonial Waterbird Survey. New York City Audubon has conducted the Harbor Herons Nesting Survey in the Greater NY/NJ Harbor annually since 1985; the surveys target long-legged wading birds including tricolored heron. Nesting surveys traditionally have been conducted at 17 islands; aids to navigation and mainland sites have been included recently (Harbor Herons Subcommittee 2010, Craig 2011, Craig 2012).

Trends Discussion *(insert map of North American/regional distribution and status):*

Populations of tricolored heron in New York are small and the number of breeding pairs has declined since the 1980s. The species first bred in New York in 1955 at the Jamaica Bay Wildlife Refuge but breeding was not discovered again until 1971. Buckley and Buckley (1980) reported an average of 13 pairs breeding at 5 locations from 1974 to 1978. Regular surveys from 1985 to 1996 recorded an average of 22 pairs; there was a low of 8 pairs in 1993 and a high of 26 pairs in 1996 (Sommers et al. 1996).

Long Island Colonial Waterbird surveys—conducted every three years for herons—counted 12 pairs in 2001, 9 pairs in 2004, 5 pairs in 2007, and 10 pairs in 2010. In 2022, five pairs were found nesting at one site.

The NYC Audubon Harbor Heron survey documented a stable, low-level presence of nesting birds annually since 1985 in the Greater NY/NJ Harbor (Harbor Herons Subcommittee 2010, Craig 2011, Craig 2012). No tricolored herons were found nesting in 2019-2022 in NY Harbor, one pair nested in 2018.

Tricolored heron is most numerous in Florida and Louisiana. Populations in Florida have declined since the 1970s, resulting in its listing there as a Species of Special Concern.

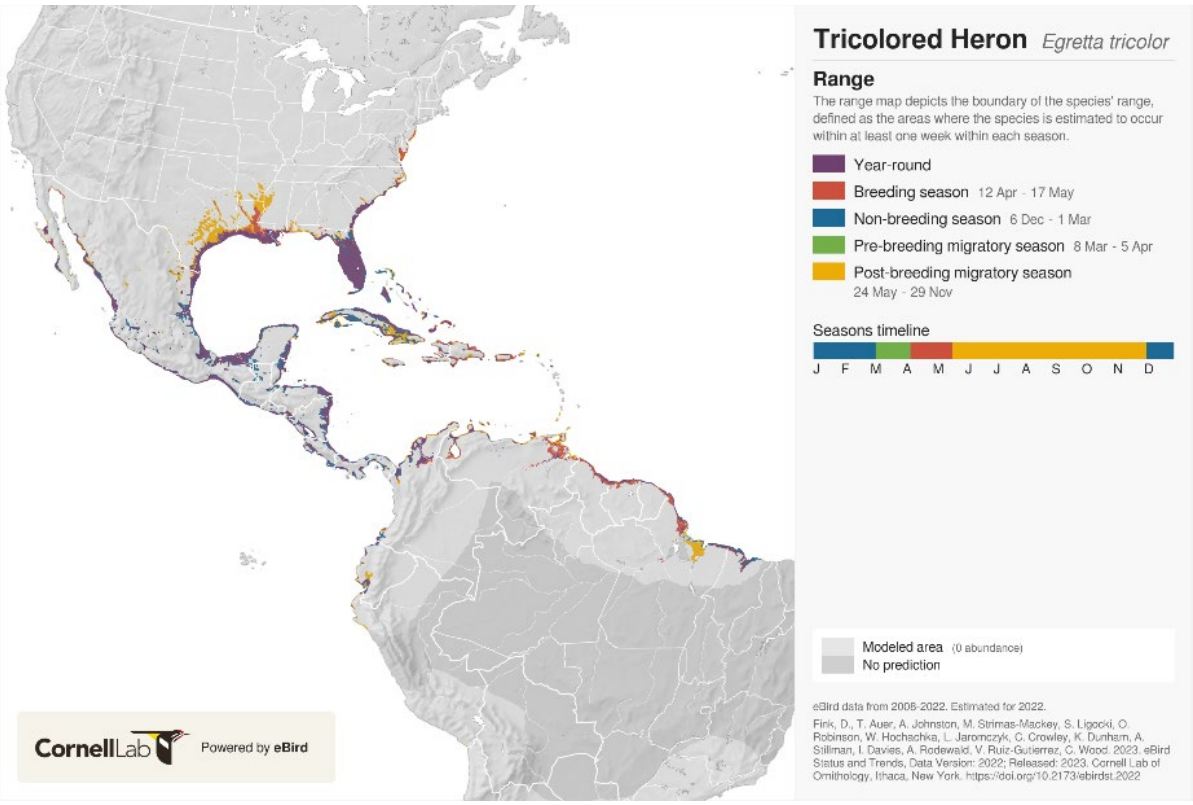

Figure 1. Tricolored heron global distribution (eBird 2022)

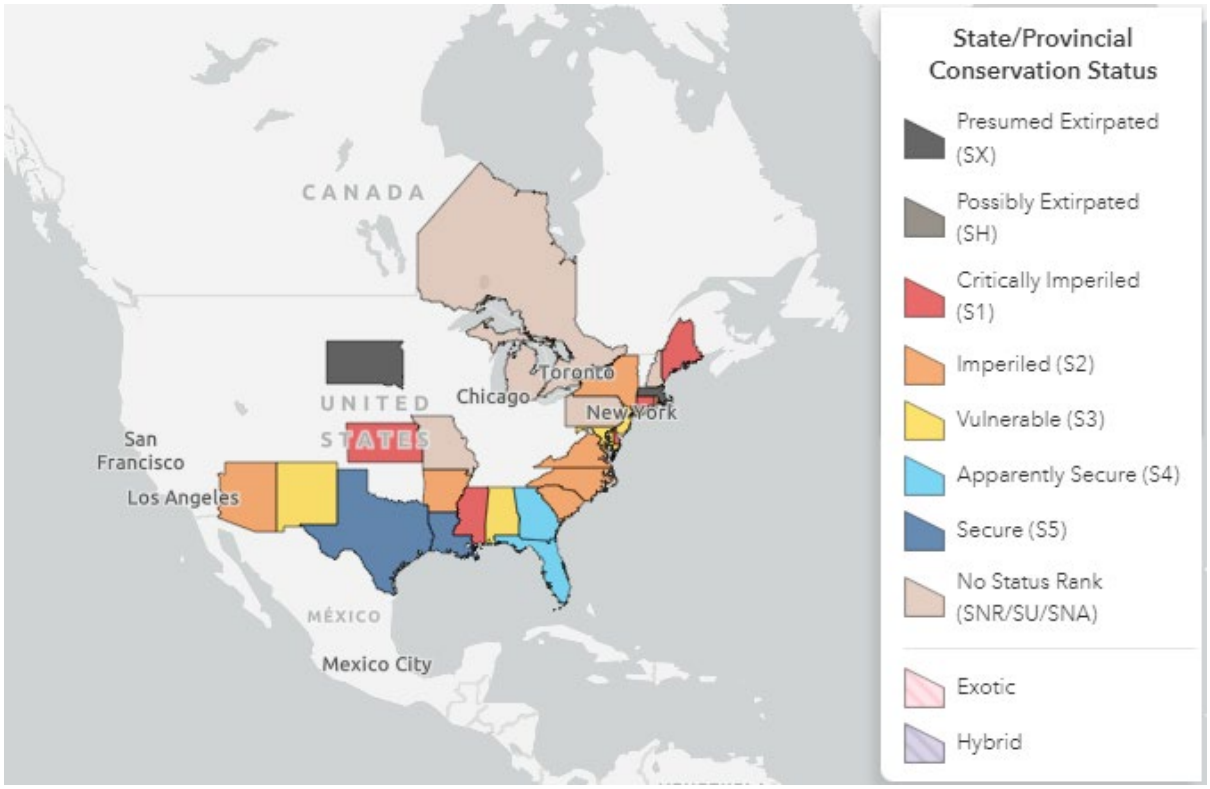

Figure 2. Conservation status of tricolored heron in North America (NatureServe)

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

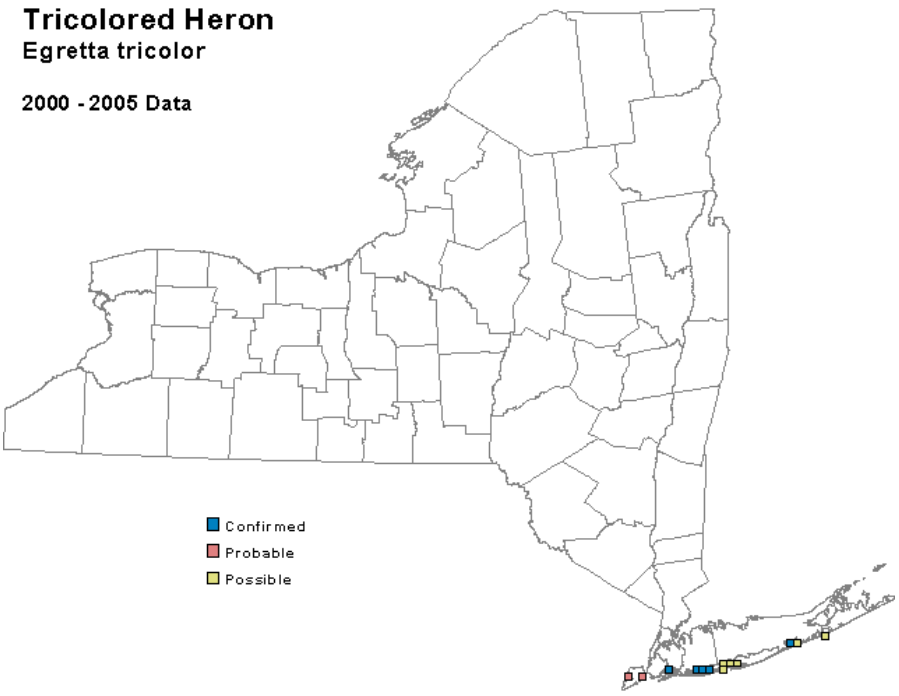

Figure 3. Tricolored heron occurrence in New York State during the second Breeding Bird Atlas (McGowan and Corwin 2008)

Figure 4. Records of tricolored heron in New York (NYS BBA III Map, 2023)

Years	# of Records	# of BBA Blocks	% of State
Pre-1980	_____	_____	_____
1980-1985	_____	11	<1
2000-2005	_____	13	<1
2020-2023	_____	4	<1

Table 1. Records of tricolored heron in New York.

Details of historic and current occurrence:

Tricolored herons first bred in New York in 1955 and were next recorded in 1970; both records are from the Jamaica Bay Wildlife Management Area. There was an average of 13 nesting pairs for the period 1974-78 and an average of 22 nesting pairs for the period 1985-96. The number of breeding pairs hit a low of 8 in 1993 and peaked at 26 in 1995.

The Long Island Colonial Waterbird Survey documented 9 breeding pairs at 3 active sites in 2010: Carnarsie Pol (3 pairs), Line Island Group (3 pairs), and Ingraham Hassock (3 pairs). The Line Island Group had 5 nesting pairs in 2022. Nesting in the Greater NY Harbor has been stable at low levels since 1985 with an average of one nest per year during this time frame, and a maximum of 6 nests in 2002. No tricolored herons have been found nesting in NY Harbor since 2018.

The first Breeding Bird Atlas (BBA) (1980-85) documented occupancy in 11 blocks, <1% of the survey blocks statewide (Andrle and Carroll 1988). The second BBA (2000-05) documented occupancy in 13 blocks, <1% of the survey blocks statewide, an increase of 18% since the first atlas (McGowan and Corwin 2008).

The third BBA (2020-25) is currently underway and utilizes a different number and layout of survey blocks across New York, making direct comparison with the first two Atlases difficult. There were 5,333 blocks in the first and second BBAs, and there are 5,710 blocks in the current BBA. As of January 2024, tricolored heron has been documented in 4 blocks, <1% of survey blocks statewide during the third BBA (NYS BBA III Overview, 2023).

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Peripheral	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

1. Freshwater Marsh
2. Estuarine, Brackish Intertidal, Tidal Wetland, Low Marsh
3. Estuarine, Brackish Intertidal, Benthic Geomorphology, Tidal Flat
4. Estuarine, Freshwater Intertidal, Tidal Wetland, Freshwater Tidal Marsh

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
No	No	Declining	

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

Tricolored herons typically breed in colonies with other heron species and are generally found in brackish and salt water coastal areas, marshes, swamps, and mud flats (Bull and Farrand 1977). Niche partitioning among tricolored herons, snowy egrets and little blue herons in marine habitat may result from differences in prey type and size, though these species show significant differences in use of foraging habitat; tricolored heron is more common in open water and pools (Kent 1986a, 1986b).

In New York, tricolored herons utilize the coastal salt marsh scrub/shrub islands along the southern coast of Long Island; nesting in dense thickets or in trees and foraging in shallow estuaries and bays (New York Natural Heritage Program 2009).

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	No	No	Yes	No	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

First breeding is presumed to be during second spring. One brood is produced each year; unsuccessful clutches will be replaced if failure occurs early enough in the season. Second clutches are likely to be uncommon. Rate of survival from hatching to independence is 67.7% (Frederick et al. 1993); from 21 d to independence, 28.6% (Bancroft and Jewell 1987). Predation of eggs and young can be major source of mortality.

May be site-faithful to breeding areas between years as long as there is no history of nesting failure (Bancroft et al. 1994). May switch colonies in local areas within and between nesting seasons (Bancroft and Jewell 1987). The longevity record in the wild 17 years and 8 months (Clapp et al. 1982).

VI. Threats *(from NY 2015 SWAP or newly described):*

Currently, the greatest threat to the tricolored heron is habitat loss and degradation together with disturbance of nesting colonies, which are primarily in urban areas. Specific threats include flooding, development, disturbance of nesting areas by human activity such as boating, fishing, dredge spoil deposition, and predation primarily by gulls, fox, crows, and raccoons (Harbor Herons 2010). Small numbers of breeding pairs in few colonies make the species susceptible to stochastic events such as storms.

Asian long-horned beetle (ALB, Anoplophora glabripennis) was discovered on Prall's Island in the Arthur Kill in 2001. Efforts to eradicate this invasive insect failed (Harbor Herons 2010). Non-native invasive plants also create an interesting issue for nesting herons. Although some species including bittersweet, porcelainberry, and kudzu provide attractive nesting structure for herons, their presence degrades the overall quality of the nesting habitat.

Coastal areas are expected to be affected by predicted sea level rise associated with climate change. In an assessment of vulnerability to predicted climate change conducted by the New York Natural Heritage Program, tricolored heron was identified as a second-priority species whose sensitivity should be assessed in the future (Schlesinger et al. 2011).

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

The tricolored heron is protected under the Migratory Bird Treaty Act of 1918. The Tidal Wetlands Act provides protection for all tidal wetlands under Article 25 of the NYS Conservation Law.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

Protection and restoration of current nesting areas.

NYC Audubon recommends: "continued monitoring of wader populations through nesting surveys and banding is a necessary step to comprehend species status, population trends, and overall health and persistence of the system" (Craig 2012). The Harbor Herons Conservation Plan (2010) provides recommendations for addressing threats known in the New York-New Jersey Harbor. General recommendations are as follows:

- Set target population size for wading birds, by species, in the greater NY/NJ Harbor
- Set target size for each nesting colony, by species in the greater NY/NJ Harbor
- Monitor breeding colonies annually to determine breeding population size
- Monitor wetland habitat availability and use by Harbor Herons in the greater NY/NJ Harbor

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
1. Land/Water Protection	Site/Area Protection
2. Land/Water Protection	Resource/Habitat Protection

3. Land/Water Management	Site/Area Management
4. External Capacity Building	Alliance & Partnership Development

Table 2. Recommended conservation actions for tricolored heron

VII. References

Bancroft, G. T. and S. D. Jewell. 1987. Foraging habitat of Egretta herons relative to stage in the nesting cycle and water conditions. Second Annual Report. South Florida Water Management District, West Palm Beach, FL.

Bancroft, G. T., A. M. Strong, R. J. Sawicki, W. Hoffman, and S. D. Jewell. 1994. Relationships among wading bird foraging patterns, colony locations, and hydrology in the Everglades. Pages 615-687 in Everglades: the ecosystem and its restoration. (Davis, S. and J. C. Ogden, Eds.) St. Lucie Press, Del Ray Beach, FL.

BirdLife International (2024) Species factsheet: *Egretta tricolor*. Downloaded from http://datazone.birdlife.org/species/factsheet/tricolored-heron-egretta-tricolor on 23/01/2024. Recommended citation for factsheets for more than one species: BirdLife International (2024) IUCN Red List for birds. Downloaded from http://datazone.birdlife.org on 23/01/2024.

Clapp, R. B., M. K. Klimkiewicz, and J. H. Kennard. 1982. Longevity records of North American birds: Gaviidae through Alcidae. J. Field Ornithol. 53:81-208.

Corwin, K. 2012. NYSDEC SWAP 2015 Species Status Assessment for tricolored heron. Prepared on July 25, 2012. Revised by S. Hoff January 2014.

Craig, E. 2011. New York City Audubon's Harbor Herons Project: 2011 interim nesting survey report. New York City Audubon, New York, NY.

Craig, E. 2012. New York City Audubon's Harbor Herons Project: 2012 interim nesting survey report. New York City Audubon, New York, NY.

Curley, S.R., 2022. New York City Audubon's Harbor Herons Project: 2022 Nesting Survey Report. New York City Audubon, New York, NY.

eBird data from 2008-2022. Estimated for 2022. Fink, D., T. Auer, A. Johnston, M. Strimas-Mackey, S. Ligocki, O. Robinson, W. Hochachka, L. Jaromczyk, C. Crowley, K. Dunham, A. Stillman, I. Davies, A. Rodewald, V. Ruiz-Gutierrez, C. Wood. 2023. eBird Status and Trends, Data Version: 2022; Released: 2023. Cornell Lab of Ornithology, Ithaca, New York. https://doi.org/10.2173/ebirdst.2022

Frederick, P. C. 1997. Tricolored Heron (Egretta tricolor), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/306 doi:10.2173/bna.306

Frederick, P. C., M. G. Spalding, and G. V. N. Powell. 1993. Evaluating methods to measure nestling survival in Tricolored Herons. J. Wildl. Manage. 57:34-41.

Harbor Herons Subcommittee. S. B. Elbin and N.K. Tsipoura (Editors). 2010. Harbor Herons Conservation Plan- NY/NJ Harbor Region. NY-NJ Harbor Estuary Program.

Kent, D. M. 1986a. Behavior, habitat use, and food of three egrets in a marine habitat. Colon. Waterbirds 9:25-30.

Kent, D. M. 1986b. Foraging efficiency of sympatric egrets. Colon. Waterbirds 9:81-85.

NatureServe. 2023.NatureServe Explorer. Page last published 1/5/2024. https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.102427/Egretta_tricolor. Accessed 1/23/2024.

New York Natural Heritage Program. 2009. Biotics Database. New York State Department of Environmental Conservation. Albany, NY.

New York Natural Heritage Program. 2024. Online Conservation Guide for *Egretta tricolor*. Available from: https://guides.nynhp.org/tricolored-heron/. Accessed January 23, 2024.

New York State Breeding Bird Atlas III Map (NYS BBA III Map). 2023. https://ebird.org/atlasny/explore. Accessed 1/23/2024.

Schlesinger, M.D., J.D. Corser, K.A. Perkins, and E.L. White. 2011. Vulnerability of at-risk species to climate change in New York. New York Natural Heritage Program, Albany, NY.

Spendelow, J. A. and S. R. Patton. 1988. National Atlas of Coastal Waterbird Colonies in the Contiguous United States: 1976-1982. U.S. Fish and Wildlife Service, Biological Report 88(5). x + 326 pp.

Watson, W. 2001. Upstate New York's first great egret colony. Kingbird 51(3):648-60.

Originally prepared by	Kimberley Corwin
Date first prepared	July 25, 2012
First revision	January 27, 2014 (Samantha Hoff)
Latest revision	January 23, 2024 (M. Oberkircher)

Species Status Assessment

Common Name: Upland sandpiper **Date Updated:** December 2023

Scientific Name: *Bartramia longicauda* **Updated By:** Abigail Valachovic

Class: Aves

Family: Scolopacidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

The upland sandpiper breeds primarily in the Great Plains region of the United States and Canada, with populations extending sparsely eastward to the Northeast. It is listed as Threatened or Endangered in 10 northeastern states. In New York, Upland sandpiper is listed as Threatened and is among the rarest of grassland birds, second only to the Henslow's sparrow. The second Breeding Bird Atlas in New York documented a 65% decline in occupancy in the past 20 years; the number of survey blocks with confirmed breeding declined by 73%. In New York, the cumulative change in estimated relative abundance from 2012 through 2022 of Upland sandpipers during the breeding season has decreased by 67.2% with confidence intervals of –56.3% to –75.6%.

Changes in farming practices, development, and reforestation are responsible for the steady decline in the Northeast. Upland sandpipers have adapted their habitat requirements to utilize airports, reclaimed mine lands, capped landfills, and other human-made landscapes, suggesting that recovery potential is promising if suitable nesting and brood-rearing habitat is managed and increased.

I. Status

a. Current legal protected Status

i. **Federal:** Not Listed **Candidate:** No

ii. **New York:** Threatened: SGCN

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** S3B **Tracked by NYNHP?:** Yes

Other Ranks:

Partners in Flight – Rank IIA out of 20
IUCN Red List Category: LC - Least concern

U.S. Shorebird Conservation Plan – Species of High Concern

Species of Northeast Regional Conservation Concern (Therres 1999)

Nature Serve listed the Upland sandpiper as secured (2014).

Status Discussion:

In New York the Upland sandpiper is a widespread but uncommon breeder. It is a rare to common migrant, especially inland in the fall. Upland sandpiper is ranked as Threatened in New York, Pennsylvania, and Vermont. It is ranked as Endangered in Connecticut, Massachusetts, and New Jersey.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Increasing	Unknown	1966-2010 2000-2010		Yes
Northeastern US	Yes	Declining	Unknown	1966-2010 2000-2010		Yes
New York	Yes	Declining	Declining	1980-2005	T	Yes
Connecticut	(blank)	Unknown	Unknown		E	Yes
Massachusetts	Yes	Unknown	Declining	Since 1980	E	Yes
New Jersey	(blank)	Unknown	Unknown	1970-87	E	Yes
Pennsylvania	Yes	Declining	Declining	1984-89 to 2004-08	T	Yes
Vermont	Yes	Declining	Declining	1976-1981 2003-2007	E	Yes
Ontario	Yes	Declining	Declining	1981-85 2001-2005	NL	No
Quebec	Yes	Declining	Declining	1984-2012	NL	No

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

New York's Landowner Incentive Program (LIP) monitors grassland birds at eight Grassland Focus Areas in the state. Upland sandpiper is one of the focal species in point counts that are conducted annually. In 2005, Audubon NY conducted grassland bird surveys within the New York grassland bird focus areas to help identify target species for each focus area. As a follow up to these surveys, in 2006 NYSDEC did targeted surveys for species that were not well represented in the 2005 survey. Upland sandpiper was one of the primary species targeted during both of these survey efforts.

Trends Discussion *(insert map of North American/regional distribution and status):*

Upland sandpiper was hunted extensively before the passage of the Migratory Bird Treaty Act in 1918. From 1870 to 1890, between 50,000 and 60,000 birds were shipped annually by train from Nebraska (Dinsmore 1994).

As an obligate grassland species, the Upland sandpiper has declined in the Northeast and in New York over the past 50 years as habitat has been lost to reforestation. Breeding Bird Survey data for New York show a declining long-term (1966-2010) and short-term (2000-2010) trend of -5.3% per year; while both trends are significant, caution is advised due to low relative abundance. The second Breeding Bird Atlas documented a -65% decline in occupancy from 1980-85 to 2000-05; the number of blocks in which breeding was confirmed declined by -73%

In North America, Breeding Bird Survey data show a significant long-term increase of 0.5% per year from 1966 to 2010, and a non-significant short-term increase of 1.2% per year from 2000 to 2010. In the Lower Great Lakes/St. Lawrence Plain BCR, the BBS trend is significantly declining at -2.9% per year for 1966 to 2010 and at -3.4% per year from 2000 to 2010.

Most recently, Breeding Bird Survey data for New York show a declining long-term (1993-2019) trend of -7.59%. The species has been roughly stable between 1970 and 2017 (Partners in Flight 2020). Short-term trends suggest that the population increased by 13% over the past three generations (12.3 years), although this value is statistically non-significant (Pardieck et al. 2018; see also Wetlands International 2020). In New York, the cumulative change in estimated relative abundance from 2012 through 2022 of Upland sandpipers during the breeding season has decreased by 67.2% with confidence intervals of –56.3% to –75.6%.

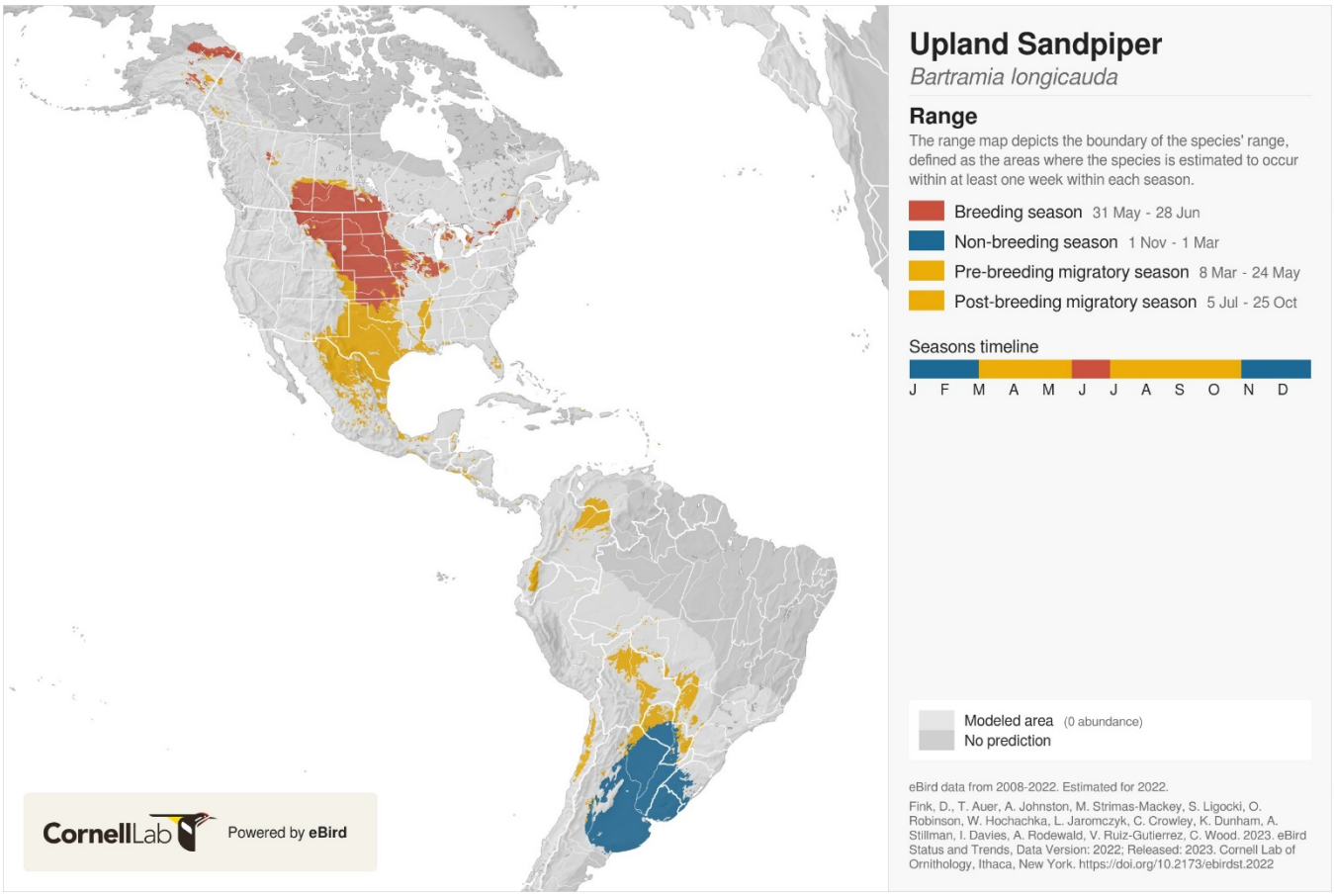

Figure 1. Upland sandpiper distribution in North America (Source: eBird).

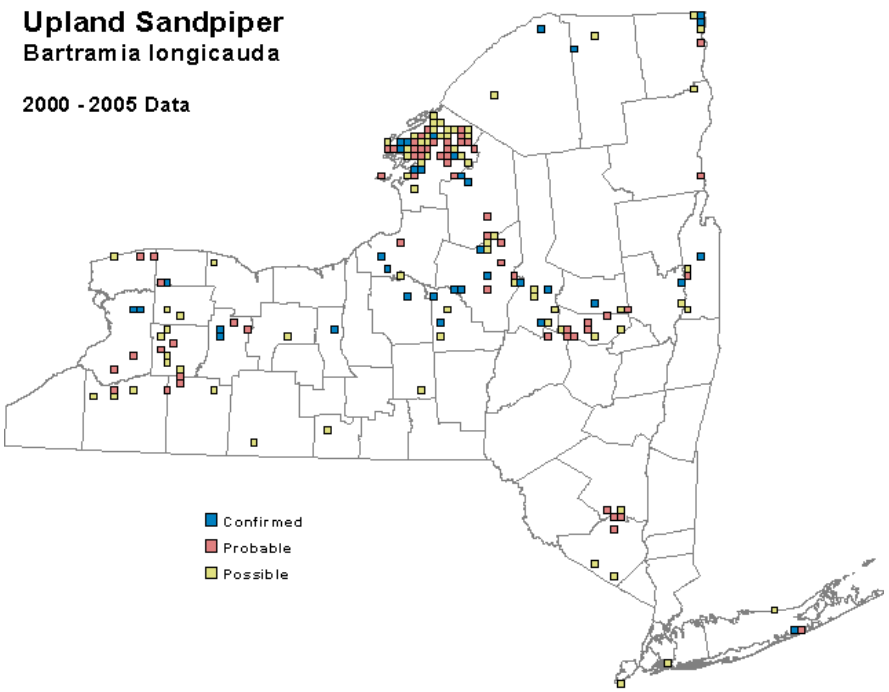

Figure 2. Upland sandpiper occurrence in New York State during the second Breeding Bird Atlas (McGowan and Corwin 2008).

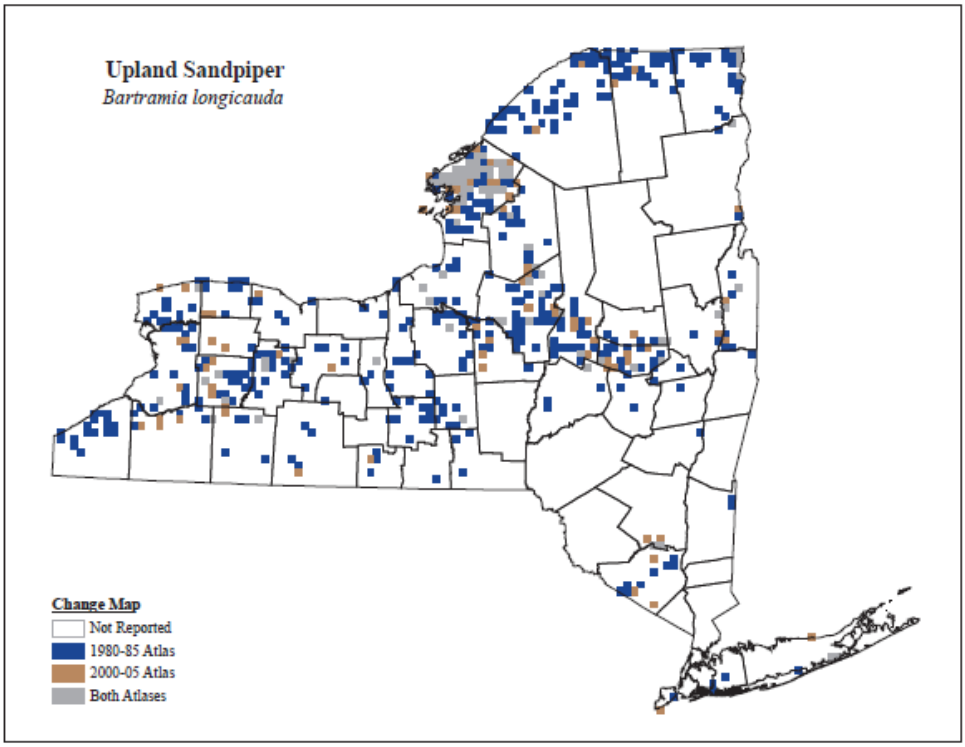

Figure 3. Change in upland sandpiper occurrence in New York State between the first Breeding Bird Atlas and the second Breeding Bird Atlas (McGowan and Corwin 2008).

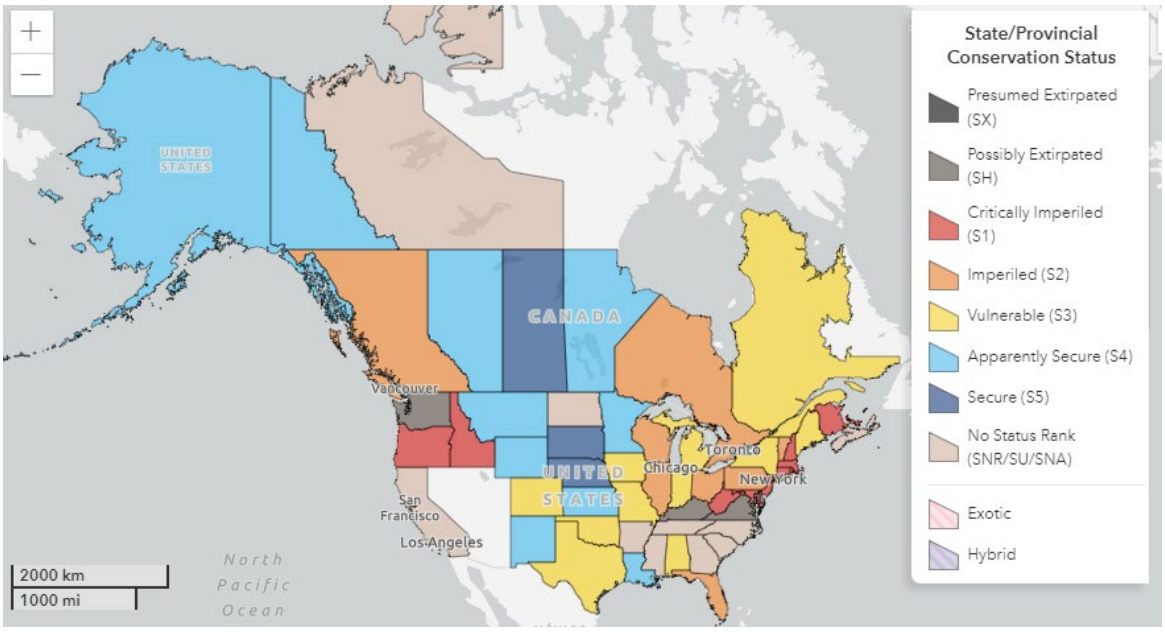

Figure 4. Conservation status of the Upland sandpiper in North America (NatureServe 2014).

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

Years	# of Records	# of BBA Blocks	% of State
Pre-1980	_____	_____	_____
1980-1985	_____	476	9%
2000-2005	_____	165	3%
2020-2023	_____	15	0.26%

Table 1. Records of upland sandpiper in New York.

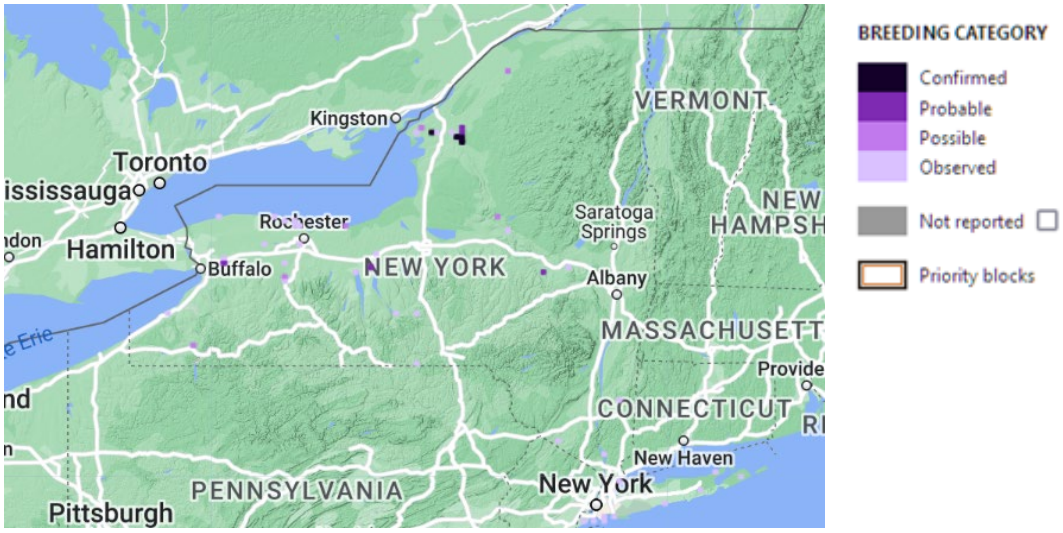

Figure 5. Breeding Bird Atlas 3 records of upland sandpiper in New York (BBA-eBird).

Details of historic and current occurrence:

Bull (1974) noted Upland sandpiper as declining, but still locally common in agricultural areas, despite its disappearance from Long Island. The first Breeding Bird Atlas (1980-85) documented occupancy in 476 survey blocks statewide (9%), with confirmed breeding in 129 blocks.

The second Breeding Bird Atlas (2000-05) documented occupancy in 165 survey blocks statewide (3%), a decline of 65%. Breeding was confirmed in 38 blocks, a decline of 73%.

The third BBA, which is currently underway, utilizes a different number and layout of survey blocks across New York, making direct comparison with the first two Atlases difficult. There were 5,333 blocks in the first and second BBAs and 5,710 blocks in the current BBA.
New York is in the northeastern part of the extensive breeding range.

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Peripheral	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

1. Pasture/Hay
2. Urban and Recreational Grasses
3. Native Barrens and Savanna
4. Old Field Managed Grasslands

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
Yes	Yes	Declining	

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

Upland sandpiper's association with the native prairie is so strong that scientists consider it to be a indicator species, that can indicate the quality of a habitat. Thus, the absence of the UPSA in a patch of prairie would indicate to biologists that there is likely a problem with the habitat.

The Upland sandpiper is a grassland bird. Optimal breeding habitat contains a mixture of short grass areas for feeding and courtship, interspersed with taller grasses and forbs for nesting and brood cover. Vegetation height at the time of spring arrival should be 15-20cm (see NatureServe 2012). Other

important habitat characteristics include fence posts, large expanses of open areas, little forest, and little topography (White 1983). Upland sandpipers are area-sensitive, preferring grasslands larger than 25 to 40 acres in size (Smith and Smith 1992).

In New York, breeding occurs in agricultural areas including old pastures and hayfields (Bull 1974). In most areas of New York where upland sandpiper is persisting there are a number of Amish families whose farming techniques remain less intensive. Upland sandpipers can also be found in mowed areas adjacent to airport runways and highways. Airfields appear to be an especially hopeful avenue for providing upland sandpiper habitat.

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	Choose an item.	No	Yes	No	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

The age at first breeding and intervals between breeding events are not known. Reproductive success appears to be higher than other ground-nesting shorebirds. There are few data on survival. The two longest survivors among banding recoveries were five years (Clapp et al. 1982), and 8 years, 11 months (Houston et al. 1999). One brood is reared per season. There are no data on lifetime reproductive success. Data on reproductive success are sparse; mortality of flightless young is relatively high, but difficult to measure because young hide and are rarely seen.
In Kansas, from 2002 through 2005, Mong and Sandercock (2007) radio-marked 184 upland sandpipers, and color-banded an additional 138 birds. Annual return rates ranged from 20-50% over the study period.

VI. Threats *(from NY 2015 SWAP or newly described):*

The greatest threat to Upland sandpipers is the loss of suitable habitat. This species is area-sensitive, requiring large expanses of grasslands, therefore fragmentation of habitat, as well as outright habitat loss, is a significant threat.

Declines are associated with plowing of natural grasslands (Houston and Bowen 2001). At present, loss, degradation, and fragmentation of habitat due to increased urbanization, changes in farming practices and natural forest succession pose the most serious threats to populations. Frequent disturbance of pastures and hayfields (cut too often to allow breeding) is a problem in some areas. Extensive row-cropping and early crop-cutting probably pose threats to breeders (Byrd and Johnston 1991).

A study led by a Canadian toxicologist identified acutely toxic pesticides as the most likely leading cause of the widespread decline in grassland bird numbers in the United States. Overall, insecticide use, and change in permanent pasture and rangeland, concluded that lethal pesticides were nearly four

times more likely to be associated with population declines than the next most likely contributor, changes in cropped pasture (Mineau and Whiteside 2013).

In an assessment of vulnerability to predicted climate change conducted by the New York Natural Heritage Program, upland sandpiper was identified as a second-priority species whose sensitivity should be assessed in the future (Schlesinger et al. 2011).

Threats to NY Populations	
Threat Category	**Threat**
1. Residential & Commercial Development	Housing & Urban Areas (habitat loss)
2. Agriculture & Aquaculture	Annual & Perennial Non-timber Crops (intensification & changes in agriculture)
3. Transportation & Service Corridor	Roads & Railroads
4. Transportation & Service Corridor	Flight Paths (plane strikes)
5. Pollution	Agriculture & Forestry Effluents (pesticides, rodenticides)
6. Natural System Modifications	Other Ecosystem Modifications (succession)
7. Energy Production & Mining	Renewable Energy (sensitive to disturbance from turbines)
8. Invasive & Other Problematic Species & Genes	Invasive/ Non-native Alien Species

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

The upland sandpiper is listed as a threatened species in New York and is protected by Environmental Conservation Law (ECL) section 11-0535 and the New York Code of Rules and Regulations (6 NYCRR Part 182). A permit is required for any proposed project that may result in a take of a species listed as Threatened or Endangered, including, but not limited to, actions that may kill or harm individual animals or result in the adverse modification, degradation or destruction of habitat occupied by the listed species. Upland sandpiper is also protected under the Migratory Bird Treaty Act.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

Grassland birds in New York will benefit from habitat management on private lands under programs such as New York's Landowner Incentive Program (LIP) for Grassland Protection and Management. The program provides incentives and technical advice to private landowners to enhance grassland habitat by following recommended mowing schedules and by removing trees, shrubs, and hedgerows. Increasing the LIP acreage in pasture or short grass habitats would be beneficial for upland sandpiper.

The NYSDEC's Strategy for Grassland Bird Conservation Best Management Practices (BMPs) for should be used to guide habitat management on grassland habitat or habitat to be converted into grassland. The management goal of these BMPs is to maintain the open, grassy conditions necessary for successful breeding by grassland birds and to avoid disturbance to nesting birds. Techniques may include seeding, mowing, and removal of trees and shrubs including invasive species. Typically, land should be managed for a minimum of 5 years to begin showing benefits for grassland birds. These BMPs form the basis for specific 5-year Site Management Plans for landowners selected to receive technical and financial assistance through LIP (NYSDEC 2022-2027).

Some general recommendations:

•Target management for grassland bird species known to be in the vicinity and consider the needs of both breeding and wintering grassland bird species.
• Consider the surrounding landscape when making management decisions.
• Conduct baseline grassland bird surveys on newly acquired fields or fields targeted for management changes to determine which species are present.
• Increase field size by hedgerow removal, removing trees, etc. to benefit species that require large, open fields.
• Control invasive plant species (glossy buckthorn, pale and black swallowwort, Canada thistle, Phragmites, etc.) to improve habitat quality.
• When developing grassland planting or habitat restoration projects, consider a variety of factors including the targeted grassland bird species, pollinators, seed mix (warm versus cool season grasses, forbs, wildflower mixes, grass height and density), timing of planting, existing site conditions, and vegetation removal techniques (including herbicide and intensive disking).
• Utilize mowing, haying, burning, and grazing for maintaining grassland habitat, after evaluating the appropriateness of these methods relative to site conditions and management objectives. In particular, burning cool season grasses is not advisable in most situations in New York.

Conservation actions following IUCN taxonomy are categorized in the table below.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
1. Land/Water Protection	Site/Area Protection
2. Land/Water Protection	Resource/Habitat Protection
3. Land/Water Management	Site/Area Management
4. Land/Water Management	Invasive/Problematic Species Control
5. Land/Water Management	Habitat and Natural Process Restoration
6. Education and awareness	Training

7. Education and awareness	Awareness & Communications
8. Land and Policy	Policies and Regulations

Table 3. Recommended conservation actions for upland sandpiper

The Comprehensive Wildlife Conservation Strategy (NYSDEC 2005) includes recommendations for the following actions for grassland birds, which includes Upland sandpiper.

Easement acquisition:

____ Identify ownership of grasslands in core focus areas, and focus Landowner Incentive Program (LIP) funding for use in conserving the most important privately-owned grasslands in the state and distribute $400,000 per year from LIP to conserve priority grasslands.

Habitat management:

____ Develop habitat management guidelines and action plans for priority focus grassland bird species.

Habitat research:

____ Evaluate the effects of specific farming and management practices, such as: timing of mowing, intensity of grazing, frequency of mowing, mowing versus haying versus prescribed fire, and width of buffer strips on productivity of grassland birds.

Other acquisition:

____ Incorporate priority grassland focus areas into the NYS Open Space Plan.

Other action:

____ Work with public land managers, including NRCS, USFWS, DEC and others, to better direct funding and other resources to the highest priority areas and projects for grassland habitat management. The ability to focus funding sources in core priority grasslands will be key. If the funding sources from National Resource Conservation Service (NRCS) cannot be adequately focused in priority areas, then this will cripple the ability to conserve the most critical grassland areas and will result in continued declines in grassland birds even within these focus areas.

____ Develop an outreach program to educate the public and land managers on the need for, and wildlife benefits, of grasslands. Also provide technical guidance on what and how to benefit grassland species. Outreach to private landowners will be a key first step to educate the public about the importance of their lands to grassland birds. So much of this habitat exists on private lands that their cooperation will be the ultimate deciding factor on whether species declines can be halted. Their cooperation at the level needed for meaningful change will probably hinge on some form of subsidies.

Population monitoring:

____ Develop and implement supplemental monitoring programs for grassland bird species that are not adequately sampled by BBS to determine precise population trends and evaluate effectiveness of conservation efforts. Use long term trend data to determine effectiveness of grassland conservation efforts.

____ Complete inventory of potential grassland habitat for species present, distribution, and relative abundance of priority species.

Statewide management plan:

____ Complete a comprehensive Grassland Bird Conservation Plan that coordinates research, management, and conservation efforts to more effectively conserve NY's grassland birds. Identify priority species and delineate priority focus areas for conservation and management.

VII. References

Bull, J. 1974. Birds of New York State. Doubleday/Natural History Press, Garden City, NY. [Reprinted by Cornell University Press, Ithaca, NY, 1985.]

Clapp, R. B., M. K. Klimkiewicz, and J. H. Kennard. 1982. Longevity records of North American birds: Gaviidae through Alcidae. J. Field Ornithol. 53(2):81-124.

Corwin, K. 2012. NYSDEC SWAP 2015 Species Status Assessment for Upland sandpiper. Prepared on July 30, 2012. Revised January 28, 2014 by Samantha Hoff.

Houston, C. S., and D. E. Bowen, Jr. 2001. Upland Sandpiper (*Bartramia longicauda*). *In* the Birds of North America, No. 580 (A. Poole and F. Gill, editors). The Birds of North America, Inc., Philadelphia, PA. 32pp.

Houston, C. S., S. C. Drury, and G. Holroyd. 1999. Upland Sandpiper banding in North America. N. Am. Bird Bander 24:1-2.

Mong, T. W. and B. K. Sandercock. 2007. Optimizing radio retention and minimizing radio impacts in a field study of Upland Sandpipers. Journal of Wildlife Management 71(3):971-980.

Morgan, M. R. and M. F. Burger. 2008. A plan for conserving grassland birds in New York: Final report to the New York State Department of Environmental Conservation under contract #C005137. Audubon New York, Ithaca, NY. <http://ny.audubon.org/PDFs/ConservationPlan-GrasslandBirds-NY.pdf>. Accessed 11 June 2013.

National Geographic Society, 2011, Field guide to the birds of North America (6th ed.): Washington, D.C., National Geographic Society, 576 p.

New York State Department of Environmental Conservation (NYSDEC). 2005. New York State Comprehensive Wildlife Conservation Strategy. <http://www.dec.ny.gov/index.html>. Accessed 11 June 2013.

NYSDEC Strategy for Grassland Bird Habitat Management and Conservation 2022-2027.

New York State Third Breeding Bird Atlas. New York Overview. https://ebird.org/atlasny/state/US-NY. Accessed (21 December 2023).

Pardieck, K. L.; Ziolkowski Jr., D. J.; Lutmerding, M.; Hudson, M. A. R. 2018. North American Breeding Bird Survey Dataset 1966 - 2017, version 2017.0. U.S. Geological Survey, Patuxent Wildlife Research Center Available at: https://doi.org/10.5066/F76972V8.

Partners in Flight. 2020. Avian Conservation Assessment Database, version 2020. Available at: http://pif.birdconservancy.org/ACAD.

Shaffer, J. A., Igl, L. D., Johnson, D. H., Dinkins, M. F., Goldade, C. M., Parkin, B. D., & Euliss, B. R. (2019). *The effects of management practices on grassland birds—Upland Sandpiper (Bartramia longicauda)* (No. 1842-F). US Geological Survey.

Smith, D.G. and C.R. Smith. 1992. Henslow's sparrow and grasshopper sparrow: a comparison of habitat use in Finger Lakes National Forest, NY. Bird Observer 20(4):187-194.

Therres, G.D. 1999. Wildlife species of regional conservation concern in the northeastern United States. Northeast Wildlife 54:93-100.

Wetlands International. 2020. Waterbird Population Estimates. Available at: wpe.wetlands.org.

White, R. P. 1983. Distribution and habitat preference of the upland sandpiper (*Bartramia longicauda*) in Wisconsin. American Birds 37:16-22.

Websites consulted:

https://www.allaboutbirds.org/guide/Upland_Sandpiper/lifehistory
NYSDEC Upland Sandpiper: https://www.dec.ny.gov/animals/59582.html

Originally prepared by	Kimberley Corwin
Date first prepared	July 30, 2012
First revision	January 28, 2014 (Samantha Hoff)
Last revision	December 22, 2023 (Abigail Valachovic)

Species Status Assessment

Common Name: Vesper sparrow **Date Updated:** December 2023

Scientific Name: *Pooecetes gramineus* **Updated By:** Abigail Valachovic

Class: Aves

Family: Emberizidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

Though classified as a grassland bird, Vesper sparrow is more appropriately called an “open land” bird, as it is more closely associated with agricultural fields than hayfields or grassy meadows (Wiens 1969, Smith 2008). In New York, this sparrow is near the eastern edge of its North American distribution, which extends in a wide band to the west coast and northward into Canada. Wintering occurs in the southern United States southward to Central America.

Population declines for Vesper sparrow that parallel losses of agricultural lands have been noted since the mid-1900s across the distribution and in the eastern region. Eastern declines appear to be associated with loss of open habitats to reforestation and urbanization, as well as changes in agricultural practices, including removal of hedgerows and more frequent mowing and haying (Santner 1992, Graham and Cotter 1996). In New York, Breeding Bird Survey data and Breeding Bird Atlas data have documented declining trends in abundance and occupancy since the mid-1960s.

I. Status

a. Current legal protected Status

i. **Federal:** Not listed **Candidate:** No

ii. **New York:** Special Concern: SGCN

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** S3B **Tracked by NYNHP?:** No

Other Ranks:

-IUCN Red List: Least Concern (LC)

New York Natural Heritage Program - Watch List

Status Discussion:

Vesper sparrow is a widespread breeder in agricultural areas of New York. It is a common to very common migrant, though much less numerous on the coast. In winter it is rare to uncommon on Long Island, and very rare inland.

Vesper sparrow is ranked as Vulnerable in New York, Vermont, and Quebec. It is ranked as Critically Imperiled in Massachusetts, Connecticut, and New Jersey, and as Apparently Secure in Pennsylvania and Ontario.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Declining	Declining	1966-2010		Yes
Northeastern US	Yes	Declining	Declining	1966-2010		Yes
New York	Yes	Declining	Declining	1966-2010; 1980-85 to 2000-05	SC	Yes
Connecticut	Yes	Declining	Declining		E	Yes
Massachusetts	Yes	Declining	Declining	1975-79 to 2007-11	T	Yes
New Jersey	Yes	Declining	Declining	1966-2010	E & T	Yes
Pennsylvania	Yes	Declining	Declining	Since 1960s	Not listed	No
Vermont	Yes	Declining	Declining	1966-2010	Not listed	Yes
Ontario	Yes	Declining	Declining	1966-2010	Secure	No
Quebec	Yes	Declining	Declining	1966-2010	Secure	No

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

New York's Landowner Incentive Program (LIP) monitors grassland birds at eight Grassland Focus Areas in the state. Vesper sparrow is one of the focal species in point counts that are conducted annually. Grassland bird surveys are also conducted at some Wildlife Management Areas.
In addition, in 2005, Audubon NY conducted grassland bird surveys within the New York grassland bird focus areas to help identify target species for each focus area. As a follow up to these surveys, in 2006 NYSDEC did targeted surveys for species that were not well represented in the 2005 survey. Although vesper sparrows were not one of the target species in the 2006 surveys, data on vesper sparrows was collected during both of these survey efforts (H. Kennedy, pers. comm.).

Trends Discussion *(insert map of North American/regional distribution and status):*

Vesper sparrow was not common in the Northeast before European settlement but increased in abundance as agricultural lands became available.

As a bird of open landscapes, the Vesper sparrow has experienced significant declines in the past several decades as habitat has diminished due to changes in agriculture and loss of agricultural lands. The Breeding Bird Survey documents this species well. Most trends show significant long-term and short-term declines. The trend for North America is -1.1% per year for 1966-2010 and -0.2% per year for 2000-2010. In the Eastern BBS routes, the trend is also declining: 2.6% per year for 1966-2010 and 1.7% per year for 2000-2010. Recently, BBS data for the United States showed a significant 1.53% decline from 1996-2019, and a 3.27% decline in New York.

In New York, the second Breeding Bird Atlas documented a 49% decline in the number of occupied survey blocks from 1980-85 to 2000-05. The number of survey blocks with confirmed breeding records dropped by 53%. Losses were scattered throughout the state. McGowan (2008) noted that some consolidation and expansion of the range suggested by the 2000-05 distribution map in the western

Great Lakes Plain and Appalachian Plateau might be a result of differences in coverage. Breeding Bird Survey data for New York show a significant long-term declining trend of 5.9% per year for 1966-2010. The short-term trend (2000-2010) is also declining, at 0.1% per year, though it is not significant due to low relative abundance.

The species has been undergoing a moderate decline at an average rate of 0.9% per year between 1970 and 2017 (Partners in Flight 2019). Short-term trends suggest that the population declined by 10% over the past ten years (Pardieck et al. 2018).In New York, the cumulative change in estimated relative abundance from 2012 through 2022 of Vesper sparrows during breeding season has decreased by 38.5% with confidence intervals of –21.8% to –53.4%.

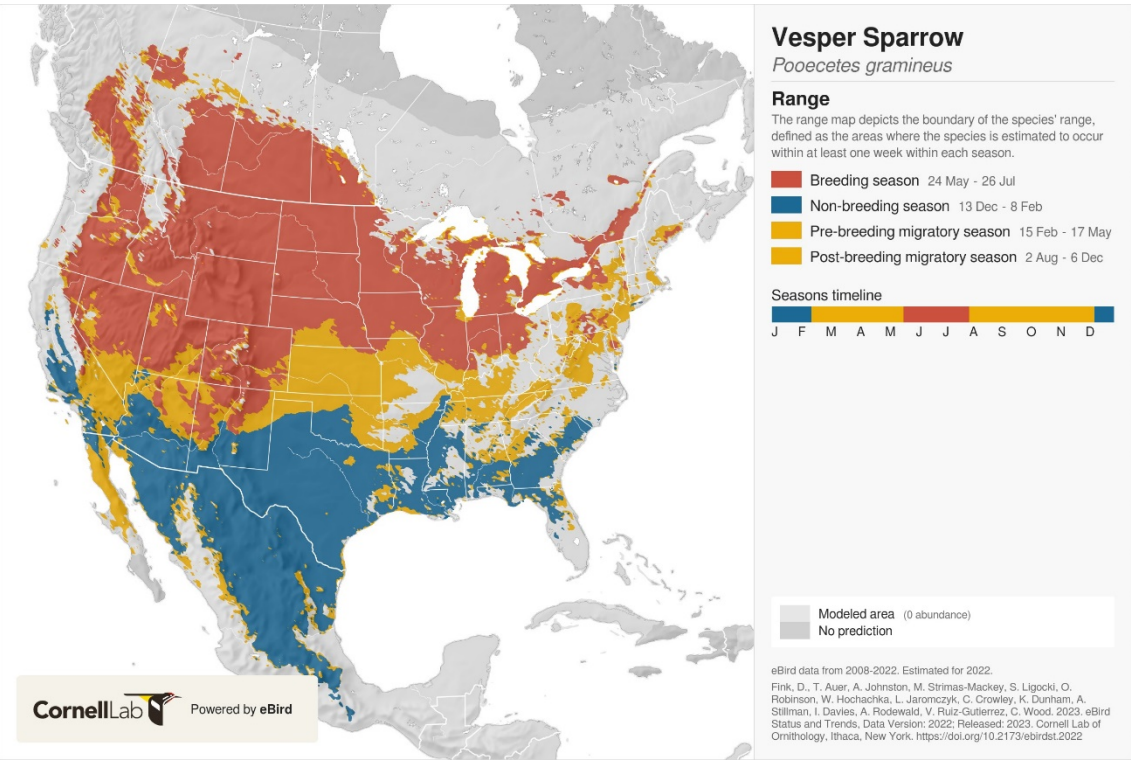

Figure 1. Vesper sparrow distribution in North America (eBird).

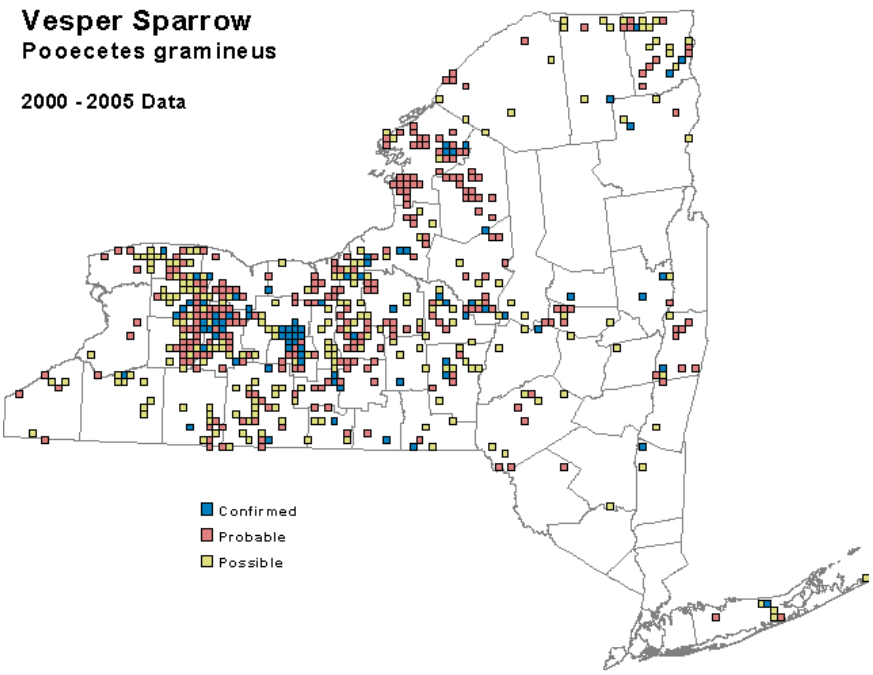

Figure 2. Vesper sparrow occurrence in New York State during the second Breeding Bird Atlas (McGowan and Corwin 2008).

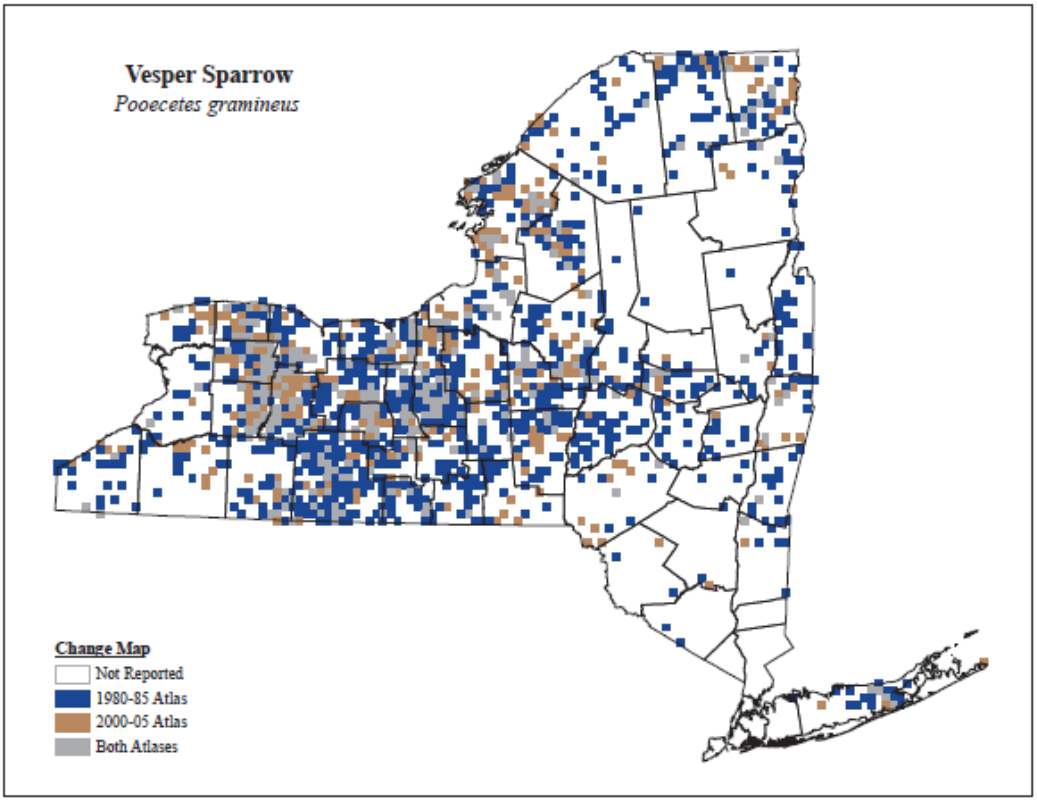

Figure 3. Change in vesper sparrow occurrence in New York State between the first Breeding Bird Atlas and the second Breeding Bird Atlas (McGowan and Corwin 2008).

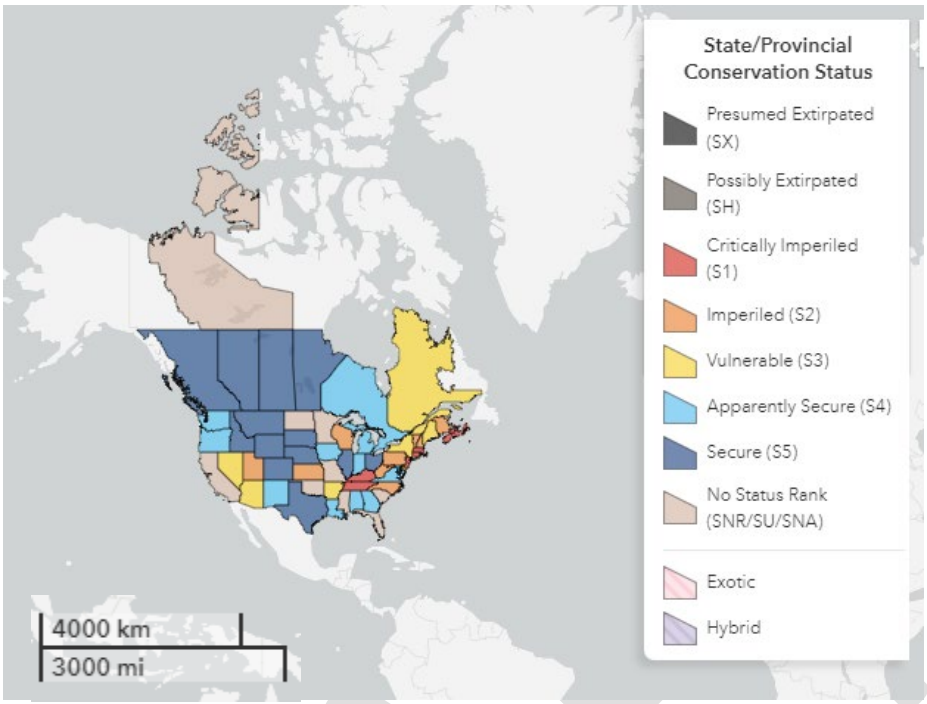

Figure 4. Conservation status of the vesper sparrow in North America (NatureServe 2023).

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

Years	# of Records	# of BBA Blocks	% of State
Pre-1980			
1980-1985		1116	21%
2000-2005		564	11%
2020-2023		244	4.3%

Table 1. Records of vesper sparrow in New York.

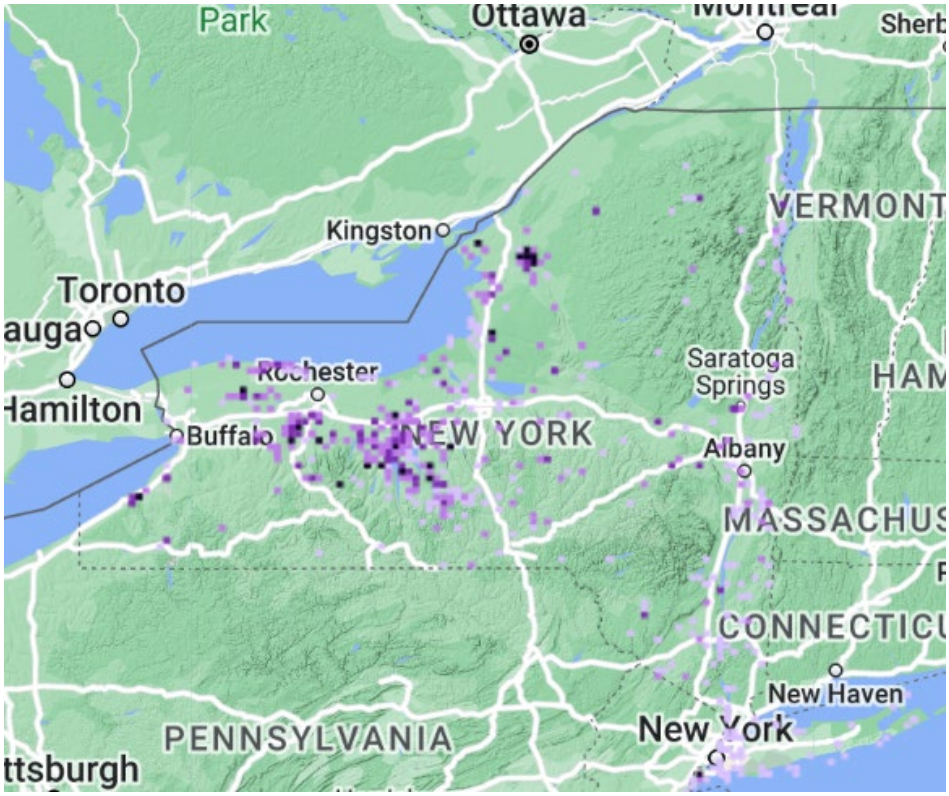

Figure 5. Breeding Bird Atlas 3 records of vesper sparrow in New York (BBA-eBird).

Details of historic and current occurrence:

Vesper sparrow was likely most abundant during the early 1900s in areas where sheep farming was common (see Smith 2008). Bull (1974) noted its presence across the state except for Long Island, but also noted its decline. The first Breeding Bird Atlas (1980-85) documented occupancy in 1,116 survey blocks statewide.

The second Breeding Bird Atlas (2000-05) documented occupancy in 564 survey blocks statewide, a decline of -49%. Breeding continued the Erie-Ontario Plain and Central Appalachians with scattered records in Clinton County, the Mohawk Valley, and Long Island.

The third BBA, which is currently underway, utilizes a different number and layout of survey blocks across New York, making direct comparison with the first two Atlases difficult. There were 5,333 blocks in the first and second BBAs and 5,710 blocks in the current BBA.
New York is in the northeastern part of the extensive breeding range.

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Peripheral	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

1. Cultivated Crops
2. Pasture/Hay
3. Native Barrens and Savanna

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
Yes	Yes	Declining	Since early 1900s

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

The Vesper sparrow is an open-land bird that requires large expanses of relatively short grasses and ample areas of bare ground (Wiens 1969, Smith 2008). Nicholson (1985) noted that in New York, sheep grazing created optimal habitat for vesper sparrow in the early 1900s because sheep crop the grasses closely and tend to overgraze (see Smith 2008). This sparrow's affinity for agricultural areas is likely a result for its requirement for bare ground; in New York it has been found in potato fields, cornfields, and over-grazed pastures (Smith 2008).

Vesper sparrows respond quickly to changes in habitat, colonizing new areas swiftly when habitat becomes suitable and abandoning old fields rapidly as they change into forest.

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	Choose an item.	No	Yes	No	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

Vesper sparrows breed during the first summer after hatching. One or two broods are raised each season. The longevity record for a banded vesper sparrow is 7 years, 1 month (Klimkiewicz 1997). No estimate of survivorship is available. A combined reported return rate of about 50% demonstrates site fidelity in this species (Best and Rodenhouse 1984).

Farming practices are a major cause of nest loss in agriculture areas (Rodenhouse and Best 1983, Frawley and Best 1991, Stallman and Best 1996). Eggs and nestlings are subject to predation by raccoons, skunks and foxes.

VI. Threats *(from NY 2015 SWAP or newly described):*

Conversion of sparse grasslands to developed areas and (much less frequently) to row crops is the major threat to vesper sparrows. Frequent haying may destroy nests or kill fledglings.

From Jones and Cornely (2002): Changes in farming practices have been implicated in declines of this species rangewide (Rising 1987); intensive farming that uses chemicals and large-scale tillage contribute to declines (Adams et al. 1994, Graham and Cotter 1996). A trend toward earlier harvest (e.g., June) of first hay crop, and more frequent cutting, destroys nests (Santner 1992, Smith 1996). Greatly reduced nest success in corn and soybean fields (Perritt and Best 1989) although production in row crops is enhanced by no-tillage, reducing the number of nests destroyed (Rodenhouse and Best 1983). However, breeding success in cultivated and no-tillage row-crop fields and croplands is generally not sufficient to maintain populations (Rodenhouse and Best 1983, Perritt and Best 1989, Stallman and Best 1996).

Based on frequency of occurrence, behavior and timing of pesticide applications, vesper sparrows could be vulnerable to pesticide use; declines in their eastern populations have been attributed to pesticides (Robbins 1996). In risk assessment of vesper sparrow activity patterns and breeding phenology, this species was thought to have a medium level of risk of exposure over 2–5 month (Boutin et al. 1999).

Threats to NY Populations	
Threat Category	**Threat**
1. Residential & Commercial Development	Housing & Urban Areas (habitat loss)
2. Agriculture & Aquaculture	Annual & Perennial Non-timber Crops (intensification & changes in agriculture)
3. Pollution	Agriculture & Forestry Effluents (pesticides, rodenticides)
4. Natural System Modifications	Other Ecosystem Modifications (succession)
5. Energy Production & Mining	Renewable Energy (sensitive to disturbance from turbines)
6. Transportation & Service Cooridors	Roads & Railroads
7. Invasive & Other Problematic Species & Genes	Invasive Non-native/Alien Species
8. Energy production & Mining	Oil & Gas Drilling (hydrofracking)

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

Vesper sparrow is protected by the Migratory Bird Treaty Act. It is listed as a Species of Special Concern in New York, though that status provides no legal protection.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

The NYSDEC's Strategy for Grassland Bird Conservation Best Management Practices (BMPs) for should be used to guide habitat management on grassland habitat or habitat to be converted into grassland. The management goal of these BMPs is to maintain the open, grassy conditions necessary for successful breeding by grassland birds and to avoid disturbance to nesting birds. Techniques may include seeding, mowing, and removal of trees and shrubs including invasive species. Typically, land should be managed for a minimum of 5 years to begin showing benefits for grassland birds. These BMPs form the basis for specific 5-year Site Management Plans for landowners selected to receive technical and financial assistance through LIP (NYSDEC 2022-2027).

Some general recommendations:

•Target management for grassland bird species known to be in the vicinity and consider the needs of both breeding and wintering grassland bird species.
• Consider the surrounding landscape when making management decisions.
• Conduct baseline grassland bird surveys on newly acquired fields or fields targeted for management changes to determine which species are present.
• Increase field size by hedgerow removal, removing trees, etc. to benefit species that require large, open fields.
• Control invasive plant species (glossy buckthorn, pale and black swallowwort, Canada thistle, Phragmites, etc.) to improve habitat quality.
• When developing grassland planting or habitat restoration projects, consider a variety of factors including the targeted grassland bird species, pollinators, seed mix (warm versus cool season grasses, forbs, wildflower mixes, grass height and density), timing of planting, existing site conditions, and vegetation removal techniques (including herbicide and intensive disking).
• Utilize mowing, haying, burning, and grazing for maintaining grassland habitat, after evaluating the appropriateness of these methods relative to site conditions and management objectives. In particular, burning cool season grasses is not advisable in most situations in New York.

Conservation actions following IUCN taxonomy are categorized in the table below.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
1. Land/Water Protection	Site/Area Protection

2. Land/Water Protection	Resource/Habitat Protection
3. Land/Water Management	Site/Area Management
4. Land/Water Management	Invasive/Problematic Species Control
5. Land/Water Management	Habitat and Natural Process Restoration
6. Education and awareness	Training
7. Education and awareness	Awareness & Communications
8. Land and Policy	Policies and Regulations

Table 2. Recommended conservation actions for vesper sparrow

VII. References

Adams, J. S., R. L. Knight, L. C. McEwen, and T. L. George. 1994. Survival and growth of nestling Vesper Sparrows exposed to experimental food reductions. Condor 96:739-748.

Best, L. B. and N. L. Rodenhouse. 1984. Territory preference of Vesper Sparrows in cropland. Wilson Bull. 96:72-82.

Boutin, C., K. E. Freemark, and D. A. Kirk. 1999. Farmland birds in southern Ontario: field use, activity patterns and vulnerability to pesticide use. Agric. Ecosyst. Environ. 72:239-254.

Frawley, B. J. and L. B. Best. 1991. Effects of mowing on breeding birds abundances and species composition in alfalfa fields. Wildl. Soc. Bull. 19:135-142.

Graham, D. and R. C. Cotter. 1996. Vesper Sparrow. Pages 974-976 *in* The breeding birds of Quebec: atlas of the breeding birds of southern Québec. (Gauthier, J. and Y. Aubry, Eds.) Assoc. québecoise des groupes d'ornithologues, Prov. of Quebec Soc. for the protection of birds, Can. Wildl. Serv., Environ. Canada, Québec Region, Montréal.

Jones, S. L. and J. E. Cornely. 2002. Vesper Sparrow (*Pooecetes gramineus*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology <http://bna.birds.cornell.edu/bna/species/624 doi:10.2173/bna.624>.

Morgan, M. R. and M. F. Burger. 2008. A plan for conserving grassland birds in New York: Final report to the New York State Department of Environmental Conservation under contract #C005137. Audubon New York, Ithaca, NY. <http://ny.audubon.org/PDFs/ConservationPlan-GrasslandBirds-NY.pdf>. Accessed 12 June 2013.

New York State Department of Environmental Conservation (NYSDEC). 2013. Best management practices for grassland birds. < http://www.dec.ny.gov/pubs/86582.html>. Accessed 12 June 2013.

NYSDEC Strategy for Grassland Bird Habitat Management and Conservation 2022-2027.

New York State Third Breeding Bird Atlas. New York Overview. https://ebird.org/atlasny/state/US-NY. Accessed (21 December 2023).

Nicholson, A.G. 1985. The development of agriculture in New York State. Natural Research and Extension Series, no 23. Department of Natural Resources, Cornell University, Ithaca, NY.

Pardieck, K. L.; Ziolkowski Jr., D. J.; Lutmerding, M.; Hudson, M. A. R. 2018. North American Breeding Bird Survey Dataset 1966 - 2017, version 2017.0. U.S. Geological Survey, Patuxent Wildlife Research Center Available at: https://doi.org/10.5066/F76972V8.

Partners in Flight. 2019. Avian Conservation Assessment Database, version 2019. Available at: http://pif.birdconservancy.org/ACAD.

Rising, J. D. 1987. Vesper Sparrow. Pages 446-447 *in* Atlas of the breeding birds of Ontario. (Cadman, M. D., P. F. J. Eagles, and F. M. Helleiner, Eds.) Univ. of Waterloo Press, Waterloo, ON.

Santner, S. 1992. Vesper Sparrow. Pages 380-381 *in* Atlas of breeding birds in Pennsylvania. (Brauning, D. W., Ed.) Univ. of Pittsburgh Press, Pittsburgh, PA.

Smith, A. R. 1996. Atlas of Saskatchewan birds. Sask. Nat. Hist. Soc. Spec. Publ. 22, Regina.

Smith, C.S. 2008. Vesper sparrow, *Pooecetes gramineus*. Pages 552-53 *in* The second atlas of breeding birds in New York State (K.J. McGowan and K. Corwin, eds.). Cornell University Press, Ithaca, NY.

Stallman, H. R. and L. B. Best. 1996. Bird use of an experimental strip intercropping system in northeast Iowa. J. Wildl. Manage. 60:354-362

Wiens, J.A. 1969. An approach to the study of ecological relationships among grassland birds. Ornithological Monographs, no. 8:1-93.

Originally prepared by	Kimberley Corwin
Date first prepared	July 31, 2012
First revision	January 27, 2014 (Samantha Hoff)
Last revision	December 22, 2023 (Abigail Valachovic)

Species Status Assessment

Common Name: White-winged scoter **Date Updated:** January 19, 2024

Scientific Name: *Melanitta deglandi* **Updated By:** C. Hoh

Class: Birds

Family: Anatidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

One of three species of scoter that occur in North America, white-winged scoter nests on lakes and wetlands in the interior of western Canada and northward to Alaska. Wintering occurs along the Atlantic and Pacific coasts. All three species of scoter are game species with an open season and population trends for the three are combined due to the difficulty in separating the species during aerial surveys. White-winged scoter is believed to be the most abundant of the three scoter species. Population trends for scoters have declined by as much as 60% since 1978.

I. Status

a. Current legal protected Status

i. **Federal:** Not Listed **Candidate:** No

ii. **New York:** SGCN

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** SNRN **Tracked by NYNHP?:** No

Other Ranks:
-IUCN Red List: Least Concern

Status Discussion:

In New York, white-winged scoter is a very abundant migrant and winter visitant on the coast. Inland it is less numerous but occurs regularly on large bodies of water including Lake Ontario and Chautauqua Lake. During migration it may occur on any body of water. It is a game species with an open season.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Choose an item.	Choose an item.	Choose an item.			Choose an item.
Northeastern US	Choose an item.	Choose an item.	Choose an item.			Choose an item.
New York	Choose an item.	Choose an item.	Choose an item.			Choose an item.

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
Connecticut	Choose an item.	Choose an item.	Choose an item.			Choose an item.
Massachusetts	Choose an item.	Choose an item.	Choose an item.			Choose an item.
New Jersey	Choose an item.	Choose an item.	Choose an item.			Choose an item.
Pennsylvania	Choose an item.	Choose an item.	Choose an item.			Choose an item.
Vermont	Choose an item.	Choose an item.	Choose an item.			Choose an item.
Ontario	Choose an item.	Choose an item.	Choose an item.			Choose an item.
Quebec	Choose an item.	Choose an item.	Choose an item.			Choose an item.

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

A Mid-Winter Waterfowl Survey is conducted annually on Long Island and Lake Champlain, and the New York State Ornithological Association has conducted an annual January Waterfowl Count since 1955, however these surveys do not include the open ocean. A Sea Duck Survey has been conducted in the Atlantic Flyway, including New York, in the 1990s and early 2000s.

Trends Discussion *(insert map of North American/regional distribution and status):*

The USFWS (2011) report on breeding duck populations states that it no longer calculates annual population indices for scoter because of concerns about the accuracy of estimates. A reliable breeding population estimate for white-winged scoter does not exist. Their breeding habitat is only partially surveyed, and surveys are conducted prior to peak nesting. Their nesting habits also make them difficult to survey and distinguishing them from the other scoter species is nearly impossible. A rough estimate is 500,000 to 1,000,000 birds across their range.

Breeding waterfowl surveys conducted by the USFWS and Canadian Wildlife Service combine data on all three scoter species due to the difficulty of identifying the three species during aerial surveys. The combined continental scoter population trend has declined by up to 60% since 1978. Midwinter inventories of all 3 species of scoter showed declining populations from 1954 to 1994; because numbers are combined for the 3 species, no trend is clear for white-winged scoter (Kehoe et al. 1994). The NYSOA January Waterfowl Count data shows a stable trend for white-winged scoter from 1973 to 2008. The long-term average (1973-2008) count of individuals is 7,274 and the short-term average (1999-2008) count of individuals is 6,330.

The U.S. Fish and Wildlife Service conducted The Sea Duck Survey in the Atlantic Flyway in the 1990s and early 2000s. This mid-winter survey was conducted over the open ocean about 3 miles offshore from Nova Scotia to Florida. The number of white-winged scoters recorded in New York waters during the survey varied greatly, from a high of 4,202 to a low of 53; along the length of the survey route, there was a high of 5,235 and low of 534. No statistically significant population trend is apparent in the results of this survey (Sea Duck Joint Venture 2003).

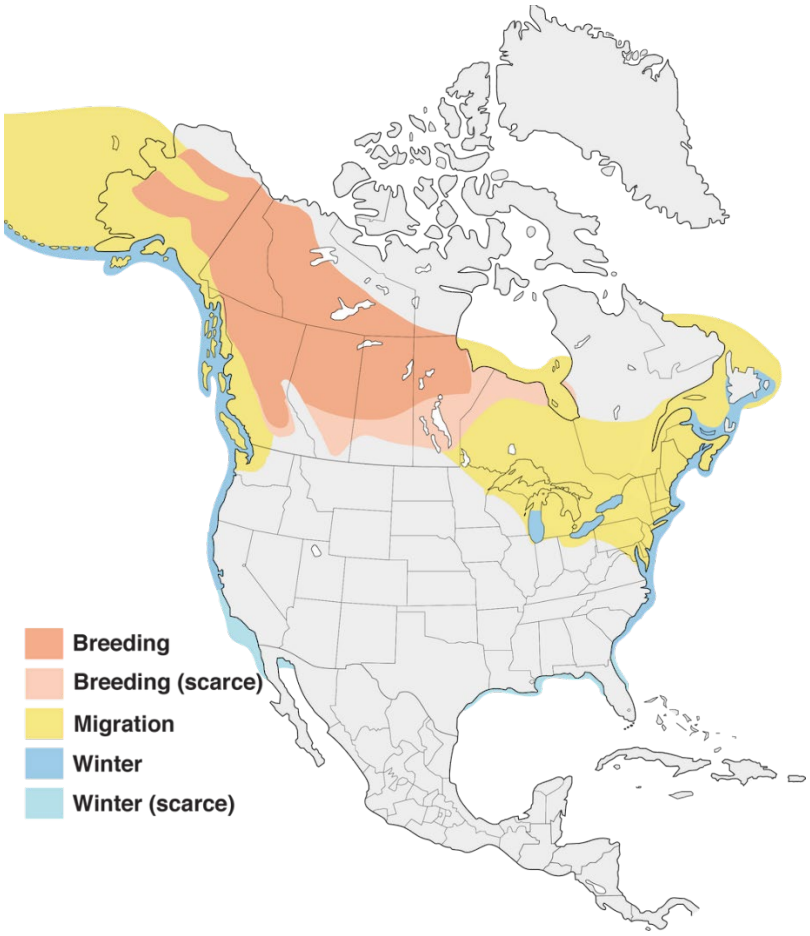

Figure 1. Distribution of the white-winged scoter in North America (Birds of the World, 2024)

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

Years	# of Records	# of BBA Blocks	% of State
Pre-1980	_____	_____	_____
1980-1985	_____	_____	_____
2000-2005	_____	_____	_____
2020-2023	_____	_____	_____

Table 1. Records of white-winged scoter in New York.

Details of historic and current occurrence:

NYSDEC Winter Waterfowl Surveys have been conducted since 1973, when the total number of individuals was 5,854. The average number of individuals from 1973 to 1982 was 6,199.

During 2008, the NYSDEC Winter Waterfowl Survey documented a total of 2,600 wintering individuals. The average number of wintering individuals from 1999 to 2008 was 6,330. Birds are typically observed in Long Island waters but also occur on large inland lakes including Lake Ontario and Chautauqua Lake.

New York is well within the wintering distribution for white-winged scoter. Nonbreeding birds are occasionally encountered in spring and summer months and even recorded in low numbers by DEC staff on Long Island during the Breeding Waterfowl Plot Survey in April and May.

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Peripheral	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

1. Estuarine, Brackish Deep Subtidal
2. Marine, Deep Subtidal
3. Great Lakes Deepwater Community

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
No	Choose an item.	Unknown	

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

Wintering birds use coastal salt and brackish waters, as well as inland fresh waters.

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Choose an item.	Yes	Choose an item.	Choose an item.	Yes	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

From Brown and Frederickson (1997): Females are known to first breed at 2 years of age, but some may not breed until 3 years old (Palmer 1976, Brown and Houston 1982). Age of breeding for males is unknown, but most are presumed to breed at age 2 years. A few individuals migrate to breeding areas and remain in small flocks on large marshes and lakes until sometime in summer, when they depart (Palmer 1976). Otherwise, breeds annually. Strongly philopatric to nesting areas (Kehoe 1994).

Nest success (proportion of nests where at least 1 egg hatched) averaged between 65% and 76% in two studies (Brown and Brown 1981). White-winged scoter is a long-lived species with a high survival rate. Gull predation on ducklings is intense.

The age ratio (number of immature per adult) for white-winged scoter was 2.21 in 2006 and 0.76 in 2010 (Raftovitch et al. 2011).

VI. Threats *(from NY 2015 SWAP or newly described):*

Threats to NY Populations	
Threat Category	**Threat**
1. Biological Resource Use	Hunting & Collecting Terrestrial Animals (hunting)
2. Invasive & Other Problematic Species & Genes	Invasive Non-Native/Alien Species (problems associated with zebra and quagga mussels)
3. Energy Production & Mining	Oil & Gas Drilling (oil spills)
4. Energy Production & Mining	Renewable Energy (offshore wind towers

From Brown and Fredrickson (1997): Hunting of scoters is popular because of more liberal bag limits than other ducks such as black duck. Total continental annual harvest of all three species of scoters averaged 126,700 for 1971–1975, 116,500 for 1976–1980, and 98,900 for 1981–1985 (USFWS 1988). In states of the Atlantic Flyway, annual average harvest of white-winged scoters was 17,320 (range 6,600–32,100) for 1961–1986 (USFWS 1988) and 12,600 for 1966-2010 (Raftovitch et al. 2011). White-winged scoters accounted for 29.9% of sea duck harvest 1961–1986 (USFWS 1988). During this time, white-winged scoters were the most common sea duck killed in 14 yr and second most common in 6 yr. Number harvested and rank in harvest of sea ducks declined after 1976 (USFWS 1988).

White-winged scoter feeds heavily on blue mussel, a species known to concentrate toxic chemicals; thus should be good environmental indicator of pollution in marine habitats (Goldberg 1975, Vermeer and Peakall 1979). Birds with high levels of lead, cadmium, and mercury have been found in Chesapeake Bay. Eight white-winged scoters collected from northcentral New York had measurable levels of polychlorinated biphenyls (PCBs) in liver, muscle, and brain tissue (Baker et al. 1976).

White-winged scoters are among the most vulnerable sea birds to oil spills because the species often occurs in high densities along oil transportation routes (Vermeer and Anweiler 1975, Vermeer and Vermeer 1975, King and Sanger 1979). Extensive oil spills may eliminate entire wintering populations.

Long-term disruption of food supplies resulting from an extensive spill could have more serious effects on populations than the more spectacular deaths occurring directly from oiling.

Intensification of agriculture has eliminated important nesting habitats in the northern prairies and aspen parklands of North America. The characteristic of nesting long distances from water in dense, often thorny, vegetation puts this species in jeopardy, because this preferred nesting habitat is among the first eliminated. Further, use of pesticides and agricultural chemicals has increased, and it has potential to greatly reduce quality of these wetlands for waterfowl (Grue et al. 1988).

In general, wintering waterbirds face threats from loss of habitat to coastal wetlands, activities that result in large scale alteration of bay or ocean substrates (dredging, sand mining, development of barrier islands, etc.), direct mortality from collisions with structures, various contaminants, or intensive human disturbance.

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

White-winged scoter is a game species with an open hunting season. The hunting season length and daily bag limit could be modified or the season could be closed. Currently, there is not a specific harvest strategy in place for white-winged scoter, and all species of scoter are managed together as "scoters." In the Atlantic Flyway, "sea ducks" (scoters, eiders, and long-tailed ducks) are managed as underutilized species capable of additional harvest opportunity, where within designated special sea duck hunting areas a 107 day hunting season may be allowed with a daily bag limit of 7 ducks (but only 4 may be scoters). In all other areas, sea ducks may be harvested during the regular duck hunting season with a bag limit of 6 per day (but only 4 may be scoters). Even with this abundant hunting opportunity, harvest of white-winged scoter is relatively low, when compared to other species of ducks. Since 1999, white-winged scoter annual harvest has averaged 1,500 in New York and about 5,000 for the Atlantic Flyway. Estimated harvest of all species of scoters in the United States was 46,187 in 2010 and 62,086 in 2011; in Canada it was 12,330 in 2010 and 9,030 in 2011 (Raftovich et al. 2012).

In New York, the 2012 hunting season for "scoters" includes a 60 day season with a 4 per day bag limit for all of upstate New York and inland waters of Long Island, and a 107 day season with a 4 per day bag limit for the coastal waters of Long Island in the Special Sea Duck Hunting Area. While most of the scoter harvest in New York occurs in the special sea duck hunting area, between a quarter and a third of the annual harvest comes from inland locations such as the Great Lakes, Niagara River, St. Lawrence River, and Lake Champlain.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

Management should focus on providing (1) adequate protection from hunting for birds on breeding and wintering areas, (2) breeding habitat that promotes successful nesting, and (3) wintering and migration habitats that are unspoiled by contaminants. Reliable techniques for monitoring population size and trends across its range need to be developed and implemented. Continued support of the Sea Duck Joint Venture should lead to improved knowledge and management of the species.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
1. Land/Water Protection	Site/Area Protection
2. Land/Water Protection	Resource/Habitat Protection
3. Land/Water Management	Site/Area Management
4. Land/Water Management	Habitat and Natural Process Restoration (pollution control)
5. Law/Policy Actions	Policy/Regulation Changes (hunting regulations, ocean dumping practices)
6. External Capacity Buildings	Alliance & Partnership Development

Table 2. Recommended conservation actions for white-winged scoter

VII. References

Baker, F. D., C. F. Tumasonis, W. B. Stone, and B. Bush. 1976. Levels of PCB and trace metals in waterfowl in New York state. New York Fish and Game J. 23:82-91.

Brown, P. W. and M. A. Brown. 1981. Nesting biology of the White-winged Scoter. J. Wildlife Manage. 45:38-45.

Brown, P.W. and L. H. Fredrickson. 1997. White-winged Scoter (*Melanitta fusca*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/274 doi:10.2173/bna.274

Brown, P. W. and C. S. Houston. 1982. Longevity and age of maturity of White-winged Scoters. J. Field Ornithol. 53:93-94.

Goldberg, E. D. 1975. The musselwatch-a first step in global marine monitoring. Mar. Pollut. Bull. 6:111.

Grue, C. E., M. W. Tome, G. A. Swanson, S. M. Borthwick, and L. R. DeWeese. 1988. National Symposium on Protection of Wetlands from Agricultural Impacts, Colorado State University, Fort Collins, April 25-29. U.S. Fish Wildlife Serv. Washington, D.C.

Kehoe, F. P., D. Caithamer, J. Myers, R. Burrell, and B. Allen. 1994. Status of sea ducks in the Atlantic Flyway with strategies towards improved management. Ad Hoc Sea Duck Committee, Atlantic Flyway Technical Section.

King, J. G. and G. A. Sanger. 1979. Oil vulnerability index for marine oriented birds. Pages 227-239 *in* Conservation of marine birds of northern North America. (Bartonek, J. C. and D. N. Nettleship, Eds.) Wildlife Research Report 11. U.S. Fish Wildl. Serv., U.S.D.I. Washington, D.C.

Palmer, R. S. 1976. Handbook of North American birds. Vol. 3. Yale Univ. Press, New Haven, CT.

Raftovich, R.V., K.A. Wilkins, S.S Williams, H.L. Spriggs, and K.D. Richkus. 2011. Migratory bird hunting activity and harvest during the 2009 and 2010 hunting seasons. U.S. Fish and Wildlife Service, Laurel, Maryland, USA.

U. S. Fish and Wildlife Service. 1988. Final supplemental environmental impact statement: Issuance of annual regulations permitting the sport hunting of migratory birds. U.S.D.I. Washington, D.C.

U.S. Fish and Wildlife Service. 2011. Trends in Duck Breeding Populations: 1955-2011.

Vermeer, K. and G. G. Anweiler. 1975. Oil threat to aquatic birds along the Yukon coast. Wilson Bull. 87:467-480.

Vermeer, K. and D. B. Peakall. 1979. Trace metals in seaducks of the Fraser River Delta intertidal area, British Columbia. Marine Poll. Bull. 10:189-193.

Vermeer, K. and R. Vermeer. 1975. Oil threat to birds on the Canadian West Coast. Can. Field-Nat. 89:278-298.

Originally prepared by	Kimberley Corwin
Date first prepared	August 7, 2012
First revision	January 28, 2014 (Samantha Hoff)
Latest revision	

Species Status Assessment

Common Name: Wood thrush **Date Updated:** January 9, 2024

Scientific Name: *Hylocichla mustelina* **Updated By:** Beth Cooper

Class: Aves

Family: Turdidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

The breeding distribution of the wood thrush includes the eastern half of the United States and the southern portions of the adjacent Canadian provinces. New York is well within this distribution. Wintering occurs in Central America. Wood thrush is a bird of mesic forests and woodlands, both mixed and deciduous. Long term trends show severe declines for wood thrush across its range and in the Northeast. Breeding Bird Survey data for the United States, the Eastern region, and New York all show significant short-term and long-term declines. Breeding Bird Atlas data for New York show a 7% decline in occupancy from 1980-85 to 2000-05. Significant threats include habitat fragmentation, mercury contamination, acid deposition, and loss of wintering habitat.

I. Status

a. Current legal protected Status

i. **Federal:** Not Listed **Candidate:** No

ii. **New York:** Not Listed; SGCN

b. Natural Heritage Program

i. **Global:** G4

ii. **New York:** S5B **Tracked by NYNHP?:** No

Other Ranks:

IUCN Red List: LC (Least Concern)

COSEWIC/SARA: Threatened

USFWS: Species of Conservation Concern (Both Continental and Bird Conservation Regions 12, 13, 14, 22, 23, 24, 25, 26, 27, 28, 29, 30)

Partners in Flight: “D” Yellow Watch List (Species with population declines and moderate to high threats); Conservation Concern Score 14 (of 20)

Road to Recovery (R2R) – Yellow Alert Tipping Point Species

Status Discussion:

Wood thrush is a widespread breeder in New York, present across the state except for higher elevations of the Adirondack and Catskill mountains. It is a fairly common spring migrant. Wood thrush is ranked Secure or Apparently Secure in all northeastern states and provinces except New Brunswick, Quebec, New Jersey, and West Virginia; where it is ranked as Vulnerable (QC, NJ, WV) or Critically Imperiled (NB).

As of 2009, the wood thrush is listed as a species of least concern by the International Union for Conservation of Nature. However, trends from BBS data, possible fragmentation effects on reproduction in the temperate zone and on survival in tropical habitats, and the continuing demise of forests in both regions call for caution. Conspicuous song, widespread occurrence, and choice of study sites in good habitat (potential refugia) can belie reproductive success and security of this species. Subjective rankings of Neotropical migrants to identify species of management concern in different regions usually place wood thrush in top 10% among species of mature deciduous forests, second only to cerulean warbler (Dendroica caerulea). Wood thrush is considered vulnerable to more than slight alteration of broad-leaved tropical forests (Evans et al. 2011).

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Declining	Declining	1966-2022		Choose an item.
Northeastern US	Yes	Declining	Declining	1966-2022		Yes
New York	Yes	Declining	Declining	1966-2022	Not listed	Yes
Connecticut	Yes	Declining	Declining	1966-2022	Not listed	Yes
Massachusetts	Yes	Declining	Declining	1966-2022	Not listed	Yes
New Jersey	Yes	Declining	Declining	1966-2022	Special Concern	Yes
Pennsylvania	Yes	Declining	Declining	1966-2022	Not listed	Yes
Vermont	Yes	Declining	Declining	1966-2022	Not listed	Yes
Ontario	Yes	Declining	Declining	1966-2022	Special Concern	Choose an item.
Quebec	Yes	Declining	Declining	1966-2022	Not listed	Choose an item.

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

The Wildlife Conservation Society has conducted surveys for boreal breeding birds at as many as 80 sites across the Adirondack Park since 2003. Though not a target species, wood thrush is documented during these surveys.

Trends Discussion *(insert map of North American/regional distribution and status):*

Wood thrush populations have declined significantly across its range. Breeding Bird Survey data for the United States show a significant decline of -1.1% for the period 1966-2022. The BBS trend in New York

shows a significant decline of -2.4% per year for the same period and a -0.9% decline in the shorter period from 2011 to 2021 (Sauer et al. 2020). In Bird Conservation Region 14, which includes the Adirondack Mountains, BBS data show a significant decline of -3.8% per year for 1966-2022 and -3.6% per year for 2011-2021.

The second Breeding Bird Atlas in New York documented a 7% decline in occupancy between 1980-85 and 2000-05. The decline was most notable in the Adirondack Mountains. Hames and Lowe (2008) noted that because BBA survey methods document occupancy in a survey block with as little as one individual, it does not capture declines in the abundance of a widespread and common species such as the wood thrush. They suggest that the third Atlas (2020-25) will document striking losses statewide, as seen in the Adirondack Mountains.

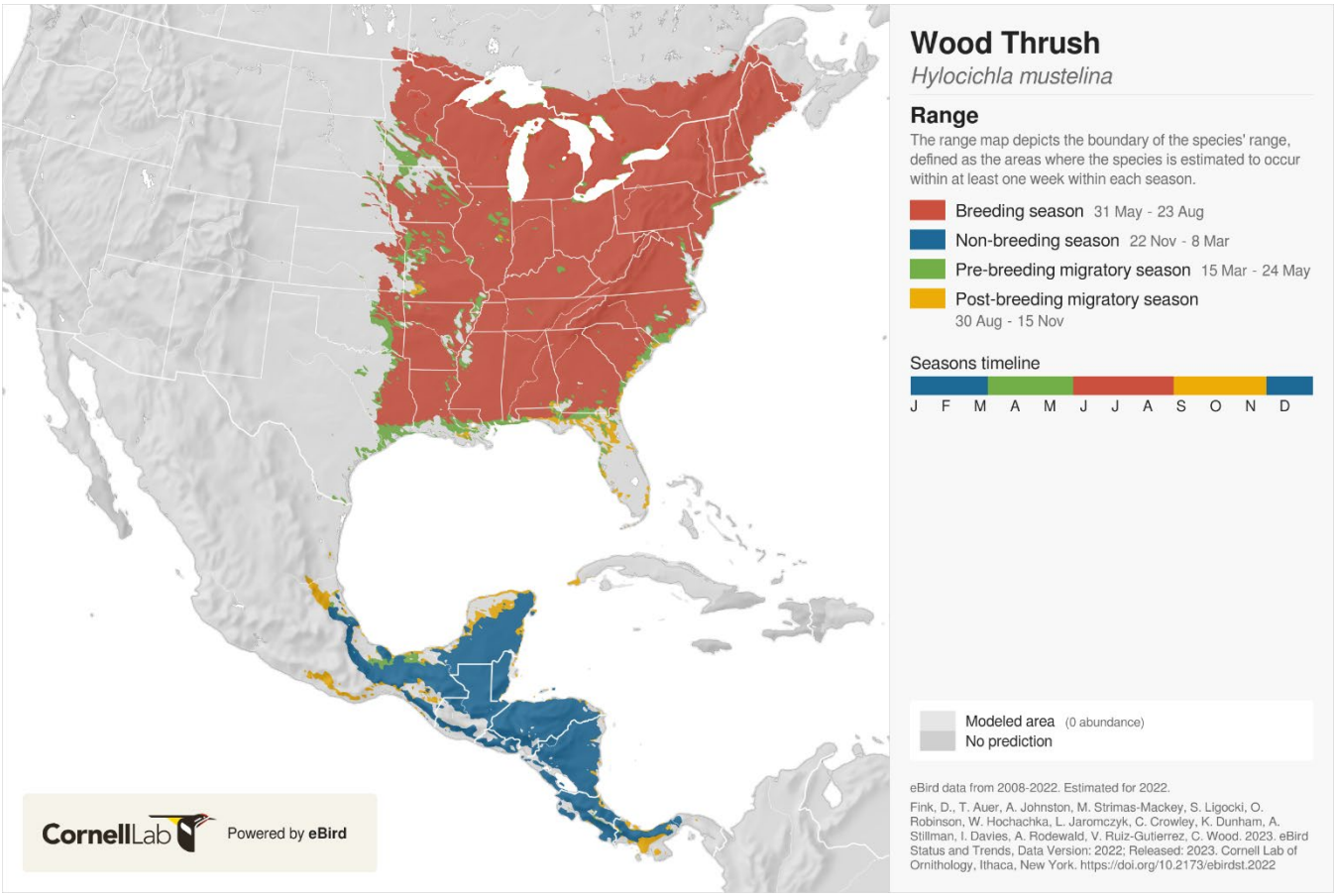

Figure 1. Wood thrush distribution in North America (eBird 2022)

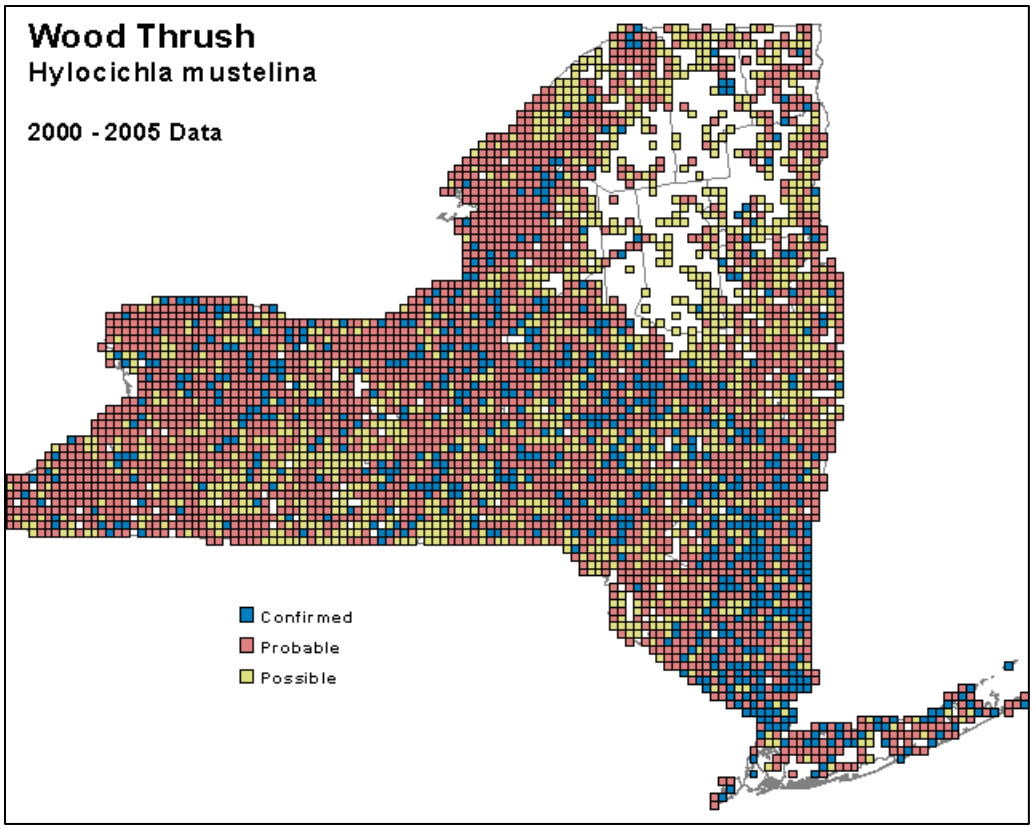

Figure 2. Wood thrush occurrence in New York State during the second Breeding Bird Atlas (McGowan and Corwin 2008).

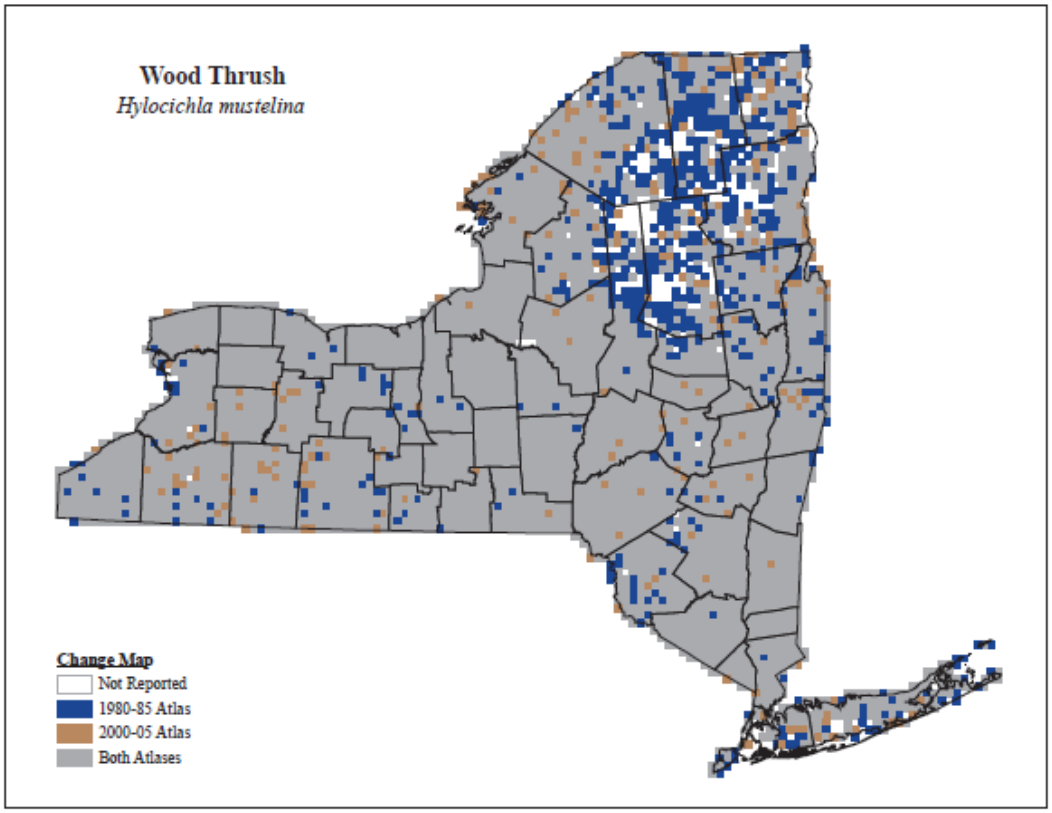

Figure 3. Change in Wood thrush occurrence in New York State between the first Breeding Bird Atlas and the second Breeding Bird Atlas (McGowan and Corwin 2008).

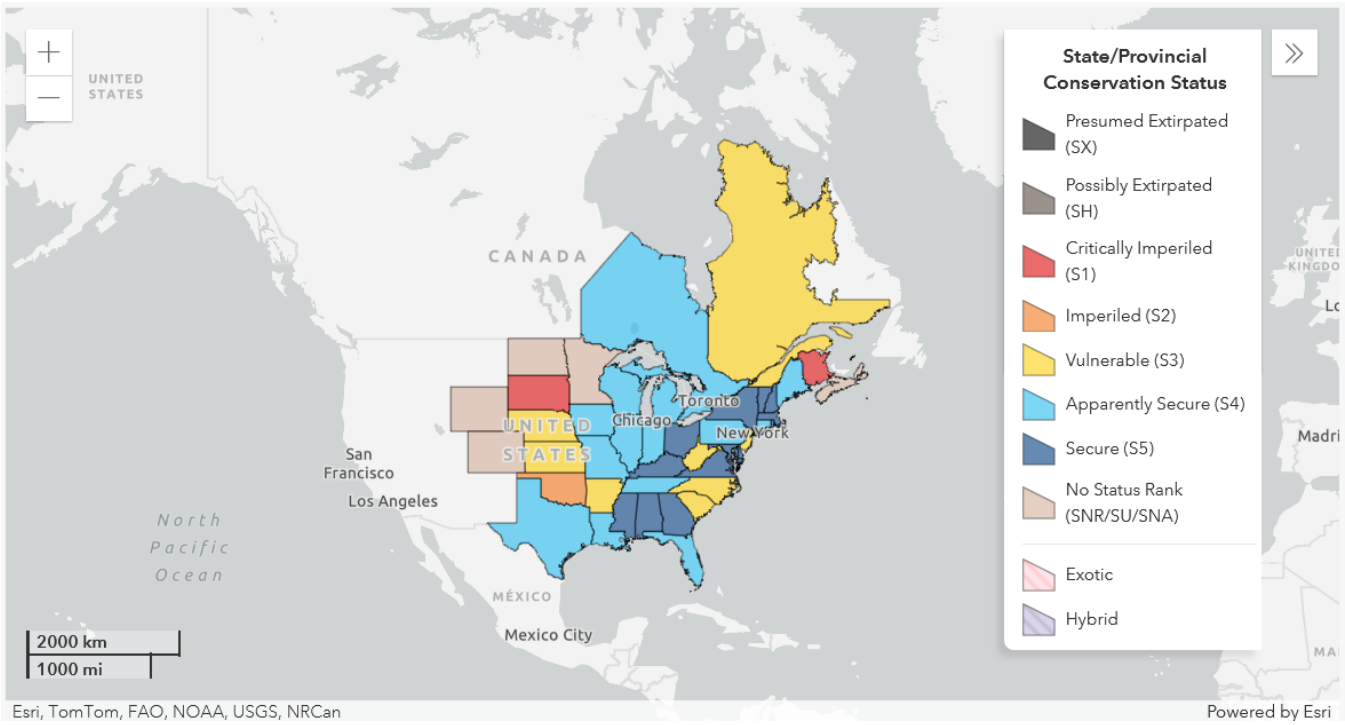

Figure 4. Conservation status of wood thrush in North America (NatureServe 2023).

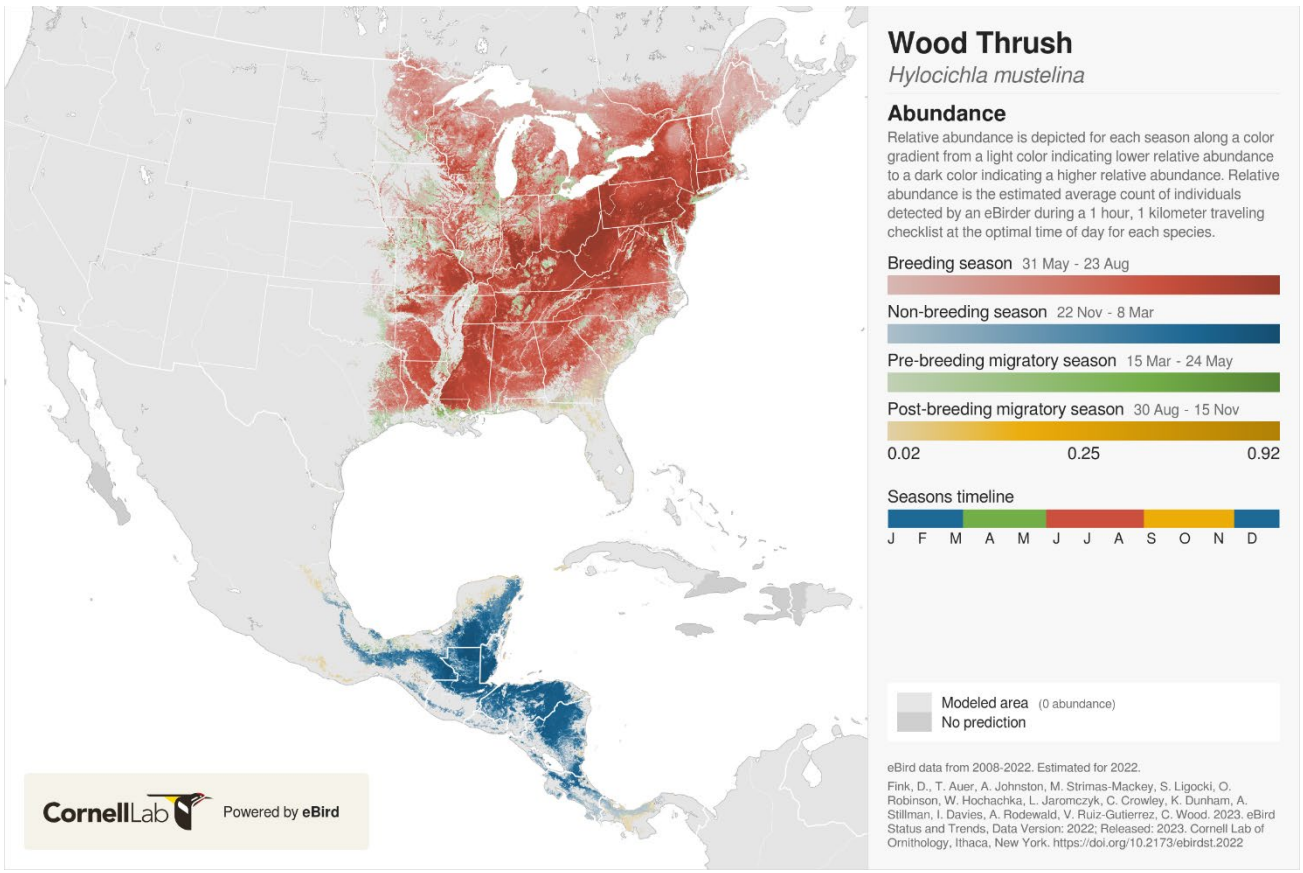

Figure 5. Wood thrush abundance in North America (eBird 2022).

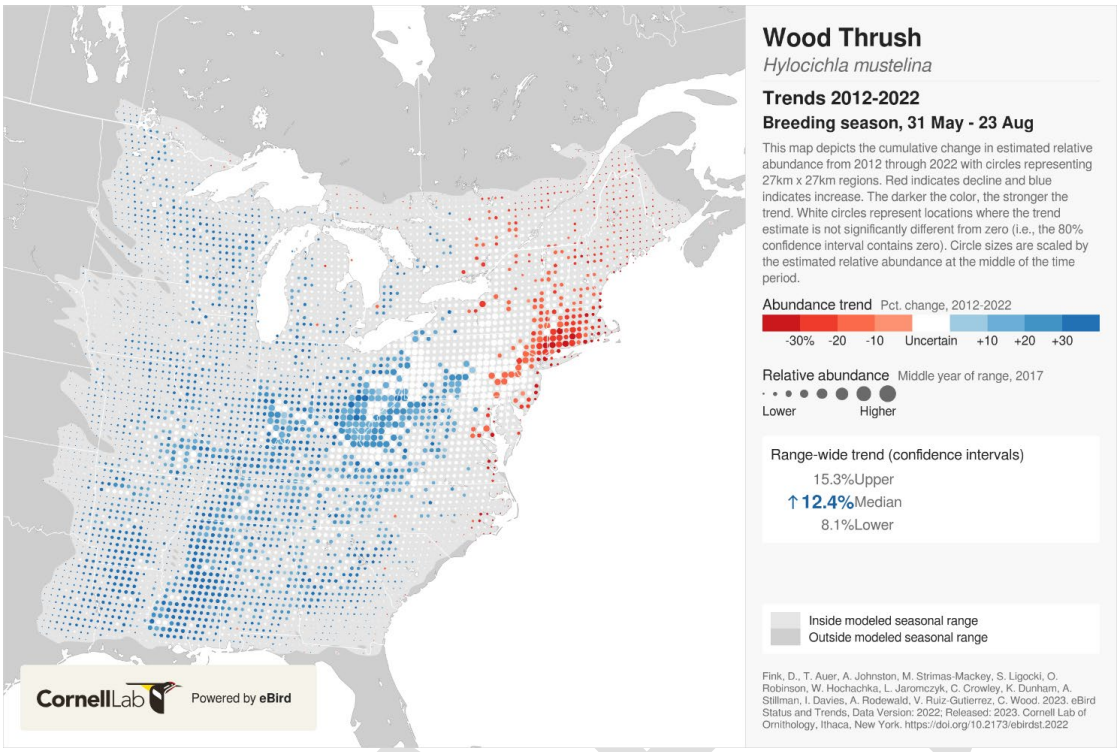

Figure 6. Wood thrush trends in North America (eBird 2022).

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

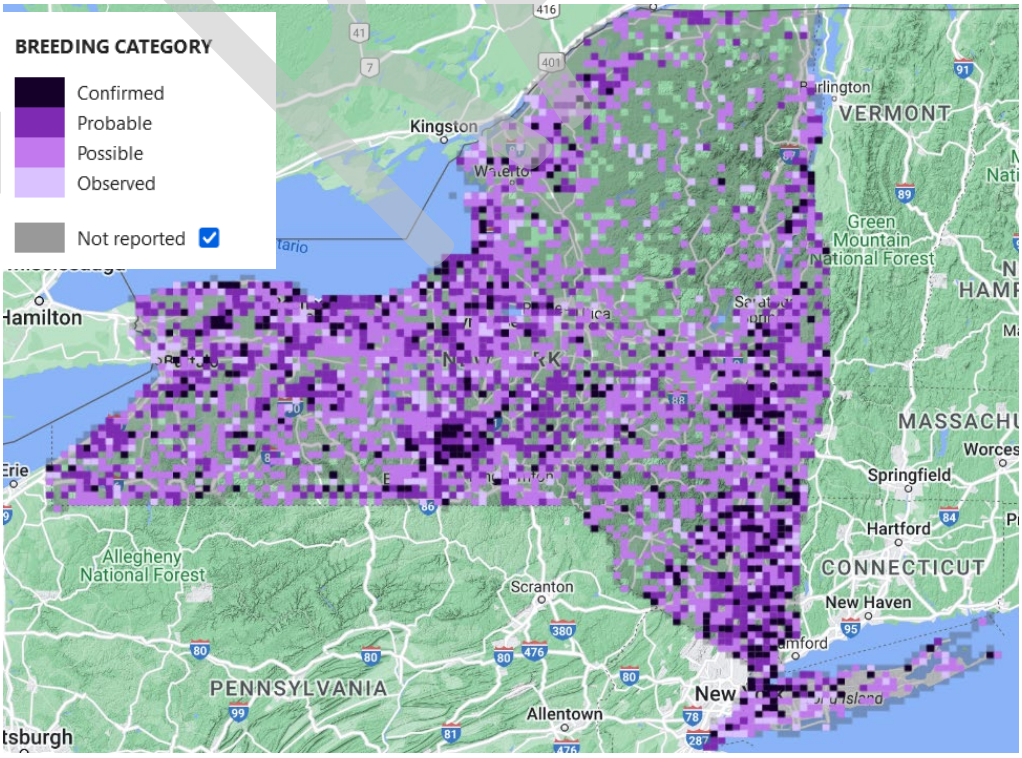

Figure 7. Records of wood thrush in New York (NYS BBA III Map, 2023)

Years	# of Records	# of BBA Blocks	% of State
Pre-1980	_____	_____	_____
1980-1985	_____	4,764	89%
2000-2005	_____	4,428	83%
2020-2023	_____	2,708	47%

Table 1. Records of wood thrush in New York.

Details of historic and current occurrence:

The first Breeding Bird Atlas (BBA) (1980-85) documented occupancy in 4,764 blocks, 89% of the survey blocks statewide (Andrle and Carroll 1988). The second BBA (2000-05) documented occupancy in 4,428 blocks, 83% of the survey blocks statewide, a decline of 7% since the first atlas (McGowan and Corwin 2008).

The third BBA (2020-25) is currently underway and utilizes a different number and layout of survey blocks across New York, making direct comparison with the first two Atlases difficult. There were 5,333 blocks in the first and second BBAs, and there are 5,710 blocks in the current BBA. To date, Wood thrush has been documented in 2,708 blocks, 47% of survey blocks statewide during the third BBA (NYS BBA III Overview, 2023).

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Core	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

1. Oak Forest
2. Mixed Northern Hardwoods
3. Plantation & Disturbed Land Pioneer Forests
4. Oak-Pine Forest
5. Coastal Red Maple-Black Gum Swamp
6. Residential Rural

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
No	No	Stable	

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

Wood thrush preferred habitat is mature, moist hardwood or mixed conifer/hardwood forest with a closed canopy and a sub-canopy shrub layer (DeGraaf and Yamasaki 2001). Although wood thrushes will nest in small woods and residential areas, it is area-sensitive, and habitat fragmentation may cause lower reproductive success due to the effects of nest parasitism, predation on eggs and nestlings, and nest abandonment caused by human disturbance (Roth et al. 1996).

Wood thrush readily nests in small woods and in residential areas, but is area sensitive; likely to occur in only 75% of patches of 100 ha in Maryland (Robbins et al. 1989).

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	Choose an item.	No	Yes	Choose an item.	Choose an item.

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

Wood thrush breeds in its first year as an adult and annually after that. In terms of productivity, the general pattern is less success in smaller forests, in less forested landscapes, and in Midwest than in East, but there are many exceptions that could reflect different local conditions or research methods (Evans et al. 2011).

The oldest age from banding records is 8 years, 11 months; sex unknown (Klimkiewicz et al. 1983). Data from a Delaware study for 1973–1995 indicate females live about one year longer than males. Strong site fidelity by older breeders (on site for 3–5 years) makes their return rate a reasonable estimate of annual survival. At a Delaware study site in 1980–1993, 64% of 39 males present for third time (≥3-yr-olds) returned the next year; of 4-year residents, 71% of 28 returned. For females, 64% of 4-year birds (n = 14) and 75% of 5-year birds (n = 12) returned. Return rates decline after these ages. By far, the greatest threat is to eggs and young, and varies geographically. Of 378 nests in Delaware that did not fledge young, 71% were lost to predation. Brood parasitism by brown-headed cowbirds may reduce productivity in nests that escape predation.

In a Delaware study, high predation rates on nests coincided with lower return rates of breeding adults, especially younger females, and no concomitant increase in immigration or return of locally produced young; these events accompanied a 4%/yr decline in abundance. When predation declined, return rate and abundance increased (Roth and Johnson 1993). There is no data on whether such dynamics occur on a regional scale. Regional abundance may ultimately be regulated by availability of habitats that produce surplus young and by dynamics of dispersal to under-producing sites; latter is largely unknown (Donovan et al. 1995, Robinson et al. 1995, Brawn and Robinson 1996). Fledgling survivorship was related to annual rodent abundance in southeastern New York (Schmidt et al. 2008).

VI. Threats *(from NY 2015 SWAP or newly described):*

Threats to NY Populations	
Threat Category	**Threat**

1. Residential & Commercial Development	Housing & Urban Areas (habitat fragmentation)
2. Energy Production & Mining	Oil & Gas Drilling (fracking)
3. Transportation & Service Corridors	Utility & Service Lines (fragmentation)
4. Invasive & Other Problematic Species & Genes	Problematic Native Species (deer overbrowse, cowbirds)
5. Pollution	Industrial & Military Effluents (mercury)
6. Residential & Commercial Development	Housing & Urban Areas (building, stack, and tower strikes)
7. Climate Change & Severe Weather	Storms & Flooding
8. Climate Change & Severe Weather	Habitat Shifting & Alteration
9. Invasive & Other Problematic Species & Genes	Non-native/Alien Species (domestic cats)

Hames et al. (2002, 2006) found the probability of breeding by wood thrush across its geographic range decreases as acid rain deposition increases, with breeding probability decreasing further when acid rain co-occurs with habitat fragmentation. Acid rain decreases soil pH (resulting in decreased calcium content in the soil) and may influence the abundance of calcium-rich invertebrate prey available for wood thrush. Deer overbrowse that reduces the understory shrub layer can make the habitat less suitable for wood thrush (Evans et al. 2011).

Cowbird parasitism levels are likely to be exacerbated by habitat fragmentation (Dowell et al. 2000, Thompson et al. 2000, Lloyd et al. 2005). Parasitism may play a significant role in reducing nesting success of wood thrushes (Powell and Knutson 2006).

The effects of exurban development on wildlife in the Adirondack Park have been studied by the Wildlife Conservation Society. A pattern has been observed in which the introduction of houses and roads into the landscape via residential development brings in a different set of predators and competitors that previously occurred in lower numbers (e.g., blue jay, American crow, gray squirrel). The combined effect of these changes tend to favor certain kinds of species over others – omnivores over insectivores, residents over migrants, generalists over habitat specialists (especially interior forest specialists), and tree nesters over ground nesters (Glennon and Kretser In Press, Reed et al. In Press). Wood thrush is a more specialized species that must compete with, or suffer higher predation from, the more common ones for which exurban development creates habitat.

According to Stevenson and Anderson (1994), kills at towers in the southeastern U.S. were more common in fall than spring because of more westward migratory routes in spring. Wood thrush appears to be vulnerable to window strikes, but few data is available (Graber et al. 1971).

In an assessment of vulnerability to predicted climate change conducted by the New York Natural Heritage Program, wood thrush was identified as a second-priority species whose sensitivity should be assessed in the future (Schlesinger et al. 2011).

Neotropical migrants face additional threats on wintering grounds and during migration including loss and degradation of wintering habitat, exposure to unregulated contaminants, and collision with various structures such as powerlines, towers, and turbines. In some areas, hunting remains a problem.
Acid rain could be a threat to forest health and therefore, this species suite (NYSDEC 2005). Lack of forestry or natural events like fire and wind throw to open the canopy and generate herbaceous and shrub growth could have serious detrimental effects on ground and shrub nesters.

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

Wood thrush is protected under the Migratory Bird Treaty Act of 1918.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

Population stability requires protection of primary and old, secondary broad-leaved tropical forests on E. Caribbean slopes and of multiple replicates of temperate deciduous forests over entire geographic range, especially ones ≥100 ha with few roadcuts. Although productivity is usually lower in smaller fragments, these can be valuable as overflow habitat or, in largely deforested landscapes, as the only breeding sites (Roth and Johnson 1993, Hoover et al. 1995). Substantial tree canopy, native shrub understory, leaf litter, and soil moisture in residential areas can provide suburban habitat, at least in Mid-Atlantic region, although cowbird parasitism and predation can be high (Roth 1987). Control of brown-headed cowbirds is not a currently justifiable method for wood thrush management; habitat management at site and on landscape scale offers the most ecologically compatible solution to the potential problem (Robinson et al. 1995).

Low levels of forest management that include patches of light harvesting will benefit ground and shrub nesting species. Some areas of moderate or even aged management would also be beneficial to many species by providing food and cover, although the majority of the forest needs to be in a relatively mature state. Efforts should also include minimizing the effects of fragmentation on habitats due to development, and on implementing population control of white-tailed deer in areas where deer populations are affecting forest regeneration and species composition (NYSDEC 2005).

Research is needed on area-sensitivity and habitat requirements of some species in this suite, and further research should be conducted on the effects of logging on forest interior birds. The public should be educated on the benefits and need for forest management to enhance populations of ground and shrub nesting forest breeding birds on public and private lands (NYSDEC 2005). Conservation actions following IUCN taxonomy are categorized in the table below.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
1. Land/Water Protection	Site/Area Protection
2. Land/Water Protection	Resource/Habitat Protection
3. Land/Water Management	Site/Area Management
4. Land/Water Management	Invasive/Problematic Species Control
5. Education & Awareness	Awareness & Communications

Table 3. Recommended conservation actions for wood thrush.

The Comprehensive Wildlife Conservation Strategy (NYSDEC 2005) includes recommendations for the following actions for deciduous/mixed forest birds, which includes wood thrush.

Habitat management:

____ Minimize the effects of fragmentation of habitats due to human development.
____ Implement population control of whitetail deer in areas where deer populations are affecting forest regeneration and species composition.

Habitat research:

____ Research effects of logging on "forest interior" birds.

Other action:

____ Educate the public on the benefits and need for forest management to enhance populations of ground and shrub nesting forest breeding birds on public and private lands.
____ Educate the public on the benefits and need for forest management on public and private lands.

Population monitoring:

____ BBS appears adequate for most species.

VII. References

BirdLife International. 2020. Hylocichla mustelina. The IUCN Red List of Threatened Species 2020: e.T22708670A154163742. https://dx.doi.org/10.2305/IUCN.UK.2020-3.RLTS.T22708670A154163742.en. Accessed on 09 January 2024.

Brawn, J. D. and S. K. Robinson. 1996. Source-sink population dynamics may complicate the interpretation of long-term census data. Ecology 77:3-12.

Corwin, K. 2012. NYSDEC SWAP 2015 Species Status Assessment for Wood thrush. Prepared on August 14, 2012. Revised January 27, 2014.

DeGraaf, R.M., and M. Yamasaki. 2001. New England Wildlife. University Press of New England, Hanover, New Hampshire.

Donovan, T. M., F. T. Thompson, and J. Faaborg. 1995. Reproductive success of migratory birds in habitat sources and sinks. Conserv. Biol. 9:1380-1395.

Dowell, B. A., J. E. Fallon, C. S. Robbins, D. K. Dawson, and F. W. Fallon. 2000. Impacts of cowbird parasitism on Wood Thrushes and other neotropical migrants in suburban Maryland forests. Pages 244-254 in Ecology and Management of Cowbirds and Their Hosts: studies in the conservation of North American passerine birds. (Smith, J. N. M., T. L. Cook, S. I. Rothstein, S. K. Robinson, and S. G. Sealy, Eds.) University of Texas Press, Austin.

Fink, D., T. Auer, A. Johnston, M. Strimas-Mackey, S. Ligocki, O. Robinson, W. Hochachka, L. Jaromczyk, C. Crowley, K. Dunham, A. Stillman, I. Davies, A. Rodewald, V. Ruiz-Gutierrez, C. Wood. 2023. eBird Status and Trends, Data Version: 2022; Released: 2023. Cornell Lab of Ornithology, Ithaca, New York. https://doi.org/10.2173/ebirdst.2022

Glennon, M.J., and H.E. Kretser. In Press. Size of the ecological effect zone associated with exurban development in the Adirondack Park, N.Y. Landscape and Urban Planning.

Graber, R. R., J. W. Graber, and E. L. Kirk. 1971. Illinois birds: Turdidae. Illinois Nat. Hist. Surv. Biol. Notes 75:1-44.

Hoover, J. P., M. C. Brittingham, and L. J. Goodrich. 1995. Effects of forest patch size on nesting success of Wood Thrushes. Auk 112:146-155.

Klimkiewicz, M. K., R. B. Clapp, and A. G. Futcher. 1983. Longevity records of North American birds: Remizidae through Parulinae. J. Field Ornithol. 54:287-294.

Lloyd, P., T. E. Martin, R. L. Redmond, U. Langner, and M. M. Hart. 2005. Linking demographic effects of habitat fragmentation across landscapes to continental source-sink dynamics. Ecological Applications 15(5):1504-1514.

NatureServe. 2023. NatureServe Explorer. Page last published 5 January 2024. https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.106491/Hylocichla_mustelina Accessed 9 January 2024.

New York State Breeding Bird Atlas III Map (NYS BBA III Map). 2023. https://ebird.org/atlasny/explore. Accessed 9 January 2024.

New York State Breeding Bird Atlas III Overview (NYS BBA III Overview). 2023. New York Checklist Overview. https://ebird.org/atlasny/state/US-NY. Accessed 9 January 2023.

New York State Department of Environmental Conservation (NYSDEC). 2005. New York State Comprehensive Wildlife Conservation Strategy. Albany, NY. https://extapps.dec.ny.gov/docs/wildlife_pdf/cwcs2005.pdf

Partners in Flight. 2021. Avian Conservation Assessment Database, version 2021. http://pif.birdconservancy.org/ACAD. Accessed on 9 January 2024.

Powell, L. A. and M. G. Knutson. 2006. A productivity model for parasitized, multibrooded songbirds. Condor 108(2):292-300.

Reed, S.E., H.E. Kretser, M.J. Glennon, L. Pejchar, and A.M. Merenlender. In Press. Faunal biodiversity at the urban-rural interface: current knowledge, research priorities, and planning strategies. Invited submission to: B.G. Lockaby, W. Zipperer, and D.N. Laband, editors. Urban-Rural Interfaces: Linking People and Nature.

Rich, A. C., D. S. Dobkin, and L. J. Niles. 1994. Defining forest fragmentation by corridor width: the influence of narrow forest-dividing corridors on forest-nesting birds in southern New Jersey. Conserv. Biol. 8:1109-1121.

Robbins, C. S., D. K. Dawson, and B. A. Dowell. 1989. Habitat area requirements of breeding forest birds of the middle Atlantic states. Wildl. Monogr. 103:1-34.

Robinson, S. K., F. R. Thompson, T. M. Donovan, D. R. Whitehead, and J. Faaborg. 1995. Regional forest fragmentation and the nesting success of migratory birds. Science 267:1987-1990.

Roth, R. R. 1987. Assessment of habitat quality for Wood Thrush in a residential area. Pages 139-149 in Integrating man and nature in the metropolitan environment. (Adams, L. W. and D. L. Le, Eds.) Natl. Inst. Urban Wildl. Columbia, MD.

Roth, R. R. and R. K. Johnson. 1993. Long-term dynamics of a Wood Thrush population breeding in a forest fragment. Auk 110:37-48.

Roth, R.R., M.S. Johnson and T.J. Underwood. 1996. Wood Thrush. In The Birds of North America, No. 246 (A. Poole and F. Gill, eds.). The Academy of Natural Sciences, Philadelphia, and The American Ornithologists' Union, Washington, D.C.

Sauer, J. R., D. K. Niven, J. E. Hines, D. J. Ziolkowski, Jr, K. L. Pardieck, J. E. Fallon, and W. A. Link. 2019. The North American Breeding Bird Survey, Results and Analysis 1966 - 2019. Version 2.07.2019 USGS Patuxent Wildlife Research Center, Laurel, MD

Schlesinger, M.D., J.D. Corser, K.A. Perkins, and E.L. White. 2011. Vulnerability of at-risk species to climate change in New York. New York Natural Heritage Program, Albany, NY.

Stevenson, H. M. and B. H. Anderson. 1994. The birdlife of Florida. Univ. Presses, Gainsville.

Thompson, F. R., S. K. Robinson, T. M. Donovan, J. R. Faaborg, D. R. Whitehead, and D. R. Larsen. 2000. Biogeographic, landscape, and local factors affecting cowbird abundance and host parasitism levels. Pages 271-279 in Ecology and Management of Cowbirds and Their Hosts: studies in the conservation of North American passerines. (Smith, J. N. M., T. L. Cook, S. I. Rothstein, S. K. Robinson, and S. G. Sealy, Eds.) University of Texas Press, Austin.

U.S. Fish and Wildlife Service. 2021. Birds of Conservation Concern 2021. United States Department of the Interior, U.S. Fish and Wildlife Service, Migratory Birds, Falls Church, Virginia. https://www.fws.gov/media/birds-conservation-concern-2021

Originally prepared by	Kimberley Corwin
Date first prepared	14 August 2012
First revision	27 January 2014, Samantha Hoff
Latest revision	9 January 2024, Beth Cooper

Species Status Assessment

Common Name: Worm-eating warbler **Date Updated:**

Scientific Name: *Helmitheros vermivorum* **Updated By:**

Class: Aves

Family: Parulidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

Worm-eating warbler is the only species in the genus *Helmitheros*. A neotropical migrant, it breeds in the eastern United States, in a somewhat narrow band that loosely follows the Appalachian Mountains, and winters in the Caribbean Islands and Central America. The northern end of the breeding distribution reaches into southern New York. Breeding habitat consists of deciduous and mixed-coniferous forests, usually those that are situated on a sloped hillside.

Breeding Bird Survey data have deficiencies due to low relative abundance, but the survey-wide trend and the trend for the Appalachian Mountains and the Eastern BBS are positive for 1966-2010 and 2000-2010. The trend in New York is negative for both periods, but detections are too few to determine whether the trend is statistically significant. Breeding Bird Atlas data show no change in occupancy from 1980-85 to 2000-05.

I. Status

a. Current legal protected Status

i. **Federal:** Not listed **Candidate:** No

ii. **New York:** Not listed; SGCN

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** S4 **Tracked by NYNHP?:** No

Other Ranks:

IUCN Red List: Least Concern

Partners in Flight: Watch list, Continental Stewardship

Status Discussion:

In New York, worm-eating warbler is a locally common breeder in the lower Hudson Valley with scattered records reaching into the eastern half of the Appalachian Plateau. Remnant populations exist in Long Island's remaining wet woodlands. It is ranked as Apparently Secure in New York and Pennsylvania. In Massachusetts, worm-eating warbler is ranked as Imperiled.

Worm-eating warblers occur in low densities across the range and individuals can therefore be difficult to detect. Population trends are rarely significant because of low relative abundance. Most life history information is based on a single, though comprehensive, study in Connecticut.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Increasing	Increasing	1966-2010		Choose an item.
Northeastern US	Yes	Increasing	Increasing	1966-2010		Choose an item.
New York	Yes	Unknown	Unknown	1980-85 to 2000-05	Not listed	Yes
Connecticut	Yes	Increasing	Increasing	1966-2010	Not listed	Yes
Massachusetts	Yes	Increasing	Increasing	1975-79 to 2007-11	Not listed	No
New Jersey	Yes	Increasing	Increasing	1966-2010	Not listed	Yes
Pennsylvania	Yes	Increasing	Increasing	1984-89 to 2004-08	Not listed	Yes
Vermont	No	Choose an item.	Choose an item.			Choose an item.
Ontario	No	Choose an item.	Choose an item.			Choose an item.
Quebec	No	Choose an item.	Choose an item.			Choose an item.

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

None.

Trends Discussion *(insert map of North American/regional distribution and status):*

Worm-eating warblers are not well suited to Breeding Bird Survey protocol due to their low numbers and sparse distribution. Survey trends in the Eastern BBS region, the Appalachian Mountains, and survey-wide are all positive for both 1966-2010 and 2000-2010, but are categorized as yellow or red to indicate deficiencies in the data.

Breeding Bird Atlas data for New York from 1980-85 to 2000-05 show little change (-1%) over the 20-year period. The distribution changed little, with the concentration of records still in the lower Hudson Valley. A record in Cattaraugus County was well-documented with a Notable Species Form.

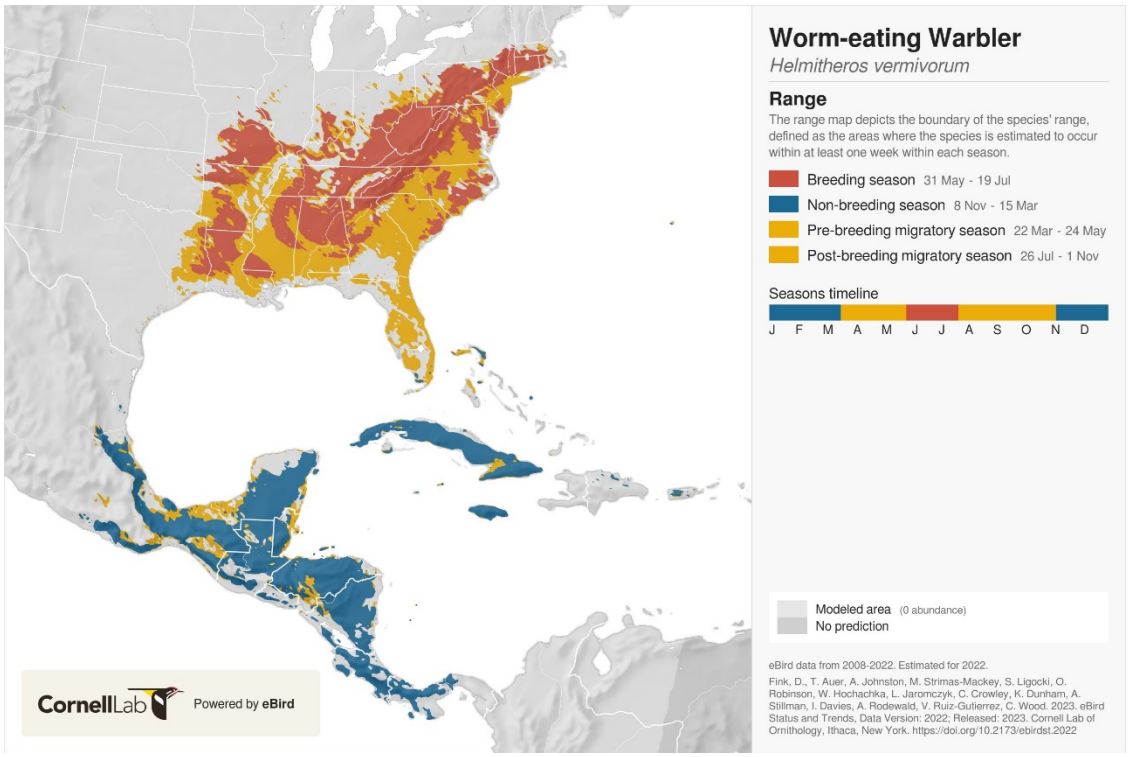

Figure 1. Worm-eating warbler distribution (eBird 2022)

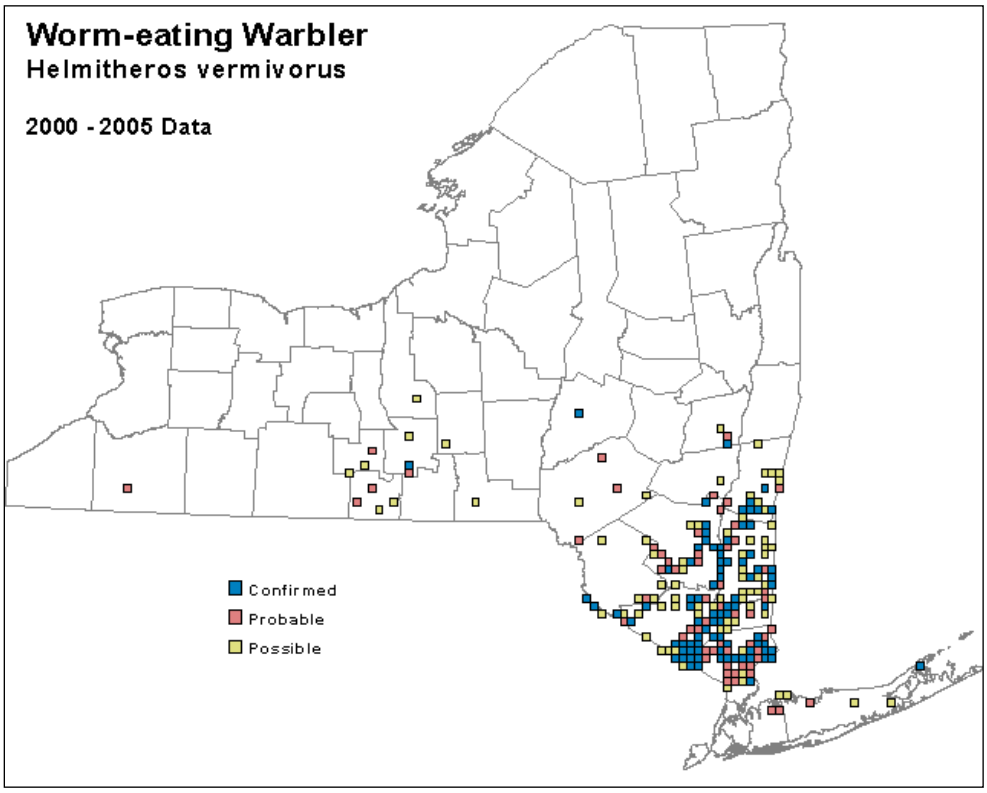

Figure 2. Worm-eating warbler occurrence in New York State during the second Breeding Bird Atlas (McGowan and Corwin 2008)

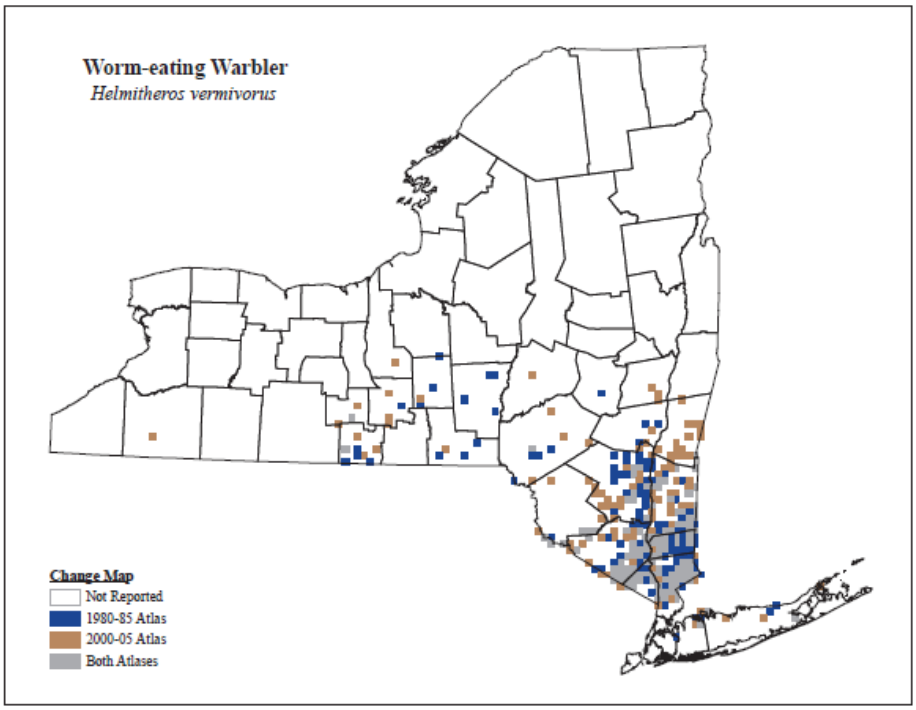

Figure 3. Change in worm-eating warbler occurrence in New York State between the first Breeding Bird Atlas and the second Breeding Bird Atlas (McGowan and Corwin 2008)

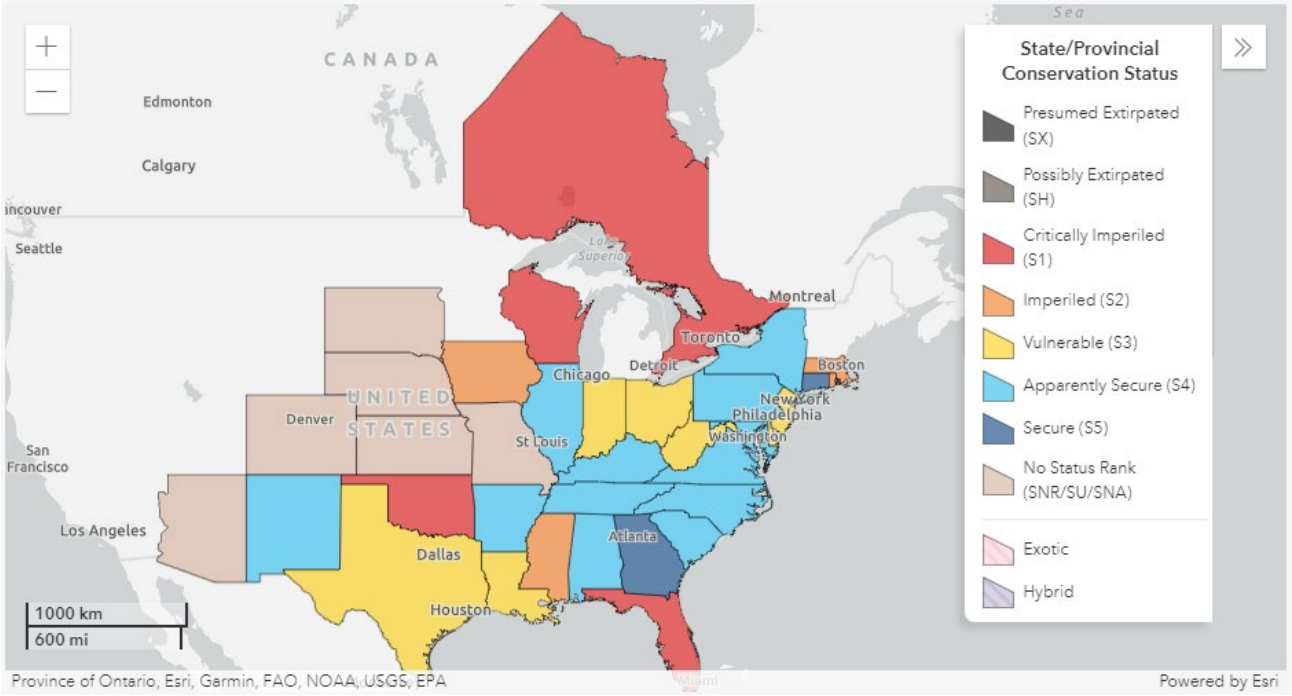

Figure 4. Conservation status of worm-eating warbler distribution in North America (NatureServe 2023)

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

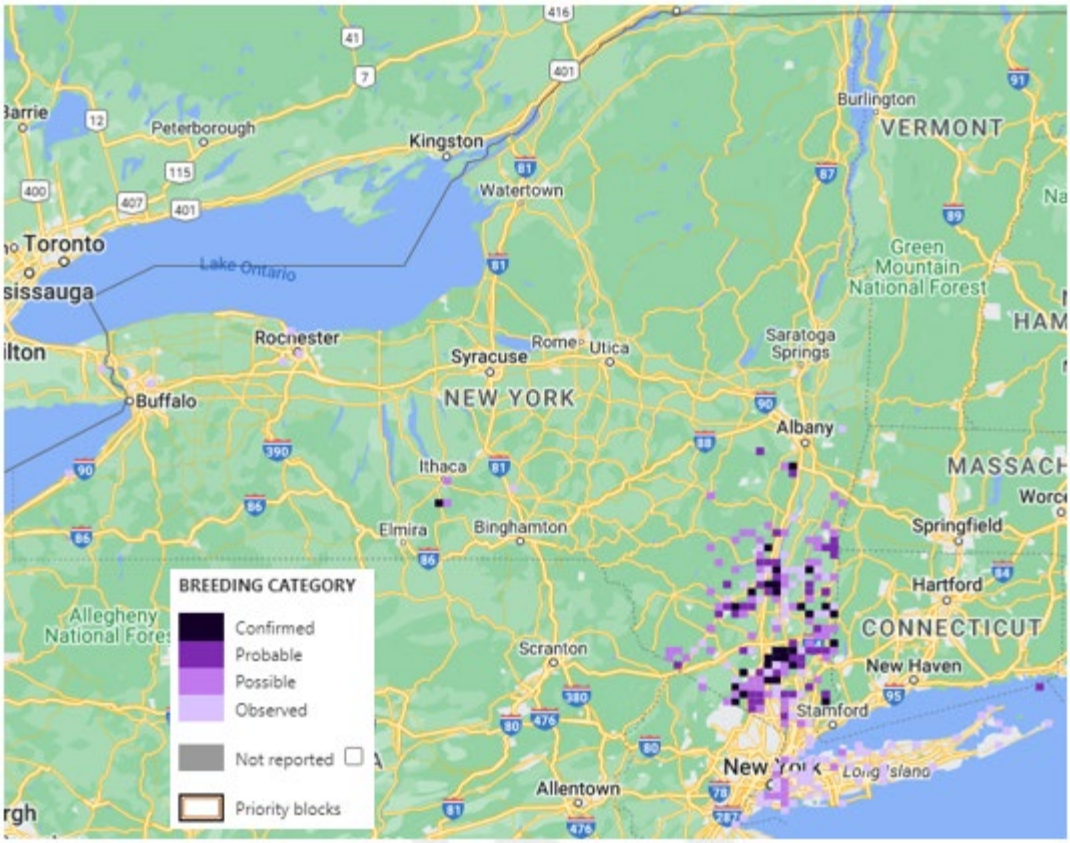

Figure 5. Records of worm-eating warbler in New York (NYS BBA III Map 2023)

Years	# of Records	# of BBA Blocks	% of State
Pre-1980	_____	_____	_____
1980-1985	_____	225	4%
2000-2005	_____	223	4%
2020-2023	_____	153	3%

Table 1. Records of worm-eating warbler in New York.

Details of historic and current occurrence:

The first Breeding Bird Atlas (BBA) (1980-85) documented occupancy in 225 blocks, 4% of the survey blocks statewide (Andrle and Carroll 1988). The second BBA (2000-05) documented occupancy in 223 blocks, 4% of the survey blocks statewide, not a significant change since the first atlas (McGowan and Corwin 2008). The number of blocks in which worm-eating warbler was found remained essentially the same but the distribution became patchy. One record of a territorial pair in Cattaraugus County is separated from other records but is well-documented by a Breeding Bird Atlas Notable Species Form (NYSDEC files).

The third BBA (2020-25) is currently underway and utilizes a different number and layout of survey blocks across New York, making direct comparison with the first two Atlases difficult. There were 5,333 blocks in the first and second BBAs, and there are 5,710 blocks in the current BBA. To date, worm-

eating warbler has been documented in 153 blocks, 3% of survey blocks statewide during the third BBA (NYS BBA III Overview, 2023).

The global population is estimated at 800,000. The population in New York is estimated at 8,000 (1%) (Blancher et al. 2007). Worm-eating warbler reaches its northern distribution in New York, with confirmed breeding occurring patchily through the lower Hudson Valley. Records from the second Breeding Bird Atlas indicate a presence in central New York but few of those records document confirmed breeding.

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Peripheral	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

a. Mixed Northern Hardwoods

b. Oak Forest

c. Oak-Pine Forest

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
Yes	No	Stable	

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

Worm-eating warblers occur in deciduous or mixed coniferous/deciduous forests situated a on a moderately-sloped to steeply-sloped hillside with a dense understory (frequently rhododendron or mountain laurel). This warbler is area-sensitive. On Long Island, breeding occurs within dry islands on "nontidal wetland forests" (Smith 2008).

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	Choose an item.	Choose an item.	Yes	No	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

The age at first breeding for worm-eating warblers is unknown, but it is likely to be during the first year. Breeding occurs annually thereafter. One brood is produced per season. In a 4-year Connecticut study, 42.2–94.7% of eggs that were laid hatched (*n* = 299 eggs). Nestling survival to fledging ranged from 69.7 to 85.4% (*n* = 222 fledglings). Paired females fledged average of 2.2 young/yr ± 2.1 SD (*n* = 88 females). Mayfield (1975) reported nest success ranging from 32.5 to 64.1% during the 4-year period (Hanners and Patton 1998).

Return rates of males to 56-ha study area in southwest Connecticut has ranged from 46.9 to 92.8% Annual rates of female return to study area are lower, ranging from 27.3 to 52.2% (mean 46.8, *n* = 3 yr), though female survivorship is suspected to be higher than reported. The longevity record for this species is 7 years, 1 month, for bird of unknown sex which was banded after its hatch year (Klimkiewicz et al. 1983).

Once a male occupies a territory, it tends to remain within 200 m of that site. Of 6 males captured on territory in 1991 and still alive in 1996, all occupied territories in 1996 within 200 m of site where first caught in 1991. Females are much less faithful and regularly occupy breeding territories that are several hundred meters away from sites occupied the prior year. Within 56-ha study area, young birds are seldom observed >1 mo after fledging. Of 97 birds banded as nestlings or local hatch-year birds in 56-ha study area, only 1 was known return as a breeder within 500 m of study area.

VI. Threats *(from NY 2015 SWAP or newly described):*

Threats to NY Population	
Threat Category	**Threat**
1. Residential & Commercial Development	Housing & Urban Areas
2. Biological Resource Use	Logging & Wood Harvesting
3. Invasive & Other Problematic Species & Genes	Problematic Native Species (nest site competition, deer overbrowse)
4. Pollution	Air-Borne Pollutants (mercury)
5. Climate Change & Severe Weather	Habitat Shifting & Alteration
6. Energy Production & Mining	Renewable Energy
7. Energy Production & Mining	Oil & Gas Drilling (fracking)
8. Pollution (migration, esp. NYC)	Excess Energy
9. Natural System Modifications	Other Ecosystem Management (insect spraying)

Worm-eating warbler occurs at relatively low densities throughout most of its range, and populations appear to be patchily distributed (Rosenberg and Wells 1995). Dependence on large forests for nesting makes this species especially vulnerable to population decreases. Fragmentation and destruction of

forest habitats on breeding and wintering grounds are believed to be principal threat to conservation of this species (Morton 1992). The species is considered “highly vulnerable” to population decline because of human alteration of tropical, broadleaf forests (Petit et al. 1993).

Worm-eating warbler is a known host species to brown-headed cowbirds (Hanners and Patton 1998).

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

Worm-eating warbler is protected under the Migratory Bird Treaty Act of 1918.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

Perpetuation of this species will require maintenance of a system of large forests to serve as source populations of new breeders (Robinson et al. 1995). Large continuous areas with minimum of nonforested edge will produce highest densities of breeding individuals (Gale et al. 1997) and increase reproductive success by decreasing cowbird parasitism and nest predation (Robinson et al. 1995). New breeders dispersing from source populations to less suitable smaller sites will help maintain regional populations (Hanners et al. 1998).

Low levels of forest management that include patches of light harvesting will benefit ground and shrub nesting species. Some areas of moderate or even aged management would also be beneficial to many species by providing food and cover, although the majority of the forest needs to be in a relatively mature state. Efforts should also include minimizing the effects of fragmentation on habitats due to development, and on implementing population control of white-tailed deer in areas where deer populations are affecting forest regeneration and species composition (NYSDEC 2005).

Research is needed on area-sensitivity and habitat requirements of some species in this suite, and further research should be conducted on the effects of logging on forest interior birds. The public should be educated on the benefits and need for forest management to enhance populations of ground and shrub nesting forest breeding birds on public and private lands (NYSDEC 2005). Conservation actions following IUCN taxonomy are categorized in the table below.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
Land/Water Protection	Site/Area Protection
Land/Water Protection	Resource/Habitat Protection

Land/Water Management	Site/Area Management
Land/Water Management	Invasive/Problematic Species Control
Education & Awareness	Awareness & Communications

Table 2. Recommended conservation actions for worm-eating warbler

The Comprehensive Wildlife Conservation Strategy (NYSDEC 2005) includes recommendations for the following actions for deciduous/mixed forest birds, which includes worm-eating warbler.

Habitat management:

____ Minimize the effects of fragmentation of habitats due to human development.

____ Implement population control of whitetail deer in areas where deer populations are affecting forest regeneration and species composition.

Habitat research:

____ Research effects of logging on "forest interior" birds.

Other action:

____ Educate the public on the benefits and need for forest management to enhance populations of ground and shrub nesting forest breeding birds on public and private lands.

____ Educate the public on the benefits and need for forest management on public and private lands.

Population monitoring:

____ BBS appears adequate for most species.

VII. References

Blancher, P. J., K. V. Rosenberg, A. O. Panjabi, B. Altman, J. Bart, C. J. Beardmore, G. S. Butcher, D. Demarest, R. Dettmers, E. H. Dunn, W. Easton, W. C. Hunter, E. E. Iñigo-Elias, D. N. Pashley, C. J. Ralph, T. D. Rich, C. M. Rustay, J. M. Ruth, and T. C. Will. 2007. Guide to the Partners in Flight Population Estimates Database. Version: North American Landbird Conservation Plan 2004. Partners in Flight Technical Series No 5. http://www.partnersinflight.org/

Corwin, K. 2012. NYSDEC SWAP 2015 Species Status Assessment for worm-eating warbler. Prepared on August 16, 2012. Revised by Samantha Hoff on January 27, 2014.

Fink, D., T. Auer, A. Johnston, M. Strimas-mackey, S. Ligocki, O. Robinson, W. Hochachka, L. Jaromczyk, C. Crowley, K. Dunham, A. Stillman, I. Davies, A. Rodewald, V. Ruiz-Gutierrez, C. Wood. (eBird). 2023. eBird Status and Trends, Data version: 2022; Released: 2023. Cornell Lab of Ornithology, Ithaca, New York. https://doi.org/10.2173/ebirdst.2022.

Gale, G. A., L. A. Hanners, and S. R. Patton. 1997. Reproductive success of Worm-eating Warblers in a forest landscape. Conserv. Biol. 11:246-250.

Hanners, L. A. and S. R. Patton. 1998. Worm-eating Warbler (*Helmitheros vermivorum*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/367 doi:10.2173/bna.367

Klimkiewicz, M. K., R. B. Clapp, and A. G. Futcher. 1983. Longevity records of North American birds: Remizidae through Parulinae. J. Field Ornithol. 54:287-294.

Mayfield, H. F. 1975. Suggestions for calculating nest success. Wilson. Bull. 87:456-466.

Morton, E. S. 1992. What do we know about the future of migrant landbirds? Pages 579-589 *in* Ecology and conservation of neotropical migrant landbirds. (Hagen III, J. M. and D. W. Johnston, Eds.) Smithson. Inst. Press, Washington, D.C.

NatureServe. 2023. NatureServe Explorer. Page last published 12/1/2023. https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.104782/Helmitheros_vermivorum . Accessed December 29, 2023.

New York State Breeding Bird Atlas III Map (NYS BBA III Map). 2023. https://ebird.org/atlasny/explore. Accessed December 29, 2023.

New York State Breeding Bird Atlas III Overview (NYS BBA III Overview). 2023. New York Checklist Overview. https://ebird.org/atlasny/state/US-NY. Accessed December 29, 2023.

New York State Department of Environmental Conservation (NYSDEC). 2005. New York State Comprehensive Wildlife Conservation Strategy. Albany, NY. https://extapps.dec.ny.gov/docs/wildlife_pdf/cwcs2005.pdf

Petit, D. R., J. F. Lynch, R. L. Hutto, J. G. Blake, and R. B. Waide. 1993. Management and conservation of migratory landbirds overwintering in the Neotropics. Pages 70-92 *in* Status and management of Neotropical migratory birds. (Finch, D. M. and P. W. Stangel, Eds.) Gen. Tech. Rep. RM-229, Fort Collins, CO.

Robinson, S. K., F. R. Thompson III, T. M. Donovan, D. R. Whitehead, and J. Faaborg. 1995. Regional forest fragmentation and the nesting success of migratory birds. Science 267:1987-1990.

Rosenberg, K. V. and J. V. Wells. 1995. Importance of geographic areas to neotropical migrant birds in the northeast. Unpub. Rep. to USFWS, Reg. 5, Hadley, MA.

Smith, C. R. 2008. Worm-eating warbler, *Helmitheros vermivorum*. Pages 516-17 *in* The Second Atlas of Breeding Birds in New York State (K.J. McGowan and K. Corwin, editors). Cornell University Press, Ithaca, NY. 688 pp.

Originally prepared by	Kimberley Corwin
Date first prepared	August 16, 2012
First revision	January 27, 2014 (Samantha Hoff)
Latest revision	Transcribed with minor updates December 29, 2023

Species Status Assessment

Common Name: Yellow rail **Date Updated:**

Scientific Name: *Coturnicops noveboracensis* **Updated By:**

Class: Aves

Family: Rallidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

Yellow rail breeds in south-central and southeastern Canada and winters on the Gulf Coast of the United States. Two subspecies are recognized in North America: *C. n. noveboracensis* of Canada and the United States (discussed here), and *C. n. goldmani*, known only from the state of México, Mexico. The former is rare in most areas of its breeding distribution, perhaps considered so due to its nocturnal and extremely secretive behavior; it has been compared to a mammal in that it moves on the ground—often beneath vegetation—rather than flushing. In New York, yellow rail occurs as a rare migrant, primarily in the fall. Spahn (1998) states that most birders in New York have never seen a live yellow rail; documentation of its presence in the state is primarily in the form of dead individuals.

Though populations have likely declined due to habitat loss and alteration, there is insufficient information on current status and past trends. In Canada, where 90% of the breeding range occurs, the yellow rail has been listed as Special Concern by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). Trends in New York are unknown due to the rare and secretive nature of this species, but interestingly, its impending documentation as a new breeder in the state has been predicted for 100 years (Eaton 1910, Post 1967, Levine 2002, Gochfeld 2010).

I. Status

a. Current legal protected Status

i. **Federal:** None **Candidate:** No

ii. **New York:** SGCN

b. Natural Heritage Program

i. **Global:** G4

ii. **New York:** SNRN **Tracked by NYNHP?:** No

Other Ranks:

USFWS: Focal Species, Species of Conservation Concern
Canadian Species at Risk Act (SARA): Special Concern
Committee on the Status of Endangered Wildlife in Canada (COSEWIC): Special Concern
IUCN Red List Category: Least Concern

Status Discussion:

Yellow rail is a rare but probably regular migrant in New York—undoubtedly overlooked—and a very rare spring migrant. In winter is it a casual visitor (Bull 1998). In Canada, which includes 90% of the breeding range, COSEWIC lists yellow rail as Special Concern, but notes that the species is close to meeting criteria for Threatened.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Declining	Declining		None	No
Northeastern US	Yes	Declining	Declining		None	No
New York	Yes	Unknown	Unknown		None	Yes
Connecticut	No	Choose an item.	Choose an item.		None	No
Massachusetts	No data	Unknown	Unknown		None	No
New Jersey	No data	Unknown	Unknown		None	No
Pennsylvania	No	Choose an item.	Choose an item.		None	No
Vermont	No	Choose an item.	Choose an item.		None	No
Ontario	Yes	Unknown	Unknown	Special Concern	None	No
Quebec	Yes	Unknown	Unknown	Special Concern	None	No

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

NYSDEC conducted a three-year study in 2004-2006 to determine occupancy of marsh birds in emergent wetlands on public lands to guide the development of a long-term monitoring plan. Yellow rail was not a target species and was not detected (Osborne et al. 2011).
A three-year pilot study of the National Marsh Bird Monitoring Program was conducted from 2009-2011 at selected wetlands across the state with the intent to establish a long-term, statewide monitoring program; yellow rail was not detected (Yard et al. 2012). Surveys continued in 2012. In addition, the Marsh Monitoring Program through Bird Studies Canada has long-term marsh bird monitoring routes in the Great Lakes Basin part of New York.

Trends Discussion *(insert map of North American/regional distribution and status):*

Yellow rail is known to be common in some areas of its Canadian breeding range, but is relatively uncommon in most areas; trends overall are unknown. In addition to the unique challenges associated with monitoring any secretive marsh bird, this species is also nocturnal. One known population at the Seney National Wildlife Refuge in Michigan has fluctuated drastically with 50 males observed during some years and very few in other years. In 1985 there was an all-time high count of 84 males while in 2001, only one bird was detected (see Southwell 2002).

In New York the yellow rail is rare and occurs only as a migrant. Bull (1974) stated that the vast majority of records for the state are based on birds taken by hunters during the fall season and referred to “50 or so specimens.” Hunting yellow rail is no longer legal in New York. Spahn (1998) reported that records added during the previous 20 years were due to tower kills for three out of four specimens, while eight actual sightings were attributed to luck.

Eaton (1910) predicted that yellow rail would eventually be documented as a breeder in New York and other authors have upheld this prediction (Post 1967, Levine 2002, Gochfeld 2010); it has not come to pass. Increases in Ontario during its second Breeding Bird Atlas inspire hope for future breeding in New York.

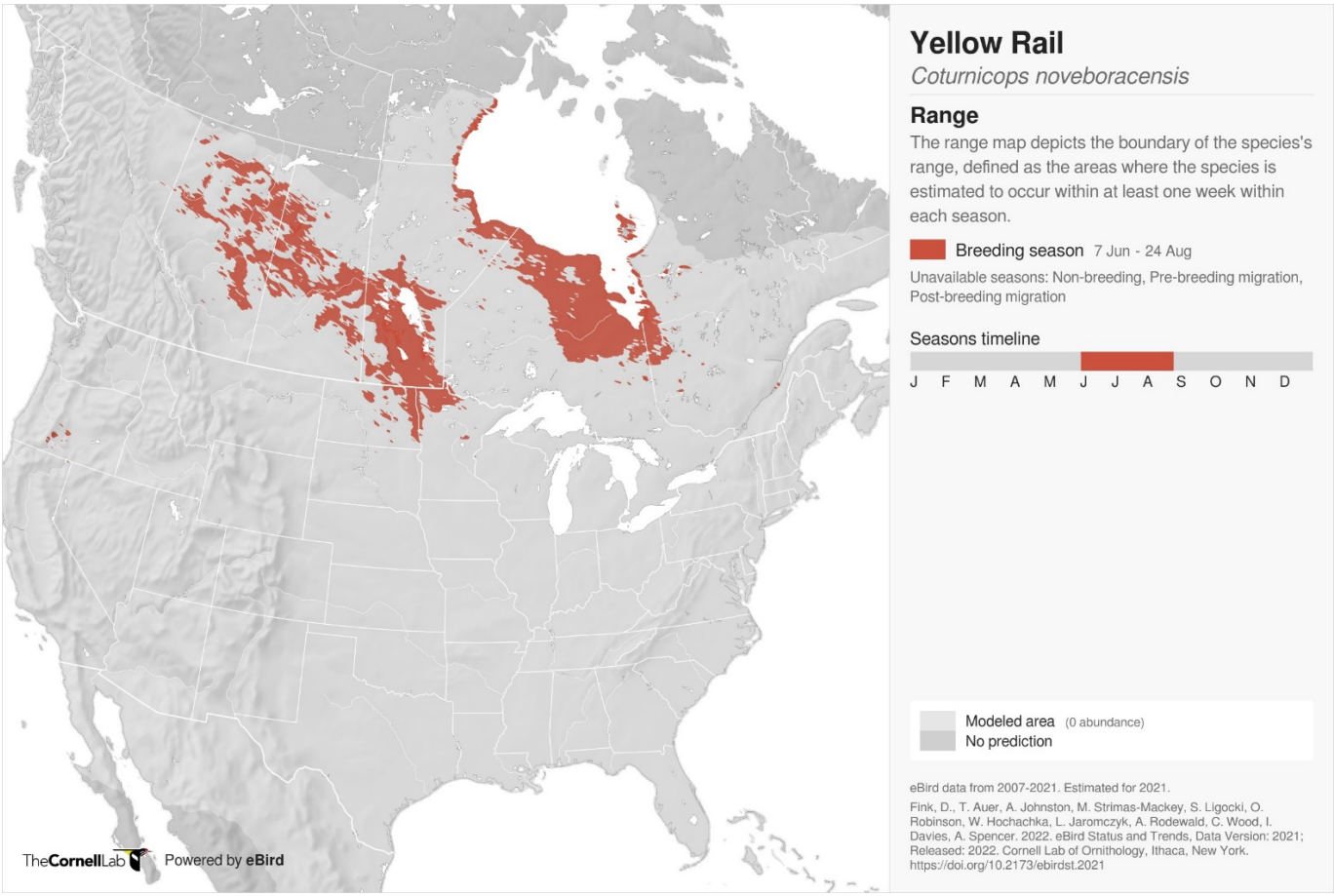

Figure 1. Yellow rail distribution in North America (eBird)

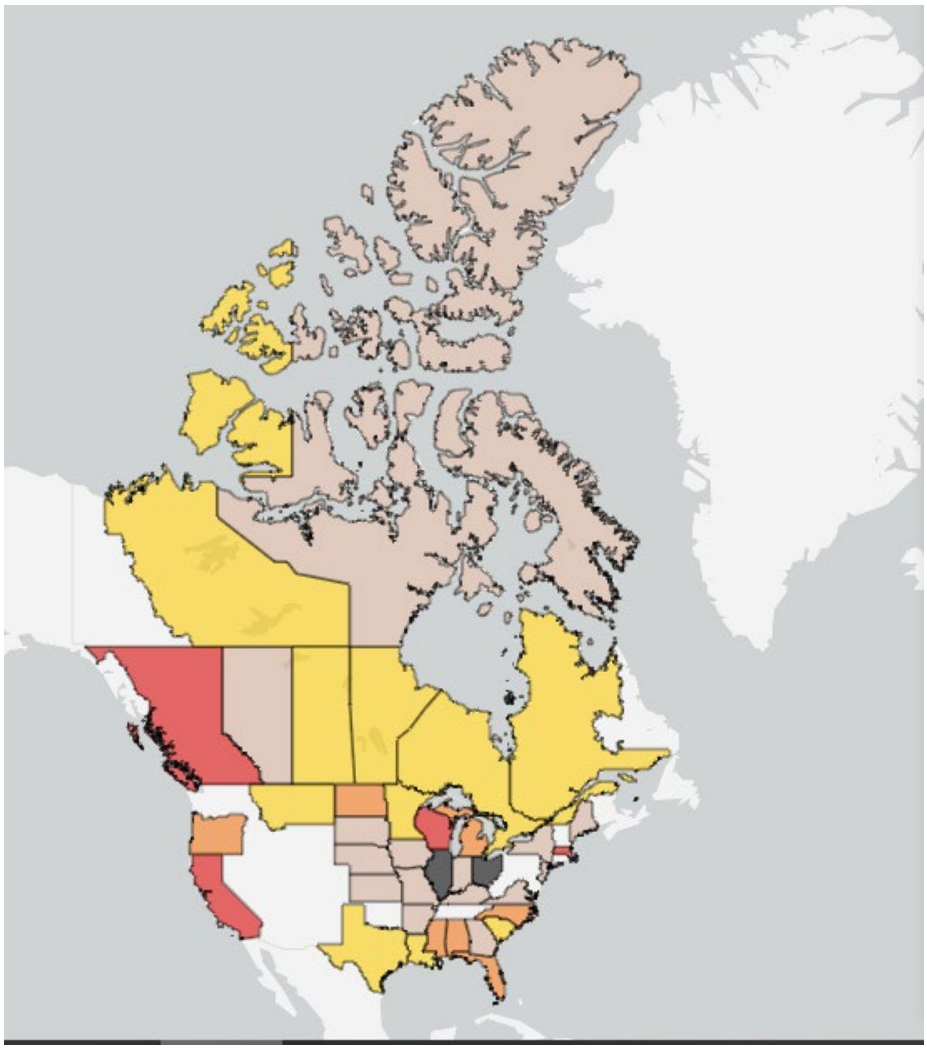

Figure 2. Conservation status of the yellow rail in New York (NatureServe 2023)

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

Years	# of Records	# of BBA Blocks	% of State
Pre-1980	_____	_____	_____
1980-1985	_____	0	0
2000-2005	_____	0	0
2020-2023	_____	0	0

Table 1. Records of yellow rail in New York.

Details of historic and current occurrence:

Breeding has never been documented in New York but Bull (1974) discussed a statement in the Auk (79:698) that refers to a nest near Cayuga Lake in the 1950s that was “almost certainly” that of a yellow rail; no evidence was ever presented. About 50 records exist for New York. Records are of single individuals, primarily on the south shore of Long Island. One bird was found in Westchester County in 1984 (Treacy 1985). One was found dead in Lisbon, St. Lawrence County in 1985 (Crowell and Smith 1986).

One or two birds are observed almost annually in the marshes on the south shore of Long Island, primarily during fall migration. A dead yellow rail was found in Oswego, Oswego County near the Lake Ontario shore during winter 1991 (Huggins 1992). Interestingly, the yellow rail appeared on the lists of 3 out of 5 expert birders in New York who were invited to predict what new breeders would be added in the next official state checklist (Levine 2002, Gochfeld 2010). This prediction, first made by Eaton (1910), may yet come to pass.

New York’s Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Disjunct	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

1. Freshwater Marsh
2. Wet Meadow/Shrub Swamp
3. Estuarine, Freshwater Intertidal, Tidal Wetland, Freshwater Tidal Marsh
4. Estuarine, Brackish Intertidal, Tidal Wetland, High Marsh
5. Estuarine Intertidal, Brackish Meadow

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
No	No	Stable	

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

Yellow rails breed in large (100-200 acre) saltwater marshes, freshwater grass or sedge marshes, and wet meadows, but also may use brackish wetlands, particularly the drier margins (DeGraaf 1991, Van Dam et al. 1993, Bookhout 1995, USFS Population Viability Assessment 2000). Each pair prefers approximately a 40-acre tract of land, hence the need for so much habitat (M. A. Burkman pers. comm. 2001 *in* Southwell 2002). Austin (2013) referred to yellow rail as the goldilocks of the waterbird world; the water level cannot be too deep or too shallow and they prefer low amounts of woody cover.

During fall migration yellow rails will use a variety of open habitats, from rice paddies to dry hayfields, dry grain fields, and wet meadows (Van Dam et al. 1993, Bookhout 1995). In New York, yellow rails occur in saltwater marshes, grassy meadows and freshwater marshes, and occasionally in upland fields (Spahn 1998).

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Choose an item.	Choose an item.	Yes	Choose an item.	Choose an item.	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

The age at first breeding for yellow rail is one year. Yellow rails are semi-colonial nesters and are thought to be monogamous, though polygyny has been reported. Nesting occurs in shallow depressions in drier parts of the occupied marsh, on damp ground, or in areas where there is up to 1.6 inches of standing water. Hummocks are occasionally used. Yellow rails in captivity have been documented building multiple nests but this behavior has not been verified in the wild. Females lay 6-10 eggs, which hatch synchronously in 13-20 days. The young are semi-precocial and can leave the nest in 1-2 days. One brood is produced each year but re-nesting will occur if nest is destroyed (Bookhout 1995, Southwell 2002).

Northern harrier and short-eared owl are suspected predators of adult yellow rails. Few data are available on population regulation. At breeding sites observed for several years, yellow rails may be common one year and scarce or absent the next. Water levels appear to influence the number of birds that are present (Bookhout 1995, Southwell 2002).

VI. Threats *(from NY 2015 SWAP or newly described):*

Threats to NY Populations	
Threat Category	**Threat**
1. Residential & Commercial Development	Housing & Urban Areas
2. Residential & Commercial Development	Tourism & Recreation Areas (shoreline development)
3. Natural System Modifications	Other Ecosystem Modification (succession)
4. Invasive & Other Problematic Species & Genes	Invasive Non-Native Alien Species (purple loosestrife)
5. Invasive & Other Problematic Species & Genes	Problematic Native Species (disease)
6. Natural System Modification	Fire & Fire Suppression

7. Natural System Modification	Dams & Water Management/Use
8. Energy Production & Mining	Renewable Energy (wind tower collisions)
9. Transportation & Service Corridors	Utility & Service Lines (cell tower collisions)
10. Climate Change & Severe Weather	Habitat Shifting & Alteration
11. Climate Change & Severe Weather	Storms & Flooding
12. Climate Change & Severe Weather	Drought
13. Agriculture & Aquaculture	Annual & Perennial Non-Timber Crops (intensification)
14. Pollution	Agricultural & Forestry Effluents (organochlorines)

Table 2. Threats to the yellow rail.

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

Yellow rail is protected under the Migratory Bird Treaty Act of 1918. The Freshwater Wetlands Act provides protection for wetlands greater than 12.4 acres in size under Article 24 of the NYS Conservation Law. The Tidal Wetlands Act provides protection for all tidal wetlands under Article 25 of the NYS Conservation Law.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

NatureServe (2013) identified numerous areas that need further research: life history information such as breeding biology and demographics, the effects of livestock graze on winter habitat, information on migratory routes, behavior, accurate status and abundance estimates, and the effects of natural water level fluctuations. Stenzel (1982) pointed out desirability of naturally fluctuating water levels on breeding grounds, allowing for burning in dry years and suitable breeding habitat in wet years. Information on basic natural history is lacking.

Protection of existing wetland habitat, especially coastal marshes, is vital. The following recommendations for management have been made (by The Nature Conservancy in USFS Species data 1999; Goldade et al. 2002):

- Reduce or eliminate livestock grazing in breeding areas
- Prevent encroachment of woody vegetation in wet meadows
- Maintain suitable breeding habitats through periodic burning
- Protect remaining breeding habitat such as coastal marshes and prairie pothole marshes
- Prevent stream projects that lower the water table in rail breeding habitats

- Enforce the 1985 Farm Act; accelerate USFWS acquisition of wetlands; resume funding of the Accelerated Research Program for Migratory and Upland Game Birds; institute hunting stamp for hunting rails.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
Education and Awareness	Awareness & Communications
Education and Awareness	Training
Land/Water Protection	Site/Area Protection
Land/Water Protection	Resource/Habitat Protection
Land/Water Management	Site/Area Management
Land/Water Management	Invasive/Problematic Species Control
Land/Water Management	Habitat & Natural Process Restoration

Table 3. Recommended conservation actions for yellow rail

VII. References

Austin, J. 2013. Response of yellow rails to habitat and landscape features in the context of fire." Proceedings from yellow rail webinar. USGS Northern Prairie Wildlife Research Center. Abstract and presentation notes available from: http://midwestbirdmonitoring.ning.com/group/midwest_secretive_marshbirds/forum/topics/proceedings-from-yellow-rail-webinar-on-january-9-2013

Bookhout, T. A. 1995. Yellow Rail (*Coturnicops noveboracensis*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/139 doi:10.2173/bna.139

Crowell, K.L. and G.A. Smith. 1986. Region 6 – St. Lawrence. Kingbird 36(1):35-38.

Eaton, E.H. 1910. The Birds of New York State, Part 1. University of the State of New York, Albany, NY.

Fink, D., T. Auer, A. Johnston, M. Strimas-Mackey, S. Ligocki, O. Robinson, W. Hochachka, L. Jaromczyk, A. Rodewald, C. Wood, I. Davies, A. Spencer. 2022. eBird Status and Trends, Data Version: 2021; Released: 2022. Cornell Lab of Ornithology, Ithaca, New York. https://doi.org/10.2173/ebirdst.2021

Gochfeld, D. 2010. Predictions of species to be added to the New York State checklist, v. 4.0. Kingbird 60(4):301-310.

Goldade, C. M., J. A. Dechant, D. H. Johnson, A. L. Zimmerman, B. E. Jamison, J. O. Church, and B. R. Euliss. 2002. Effects of management practices on wetland birds: Yellow Rail. Northern Prairie Wildlife Research Center, Jamestown, ND. 21 pages.

Huggins, G. 1992. Region 5 – Oneida Lake Basin. Kingbird 42(1):41-46.

Levine, E. 2002. Further Predictions of Species to be Added to the Checklist of the Birds of New York State. Kingbird 52(2):119-123.

Lowery, G. H. 1974. Louisiana birds. 3rd ed. Louisiana State Univ. Press, Baton Rouge.

NatureServe. 2013. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available http://www.natureserve.org/explorer. (Accessed: February 8, 2013).

Osborne, C. E., I. M. Mazzochi, H. Kennedy, S. Muller, and D. J. Adams. 2011. Occupancy, detection, and habitat associations of secretive marsh bird species in New York State, 2004 - 2006. Technical Report. New York State Department of Environmental Conservation, Albany, NY, USA.

Post, P.W. 1967. Photographs of New York State Rarities. Kingbird 17(1):2.

Robert, M. and P. Laporte. 1994. Plan d'action por le retablissement du Ralu Jaune au Quebec. Preliminary draft. Service Canadien de la Faune, Sainte-Foy, Quebec.

Southwell, D. 2002. Conservation assessment for yellow rail (*Coturnicops noveboracensis*). USDA Forest Service, Eastern Region.

Stenzel, J. R. 1982. Ecology of breeding Yellow Rails at Seney National Wildlife Refuge. Master's Thesis. Ohio State Univ. Columbus.

Treacy, E.D. 1985. Region 9 – Delaware-Hudson. Kingbird 35(1): 64-68.

USFS Species Data, 1999. United States Forest Service, Region 9.Chippewa, Superior, and Chequamegon-Nicolet National Forests Statement of Purpose and Reason Draft Species Data Records. November 1999. Yellow rail. Internal document. 20 pp.

Van Dam, B., R. Jennings, J.D. Soule, G. Hammerson, M.T. Koenen, and D.W. Mehlman. 1993. Species Management Abstract: Yellow rail (*Coturnicops noveboracensis*). The Nature Conservancy, 4245 North Fairfax Drive, Suite 100, Arlington, VA 22203.

Yard, K. A., C. E. Osborne, J. W. Ozard, and P. G. Novak. 2012. New York State Marsh Bird Monitoring Program Pilot Study, 2009-2011. Technical Report. New York State Department of Environmental Conservation, Albany, NY, USA.

Originally prepared by	Kimberley Corwin
Date first prepared	August 23, 2012
First revision	January 28, 2014 (Samantha Hoff)
Latest revision	Transcribed with some updated January 2024

Species Status Assessment

Common Name: Yellow-breasted chat **Date Updated:**

Scientific Name: *Icteria virens* **Updated By:**

Class: Aves

Family: Icteriidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

Yellow-breasted chat is a neotropical migrant that breeds most abundantly in southern states and is near its northern extent in New York. As the largest member of the family Parulidae, the yellow-breasted chat's classification has been examined due to its size, unusual vocal repertoire, and atypical physical attributes. Its breeding preference includes a variety of open-canopy habitats with shrubby, second-growth vegetation and thickets. This early-successional habitat is declining in New York.

Across this warbler's distribution, Breeding Bird Survey data show slight but significant declining population trends of -0.62% per year since 1966 and -0.78% per year since 2005. Both long- and short-term trends show significant declines in the Eastern BBS, Appalachian Mountain, and New England/Mid-Atlantic Coast regions (Sauer et al. 2017). It is likely that yellow-breasted chat was always uncommon in New York (McGowan 2008). Records scattered sparsely across the Appalachian Plateau, Coastal Lowlands, and lower Hudson Valley during the first Breeding Bird Atlas went missing during the second Atlas; occupancy declined by 78%. Preliminary data from the first year of the third BBA (2020) documented chat breeding behavior in just 9 blocks (J. Hart pers. comm. 2020; eBird 2023).

I. Status

a. Current legal protected Status

i. **Federal:** Not listed **Candidate:** No

ii. **New York:** Special Concern; SGCN

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** S2 **Tracked by NYNHP?:** Yes

Other Ranks:

IUCN Red List: Least Concern

Northeast Regional SGCN: Watchlist

COSEWIC: Endangered

Partners in Flight: Species of Regional Concern in BRC 28

North American Bird Conservation Initiative (NABCI) Conservation Concern Score 10 (of 20)

Status Discussion:

Yellow-breasted chat is an uncommon and local breeder in southern New York. It is rare as a migrant and wintering bird. It is ranked as Vulnerable in New Jersey, Imperiled in New York, and Critically Imperiled in Ontario, Massachusetts, and Connecticut. The IUCN Red List status is Least Concern and global population trend considered stable (Birdlife International 2018).

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Declining	Declining	BBS: 1966-2015 and 2005-15		Choose an item.
Northeastern US	Yes	Declining	Declining	BBS: 1966-2005 and 2005-15		Choose an item.
New York	Yes	Declining	Declining	BBA: 1980-85 to 2000-05; BBS: 1966-2015 and 2005-15	Special Concern	Yes
Connecticut	Yes	Declining	Declining	BBS: 1966-2015 and 2005-15	Endangered	Yes
Massachusetts	Yes	Unknown	Declining	BBA: 1975-79 to 2007-11	Not listed	No
New Jersey	Yes	Declining	Unknown	BBS: 1966-2015 and 2005-15	Special Concern	Yes
Pennsylvania	Yes	Declining	Declining	BBA: 1984-89 to 2004-08; BBS 1966-2015 and 2005-15	Not listed	Yes
Vermont	Unknown	Unknown	Unknown	1 breeding record in 1912, 5 possible records over 2 BBAs	Not listed	No
Ontario	Yes	Declining	Increasing	BBS: 1966-2015 and 2005-2015	Endangered	Choose an item.
Quebec	No	Choose an item.	Choose an item.			Choose an item.

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

None

Trends Discussion *(insert map of North American/regional distribution and status):*

Yellow-breasted chat populations appear to be declining in the northeastern part of the range and increasing in the western part. Throughout its range, the species has declined by 11% (Partners In Flight).

Survey-wide, Breeding Bird Survey data show slight but significant declines of -0.62% per year for 1966-2015 and -0.78% per year for 2005-2015. In the Eastern BBS region, the long-term trend is -1.02% per year and the short-term trend is -1.24% per year (Sauer et al. 2017). Breeding Bird Survey data for New York, New Jersey, Connecticut, Pennsylvania, and Ontario all have deficiencies due to low relative abundance, but trends and Breeding Bird Atlas data (where available) for each show declines and range retractions during the past 20 years.

The second Breeding Bird Atlas in New York documented a -78% decline in occupancy from 1980-85 to 2000-05. Yellow-breasted chats are now documented in less than 1% of survey blocks statewide.

Numbers of birds caught in the fall at both Manomet Bird Observatory in eastern Massachusetts and at Powdermill Nature Reserve in western Pennsylvania from 1970 to 1988 both declined, albeit not significantly (Hagan et al. 1992), mirroring declines reported by BBS for similar time periods.

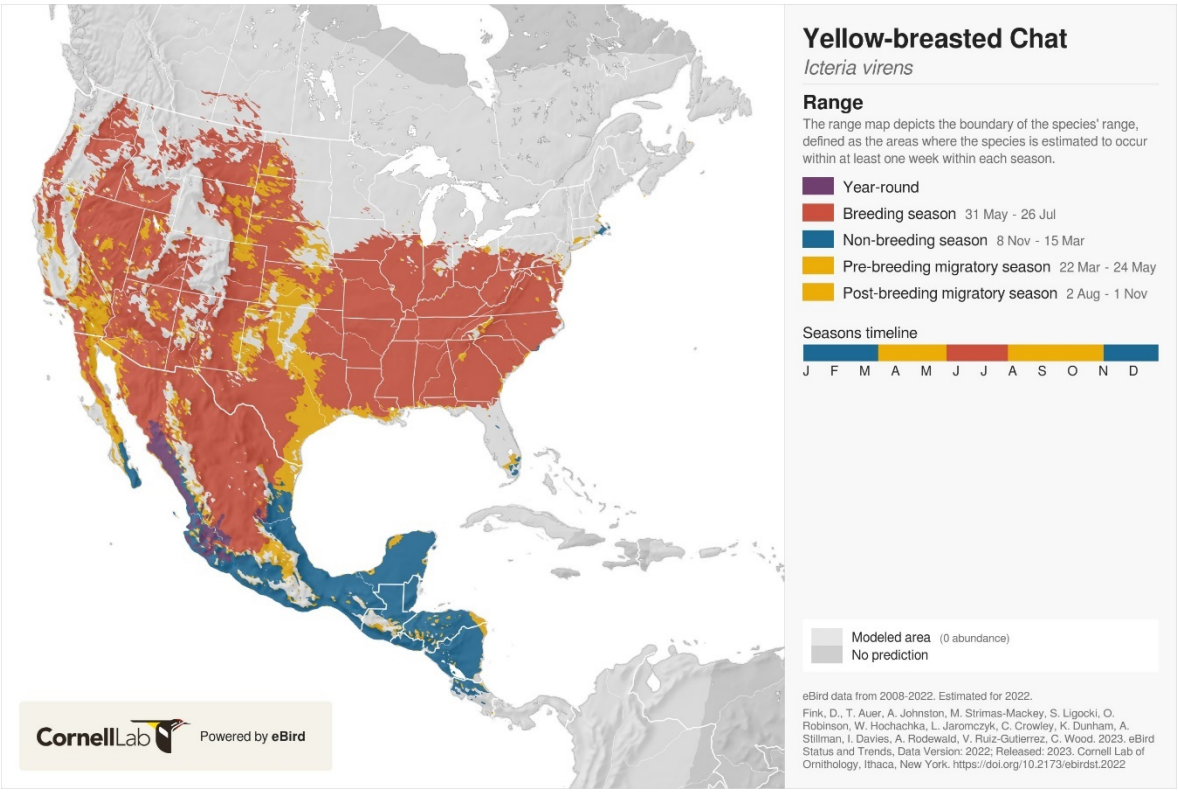

Figure 1. Yellow-breasted chat distribution (eBird 2022)

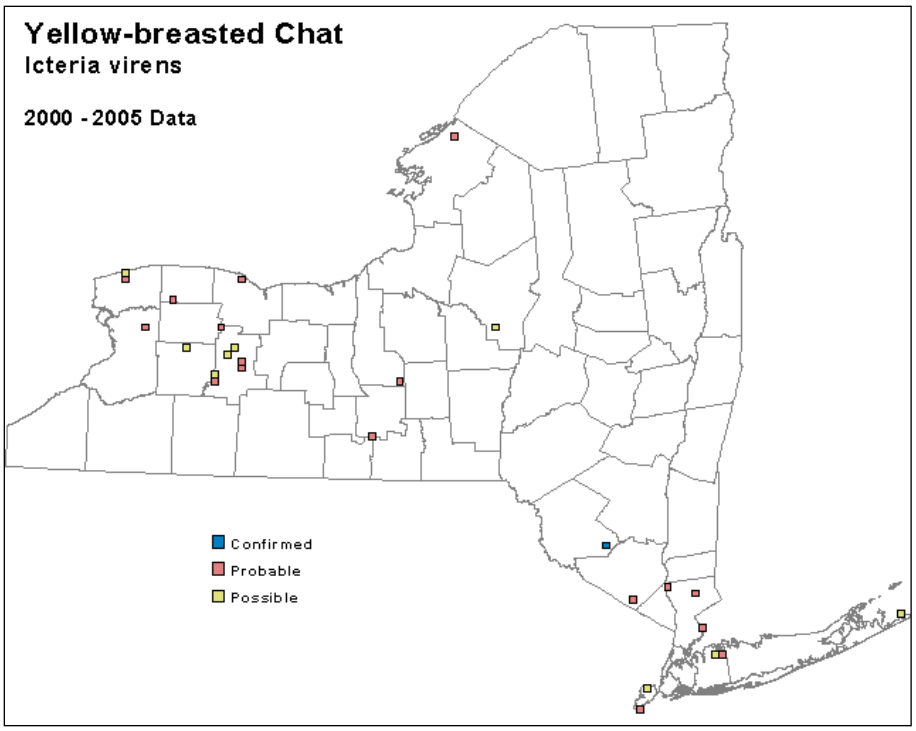

Figure 2. Yellow-breasted chat occurrence in New York State during the second Breeding Bird Atlas (McGowan and Corwin 2008)

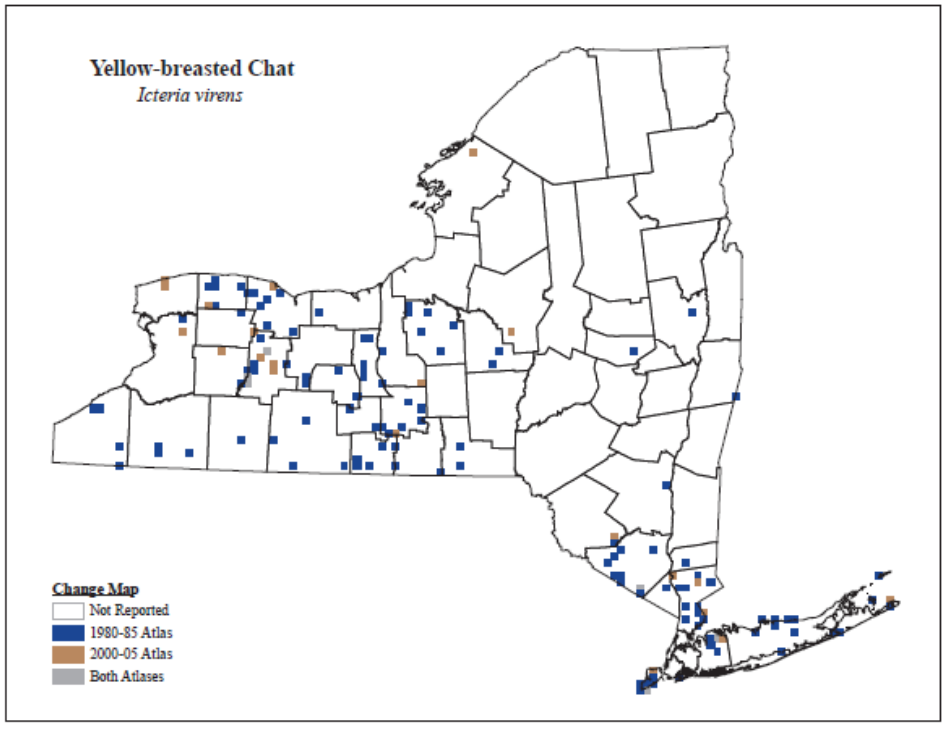

Figure 3. Change in yellow-breasted chat occurrence in New York State between the first Breeding Birds Atlas and the second Breeding Bird Atlas (McGowan and Corwin 2008)

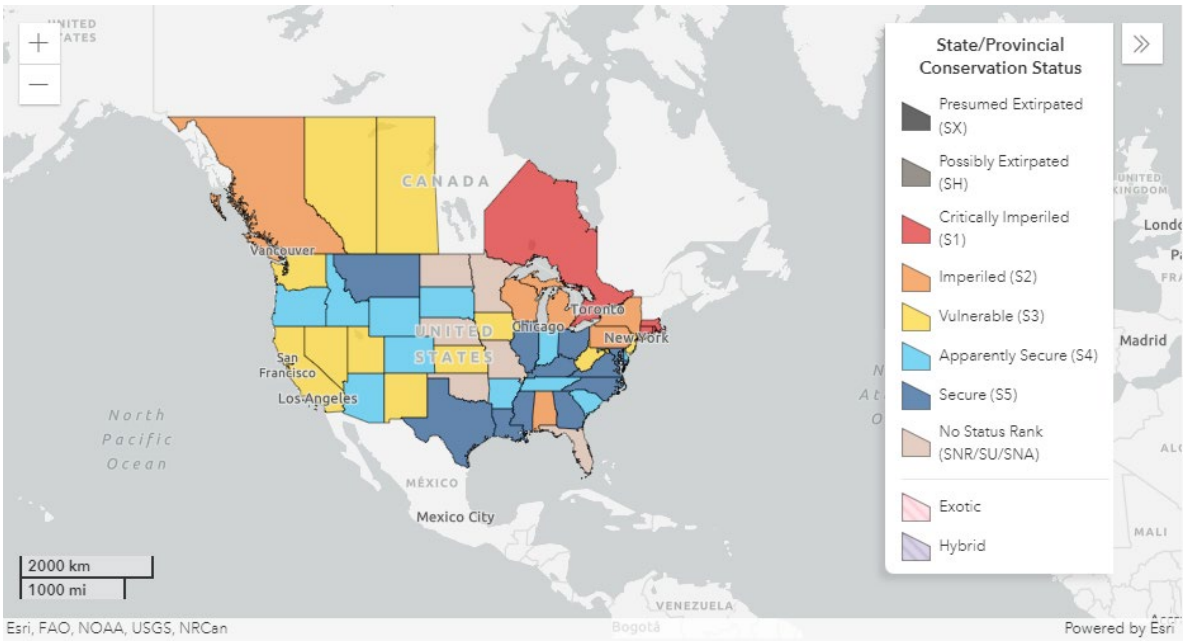

Figure 4. Conservation status of yellow-breasted chat in North America (NatureServe 2023)

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

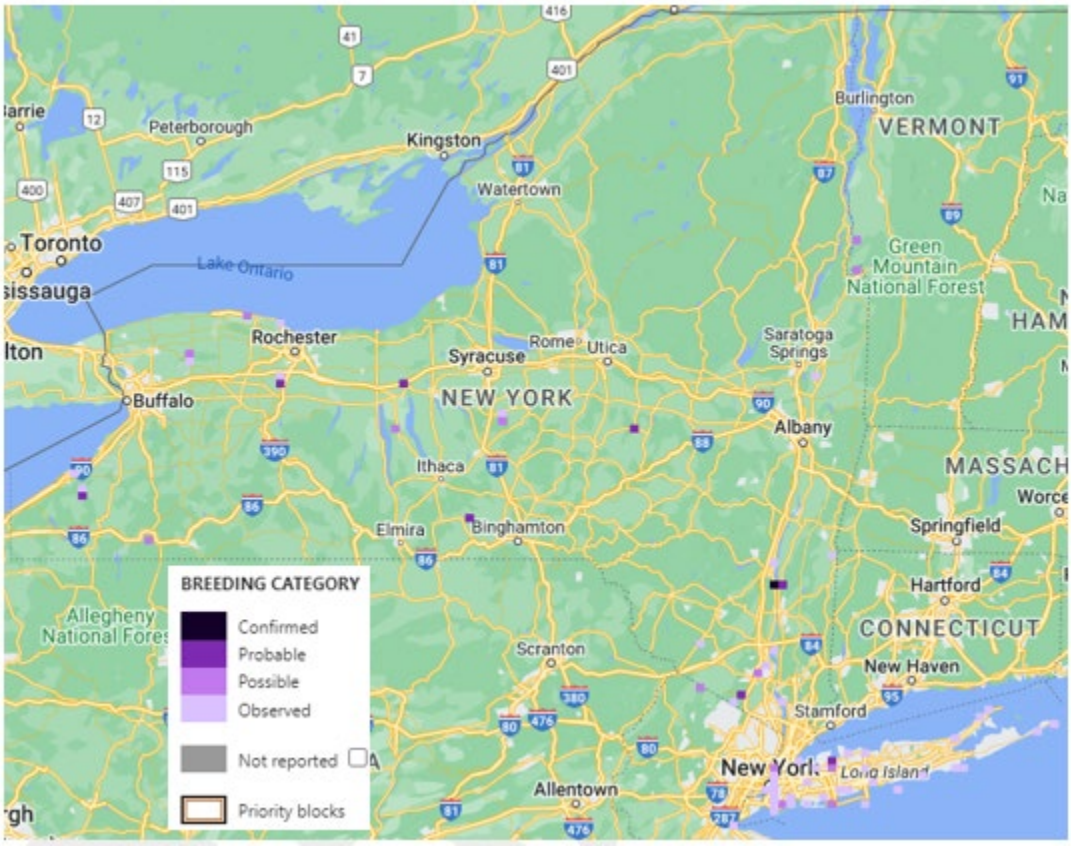

Figure 5. Records of yellow-breasted chat in New York (NYS BBA III Map, 2023)

Years	# of Records	# of BBA Blocks	% of State
Pre-1980	_____	_____	_____
1980-1985	_____	122	2%
2000-2005	_____	27	0.5%
2020-2023	_____	22	0.4%

Table 1. Records of yellow-breasted chat in New York.

Details of historic and current occurrence:

The first Breeding Bird Atlas (BBA) (1980-85) documented occupancy in 122 blocks, 2% of the survey blocks statewide (Andrle and Carroll 1988). The second BBA (2000-05) documented occupancy in 27 blocks, 0.5% of the survey blocks statewide, a decline of 78% since the first atlas (McGowan and Corwin 2008).

The third BBA (2020-25) is currently underway and utilizes a different number and layout of survey blocks across New York, making direct comparison with the first two Atlases difficult. There were 5,333 blocks in the first and second BBAs, and there are 5,710 blocks in the current BBA. To date, yellow-breasted chat has been documented in 22 blocks, 0.4% of survey blocks statewide during the third BBA (NYS BBA III Overview, 2023).

The global population of yellow-breasted chat is estimated at 11 million; the population in New York is estimated at about 400 individuals (Blancher et al. 2007). Most of the records in the second Breeding Bird Atlas were distributed across the Great Lakes Plain. The single Confirmed breeding record was in the Shawangunk Hills (McGowan 2008).

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Peripheral	

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

a. Riparian

b. Non-native Shrublands

c. Powerline

d. Plantation and Disturbed Land Pioneer Forests

e. Old Field Managed Grasslands

f. Native Barrens and Savanna

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
Yes	No	Declining	Since mid-1900s

Habitat Discussion:

The yellow-breasted chat is a shrubland bird. It breeds in open areas with dense, shrubby vegetation and no tree canopy, including the edges of streams, swamps, and ponds as well as forest edges, regenerating burned-over forest, logged areas, fencerows, shrubby old pastures, thickets with few tall trees, and powerline corridors (Eckerle and Thompson 2001).

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	Choose an item.	Choose an item.	Yes	No	Choose an item.

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

Breeding occurs during the second year and annually thereafter. On a southern Indiana study area over a 5-year period, 28% of eggs laid survived to hatch and nest success averaged 22%. A single brood is typically produced, though broods may be replaced after depredation (Eckerle and Thompson 2001). Apparent annual survival of adult male chats in British Columbia was 65% during a 7-year banding study (McKibbin and Bishop, 2012). The maximum age of a banded and recaptured bird was 11 years, 11 months (BBL 2020). Nest site fidelity appears to be extremely low, suggesting frequent movement to new breeding sites, at least in one studied population in southern Indiana. In British Columbia, roughly 30% males and 10% of females showed fidelity to the site they were banded as an adult, and 10% of banded nestlings returned to their natal site (McKibbin and Bishop 2012). Further, McKibbbin and Bishop (2012) documented adult male dispersal ranging from 6.4-42.9 km and natal dispersal ranging from 2.5-15.6 km for males and 2.3-2.6 km for females. Movement during breeding season is extensive, at least in some populations, with new males and females appearing throughout this period (Thompson and Nolan 1973). Males and females that settled in both naturally and experimentally created vacancies in breeding populations were mostly birds moving after nest failure elsewhere (Thompson 1977).

Nests parasitized by brown-headed cowbirds in small habitat patches were more likely to suffer depredation than unparasitized nests in large patches; nest-depredation rates were lower in large rather than small habitat patches, but nests in large patches were more likely than those in small patches to be parasitized (Burhans and Thompson 1999).

Yellow-breasted chats are easy to detect during the breeding season but become quiet outside of this period. Detection may be difficult due to its dense habitat and skulking nature.

VI. Threats *(from NY 2015 SWAP or newly described):*

Threats to NY Populations	
Threat Category	**Threat**
1. Residential & Commercial Development	Housing & Urban Areas
2. Agriculture & Aquaculture	Perennial & Non-Timber Crops (habitat loss to agriculture)
3. Natural System Modifications	Other Ecosystem Modifications (forest maturation)
4. Invasive & Other Problematic Species & Genes	Problematic Native Species (increased predation from urbanization raccoons, foxes)
5. Invasive & Other Problematic Species & Genes	Non-native/Alien Species (domestic cats)
6. Invasive & Other Problematic Species & Genes	Non-native/Alien Species (bush honeysuckle, autumn olive, multiflora rose)
7. Climate Change & Severe Weather	Habitat Shifting & Alteration
8. Invasive & Other Problematic Species & Genes	Problematic Native Species (brown-headed cowbird nest parasitism)

Habitat loss due to succession is the primary issue for yellow-breasted chats. Although this warbler tolerates open, grassy areas (Johnston and Odum 1956), any activity, such as grazing, that leads to disappearance of dense, shrubby areas will be detrimental. Local breeding populations decline if secondary succession is not set back before the canopy closes in regenerating forest (Eckerle and Thompson 2001). General threats to the early successional forest/shrubland bird suite in New York include reversion of shrublands to forest; loss of small dairy farms; fire suppression; more intensive agriculture that results in loss of hedgerows, shrubs, and shrub wetlands; reversion of young forest habitat to mature forest; inadequate amounts of even-aged forest management or uneven-aged management with low residual basal area; and the erroneous public perception that forest management is harmful to birds (NYSDEC 2005).

Several studies indicate that small numbers of yellow-breasted chats are killed during both spring and autumn migration as a result of collisions with stationary objects (Eckerle and Thompson 2001). Loss et al. (2014) estimated that 365 to 988 million birds are killed by building/glass collisions in the U.S. each year, with warblers being among the most vulnerable taxa. They also noted that buildings collisions are the second leading source of direct mortality of migratory birds, following predation by feral and outdoor pet cats. Longcore (2013) similarly found that nearly 60% of avian mortality from collisions with communication towers and guy wires are warblers; chats had an estimated annual mortality <1% of estimated population size from mortality at communication towers.

Neotropical migrants face additional threats on wintering grounds and during migration including loss and degradation of wintering habitat, exposure to unregulated contaminants, and collision with various

structures such as powerlines, towers, and turbines. In some areas, hunting remains a problem (Eckerle and Thompson 2001).
Brood parasitism by brown-headed cowbirds may affect chats less than other songbirds. However, research in habitat restoration areas found that chat reproductive success was influenced by cowbirds more so than any vegetation characteristics (Forrester et al. 2020).

Nonnative, invasive plants negatively affect yellow-breasted chats. Ripple (2020) documented that prevalence of multiflora rose negatively affected chat site occupancy; increasing amounts of honeysuckle were related to lower diet quality (lower concentrations of triglycerides and β-hydroxybutyrate); high amounts of autumn olive and honeysuckle increased stress (corticosterone levels); while increasing amounts of native plants positively influenced chat immune function (bacteria killing ability).

The National Audubon Society's climate vulnerability assessment found that, under the +3.0 °C scenario, the yellow-breasted chat had an overall species vulnerability status of "stable" with range gained in New York. Climate-related threats include habitat loss from wildfire and urbanization as well as decreased nesting success due to spring heat waves (National Audubon Society 2019). Climate change-related increases in the frequency and intensity of extreme weather events may adversely affect annual survival of chats but more study is needed (Huang et al. 2017).

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

Yellow-breasted chat is protected under the Migratory Bird Treaty Act of 1918.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

Yellow-breasted chat may benefit from the creation and maintenance of early-successional habitat, especially in areas where breeding occurred historically. Chat density is positively associated with habitat created by silvicultural treatments (Twedt and Wilson 2017, Kendrick et al. 2015) including clearcuts (George et al. 2019), thinning and prescribed fire (Roach et al. 2019). The suitability of habitat structure for chats depends on successional stage. Morris et al. (2013) found that chat density increased after both even-aged and uneven-aged silvicultural treatments but that chats were absent from these areas by 14 years after harvest. Chats are area sensitive and require patch sizes of at least 2.3 ha in the eastern U.S. (Shake et al. 2012).

DEC's Young Forest Initiative began in 2015 to increase the amount of young forest habitat on state-owned Wildlife Management Areas. The program may provide early successional habitat suitable for chats on protected, managed public lands. The program is still in the early stages but, to date, our survey and monitoring efforts have not detected chats using these areas.

Conservation actions following IUCN taxonomy are categorized in the table below.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated

subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
Land/Water Protection	Site/Area Protection
Land/Water Protection	Resource/Habitat Protection
Land/Water Management	Site/Area Management
Land/Water Management	Invasive/Problematic Species Control
Land/Water Management	Habitat and Natural Process Restoration
Education and Awareness	Training
Education and Awareness	Awareness & Communications
Law and Policy	Policies and Regulations

Table 2. Recommended conservation actions for yellow-breasted chat

The Comprehensive Wildlife Conservation Strategy (NYSDEC 2005) includes recommendations for early-successional forest/shrubland birds, which includes yellow-breasted chat.

Curriculum development:

____ Educate public to the benefits and need for early successional habitat including even-aged management.

Easement acquisition:

____ Implement a Landowner Incentive Project for early successional birds that will direct $600,000 per year at conserving and creating habitat for early successional forest/shrub birds.

Habitat management:

____ Work with Utilities to manage ROWs in a manner that will provide for maximum benefit to early successional species.

____ Double the amount of early successional forest and shrub habitat on public and private land through sound planned management.

____ Increase early successional management on public and private lands.

____ Maintain, restore, and enhance fire adapted ecosystems. Increase use of prescribed fire in fire adapted ecosystems.

____ Promote management of Utility ROWs that will provide the maximum benefit to shrub bird species.

Habitat monitoring:

____ Precisely monitor trends of all species, in particular those that are not currently adequately monitored.

____ Complete an inventory and analysis for high priority focus species that identifies core habitats (highest abundance) and geographic areas (where appropriate).

Habitat research:

____ Determine effects of viburnum leaf beetle on early successional forest/shrub habitats and species utilizing them.

Population monitoring:

____ Encourage full completion of BBS routes.

Statewide management plan:

____ Develop a management plan that provides guidance on maintaining, enhancing and restoring early successional forest/shrub bird species.

Other actions:

____ Develop better mechanisms for directing federal (NRCS and USFWS) funding programs into early successional forest/shrub habitats.

____ Develop BMPs for forest management in riparian areas that recognize the critical need maintain, enhance and restore early successional forest/shrub habitat in these areas.

VII. References

Bird Banding Laboratory (BBL). 2020. Longevity Records of North American Birds. Version 2019.2. Patuxent Wildlife Research Center. US Geological Survey. Laurel, MD.

BirdLife International. 2018. Icteria virens. The IUCN Red List of Threatened Species 2018: e.T22722057A132011103. https://dx.doi.org/10.2305/IUCN.UK.2018-2.RLTS.T22722057A132011103.en. Downloaded on 04 November 2020.

Blancher, P. J., K. V. Rosenberg, A. O. Panjabi, B. Altman, J. Bart, C. J. Beardmore, G. S. Butcher, D. Demarest, R. Dettmers, E. H. Dunn, W. Easton, W. C. Hunter, E. E. Iñigo-Elias, D. N. Pashley, C. J. Ralph, T. D. Rich, C. M. Rustay, J. M. Ruth, and T. C. Will. 2007. Guide to the Partners in Flight Population Estimates Database. Version: North American Landbird Conservation Plan 2004. Partners in Flight Technical Series No 5. http://www.partnersinflight.org/

Burhans, D. E. and F. R. Thompson III. 1999. Habitat patch size and nesting success of Yellow-breasted Chats. Wilson Bulletin. 111:210-215.

Corwin, K. 2012. NYSDEC SWAP 2015 Species Status Assessment for yellow-breasted chat. Prepared on August 16, 2012. Revised by S. Hoff on January 28, 2014 and by K. Yard on December 9, 2020.

Eckerle, K. P. and C. F. Thompson (2020). Yellow-breasted Chat (*Icteria virens*), version 1.0. In Birds of the World (A. F. Poole and F. B. Gill, Editors). Cornell Lab of Ornithology, Ithaca, NY, USA. https://doi.org/10.2173/bow.yebcha.01

Fink, D., T. Auer, A. Johnston, M. Strimas-Mackey, S. Ligocki, O. Robinson, W. Hochachka, L. Jaromczyk, C. Crowley, K. Dunham, A. Stillman, I. Davies, A. Rodewald, V. Ruiz-Gutierrez, C. Wood. 2023. (eBird). eBird Status and Trends, Data Version: 2022; Released: 2023. Cornell Lab of Ornithology, Ithaca, New York. https://doi.org/10.2173/ebirdst.2022

Forrester, T.R., D.J. Green, R. McKibbin, A.M. Bezener, and C.A. Bishop. 2020. Riparian habitat restoration increases the availability and occupancy of yellow-breasted chat territories but brood parasitism is the primary influence on reproductive performance. The Condor 38.

George, A.D., P.A. Porneluzi, J.M. Haslerig, and J. Faaborg. 2019. Response of shrubland birds to regenerating clearcut area and shape. Journal of Wildlife Management 83(7):1508-1514.

Hagan III, J. M., T. L. Lloyd-Evans, J. L. Atwood, and D. S. Wood. 1992. Long-term changes in migratory landbirds in the northeastern United States: evidence from migration capture data. Pages 115-130 *in* Ecology and conservation of Neotropical migrant landbirds. (Hagan III, J. M. and D. W. Johnston, Eds.) Smithson. Inst. Press, Washington, D.C.

Huang, A.C., C.A. Bishop, R. McKibbin, A. Drake, and D.J. Green. 2017. Wind conditions on migration influence the annual survival of a neotropical migrant, the western yellow-breasted chat *(Icteria virens auricollis*). BMC Ecology 17:29 DOI 10.1186/s12898-017-0139-7.

Johnston, D. W. and E. P. Odum. 1956. Breeding bird populations in relation to plant succession on the piedmont of Georgia. Ecology 37:50-62.

Kendrick, S.W., P.A. Porneluzi, F.R. Thompson III, D.L. Morris, J.M. Haslerig, and J. Faaborg. 2015. Stand-level bird response to experimental forest management in the Missouri Ozarks. Journal of Wildlife Management 79(1):50-59.

Longcore, T., C. Rich, P. Mineau, B. MacDonald, D.G. Bert, L.M. Sullivan, E. Mutrie, S.A. Gauthreaux Jr., M.L. Avery, R.L. Crawford, A.M. Manville II, E.R. Travis, and D. Drake. 2013. Avian mortality at communication towers in the United States and Canada: which species, how many, and where? Biological Conservation 158:410-419.

Loss, S.R., T. Will, S.S. Loss, and P.P. Marra. 2014. Bird–building collisions in the United States: Estimates of annual mortality and species vulnerability. The Condor 116:8–23.

McGowan, K.J. 2008. Yellow-breasted chat (Icteria virens). Pages 536-37 in The second atlas of breeding Birds in New York State (K.J. McGowan and K. Corwin, eds.). Cornell University Press, Ithaca, NY.

McKibbin, R. and C.A. Bishop. 2012. Site fidelity and annual survival of the western yellow-breasted chat (*Icteria virens auricollis*) at the northern edge of its range. Canadian Field-Naturalist 126(2):135-142.

Morris, D.L., P.A. Porneluzi, J. Haslerig, R.L. Clawson, and J. Faaborg. 2013. Results of 20 years of experimental forest management on breeding birds in Ozark forests of Missouri, USA. Forest Ecology and Management 310:747-760.

National Audubon Society. 2019. How climate change will reshape the range of the yellow-breasted chat. Online: https://www.audubon.org/field-guide/bird/yellow-breasted-chat#bird-climate-vulnerability.

NatureServe. 2023. NatureServe Explorer. Page last published 12/1/2023. https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.104641/Icteria_virens. Accessed December 29, 2023.

New York State Breeding Bird Atlas III Map (NYS BBA III Map). 2023. https://ebird.org/atlasny/explore. Accessed December 29, 2023.

New York State Breeding Bird Atlas III Overview (NYS BBA III Overview). 2023. New York Checklist Overview. https://ebird.org/atlasny/state/US-NY Accessed December 29, 2023.

New York State Department of Environmental Conservation (NYSDEC). 2005. New York State Comprehensive Wildlife Conservation Strategy. Albany, NY. https://extapps.dec.ny.gov/docs/wildlife_pdf/cwcs2005.pdf.

North American Bird Conservation Initiative (NABCI). 2016. State of North America's Birds. Online: https://www.stateofthebirds.org/2016/resources/species-assessments/

Roach, M.C., F.R. Thompson III, and T. Jones-Farrand. 2019. Effects of pine-oak woodland restoration on breeding bird densities in the Ozark-Ouachita Interior Highlands. Forest Ecology & Management 437:443-459.

Rosenberg, K. V., J. A. Kennedy, R. Dettmers, R. P. Ford, D. Reynolds, J.D. Alexander, C. J. Beardmore, P. J. Blancher, R. E. Bogart, G. S. Butcher, A. F. Camfield, A. Couturier, D. W. Demarest, W. E. Easton, J.J. Giocomo, R.H. Keller, A. E. Mini, A. O. Panjabi, D. N. Pashley, T. D. Rich, J. M. Ruth, H. Stabins, J. Stanton, T. Will. 2016. Partners in Flight Landbird Conservation Plan: 2016 Revision for Canada and Continental United States. Partners in Flight Science Committee. 119 pp. Available online: https://partnersinflight.org/resources/the-plan/

Rosenberg, K. V., A. M. Dokter, P. J. Blancher, J. R. Sauer, A. C. Smith, P. A. Smith, J. C. Stanton, A. Panjabi, L. Helft, M. Parr, and P. P. Marra. 2019. Decline of North American avifauna. Science 366:120-124. DOI: 10.1126/science.aaw1313.

Ripple, K. 2020. Effects of non-native woody plant species on shrubland birds of conservation concern. M.S. Thesis. University of Illinois at Urbana-Champaign.

Sauer, J. R., D. K. Niven, J. E. Hines, D. J. Ziolkowski, Jr, K. L. Pardieck, J. E. Fallon, and W. A. Link. 2017. The North American Breeding Bird Survey, Results and Analysis 1966 - 2015. Version 2.07.2017 USGS Patuxent Wildlife Research Center, Laurel, MD.

Shake, C.S., C.E. Moorman, J.D. Riddle, and M.R. Burchell, II. 2012. Influence of patch size and shape on occupancy by shrubland birds. The Condor 114(2):268–278.

Thompson, C. F. 1977. Experimental removal and replacement of territorial male Yellow-breasted Chats. Auk 94:107-113.

Thompson, C. F. and V. Nolan, Jr. 1973. Population biology of the Yellow-breasted Chat (*Icteria virens L.*) in southern Indiana. Ecol. Monogr. 43:145-171.

Twedt, D. J. and R.R. Wilson. 2017. Breeding birds in managed forests on public conservation lands in the Mississippi Alluvial Valley. Forest Ecology & Management 384:180-190.

Originally prepared by	Kimberley Corwin
Date first prepared	August 16, 2012
First revision	January 28, 2014 (Samantha Hoff)
Second revision	December 9, 2020 (Katherine Yard)
Latest revision	Transcribed with minor updates December 29, 2023

Species Status Assessment

Common Name: Yellow-crowned night heron **Date Updated:** 12/21/2023

Scientific Name: *Nyctanassa violacea* **Updated By:** M. Oberkircher

Class: Aves

Family: Ardeidae

Species Synopsis *(a short paragraph which describes species taxonomy, distribution, recent trends, and habitat in New York):*

There are six subspecies of yellow-crowned night heron, five of which are tropical. The North American subspecies, *N. v. violacea*, occurs in the southeastern United States and northward along the Atlantic Coast. In New York—where it occurs primarily on the Coastal Lowlands—it is very near the northern extent of its range. Populations declined range-wide with the millenary trade in the late 1800s and early 1900s. After protection by the Migratory Bird Treaty Act of 1918, populations rebounded, increasing dramatically through the 1960s.

The North American Waterbird Conservation Plan assessed the yellow-crowned night heron population as essentially stable across its range and classified it in a “moderate risk” category. In New York, this night-heron occurs in small populations scattered on the north and south shores of Long Island and in the New York City harbor. The second Breeding Bird Atlas showed a 27% increase in the number of survey blocks with confirmed breeding from 1980-85 to 2000-05. The NYSDEC Colonial Waterbird Survey documented an increase in the number of breeding pairs from 2001 to 2010. The NYC Audubon Harbor Herons survey documented a stable presence of island nesting birds since 1985; an increase in nesting at a mainland site was observed in 2012 (Craig 2012). The population in New York appears to be stable; local fluctuations occur as a result of food and habitat availability (McCrimmon 2008).

I. Status

a. Current legal protected Status

i. **Federal:** Not Listed **Candidate:** No

ii. **New York:** SGCN

b. Natural Heritage Program

i. **Global:** G5

ii. **New York:** S2 **Tracked by NYNHP?:** Yes

Other Ranks:
-IUCN Red List: Least Concern

Partners in Flight: 12 out of 20

Status Discussion:

Yellow-crowned night herons are common in many portions of their range but trends are unknown for many regions. In New York, their breeding range is restricted mainly to Long Island and some areas of NYC.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Unknown	Unknown			Choose an item.
Northeastern US	Yes	Unknown	Unknown			No
New York	Yes	Stable	Stable			Yes
Connecticut	Yes	Stable	Stable		Special Concern	Yes
Massachusetts	Yes	Unknown	Unknown			No
New Jersey	Yes	Declining	Declining		Threatened	Yes
Pennsylvania	Yes	Stable	Stable		Endangered	Yes
Vermont	No	Choose an item.	Choose an item.			No
Ontario	No	Choose an item.	Choose an item.			No
Quebec	No	Choose an item.	Choose an item.			No

Column options
Present?: Yes; No; Unknown; No data; (blank) or Choose an Item
Abundance and Distribution: Declining; Increasing; Stable; Unknown; Extirpated; N/A; (blank) or Choose an item
SGCN?: Yes; No; Unknown; (blank) or Choose an item

Monitoring in New York *(specify any monitoring activities or regular surveys that are conducted in New York):*

NYSDEC conducts surveys for night herons every three years as part of the Colonial Waterbird Survey.

New York City Audubon has conducted Harbor Herons Nesting Survey in the Greater New York/New Jersey Harbor annually since 1985; the surveys target long-legged wading birds including yellow-crowned night heron (Harbor Herons Subcommittee 2010, Craig 2011, Craig 2012).

Trends Discussion *(insert map of North American/regional distribution and status):*

There is no definitive information currently on yellow-crowned night heron trends. Because this bird is dark-bodied and nests under canopy in forested areas, aerial surveys are ineffective in determining population status. Also, because colonies are small and scattered, ground surveys are economically unfeasible over large areas.

The North American population expanded northward dramatically from 1925 to 1960. The first recorded breeding in New York occurred in 1938 at Massapequa in Nassau County (Cruickshank 1942). The Long Island population grew in the following decades and in the 1960s, 13 breeding sites were known (Bull 1964). A decline was detected during the 1990s and through about 2005, the average number of pairs was around 18 annually. The Long Island Colonial Waterbird Survey in 2010 detected 31 breeding pairs at 6 active sites. In 2022, the survey found 41 pairs nesting at 3 locations.

Breeding Bird Atlas data for New York show a decline of -28% from 1980-85 to 2000-05. This is primarily a result of the change in Possible records. The change in the number of Confirmed records—which is perhaps a more accurate indicator for this colonial breeder—shows an increase of 27%. The New York City Harbor Herons nesting survey showed an increase in yellow-crowned night heron from 2007 to 2012 (Craig 2012). The Harbor Heron survey has shown a steady decrease in island-nesting yellow crowned night herons since 2010.

The USGS Breeding Bird Survey shows a slight negative trend of -0.2 from 1993-2021. The Christmas Bird Count also has a slightly negative trend of -0.41 during the same time period. The eBird trends map shows a -18.8% trend for breeding yellow-crowned night herons with an upper confidence interval of 11% and a lower one of -32% from 2012-2022.

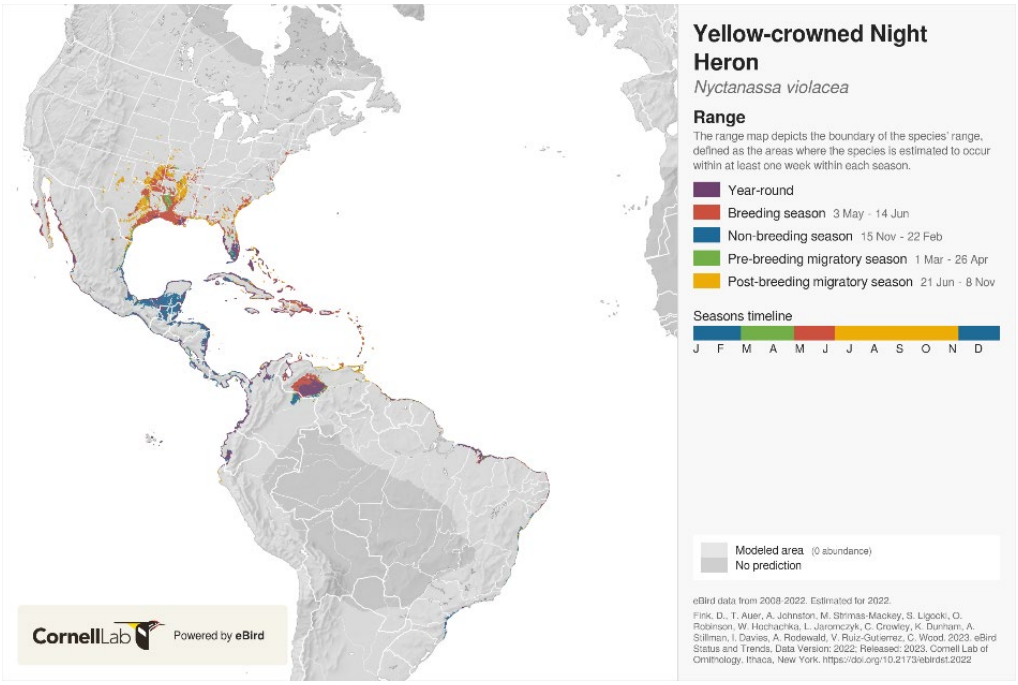

Figure 1. Distribution of yellow-crowned night heron (Birds of the World)

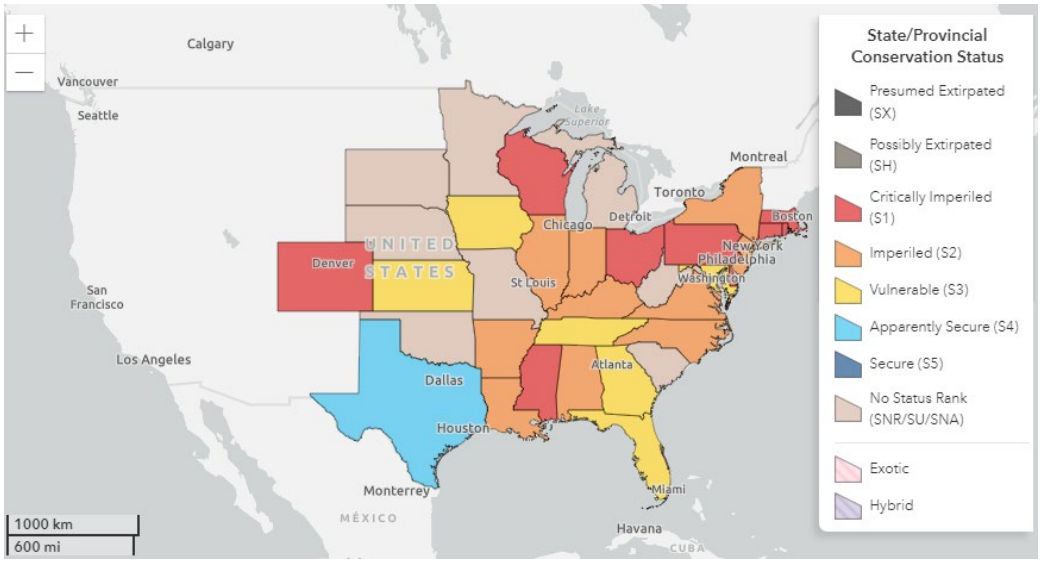

Figure 2. Conservation status of yellow-crowned night-heron in North America (NatureServe)

III. New York Rarity *(provide map, numbers, and percent of state occupied)*

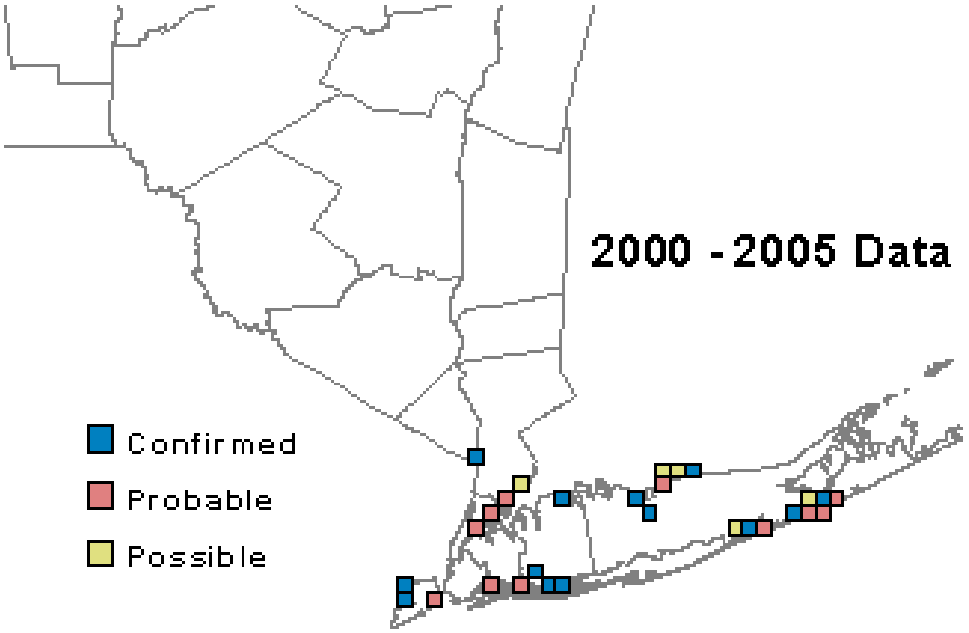

Figure 3. Yellow-crowned night heron occurrence in New York State during the second Breeding Bird Atlas (McGowan and Corwin 2008).

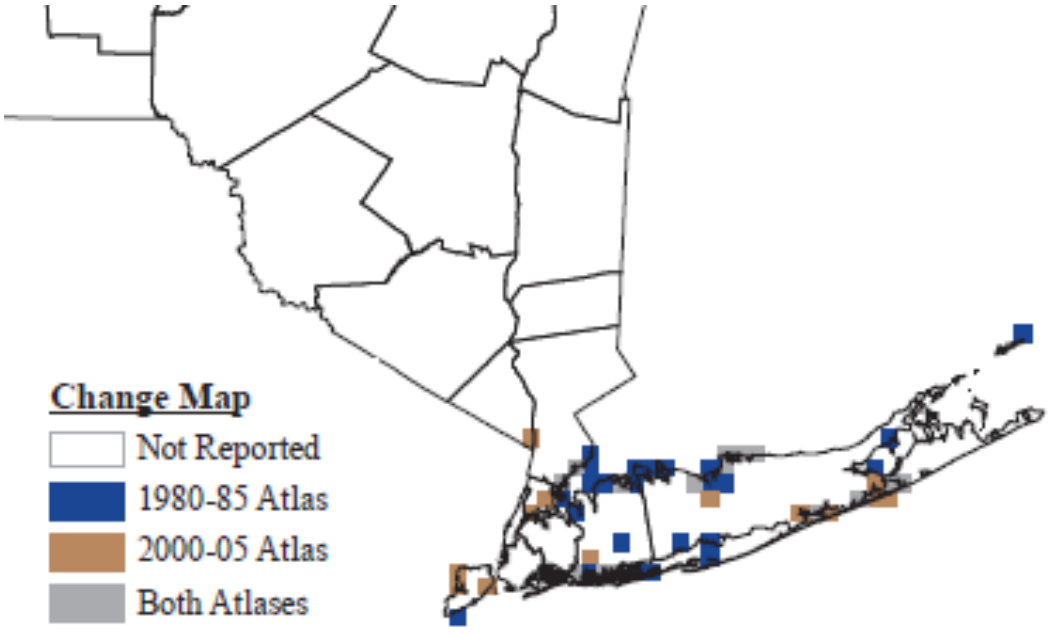

Figure 4. Change in yellow-crowned night heron occurrence in New York State between the first Breeding Bird Atlas and the second Breeding Bird Atlas (McGowan and Corwin 2008).

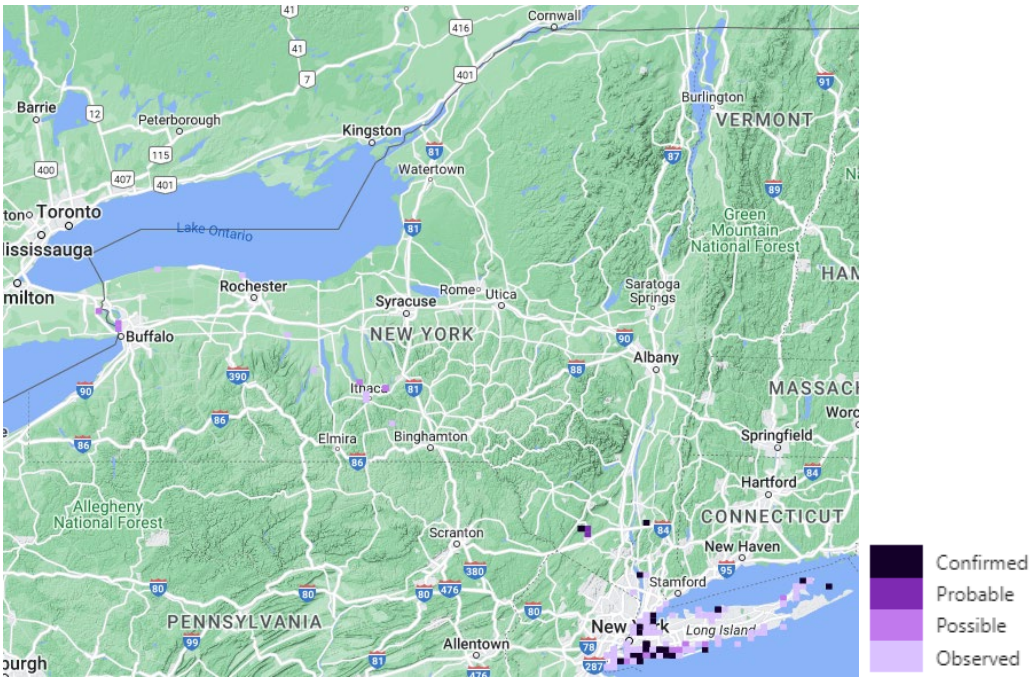

Figure 5. Records of yellow-crowned night heron in New York (NYS BBA III Map, 2023)

Years	# of Records	# of BBA Blocks	% of State
Pre-1980	_____	_____	_____
1980-1985	_____	40	<1
2000-2005	_____	29	<1
2020-2023	_____	36	<1

Table 1. Records of yellow-crowned night-heron in New York.

Details of historic and current occurrence:

The first breeding record in New York State was four pairs observed in Nassau County in 1938 (Bull 1964). In 1953, a pair was found nesting at Jamaica Bay Refuge, two pairs nested at Pelham Park in Bronx County in 1962 and breeding pairs were found nesting on three islands in Richmond County in 1988. One pair successfully raised young at a location in Dutchess County in 2023.

The first Breeding Bird Atlas (1980-85) documented occupancy in 40 blocks statewide, 11 of which had records of confirmed breeding. The second Breeding Bird Atlas (2000-05) documented occupancy in 29 survey blocks, 14 of which had records of Confirmed breeding. This is a 27% increase in the number of blocks with confirmed breeding.

The third BBA (2020-25) is currently underway and utilizes a different number and layout of survey blocks across New York, making direct comparison with the first two Atlases difficult. There were 5,333 blocks in the first and second BBAs, and there are 5,710 blocks in the current BBA. To date, yellow-crowned night heron has been documented in 36 blocks, <1% of survey blocks statewide during the third BBA (NYS BBA III Overview, 2023).

The Long Island Colonial Waterbird Survey documented 41 breeding pairs at 3 sites in 2022. The survey documented 25 pairs in 2004, 42 in 2007, and 31 pairs at 6 sites in 2010. In addition to island locations, the Harbor Herons Survey in 2022 documented 31 nests at one inland location, Redfern Houses at Far Rockaway, which was down from a high of 65 nests at this site in 2010

(Craig 2011, 2012). The population at Redfern was 40 nests in 2013 and although this population is stable, it is vulnerable (S. Elbin, pers. comm.).

New York's Contribution to Species North American Range:

Percent of North American Range in NY	Classification of NY Range	Distance to core population, if not in NY
1-25%	Peripheral	

Column options
Percent of North American Range in NY: 100% (endemic); 76-99%; 51-75%; 26-50%; 1-25%; 0%; Choose an item
Classification of NY Range: Core; Peripheral; Disjunct; (blank) or Choose an item

IV. Primary Habitat or Community Type *(from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):*

1. Freshwater Marsh
2. Estuarine, Freshwater Intertidal, Tidal Wetland, Freshwater Tidal Swamp
3. Estuarine, Freshwater Intertidal, Tidal Wetland, Freshwater Tidal Marsh
4. Lake and River Shore/Beach
5. Marine Cultural, Marine Dredge Spoil Shore
6. Estuarine Intertidal, Salt Scrub

Habitat or Community Type Trend in New York

Habitat Specialist?	Indicator Species?	Habitat/ Community Trend	Time frame of Decline/Increase
No	No	Declining	

Column options
Habitat Specialist and Indicator Species: Yes; No; Unknown; (blank) or Choose an item
Habitat/Community Trend: Declining; Stable; Increasing; Unknown; (blank) or Choose an item

Habitat Discussion:

Yellow-crowned night-herons are colonial nesters, often nesting with black-crowned night-herons and other heron species. They can be found in marshes, swamps, lakes, lagoons, and mangrove swamps, depending on geographical location. In New York, yellow-crowned night-herons nest and feed in low, coastal shrubland, dredge spoil, on salt marsh islands, and in woodlands near swamps, rivers, and harbors in the lower Hudson and Long Island Bays (Peterson 1988, Watts 2011). They are tolerant of human habitation and have nested recently in densely populated residential areas in Staten Island, Far Rockaway, and various locations in Nassau County (McCrimmon 2008).

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	Yes	No	Yes	No	Choose an item.

Column options
First 5 fields: Yes; No; Unknown; (blank) or Choose an item
Anadromous/Catadromous: Anadromous; Catadromous; (blank) or Choose an item

Species Demographics and Life History Discussion *(include information about species life span, reproductive longevity, reproductive capacity, age to maturity, and ability to disperse and colonize):*

From Watts (2011): Yellow-crowned night herons typically breed at 2 years of age when adult plumage is acquired (Wingate 1982), and then annually. One clutch is produced each season. Annual reproductive success seems to depend not only on the extent of predation or other sources of loss but also on timing of the losses. Significant losses early in the breeding season may have no impact on average productivity, but losses late in the season have a greater effect because most females will not renest (Watts 1987). In Virginia in 1992, at least 1 young fledged from 63.5% of nests. This value may underestimate success per female because no birds were marked and because females will occasionally relocate to renest following nest failure. Lifetime reproductive success is unknown.

Fidelity to breeding site is believed to be high. No definitive information on dispersal distance. As with most ardeids, however, post-breeding dispersal is far-reaching. Most extralimital records involve young of the year in late summer or early fall.

Predation, prey availability, and nesting substrate availability may individually or in concert limit populations in local areas.

VI. Threats *(from NY 2015 SWAP or newly described):*

Currently, the greatest threat to yellow-crowned night heron is habitat loss and degradation together with disturbance of nesting colonies (Watts 1987, McCrimmon 2008), many of which are in urban areas. Specific threats include flooding, development, disturbance of nesting areas by human activity such as boating, fishing, dredge spoil deposition, and predation primarily by gulls, fox, crows, and raccoons (Harbor Herons 2010). Small numbers of breeding pairs in few colonies make the species susceptible to stochastic events such as storms.

Asian long-horned beetle (ALB, *Anoplophora glabripennis*) was discovered on Prall's Island in the Arthur Kill in 2001. Efforts to eradicate this invasive insect failed (Harbor Herons 2010). Non-native invasive plants also create an interesting issue for nesting herons. Although some species including bittersweet, porcelain berry, and kudzu provide attractive nesting structure for herons, their presence degrades the overall quality of the nesting habitat.

A rise in sea level resulting from predicted climate change will reduce the marsh habitat needed for breeding and foraging. Shifts in temperature can also have negative effects on the heron's main food source, crustaceans, because the emergence of crustaceans is typically temperature-dependent (Watts 1995).

Avian predators have the potential to severely affect the nesting success of yellow-crowned night herons. In 2010, red-tailed hawks nearly destroyed the colony at Redfern Houses (Craig 2011).

Are there regulatory mechanisms that protect the species or its habitat in New York?

Yes: ✓ **No:** _____ **Unknown:** _____

If yes, describe mechanism and whether adequate to protect species/habitat:

Yellow-crowned night heron is protected under the Migratory Bird Treaty Act of 1918. The Freshwater Wetlands Act provides protection under Article 24 of the NYS Conservation Law. The Tidal Wetlands Act provides protection for all tidal wetlands under Article 25 of the NYS Conservation Law.

Describe knowledge of management/conservation actions that are needed for recovery/conservation, or to eliminate, minimize, or compensate for the identified threats:

In order to maintain good-quality nesting and foraging habitat for yellow-crowned night herons, habitat management and restoration projects, along with a management plan for colonial-nesting herons, is needed (McCrimmon 2006). More research is needed on the general biology, ecology, and distribution of yellow-crowned night herons, especially juveniles. Investigation of how their food source being temperature-dependent affects the heron's breeding and distribution is also needed (Harbor Herons Subcommittee 2010, Watts 2011). Conservation actions following IUCN taxonomy are categorized in the table below.

Complete Conservation Actions table using IUCN conservation actions taxonomy at link below. Use headings 1-6 for Action Category (e.g., Land/Water Protection) and associated subcategories for Action (e.g., Site/Area Protection) - https://www.iucnredlist.org/resources/conservation-actions-classification-scheme

Conservation Actions	
Action Category	**Action**
1. Land/Water Protection	Site/Area Protection
2. Land/Water Protection	Resource/Habitat Protection
3. Land/Water Management	Site/Area Management
4. External Capacity Building	Alliance & Partnership Development

Table 2. Recommended conservation actions for yellow-crowned night-heron

VII. References

BirdLife International. 2018. *Nyctanassa violacea*. *The IUCN Red List of Threatened Species* 2018: e.T22697203A132067766. https://dx.doi.org/10.2305/IUCN.UK.2018-2.RLTS.T22697203A132067766.en. Accessed on 03 January 2024.

Corwin, K. 2012. NYSDEC SWAP 2015 Species Status Assessment for yellow-crowned night heron. Prepared on August 24, 2012. Revised December 2014.

Craig, E. 2011. New York City Audubon's Harbor Herons Project: 2012 interim nesting survey report. New York City Audubon, New York, NY.

Craig, E. 2012. New York City Audubon's Harbor Herons Project: 2012 interim nesting survey report. New York City Audubon, New York, NY.

Curley, S.R., 2022. New York City Audubon's Harbor Herons Project: 2022 Nesting Survey Report. New York City Audubon, New York, NY.

eBird data from 2008-2022. Estimated for 2022. Fink, D., T. Auer, A. Johnston, M. Strimas-Mackey, S. Ligocki, O. Robinson, W. Hochachka, L. Jaromczyk, C. Crowley, K. Dunham, A. Stillman, I. Davies, A. Rodewald, V. Ruiz-Gutierrez, C. Wood. 2023. eBird Status and Trends, Data

Version: 2022; Released: 2023. Cornell Lab of Ornithology, Ithaca, New York. https://doi.org/10.2173/ebirdst.2022

Harbor Herons Subcommittee. S. B. Elbin and N.K. Tsipoura (Editors). 2010. Harbor Herons Conservation Plan- NY/NJ Harbor Region. NY-NJ Harbor Estuary Program.

McCrimmon, D.A. 2006. Species group report for colonial nesting herons. Pages 33-42 of Appendix A1, Species group reports for birds in: New York State comprehensive wildlife conservation strategy. New York Department of Environmental Conservation. Albany, NY.

McCrimmon, D.A. 2008. Yellow-crowned night heron, *Nyctanassa violacea*. Pages 176-77 in The Second Atlas of Breeding Birds in New York State (K.J. McGowan and K. Corwin, eds.). Cornell University Press, Ithaca, NY.

NatureServe. 2023. NatureServe Explorer. Page last published 12/1/2023. https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.106355/Nyctanassa_violoacea. Accessed 1/3/2024.

New York Natural Heritage Program. 2024. Online Conservation Guide for *Nyctanassa violacea*. Available from: https://guides.nynhp.org/yellow-crowned-night-heron/. Accessed January 2, 2024.

New York State Breeding Bird Atlas III Overview (NYS BBA III Overview). 2023. New York Checklist Overview. https://ebird.org/atlasny/state/US-NY. Accessed 1/2/2024.

Peterson, D. M. 1988. Yellow-crowned night heron, *Nyctanassa violacea*. Pages 52-53 in The Atlas of Breeding Birds in New York State (R. F. Andrle and J. R. Carroll, eds.). Cornell University Press, Ithaca, NY.

Watts, B. D. 1987. The effects of mortality and time constraints on productivity in Yellow-crowned Night Herons (*Nycticorax violaceus*). Master's Thesis. College of William and Mary, Williamsburg, VA.

Watts, B. D. 2011. Yellow-crowned Night-Heron (*Nyctanassa violacea*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/161 doi:10.2173/bna.161

Wingate, D. B. 1982. Successful reintroduction of the Yellow-crowned Night Heron as a nesting resident in Bermuda. Colon. Waterbirds 5:104-115.

Originally prepared by	Kimberley Corwin
Date first prepared	August 24, 2012
First revision	December 2014
Latest revision	December 21, 2023 (M. Oberkircher)