

II. Abundance and Distribution Trends

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
North America	Yes	Declining	Unknown	Between 1966-2022 BBS data show a significant decline of 0.7% annually. Between 2000-2022, there is a non-significant decline of 0.23% annually		
Northeastern US	Yes	Unknown	Unknown			Choose an item.
New York	Yes	Unknown	Declining	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 BBA		Yes
Connecticut	Yes	Unknown	Unknown	Rare in the state		No
Massachusetts	Yes	Unknown	Unknown	Rare breeder – only 2 confirmed blocks in second BBA (2007 – 2011)		No
New Jersey	Yes	Increasing	Unknown	BBS trend 1966-2022: marginally non		Yes

Region	Present?	Abundance	Distribution	Time Frame	Listing status	SGCN?
				significant annual increase of 1.91%		
Pennsylvania	Yes	Unknown	Unknown	Short term 10-year trend listed in PA 2015-2025 SWAP as unknown		Yes
Vermont	No	-	-			-
Ontario	Yes	Unknown	Stable	From first BBA (1980-1988) to second atlas (2000-2005) very limited, but stable distribution	E	-
Quebec	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*):

Recent targeted point count surveys (starting in 2015 in some locations) have been done by DEC staff at some of the known breeding sites across the state.

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

The BBS trend for the Eastern region shows a non-significant short-term increase of 0.04% per year (2000-2022) and a non-significant long-term decrease of 0.26% per year (1966-2022). Survey-wide, the BBS data show a significant declining trend of 0.7% per year for 1966-2022 and a non-significant decrease of 0.23% per year for 2000-2022. 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.

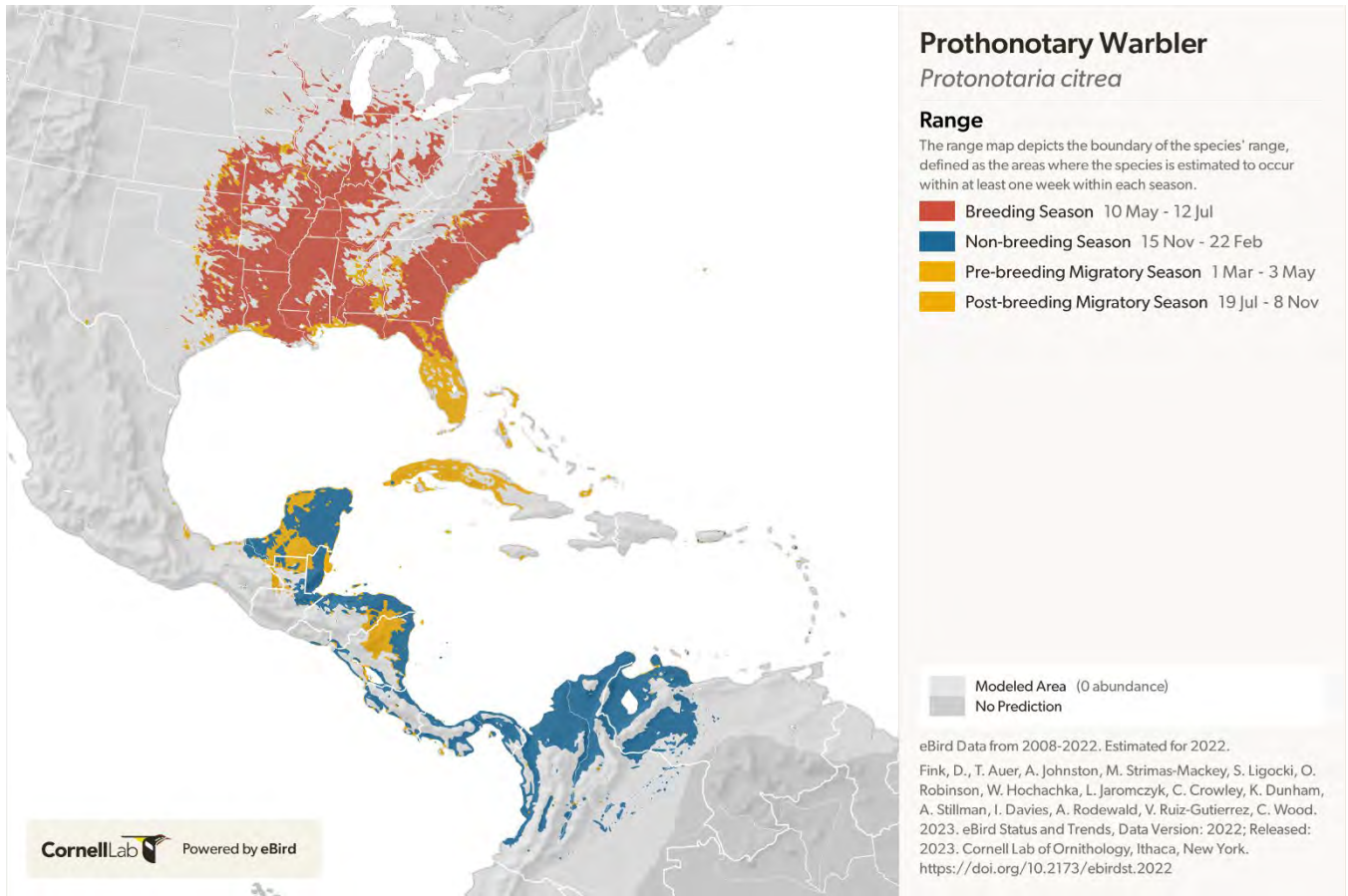


Figure 1. Prothonotary warbler distribution (eBird 2022)

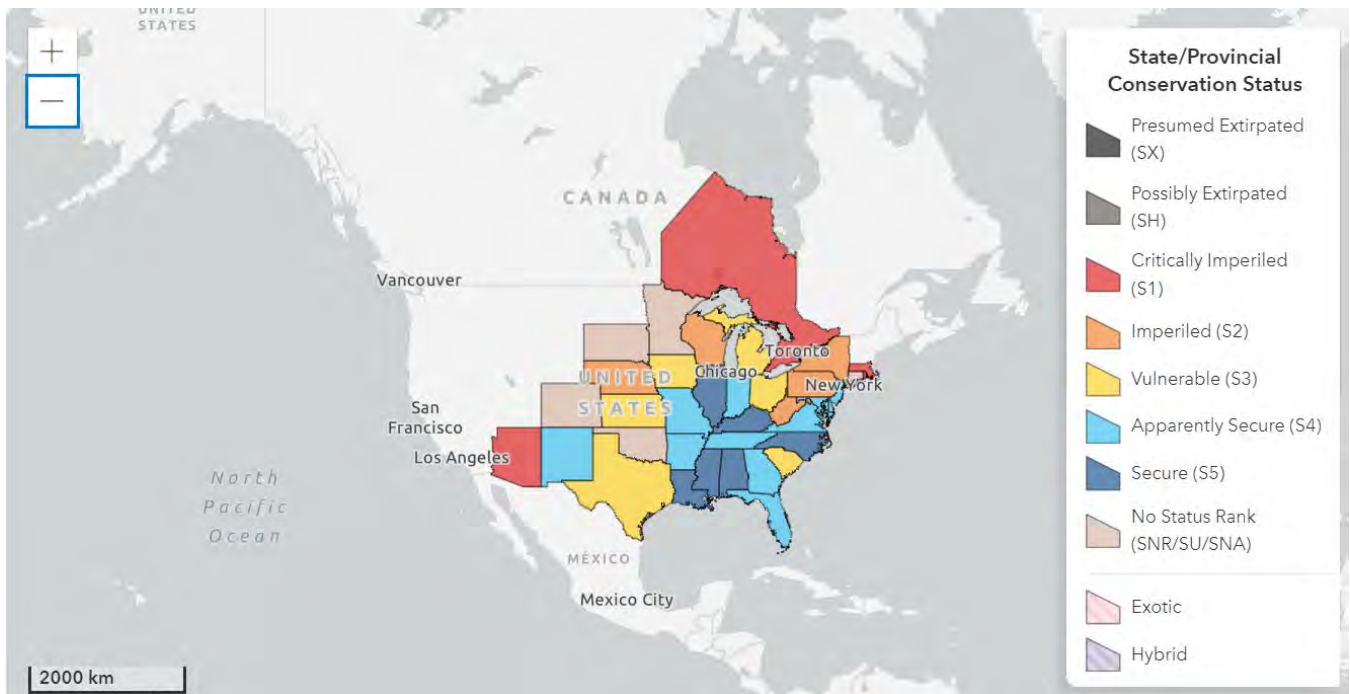


Figure 2. Conservation status of prothonotary warbler in North America (NatureServe 2024)

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

Prothonotary warbler occurs at the northern edge of its distribution in New York, occurring locally in the southeastern and central parts of the state. Prothonotary warbler exhibits moderate level of forest area sensitivity on breeding grounds, avoiding forest tracts of <100 ha (Robbins et al. 1989) and riparian woodlands <30 m wide (Kahl et al. 1985).

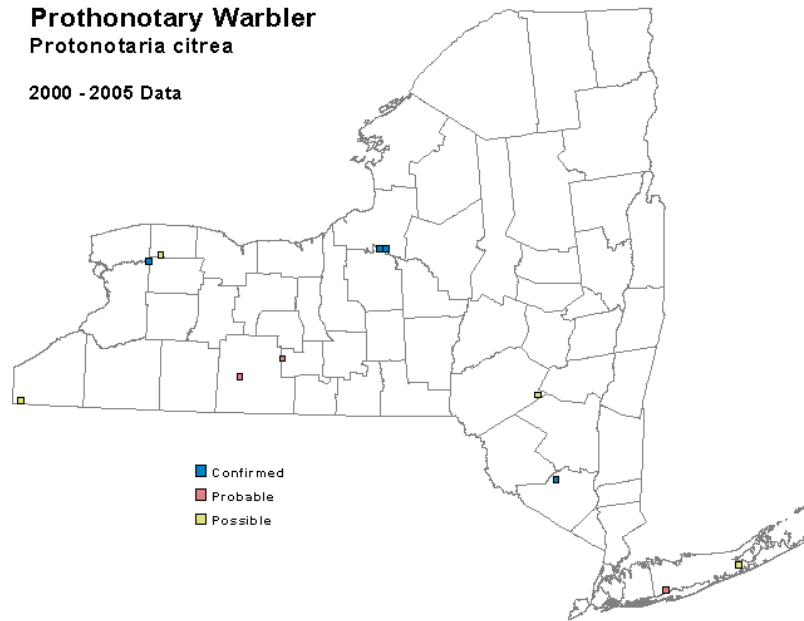


Figure 3. Prothonotary warbler occurrence in New York State during the second Breeding Bird Atlas (McGowan and Corwin 2008).

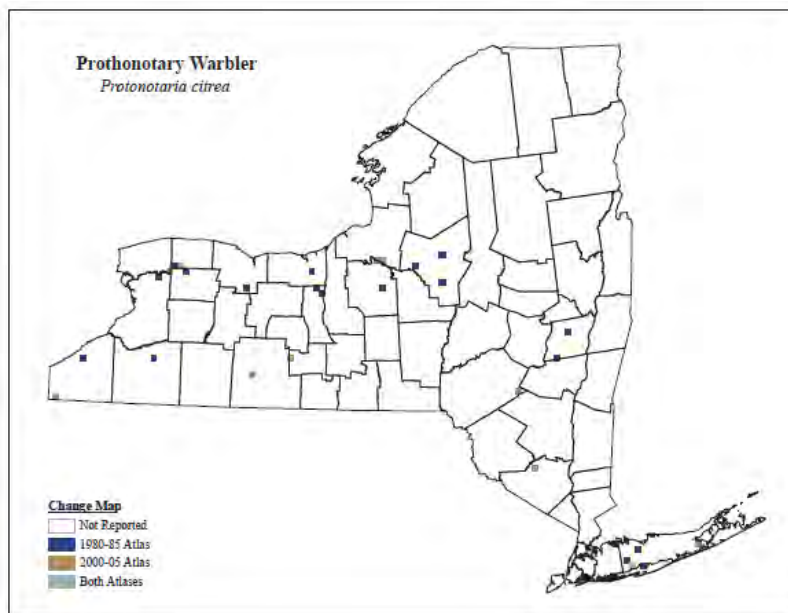


Figure 4. Change in prothonotary warbler occurrence in New York State between the first Breeding Bird Atlas and the second Breeding Bird Atlas (McGowan and Corwin 2008).

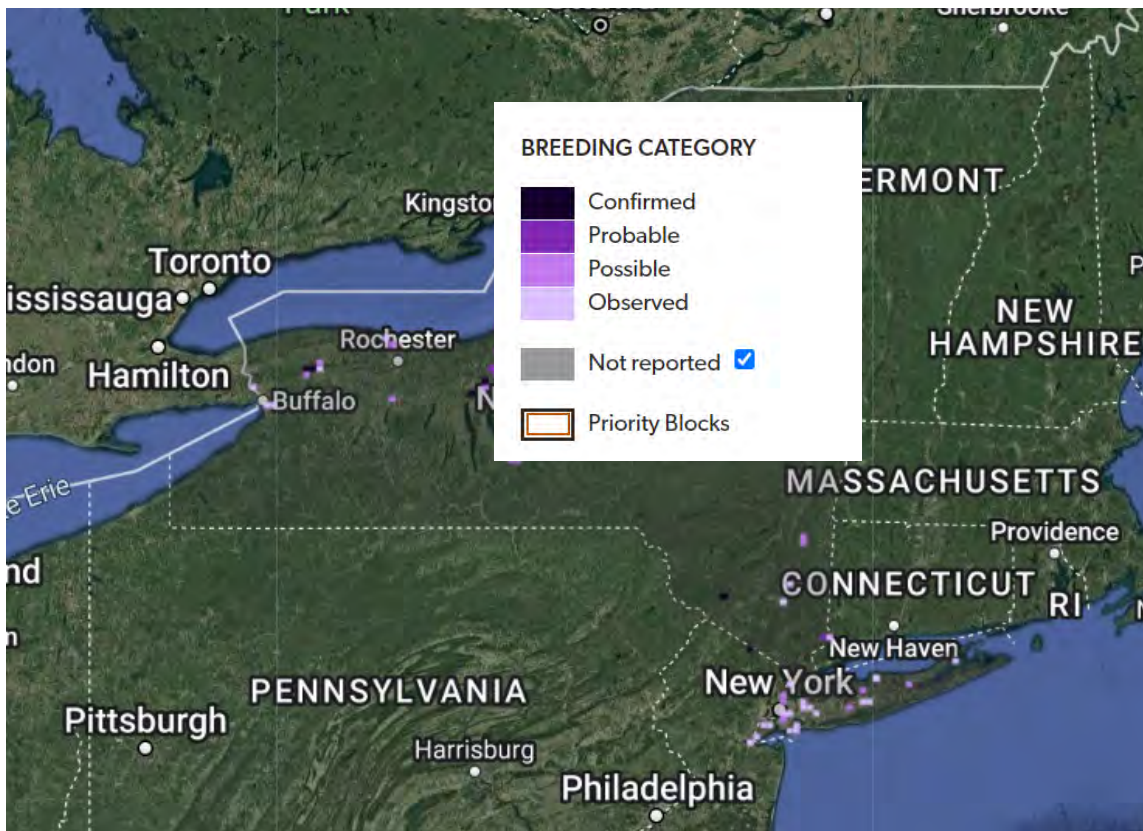
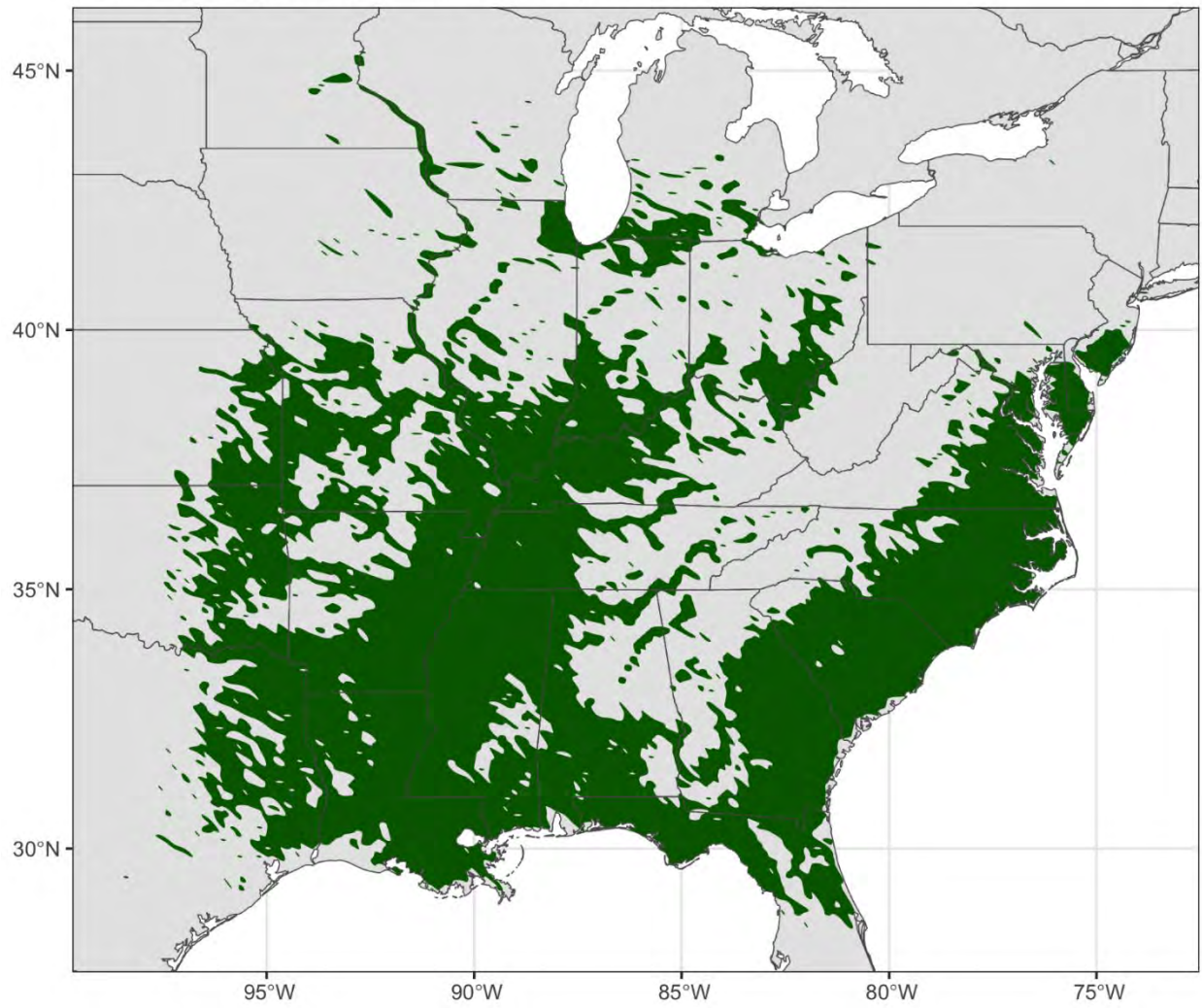


Figure 5. Records of prothonotary warbler in New York (NYS BBA III Map, 2024)

Breeding range map for Prothonotary Warbler



Range map data from eBird Status and Trends, Data Version: 2022; Released: 2023

Figure 6. Breeding Range of prothonotary warbler (eBird)

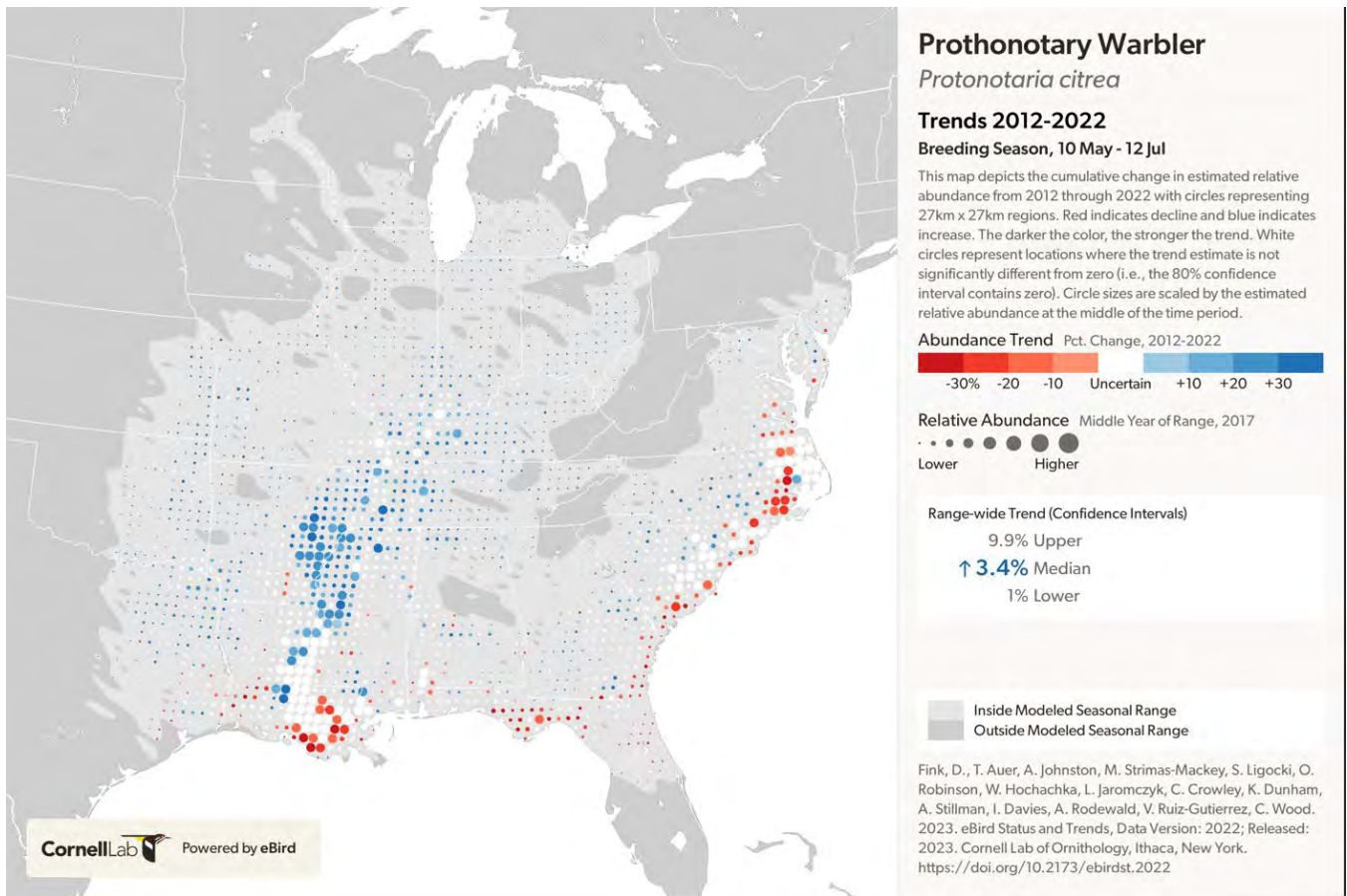
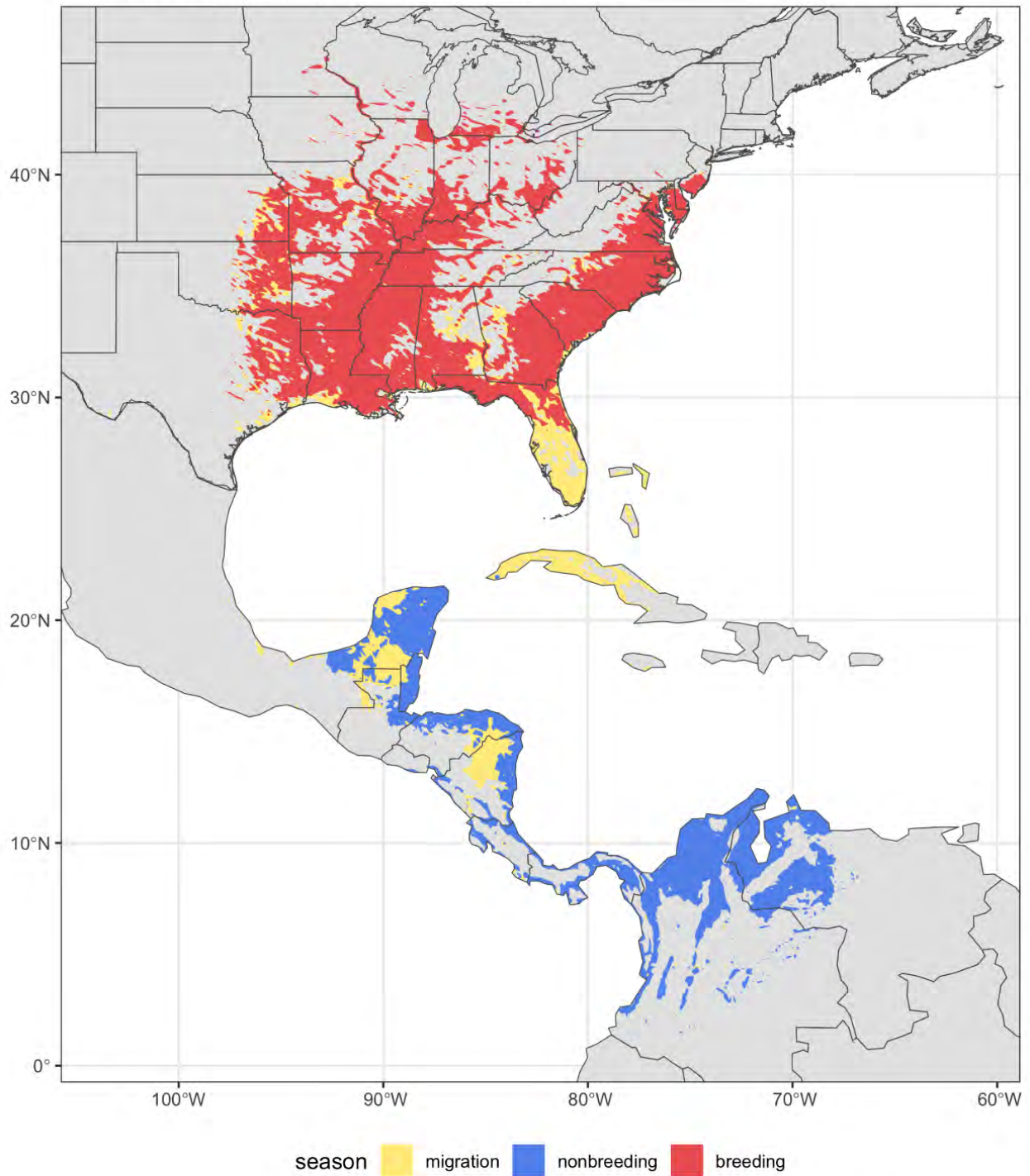


Figure 7. Breeding season trends 2012 – 2022 (eBird)

Year-round range map for Prothonotary Warbler



Range map data from eBird Status and Trends, Data Version: 2022; Released: 2023

Figure 8. Year-Round Map for prothonotary warbler. Data Source eBird

Details of historic and current 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).

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). Until recent NYSDEC targeted surveys, breeding was last recorded in the Montezuma NWR area in 1998 (Ostrander 1998). The species has more recently been documented consistently at Northern Montezuma WMA.

The point count surveys mentioned above done by NYSDEC show that prothonotary warbler continues to nest at some long-term breeding sites such as Tonawanda, Oak Orchard, and Northern Montezuma WMAs in region 8, but with limited numbers detected, especially at Oak Orchard and Tonawanda WMAs. Nest boxes have been placed at these 3 WMAs, and use by this species has been documented in boxes at Tonawanda and Northern Montezuma WMAs. On the other hand, surveys done in Region 1 in 2017 at 6 historic sites did not document any individuals, and surveys done in 2017, 2018, and 2019 at Three Mile Bay WMA in region 7, a site that was occupied by the species during the last BBA, also did not detect any prothonotary warbler. These recent surveys show a potential decrease in occupancy since the last BBA in 2000-2005.

The first Breeding Bird Atlas (BBA) (1980-85) documented occupancy in 22 blocks, 0.4% of the survey blocks statewide (Andrle and Carroll 1988). The second BBA (2000-05) documented occupancy in 11 blocks, 0.2% of the survey blocks statewide (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, of which 1,815 are considered priority blocks. To date, prothonotary warbler has been documented in 35 priority blocks, 0.8% of all priority blocks statewide during the third BBA (NY BBA III Overview, 2024).

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

Prothonotary warblers require mature forested habitat that is situated in close association with water (preferably flooded), and that contains large dead or live trees that provide nesting cavities. Preferred nest cavities are typically 2-8 feet above the water. Commonly used habitat includes flooded bottomlands, cypress swamps, white cedar swamps and backwater areas along large lakes and rivers. Other important habitat correlates include low elevation, flat terrain, shaded forest habitats with sparse understory, and in some parts of the range, presence of bald cypress (Kahl et al. 1985, Robbins et al. 1989). Prothonotary warblers have been shown to readily accept and perhaps even prefer nest boxes placed in appropriate habitat (primarily wooded swamps and floodplain/riparian forests that are seasonally or permanently flooded). In addition, certain habitat conditions may be more conducive to successful nesting (certain water depths, presence of snags of appropriate size, reduction in habitat fragmentation etc.).

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	(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 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 (Blem et al. 1999). A previous estimate of minimum longevity (4 years, 11 months) was

established based on a 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 the 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 (from NY 2015 SWAP or newly described):

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 a 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.

The prothonotary warbler has very specific habitat needs, and this makes it vulnerable to habitat alterations such as water level fluctuation and changes to forest structure. Emerald Ash Borer (EAB) is a significant threat to the remaining populations in NY. In the short term, the species may benefit from EAB due to an increase in dead snags and potential nesting cavities, but in forests where ash is the dominant species, the loss of tree canopy cover could make habitat unsuitable over time. Other invasive species such as phragmites are also a threat.

Threat Level 1	Threat Level 2	Threat Level 3	Spatial Extent	Severity	Immediacy	Trend	Certainty
1. Residential and Commercial	1.1 Housing & Urban Areas	-	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
3. Energy Production & Mining	3.3 Renewable Energy	3.3.2 Wind farms	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
5. Biological Resource Use	5.3 Logging & Wood Harvesting	(removal of snags)	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
7. Natural System Modifications	7.2 Dams & Water Management/Use	(channelization)	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
8. Invasive & Other Problematic Species	8.2 Problematic Native Plants & Animals	-	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
9. Pollution	9.3 Agricultural & Forestry Effluents	9.3.3 Herbicides & pesticides (insecticides)	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
9. Pollution	9.5 Air-Borne Pollutants	(mercury, acid)	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
11. Climate Change	11.4 Changes in Precipitation & Hydrological Regimes	11.4.2 Droughts	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.
11. Climate Change	11.5 Storms & Severe Weather	-	Choose an item.	Choose an item.	Choose an item.	Choose an item.	Choose an item.

Table 1. Threats to prothonotary warbler

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:

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 (this will be 7.4 acres as of 2028). 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 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 a 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 and are maintained at the Oak Orchard and Tonawanda WMAs in western New York and at Northern Montezuma WMA, but additional efforts may be warranted in areas of long term known occupation.

It is also important to assess habitat characteristics (especially as forest structure changes over time), including water depth and period of inundation, tree species and surrounding vegetation, forest patch size, canopy cover, availability of tree cavities, availability of nesting materials (including moss), post fledging habitat, presence of nest competitors such as house wren, and presence of invasive species (phragmites, emerald ash borer etc.). This will help us to determine conditions conducive to nest site selection and potentially nest success in order to effectively place nest structures and manage habitat (water level management, tree planting etc.).

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.

Action Category	Action	Description
A.1 Direct Habitat Management	A.1.0.0.0 Direct habitat management	Site/Area management
A.1 Direct Habitat Management	A.1.1.0.0 Manage plants, animals, fungi, or bacteria	Invasive/Problematic species control
B.3 Outreach	B.3.1.4.0 Public outreach and information	Awareness & Communications
C.6 Design and Plan Conservation	C.6.5.0.0 Conservation planning	Site/Area Protection
C.6 Design and Plan Conservation	C.6.5.0.0 Conservation planning	Resource/Habitat Protection

Table 2. Recommended conservation actions for prothonotary warbler

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 (but not for prothonotary warbler in the NE).

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