

Species Status Assessment

Class: Birds
Family: Parulidae
Scientific Name: *Setophaga tigrina*
Common Name: Cape May warbler

Species synopsis:

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 declines as well, though more severely.

I. Status

a. Current Legal Protected Status

- i. Federal Not Listed Candidate? No
ii. New York SGCN

b. Natural Heritage Program Rank

- i. Global G5
ii. New York S2 Tracked by NYNHP? Yes

Other Rank:
IUCN – Least Concern

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.

III. Abundance and Distribution Trends

a. North America

i. Abundance

declining increasing stable unknown

ii. Distribution:

declining increasing stable unknown

Time frame considered: 2001-2011

b. Regional

i. Abundance

declining increasing stable unknown

ii. Distribution:

declining increasing stable unknown

Regional Unit Considered: Northeast

Time frame considered: 2001-2011

c. Adjacent States and Provinces

CONNECTICUT Not Present No data

MASSACHUSETTS Not Present No data

NEW JERSEY Not Present X No data _____

ONTARIO Not Present _____ No data _____

i. Abundance

____ declining ____ increasing X stable ____ unknown

ii. Distribution:

____ declining ____ increasing X stable ____ unknown

Time frame considered: 1981-85 to 2001-05

Listing Status: Not Listed

PENNSYLVANIA Not Present X No data _____

QUEBEC Not Present _____ No data _____

i. Abundance

 X declining ____ increasing ____ stable ____ unknown

ii. Distribution:

 X declining ____ increasing ____ stable ____ unknown

Time frame considered: 1984-89 to 2011

Listing Status: Not Listed

VERMONT Not Present _____ No data _____

i. Abundance

 X declining ____ increasing ____ stable ____ unknown

ii. Distribution:

 X declining ____ increasing ____ stable ____ unknown

Time frame considered: 1976-81 to 2003-07

Listing Status: Not Listed SGCN? No

d. New York

No data _____

i. Abundance

declining increasing stable unknown

ii. Distribution:

declining increasing stable unknown

Time frame considered: 1980-85 to 2000-05

Monitoring in New York.

The Wildlife Conservation Society has conducted surveys for boreal breeding birds at a number of locations in the Adirondack Park since 2003 (Glennon 2010). Cape May warbler is one of 12 target species.

Trends Discussion:

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).

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.

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 Cape May warbler, which prevented occupancy modeling.



Figure 1: Distribution of Cape May warbler in North America (Birds of North America Online).

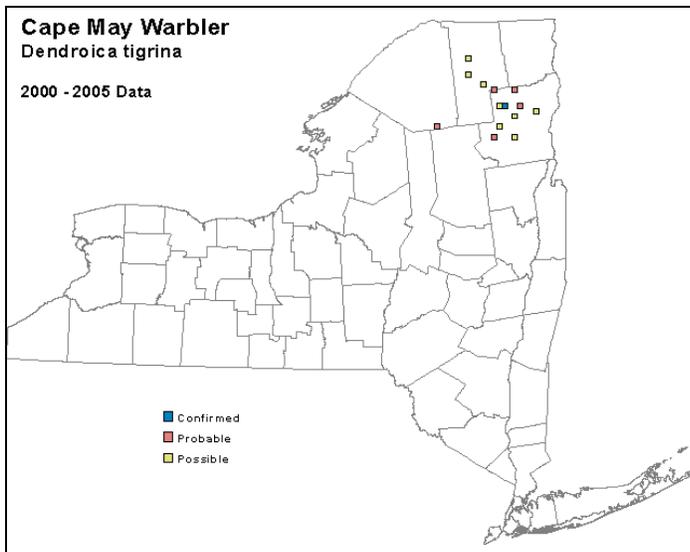


Figure 2. Cape May warbler occurrence in New York State during the second Breeding Bird Atlas (McGowan and Corwin 2008).

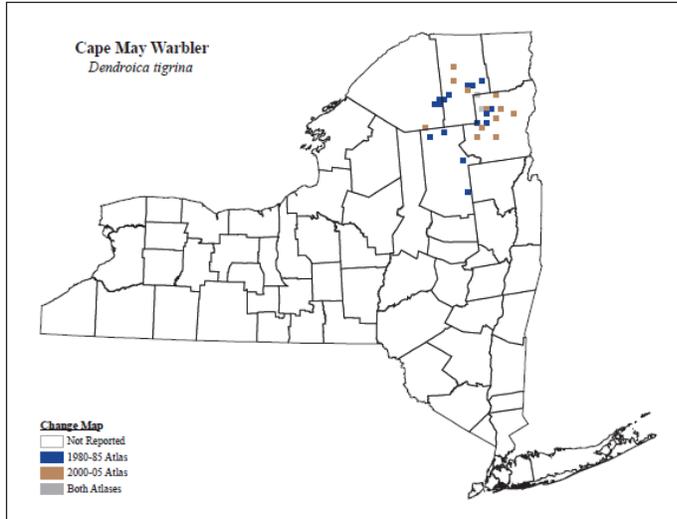


Figure 3. Change in Cape May warbler occurrence in New York State between the first Breeding Bird Atlas and the second Breeding Bird Atlas (McGowan and Corwin 2008).

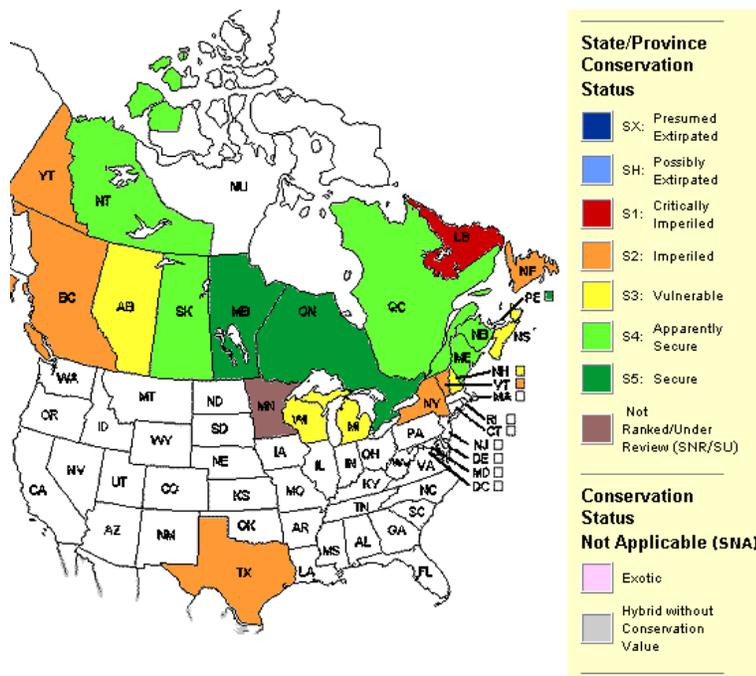


Figure 4: Conservation status of Cape May warbler in North America (NatureServe 2011).

IV. New York Rarity, if known:

Historic	<u># of Animals</u>	<u># of Locations</u>	<u>% of State</u>
prior to 1970	_____	_____	_____
prior to 1980	_____	_____	_____
prior to 1990	_____	<u>18 blocks</u>	<u><1%</u>

Details of historic 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).

Current	<u># of Animals</u>	<u># of Locations</u>	<u>% of State</u>
	_____	<u>14 blocks</u>	<u><1%</u>

Details of current occurrence:

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.

New York's Contribution to Species North American Range:

Distribution (percent of NY where species occurs)

- X 0-5%
- ___ 6-10%
- ___ 11-25%
- ___ 26-50%
- ___ >50%

Abundance (within NY distribution)

- ___ abundant
- ___ common
- ___ fairly common
- ___ uncommon
- X rare

NY's Contribution to North American range

- 0-5%
- 6-10%
- 11-25%
- 26-50%
- >50%

Classification of New York Range

- Core
- Peripheral
- Disjunct

Distance to core population: _____

IV. Primary Habitat or Community Type:

1. Spruce-Fir Forest and Flats
2. Mountain Spruce-Fir Forests
3. Conifer Forest Swamp

Habitat or Community Type Trend in New York:

Declining Stable Increasing Unknown

Time frame of decline/increase: _____

Habitat Specialist? Yes No

Indicator Species? Yes No

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).

V. New York Species Demographics and Life History

- Breeder in New York**
 - Summer Resident**
 - Winter Resident**
 - Anadromous**
- Non-breeder in New York**
 - Summer Resident**
 - Winter Resident**
 - Catadromous**
- Migratory only**
- Unknown**

Species Demographics and Life History Discussion:

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:

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?

- No Unknown
 Yes

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.

Conservation Actions	
Action Category	Action
Land/Water Management	Site/Area Management
External Capacity Building	Alliance & Partnership Development

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.

VII. References

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.

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.

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. Fitcher. 1983. Longevity records of North American birds: Remizidae through Parulinae. *J. Field Ornithol.* 54:287-294.

McGowan, KJ 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. Available <http://www.natureserve.org/explorer>. (Accessed: December 13, 2011).

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 New York State* (K.J. McGowan and K. Corwin, eds.). Cornell University Press, Ithaca, NY.

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.

Date last revised: July 2014