

Species Status Assessment

Class: Birds
Family: Parulidae
Scientific Name: *Geothlypis formosus*
Common Name: Kentucky Warbler

Species synopsis:

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.

The Breeding Bird Survey data for the Northeast show a declining trend of 0.7% per year since 1966, but an increasing trend of 0.4% per year since 1999. The second Breeding Bird Atlas (2000-05) documented a 72% decline in occupancy since 1980-85.

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:

Audubon WatchList – Yellow

Partners in Flight Priority 1 Species

Species of Continental Concern and Species of Regional Concern in BCRs 28 and 30.

Species of Continental Stewardship and Regional Stewardship in BCR 28

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 as Vulnerable in Connecticut and 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: 1999-2009

b. Regional

i. Abundance

___ declining X increasing ___ stable ___ unknown

ii. Distribution:

___ declining X increasing ___ stable ___ unknown

Regional Unit Considered: Eastern BBS

Time Frame Considered: 1999-2009

c. Adjacent States and Provinces

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

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** _____

i. Abundance

_____ **declining** X **increasing** _____ **stable** _____ **unknown**

ii. Distribution:

_____ **declining** X **increasing** _____ **stable** _____ **unknown**

Time frame considered: 1974-79 to 2007-11

Listing Status: _____ Not Listed _____ SGCN? No

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

i. Abundance

 X **declining** _____ **increasing** _____ **stable** _____ **unknown**

ii. Distribution:

 X **declining** _____ **increasing** _____ **stable** _____ **unknown**

Time frame considered: 1999-2009

Listing Status: _____ Special Concern _____ SGCN? Yes

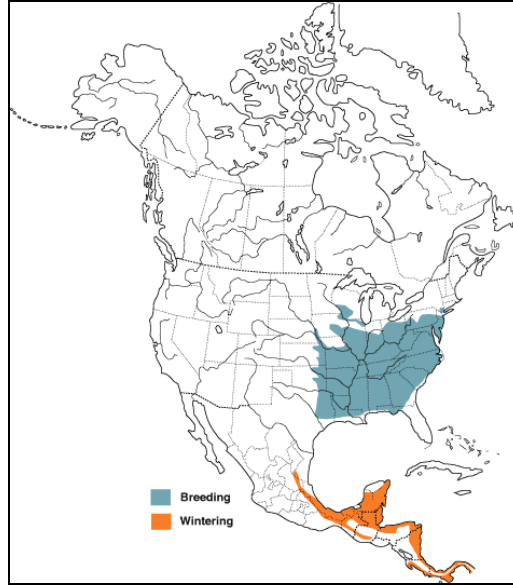


Figure 1. Range of the Kentucky warbler in North America (Birds of North America Online 2013).

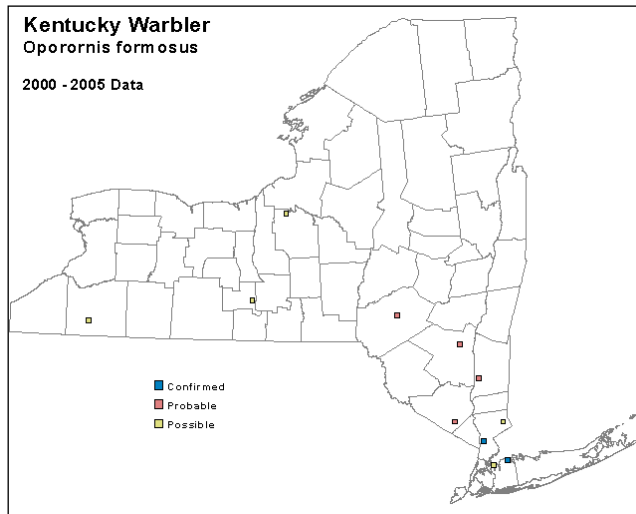


Figure 2. Kentucky warbler occurrence in New York State during the second Breeding Bird Atlas (McGowan and Corwin 2008).

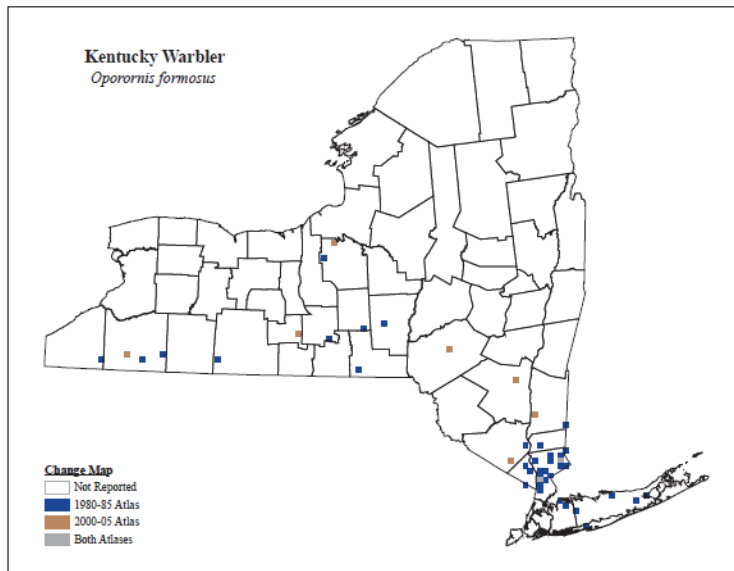


Figure 3. Change in Kentucky warbler occurrence in New York State between the first Breeding Bird Atlas and the second Breeding Bird Atlas (McGowan and Corwin 2008).

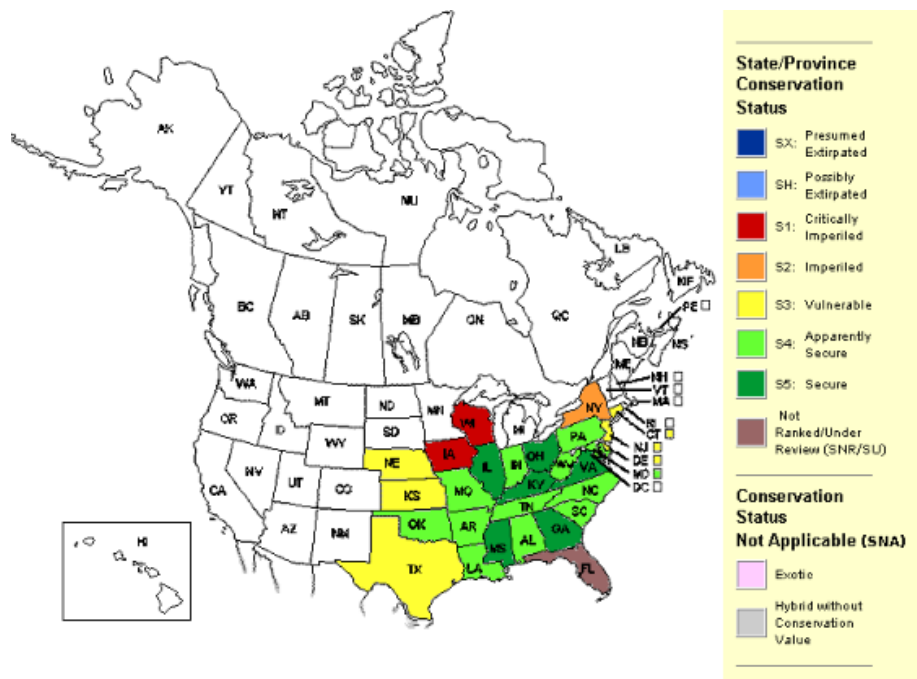


Figure 4. Conservation status of the Kentucky warbler in North America (NatureServe 2012).

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>39 blocks</u>	<u><1%</u>

Details of historic 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).

Current	<u># of Animals</u>	<u># of Occurrences</u>	<u>% of State</u>
	_____	<u>11 blocks</u>	<u><1%</u>

Details of current occurrence:

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.

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

- X 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. Mixed Northern Hardwoods
2. Riparian
3. Hardwood 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:

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 is essential to the species' reproductive success.

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. 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:

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 7 years, banded as adult male and returning annually to same territory in north Virginia. 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 birth site. 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 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:

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 occupation 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 lead to forest openings with dense shrubby understory may be reduced.

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?

No **Unknown**

Yes

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). White-tailed deer

population reduction in some areas may reduce overbrowsing of the shrub understory critical for Kentucky warbler nesting.

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.

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 Kentucky 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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