Species Status Assessment

Common Name: Cape May warbler **Date Updated:** 12 March 2025

Scientific Name: *Setophaga tigrina* **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 tigrina*, Cape May warbler was recently placed in the genus *Setophaga* (Chesser et al. 2011). This warbler breeds in the boreal forests of Canada and northernmost portions of the United States. In New York, Cape May warblers breed only in the Adirondack Mountains. This population is disjunct from the main breeding range and represents the southern breeding limit for the species. This warbler's presence is known to be closely associated with spruce budworm outbreaks, and it can disappear from an area in the absence of this favored food source (Morse 1978). Breeding Bird Atlas data and Breeding Bird Survey data for New York both indicate declining trends in the past 20 years. Long-term trends show more severe declines.

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:
NYS 2025 SGCN status: Species of Greatest Conservation Need
COSEWIC: Not listed in Canada
IUCN Red List: Least Concern
Northeast Regional SGCN: Not listed

Status Discussion:

Cape May warbler is a rare breeder in New York, occurring only in the Adirondack Mountains. It is an uncommon to common migrant. About 83% of the population breeds in Canada, where the population trend is thought to be declining. Cape May warbler is considered secure in Ontario, Quebec, and Maine, but is ranked as imperiled in New York and Vermont, and vulnerable in New Hampshire.

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status or S Rank	SGCN?
North America	Yes	Increasing	Unknown	BBS 1966-202 trend for US	2	
Northeastern US	Yes	Unknown	Unknown	Unknown		
New York	Yes	Unknown	Unknown	BBS 1966-202 not credible trend		
Connecticut	Yes	Unknown	Unknown	Unknown	SNA	
Massachusetts	Yes	Unknown	Unknown	Unknown	S3N	
New Jersey	Yes	Unknown	Unknown	Unknown	S4N	
Pennsylvania	Yes	Unknown	Unknown	Unknown	S4M	
Vermont	Yes	Unknown	Unknown	BBS 1966-202 not credible trend	S1B	
Ontario	Yes	Increasing	Unknown	BBS 1966-202 trend	S5B	
Quebec	Yes	Increasing	Unknown	BBS 1966-202 trend	S5B	

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 locations in the Adirondack Park since 2007 (Glennon 2010), which was continued through 2024 (Glennon pers comm). Cape May warbler is one of 12 target species monitored through this program.

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

The second Breeding Bird Atlas showed a 22% decline in occupancy from 1980-85 to 2000-05. Breeding Bird Survey data for New York show a non-significant annual decline of 5.3% per year from 1999-2009. BBS data for the Eastern region show a 3.5% annual decline from 1966-2011, which represents a 30% decline over that period. However, an annual increase of 1.8% per year has been

noted for the shorter period of 2001-2011 (Sauer et al. 2012). Cape May warblers have been so infrequently detected during Adirondack Park surveys from 2007-2024 that trends are unable to be estimated. For example. The Wildlife Conservation Society had conducted point counts for 12 boreal species at 59 sites in the Adirondack Park from 2007-2011. Fewer than five detections were obtained for Cape May warbler, which prevented occupancy modeling.

There is a well-documented direct correlation between abundance and occurrence of Cape May warbler and spruce budworm populations (Kendeigh 1947, Morris et al. 1958, Sanders 1970). Between outbreaks, populations of this warbler can be severely reduced or even locally extirpated.

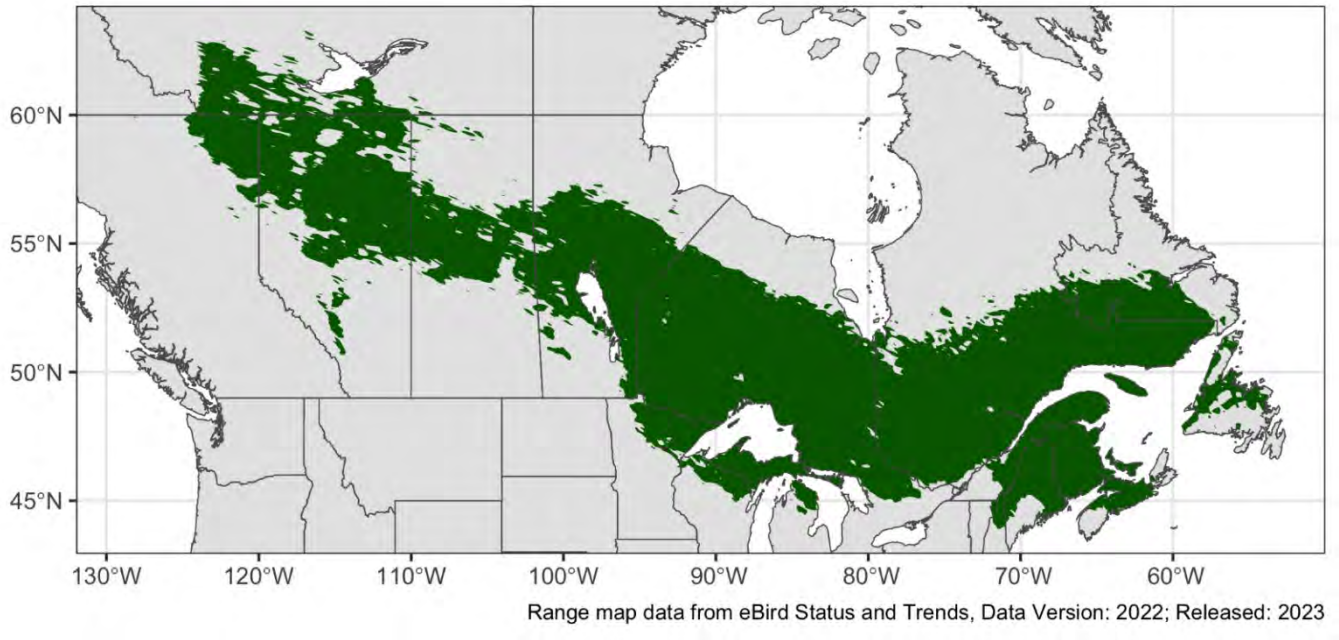

Figure 1: Breeding range for Cape May warbler (eBird).

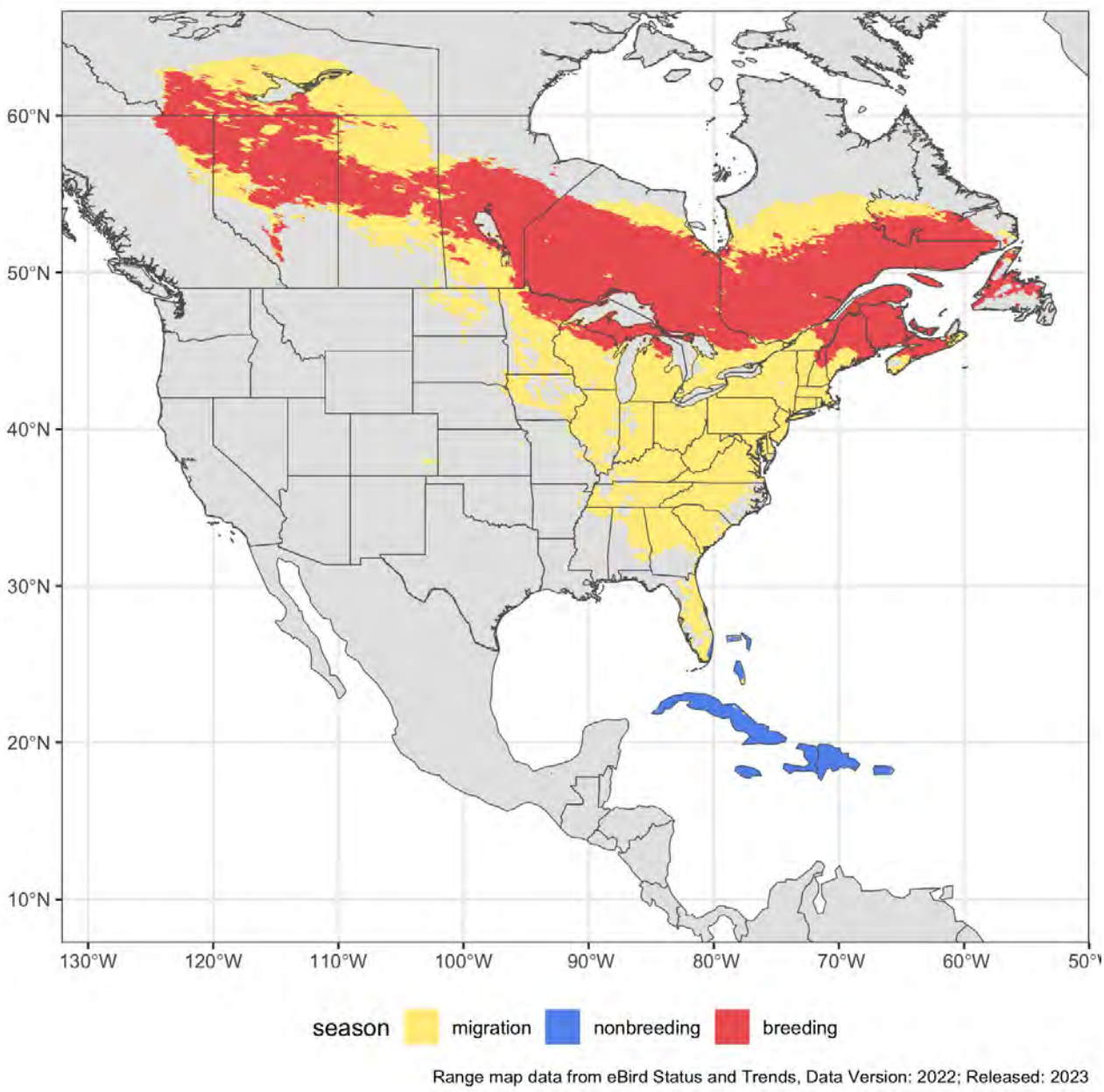

Figure 2: Year-round distribution of Cape May warbler in North America (Birds of North America Online).

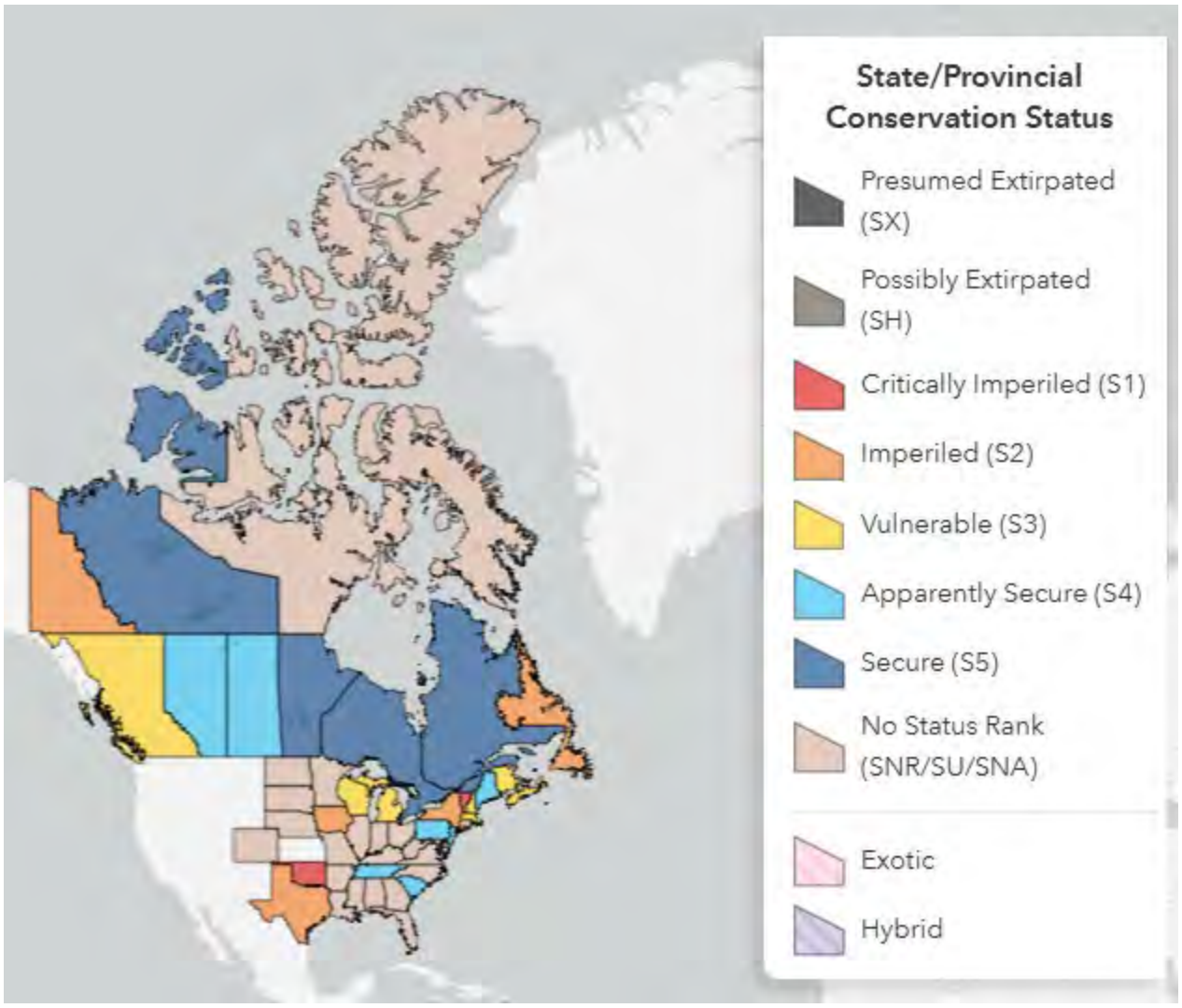

Figure 3: Conservation status of Cape May warbler in North America (NatureServe 2025).

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

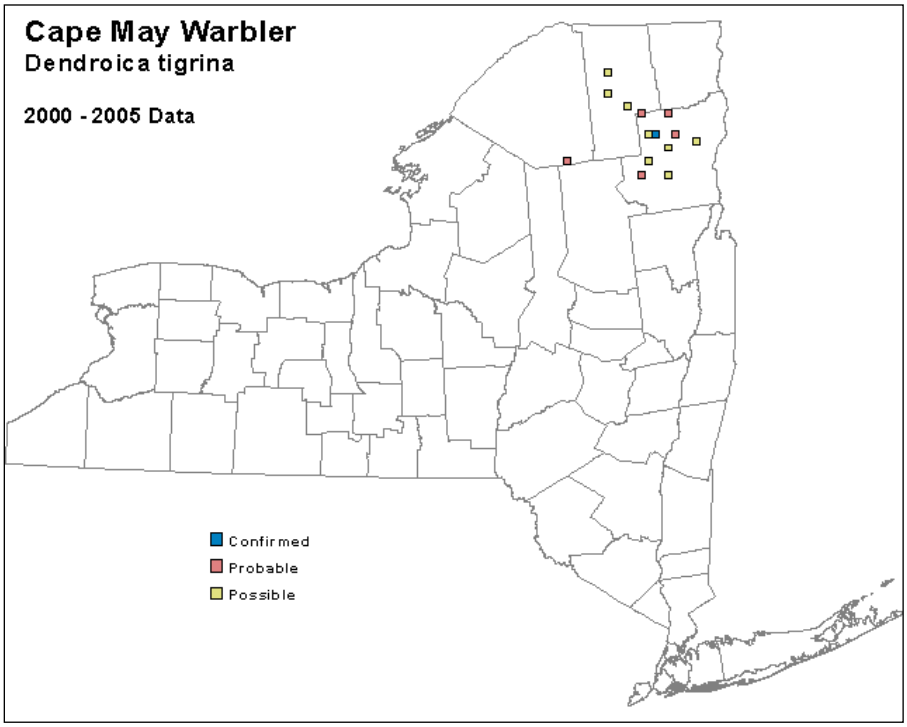

Figure 4. Cape May warbler occurrence in New York State during the second Breeding Bird Atlas (McGowan and Corwin 2008).

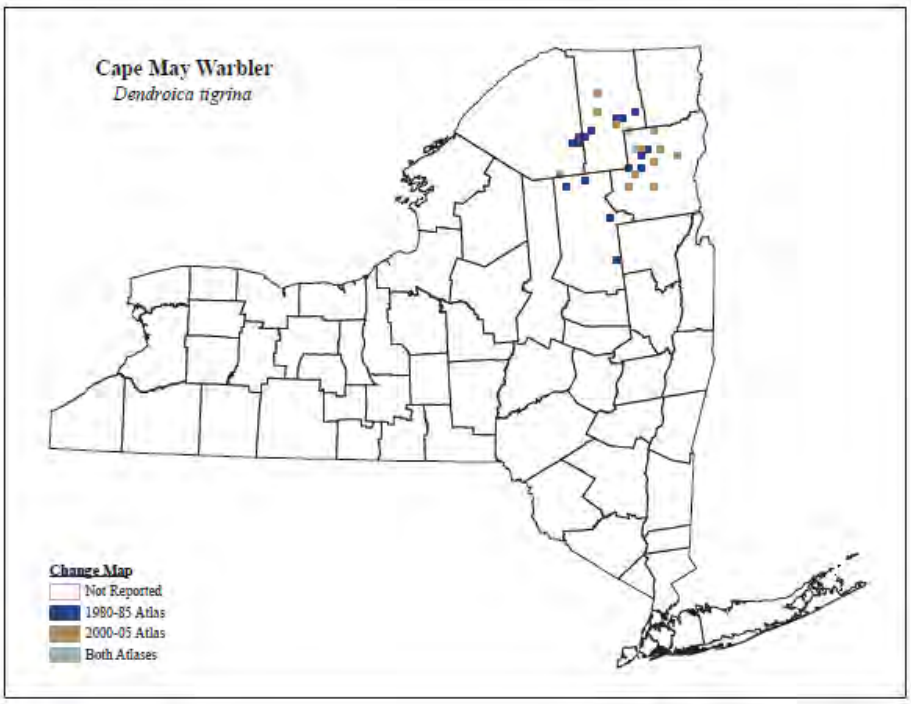

Figure 5. Change in Cape May warbler occurrence in New York State between the first Breeding Bird Atlas and the second Breeding Bird Atlas (McGowan and Corwin 2008).

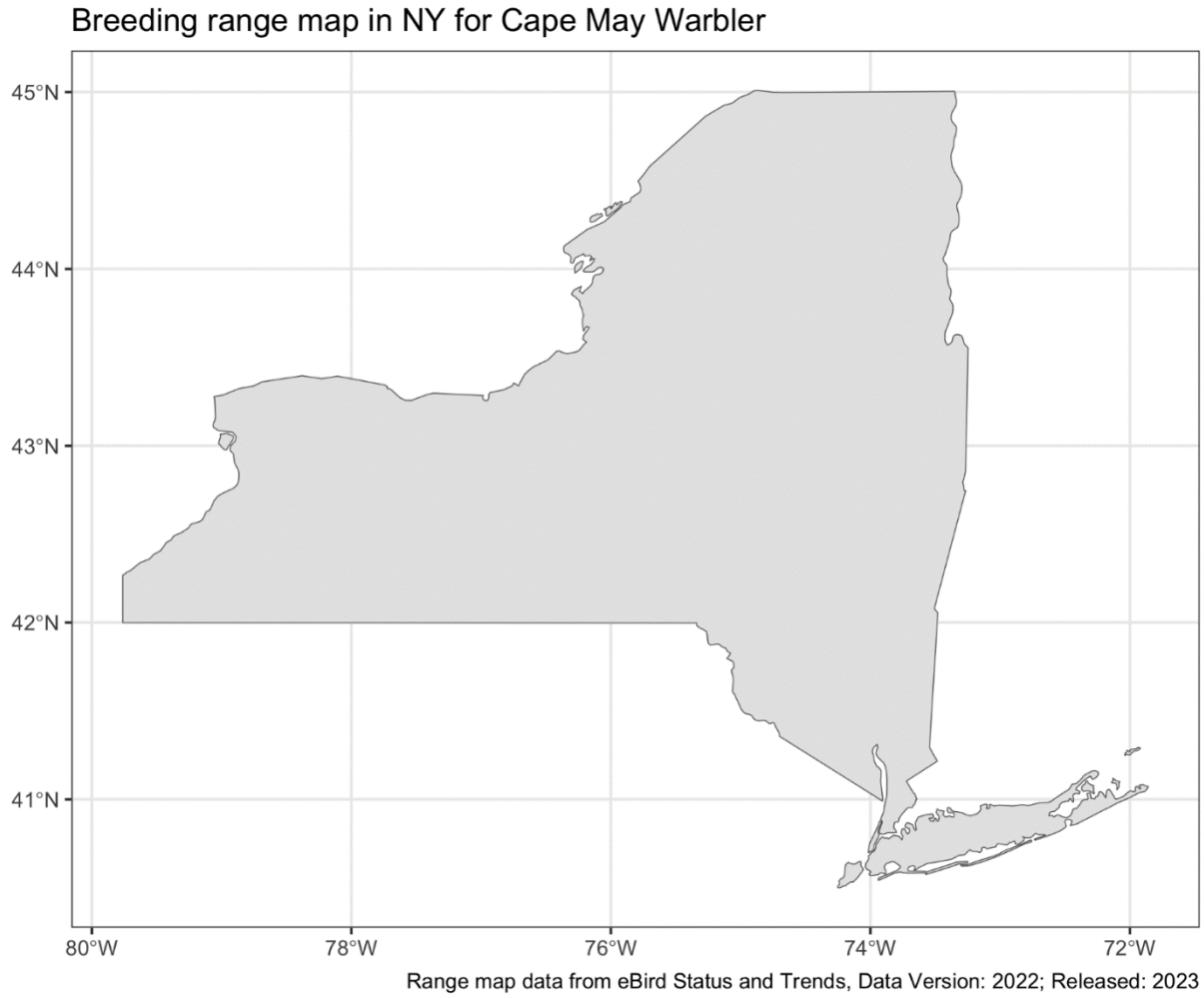

Figure 6: NYS breeding range for Cape May warbler based on eBird data.

Details of historic and current occurrence:

The first Breeding Bird Atlas (1980-85) documented Cape May warbler in 18 survey blocks statewide, all in the Adirondack Mountains (Andrle and Carroll 1988).

The second Breeding Bird Atlas (2000-05) documented Cape May warbler in 14 survey blocks statewide, again all in the Adirondack Mountains, and still less than 1% of the entire state (McGowan and Corwin 2088). Only two locations were the same during both Atlases, though: Bloomingdale Bog on the Essex/Franklin County line; and Chubb River, Essex County.

In New York, Cape May warblers occur only in the Adirondack Mountains. This population is disjunct from the main breeding population to the north and represents the southern limit for the species. Peterson (2008) noted that although records came from 18 blocks during the first Atlas and 14 blocks during the second Atlas, only two locations had Cape May warblers during both atlases: Bloomingdale Bog (Essex/Franklin **C**ounty line) and Chubb River (Essex County). Long-term boreal bird monitoring data from the Wildlife Conservation Society have located Cape May warbler at only 8 locations in the Adirondacks between 2003 – 2012; detections were in 2004, 2005, 2007, 2009 and 2011 (M. Glennon, 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%	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. Spruce-Fir Forest and Flats

b. Mountain Spruce-Fir Forests

c. Conifer Forest Swamp

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:

Cape May warbler breeds in boreal spruce and fir forests, typically in stands more than 50 years old, and more than 15 meters high; trees generally have well-developed crowns. Occupied areas also include some trees that rise above canopy, and are thus suitable for singing posts (see NatureServe 2011).

Breeding: (1) in black spruce (*Picea mariana*) forest at 1900' (2) mixed spruce-tamarack forest.

Trees may be scattered or dense; also found near forest edge, especially if birches (*Betula* spp.) or hemlocks (*Tsuga* spp.) are present and more open land with small trees (DeGraaf and Rappole 1995). The species proliferates in areas heavily occupied by spruce-budworms, and may not occur after the outbreak has subsided (Brewster 1938, Erskine 1977, Morse 1989). In Ontario, the species is found in habitats dominated by White (*P. glauca*) or Black Spruce of at least 30 m height with Balsam Fir in the canopy, and an understory of Speckled Alder (*Alnus incana*), Labrador Tea (*Ledum groenlandicum*), and briers (Kendeigh 1947). In Quebec, the Cap May warbler occurs in White Spruce plantations at least 50 years old with a sparse shrub understory; average distance between trees 2.4 m +/- 1.3 SD and canopy height > 10 m (DesGranges 1980). In Alberta, it uses dense, mature White Spruce, stand of coniferous and mixed forest (Semenchuck 1992). In Michigan, it is found in wet coniferous bogs dominated by black spruce (Baker 1978, L.C. Binford in Brewer et al. 1991).

In New York, the Cape May warbler occupies stands of medium-aged spruce (25-75 years old), with some Balsam Fir (J. M. C. Peterson in Andrle and Carroll 1988). In Maine, the species uses various coniferous forest stands, including second-growth Balsam Fir and Red Spruce (*P. rubens*) with an open understory (Morse 1978).

Migration: The Cape May warbler uses a variety of forest woodlands (conifers and especially spruces are preferred), scrub and thicket (Godfrey 1986, AOU 1983, Dunn and Garrett 1997). In spring, it is

found in association with exotic flowering trees such as silk-oats and bottlebrush as well as flower and catkins of hardwoods such as oaks, hickories, and honey locusts. Fall migrants commonly in berry producing shrubs and small vineyards within woodlands. In Indiana, it is found in such habitats on campuses, golf courses, tree nurseries, pine plantations and residential areas, in brier patches, overgrown fence rows and weedy roadsides (Mumford and Keller 1984, Baltz and Latta 1988).

Non-breeding: The Cape May warbler overwinters in mature tropical forests, open woodland and exotic shade and flowering trees (e.g., palm, eucalyptus, casuarinas) over a wide range of elevation. It is commonly found in gardens or shade coffee plantations, where flowering plants are abundant. It can also be found in towns using ornamental gardens, parklands, and in montane forest, arid mesquite, pines, mangroves and other flowering trees, and occasionally dense forest (AOU 1983, AOU 1988, Ehrlich et al. 1988, Dunn and Garrett 1997, Pashley 1989). It also uses nectar sources (flowering plants) are an important winter habitat component. Variety of habitats in the West Indies; shade coffee plantations, coastal thickets and almost anywhere plants are flowering, but uncommon in native dry forest (Raffaele et al. 1998). In the Bahamas, common in gardens and plantings, second-growth, and Red Mangrove (*Rhizophora mangle*); rarely in pine forest (Baltz 1993). In Jamaica, primarily in gardens and parklands to 1,500 m (Lack and Lack 1972). In Puerto Rico and Cuba, it is common in dry coastal vegetation, more commonly in *Bucida buceras, Bursera simaruba,* and *Coccoloba diversifolia* (Post 1978, Wallace et al. 1996), and secondary forest (Stacier 1992, Baltz and Latta 1998). In the Dominican Republic, it occurs in pine and broadleaf, dry scrub, pasture and shade-coffee plantations (Arendt 1992, Wunderle and Waide 1993). It is common in Cuba, where it is found in forests and gardens (Garrido and Kirkconnell 2000). In Mexico, Cape May warblers are found in semiarid scrub and woodland and gardens at flowering trees (Howell and Webb 1995). In Costa Rica, it uses open groves, garden trees, open areas, associating with flowering *Eucalyptus* spp. and *Erythrina* spp. trees (Stiles and Skutch 1989).

V. Species Demographic, and Life History:

Breeder in NY?	Non-breeder in NY?	Migratory Only?	Summer Resident?	Winter Resident?	Anadromous/ Catadromous?
Yes	Unknown	Unknown	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):*

There is no data on age at first breeding, but males and females likely breed in the first summer after their hatch year. Cape May warblers likely produce only one brood per season. There is no information on re-nesting. The longevity record is 4 years and 3 months for a female banded in Ohio and recovered in Quebec (Klimkiewicz et al. 1983). There is no data on survivorship and no information available for fidelity to breeding site.

VI. Threats

Table 2. Threats to the Cape May warbler.

Threat Level 1	Threat Level 2	Threat Level 3	Spatial Extent	Severity	Immediacy	Trend	Certainty
4. Transportation & Service Corridors	4.1 Roads & Railroads	-	Restricted	Choose an item.	Choose an item.	Choose an item.	Choose an item.
5. Biological Resource Use	5.3 Logging & Wood Harvesting	-	Small	Choose an item.	Choose an item.	Choose an item.	Choose an item.
11. Climate Change	11.1 Habitat Shifting & Alteration	-	Large	Choose an item.	Choose an item.	Choose an item.	Choose an item.
9. Pollution	9.5 Air-Borne Pollutants	9.5.1 Acid rain	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
7. Natural System Modifications	12.6 Unknown	8.1.1 Terrestrial animals	Restricted	Unknown	Choose an item.	Choose an item.	Choose an item.

Climate change could reduce the amount of spruce-fir forest available in New York. In an assessment of vulnerability to predicted climate change conducted by the New York Natural Heritage Program, Cape May warbler was identified as a second-priority species whose sensitivity should be assessed in the future (Schlesinger et al. 2011).

Osborne et al. (2011) showed that the effects of mercury can be exacerbated in boreal species that use high-acid habitats such as peatlands.

Aerial spraying for spruce budworm is known to have killed large numbers of birds on breeding grounds in the past (Pearce et al. 1976). However, modifications to spruce budworm spraying programs appear to have reduced acute mortality in breeding birds, including this warbler (Pearce and Garrity 1981).

Neotropical migrants face additional threats on the 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.

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:

Cape May 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:

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.

The CWCS includes recommendations for the following actions for boreal forest birds, which includes Cape May Warbler (NYSDEC 2005).

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.

Table 3. Recommended conservation actions for Cape May warbler

Action Category	Action	Description
C.6 Design and Plan Conservation	Land acquisition/easements	Habitat protection/management
B.3 Outreach	Landowner involvement	Provide voluntary BMPs

VII. References

Baker, D. E. 1978. Observations of Cape May Warblers in Michigan, USA. Jack-pine Warbler 56: 94-96.

Baltz, M.E., and S.C. Latta. 1998. Cape May Warbler (DENDROICA TIGRINA). In A. Poole and F. Gill, editors, The Birds of North America, No. 332. The Birds of North America, Inc., Philadelphia, PA. 20 pp.

Brewster, W. 1938. The birds of Lake Umbagog region of Maine, part 4. Compiled by Ludlow Griscom. Bull. Mus. Comp. Zool. 66:525-620.

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.

DeGraaf, R.M., and J.H. Rappole. 1995. Neotropical migratory birds: natural history, distribution, and population change. Comstock Publishing Associates, Ithaca, NY.

Dunn, J., and K. Garrett. 1997. Peterson's field guide to warblers. Houghton Mifflin, New York, NY. 656pp.

eBird. 2024. eBird: An online database of bird distribution and abundance [web application]. eBird, Cornell Lab of Ornithology, Ithaca, New York. Available: http://www.ebird.org. [Accessed: 11/25/2024].

Ehrlich, P. R., D. S. Dobkin, and D. Wheye. 1988. The birder's handbook: a field guide to the natural history of North American birds. Simon and Shuster, Inc., New York. xxx + 785 pp.

Erskine, A. J. 1977. Birds in boreal Canada. Canadian Wildlife Service Report Series no. 41.

Garrido, O. H., and A. Kirkconnell. 2000. Field guide to the birds of Cuba. Cornell University Press, Ithaca, New York. 253 pp.

Glennon, M. 2010. Distribution and abundance of boreal birds in the Adirondack Park. Final Report to the NYS Department of Environmental Conservation. Wildlife Conserv. Soc., Saranac Lake, NY.

Godfrey, W. E. 1986. The birds of Canada. Revised edition. National Museum of Natural Sciences, Ottawa. 596 pp. + plates.

Kendeigh, S. C. 1947. Bird population studies in the coniferous forest biome during a spruce budworm outbreak. Ontario Dept. Lands Forest, Biol. Bull. 1:1-100.

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.

Lack, D., and P. Lack. 1972. Wintering warblers in Jamaica. Living Bird. 11:129-153.

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

Morris, R. F., W. F. Cheshire, C. A. Miller, and D. G. Mott. 1958. The numerical response of avian and mammalian predators during a gradation of the spruce budworm. Ecology 39:487-494.

Morse, D.H. 1978. Populations of Bay-breasted and Cape May Warblers during an outbreak of the spruce budworm. Wilson Bull. 90:404-413.

NatureServe. 2011. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. http://www.natureserve.org/explorer. (Accessed: 12/13/2011).

Pashley, D. N. 1989. Personal communication.

Pearce, P. A., D. B. Peakall, and A. J. Erskine. 1976. Impact on forest birds of the 1975 spruce budworm spray operation in New Brunswick. Can. Wildl. Serv., Progress Note 62.

Pearce, P. A. and N. R. Garrity. 1981. Impact of aminocarb (Matacil) spraying on forest songbirds in northern New Brunswick. Can. Wildl. Serv., Progress Notes 121.

Peterson, J.M.C. 2008. Cape May Warbler, *Dendroica tigrinum*. Pages 486-87 in The second Atlas of breeding birds in NYS (K.J. McGowan and K. Corwin, eds.). Cornell Univ. Press, Ithaca, NY.

Raffaele, H. A. 1983. A guide to the birds of Puerto Rico and the Virgin Islands. Fondo Educativo Interamericano, San Juan, Puerto Rico. 255 pp.

Sanders, C. J. 1970. Populations of breeding birds in the spruce-fir forests of northwestern Ontario. Can. Field Nat. 84:131-135.

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.

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.

Stacier, C.A. 1992. Social behavior of the Northern Parula, Cape May Warbler, and Prairie Warbler wintering in second-growth forest in southwestern Puerto Rico. Pp. 308- IN J. M. Hagen III and D. W. Johnston, eds., Ecology and conservation of neotropical migrant landbirds. Smithsonian Institution Press, Washington, D.C.

Stiles, F. G. and A. F. Skutch. 1989. A guide to the birds of Costa Rica. Cornell University Press, Ithaca, New York, USA. 511 pp.