

Species Status Assessment

Class: Birds
Family: Parulidae
Scientific Name: *Protonotaria citrea*
Common Name: Prothonotary warbler

Species synopsis:

The prothonotary warbler is a cavity-nester that breeds in wooded habitats near water, particularly in flooded bottomland hardwood forests, cypress swamps, and along large lakes and rivers. Breeding occurs in the eastern half of the United States, primarily in the south but with patchy areas of local breeding extending northward to Ontario. Breeding Bird Survey trends across the range show slight long-term declines (0.9% per year, 1966-2010) and slight short-term increases (0.5% per year, 2000-2010).

Only in the past 80 years has prothonotary warbler bred in New York; the first confirmed breeding was in 1931 at Oak Orchard Swamp in Genesee County. This southern species remains uncommon and local in New York where it is well north of the core distribution. Breeding locations are sparsely distributed across the southern parts of the state and on Long Island. The second Breeding Bird Atlas (2000-05) documented a 50% decline in occupancy since 1980-85; only four locations in the state had confirmed breeding during the 2000-05 survey.

I. Status

a. Current and 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:

Partners in Flight Priority I
Partners in Flight Watch List

Status Discussion:

Prothonotary warbler is a rare and local breeder in New York, and a regular migrant. Several areas including Oak Orchard Swamp in western New York, the Montezuma wetlands, and the Oneida Lake area, have had a long history of regular breeding. Prothonotary warbler is ranked as Critically Imperiled in Ontario and Massachusetts, and as Imperiled in New York and Pennsylvania. It is ranked as Apparently Secure in New Jersey.

II. Abundance and Distribution Trends

a. North America

i. Abundance

___ declining X increasing ___ stable ___ unknown

ii. Distribution:

___ declining X increasing ___ stable ___ unknown

Time frame considered: 2000-2010

b. Regional

i. Abundance

___ declining X increasing ___ stable ___ unknown

ii. Distribution:

___ declining X increasing ___ stable ___ unknown

Regional Unit Considered: Eastern BBS

Time Frame Considered: 2000-2010

c. Adjacent States and Provinces

CONNECTICUT **Not Present** _____ **No data** _____

i. Abundance

____ declining ____ increasing ____ stable X unknown

ii. Distribution:

____ declining ____ increasing ____ stable X unknown

Time frame considered: _____

Listing Status: _____ Not Listed SGCN? No

MASSACHUSETTS **Not Present** _____ **No data** X

i. Abundance

____ declining ____ increasing ____ stable X unknown

ii. Distribution:

____ declining ____ increasing ____ stable X unknown

Time frame considered: "Marginal and recently arrived," 2 atlas blocks

Listing Status: _____ Not Listed SGCN? No

NEW JERSEY **Not Present** _____ **No data** _____

i. Abundance

____ declining X increasing ____ stable ____ unknown

ii. Distribution:

____ declining X increasing ____ stable ____ unknown

Time frame considered: 2000-2010

Listing Status: _____ Not Listed SGCN? Yes

QUEBEC Not Present X No data _____

VERMONT Not Present X No data _____

d. NEW YORK No data _____

i. Abundance

___ declining ___ increasing ___ stable X unknown

ii. Distribution:

X declining ___ increasing ___ stable ___ unknown

Time frame considered: 1980-85 to 2000-05

Monitoring in New York.

None.

Trends Discussion:

The BBS trend for the Eastern region shows a non-significant short term increase of 0.46% per year (2000-2010) and a significant long-term decrease of 0.8% per year (1966-2010). Survey-wide, the BBS data show a significant declining trend of 0.92% per year for 1966-2010 and a non-significant increase of 0.42% per year for 2000-2010. BBS data are too few to analyze trends in New York. The second Breeding Bird Atlas documented a -50% decline in occupancy from 1980-85 to 2000-05.

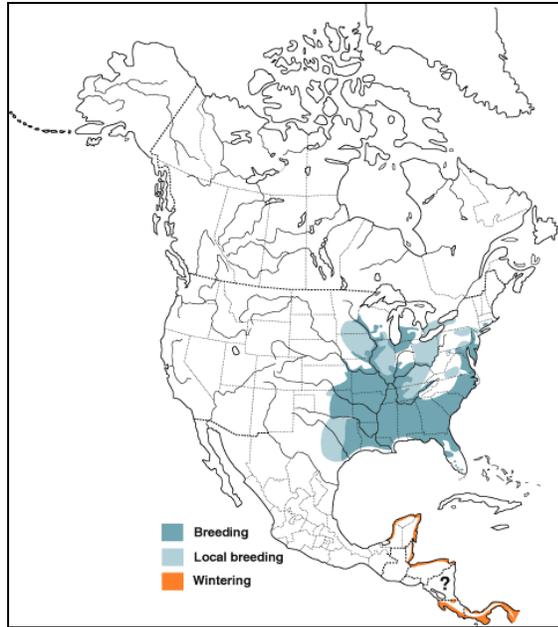


Figure 1. Range of the prothonotary warbler in North America (Birds of North America Online 2013).

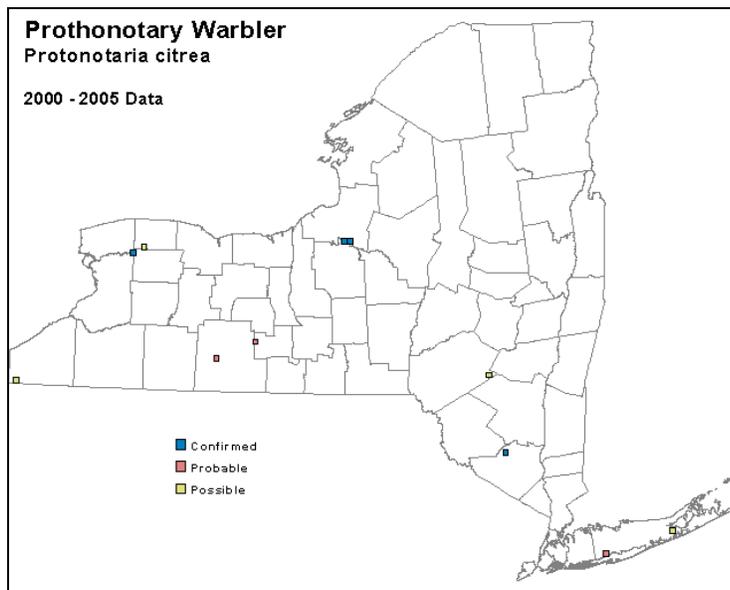


Figure 2. Prothonotary warbler occurrence in New York State during the second Breeding Bird Atlas (McGowan and Corwin 2008).

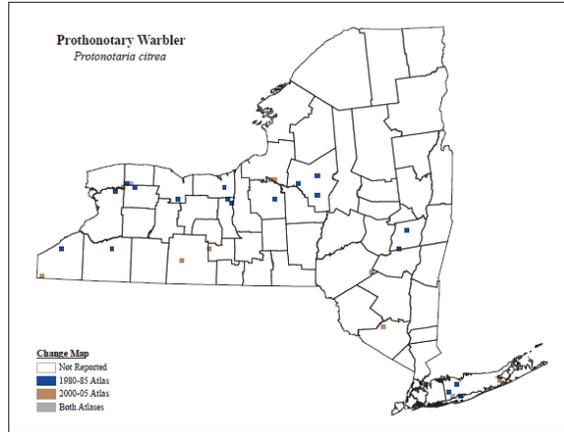


Figure 3. Change in prothonotary warbler occurrence in New York State between the first Breeding Bird Atlas and the second Breeding Bird Atlas (McGowan and Corwin 2008).

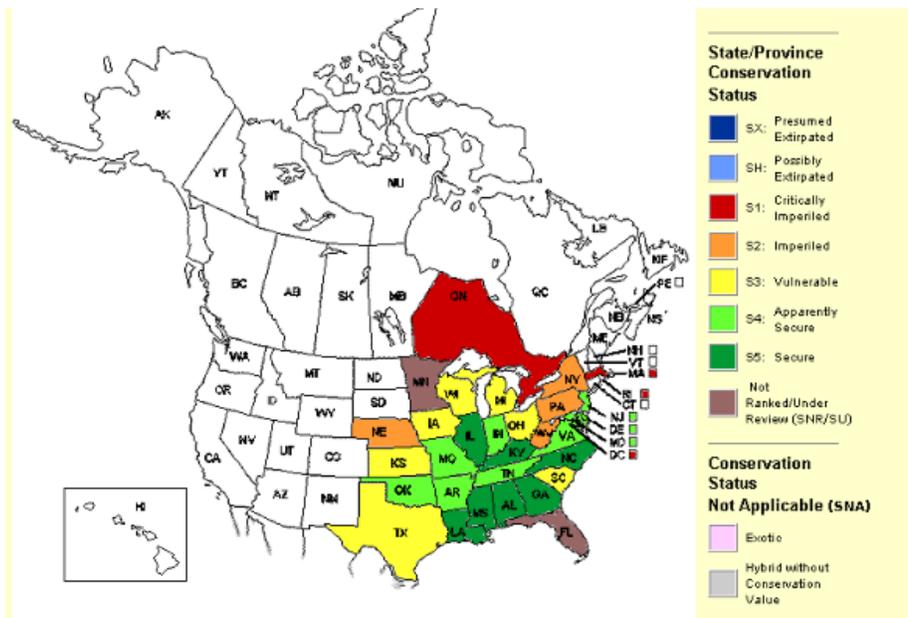


Figure 4. Conservation status of the prothonotary warbler in North America (NatureServe 2012).

III. 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><1</u>

Details of historic occurrence:

Breeding was first confirmed in New York in 1931 at Oak Orchard Swamp in Genesee County. Bull (1974) mentioned six locations in the state but listed only Oak Orchard WMA, Montezuma NWR, and Oneida Lake as permanent colonies. The first Breeding Bird Atlas (1980-85) documented occupancy in 22 survey blocks statewide. Confirmed breeding was documented at Oak Orchard and Montezuma, as well as at Delta Lake in Oneida County. On Long Island, breeding was Confirmed in two blocks where it previously nested, and in one additional survey block (McGowan 2008).

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

Details of current occurrence:

The second Breeding Bird Atlas (2000-05) documented occupancy in 11 survey blocks statewide; 4 of those blocks had Confirmed breeding records. This represented a 50% decline in occupancy across the state. Breeding was Confirmed on the shore of Oneida Lake, where prothonotary warbler has bred since the 1940s, at Oak Orchard WMA, and at a small pond in Orange County, but not at Montezuma NWR (McGowan 2008). Breeding was last recorded at Montezuma NWR in 1998 (Ostrander 1998).

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. Hardwood Swamp
2. Floodplain Forests
3. Riparian
4. Coastal Red Maple/Black Gum Swamp
5. Atlantic White Cedar Swamp
6. Northern White Cedar Swamp

Species Demographics and Life History Discussion:

The prothonotary warbler breeds each year, beginning as early as the first year after fledging. Females are more likely than males to breed as yearlings. The longevity record is from a banded female of ≥ 8 years (Blum et al. 1999). A previous estimate of minimum longevity (4 years, 11 months) was established based on male nestling banded by Walkinshaw in 1940 (Klimkiewicz et al. 1983); but Walkinshaw (1953) recorded a minimum longevity of 5.5 years for presumably the same male. Many eggs and nestlings are lost to nest inundation from floods (Flaspohler 1996), or to loss of decayed nest trees (Petit 1999).

Breeding site fidelity is high. Kowalski (1985) found that 4 (57%) of 7 marked males returned to a breeding area in Indiana. Two of those males bred on previous territory and 2 settled 0.8 and 1.2 km, respectively, from previous territory. In Illinois, 13 (93%) of 14 returning males used same territory (Kleen 1973). In Tennessee, site fidelity to breeding territory was greater in high-quality flooded habitat, though males with darker (green) plumage were faithful to low-quality habitat, possibly because of inability to compete with brighter males in flooded areas (Petit 1991).

VI. Threats:

Probably the most serious issue for prothonotary warblers is human activity that degrades or destroys habitat. Bottomland hardwood forests, the prime breeding habitat, have been logged or converted to pasture or cropland throughout the southeastern United States, and only 10% of original bottomland forest in the lower 48 states remains (reviewed in Dickson et al. 1995). The primary negative impact of silviculture is the removal of decayed trees that could provide nest sites, and the alteration of hydrological regime, causing drying of seasonally flooded areas (Pashley and Barrow 1993, Dickson et al. 1995). Channeling of streams to control flooding also lowers habitat quality (Petit 1999).

Destruction of mangrove habitats on wintering grounds is potentially an even greater threat than loss of bottomland forest in breeding areas. Terborgh (1989) reported losses throughout Latin America during the previous 20 years. Coastal development, highway construction, agriculture, and aquaculture have resulted in the loss of 50% to 70% of mangroves in Columbia and Ecuador (Terborgh 1989, Botero 1990). Increased rates of mangrove destruction in Central and South America appears to coincide with observed declines of populations from core of breeding range during the 1980s and 1990s, a period during which the rate of loss of bottomland forest generally had stabilized in the region (Dickson et al. 1995).

The house wren is severe nest-site competitor in northern portions of range, causing approximately 33% of mortality of eggs and young in Michigan (Walkinshaw 1941). Nest-site competitors, including wasps, flying squirrels, house wren, tufted titmouse, Carolina wren, Eastern bluebird, and *Peromyscus* mice, are more numerous away from water (Blem and Blem 1991, Brush 1994, Petit and Petit 1996). Tree swallows are usually not a significant nest-site competitor.

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

___ No ___ Unknown
 X Yes

Prothonotary warbler 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. Much of the breeding habitat in New York should receive regulatory protection under this law.

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

Prothonotary warblers will readily use artificial nest sites and breeding populations can be greatly increased with the addition of artificial nest sites to suitable habitat. In Tennessee, 45–77% of females with one successful attempt in nest boxes made second brood attempt, and approximately 50% of those (20–30% of total population) raised both broods successfully (Petit 1989, Petit and Petit 1996). Some nest boxes have been placed in the Oak Orchard WMA in western New York in years past, but additional efforts may be warranted in areas of longer term known occupation.

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. Conservation actions following IUCN taxonomy are categorized in the table below.

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

The Comprehensive Wildlife Conservation Strategy (NYSDEC 2005) includes recommendations for the following actions for deciduous/mixed forest birds, which includes prothonotary 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

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