

Species Status Assessment

Class: Birds
Family: Ardeidae
Scientific Name: *Botaurus lentiginosus*
Common Name: American bittern

Species synopsis:

The American bittern occurs across the northern half of North America and in most of Canada where it breeds in freshwater wetlands. The species is monotypic. It occurs sparsely throughout the state, occurring in 9% of Breeding Bird Atlas survey blocks statewide with concentrations in St. Lawrence and Jefferson counties (McGowan 2008). Since the early 1980s, a 10% decline in occurrence was documented during the second Breeding Bird Atlas survey. Historic declines were documented in the 1950s through 1970s due to loss of wetland habitat, but populations now appear to be fairly stable. Detection of American bittern is best attained through species-specific surveys because of its secretive nature.

I. Status

a. Current and Legal Protected Status

- i. **Federal** Not Listed **Candidate:** No
- ii. **New York** Special Concern; SGCN

b. Natural Heritage Program Rank

- i. **Global** G5
- ii. **New York** S4 **Tracked by NYNHP?** No

Other Rank:

New York Natural Heritage Program Watch List
IUCN Red List Category: LC - Least concern
Species of Northeast Regional Conservation Concern (Therres 1999)

Status Discussion:

American bittern is an uncommon breeder in New York. Stoner (1998) referred to it as “declining.” It is uncommon but regular along New York’s coastline in winter and rare inland. It is listed as Endangered in CT, MA, and PA, and Threatened in NJ. It is not listed in NH or VT.

II. Abundance and Distribution Trends

a. North America

i. Abundance

X declining ___ increasing ___ stable ___ unknown

ii. Distribution:

X declining ___ increasing ___ stable ___ unknown

Time frame considered: 1966-89 BBS showed significant -2.4% annually

b. Regional

i. Abundance

___ declining X increasing ___ stable ___ unknown

ii. Distribution:

___ declining X increasing ___ stable ___ unknown

Regional Unit Considered: Eastern BBS: increase by 2.1% annually

Time frame considered: 1999-2009

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: One confirmed breeding event in last decade

Listing status: _____ Endangered _____ SGCN? Yes

MASSACHUSETTS **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: _____ Endangered _____ SGCN? Yes

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

i. Abundance

 X declining ____ increasing ____ stable ____ unknown

ii. Distribution:

 X declining ____ increasing ____ stable ____ unknown

Time frame considered: Since 1970s

Listing status: Breeding: Endangered; Non-breeding: Special Concern SGCN? Yes

and 1989, but no significant trends were evident for populations in the eastern U.S. or Canada; other sources suggest that declines have occurred in portions of New York and in southern New England, Pennsylvania, New Jersey, and Delaware (Gibbs and Melvin 1992). Eaton (1988) stated that the species had declined in New York since the 1950s.

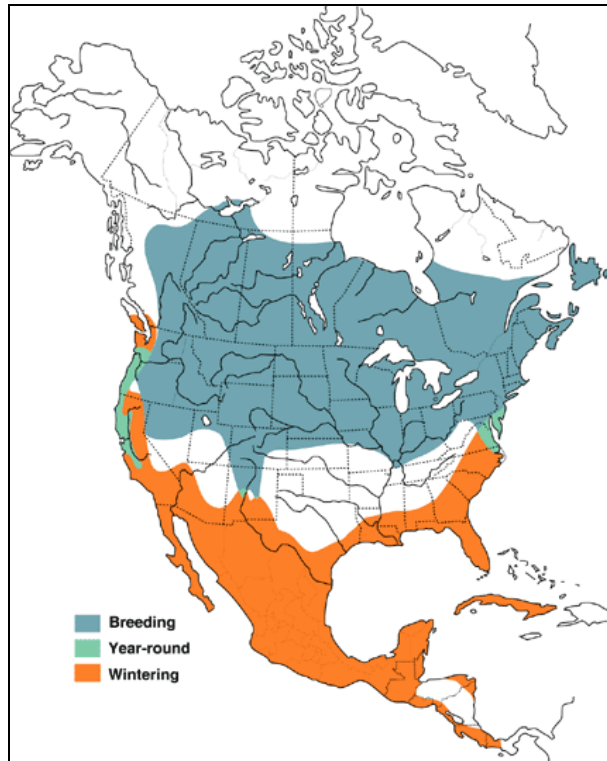


Figure 1. Distribution of American bittern in North America (Birds of North America Online).

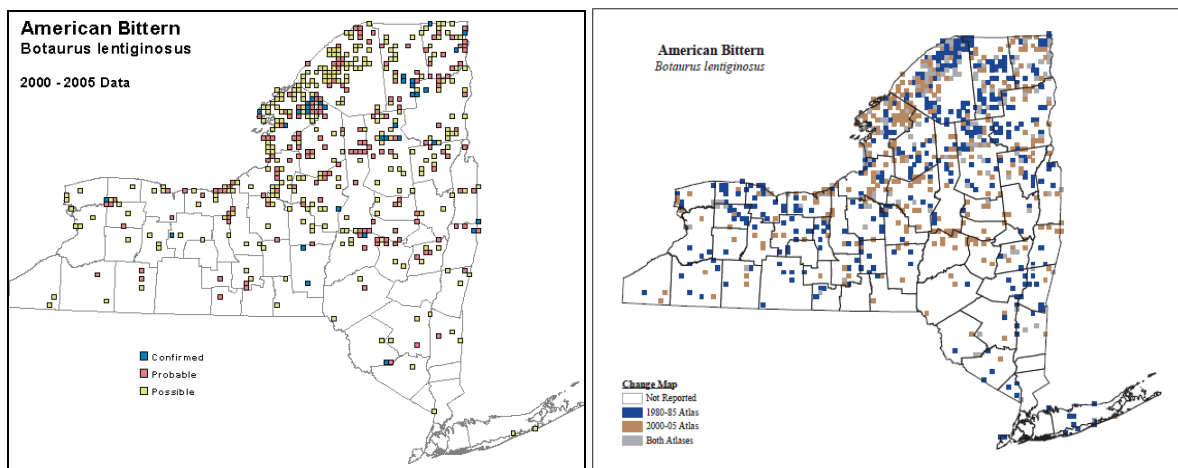


Figure 2. Known locations of American bittern from the NYS Breeding Bird Atlas (NYSDEC).

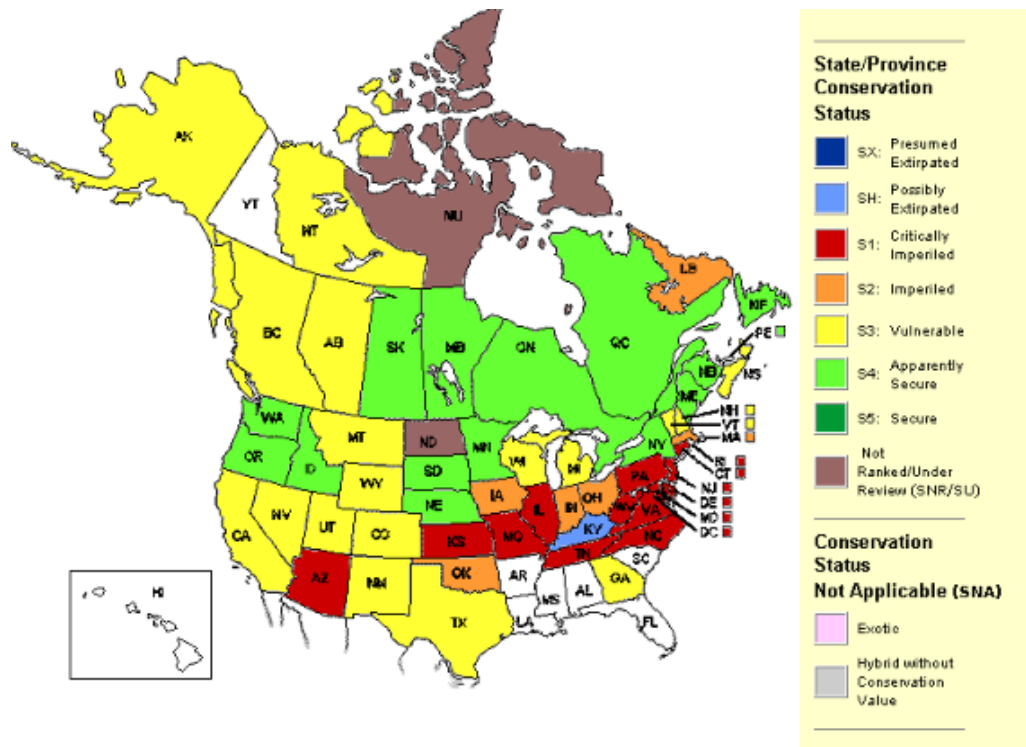


Figure 3. Conservation status of American bittern in North America (NatureServe 2012).

III. New York Rarity, if known (provide numbers or percent of state occupied, include citations and maps):

Historic (select one)	<u># of Animals</u>	<u># of Locations</u>	<u>% of State</u>
prior to 1970	_____	_____	_____
prior to 1980	_____	_____	_____
prior to 1990	_____	<u>534 blocks</u>	<u>10%</u>

Details of historic occurrence:

Breeding Bird Atlas data from 1980-85 show statewide distribution with concentrations in the northern part of the state. Eaton (1988) stated that the species had declined since the 1950s.

Current	<u># of Animals</u>	<u># of Locations</u>	<u>% of State</u>
	_____	<u>478 blocks</u>	<u>9%</u>

Details of current occurrence:

Breeding Bird Atlas data from 2000-05 documented occupancy in 9% of the state, a 10% decrease in occupancy since the first Atlas in 1980-85 (McGowan and Corwin 2008).

New York's Contribution to Species North American Range:

Distribution (percent of NY where species occurs)

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

Abundance (within NY distribution)

- abundant
- common
- fairly common
- uncommon
- 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:

Rarity Discussion:

The North American population is estimated at 10,000 to 1,000,000 individuals (NatureServe). New York lies well within the main distribution.

IV. Primary Habitat or Community Type (from NY crosswalk of NE Aquatic, Marine, or Terrestrial Habitat Classification Systems):

1. Freshwater Marsh
2. Great Lakes Freshwater Estuary Marsh
3. Wet Meadow/Shrub Swamp
4. Old Field Managed Grasslands
5. Native Barrens and Savannah
6. Open Alkaline Peatlands
7. Open Acidic Peatlands
8. Estuarine, Freshwater Intertidal, Tidal Wetland, Freshwater Tidal Marsh

Habitat or Community Type Trend in New York:

Declining Stable Increasing Unknown

Time frame of decline/increase: Since the 1950s

Habitat Specialist? Yes No

Indicator Species? Yes No

Habitat Discussion:

American bitterns breed in freshwater wetlands with tall emergent vegetation, especially larger wetlands with abundant amphibian populations, and rarely tidal marshes. Eaton (1914) suggested that there were occurrences in New York at marshes of less than four hectares. This bittern seems to be adaptable to a wide variety of wetland habitats, ranging from margins of boreal lakes in Quebec (DesGranges and Houde 1989) to dense cattail marshes in New York (Andrle and Carroll 1988), and can thrive at wetlands of many types as long as suitable prey and adequate cover are available (Gibbs et al. 1991). Nesting can also occur in grasslands adjacent to wetland habitat.

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:

Remarkably little is known about the biology of this species. There is no information on age at first breeding, but it is 1 year in the closely related Eurasian Bittern. The maximum reported longevity is 8 years, 4 months. Minimal information is available on the effects of predation or parasites and disease. The species is thought to undergo extensive, post-breeding dispersal (Lowther et al. 2009).

Because of extensive post-breeding dispersal (Cramp 1977), bitterns are able to colonize new areas and persist as small, isolated populations. The species also seems adaptable to a wide range of wetland habitats.

VI. Threats:

Threats Discussion:

The most serious factor limiting populations is availability of wetland habitat. Loss is due to drainage, filling, conversion to agriculture or recreational use, siltation, and pollution. The entire life cycle is dependent on wetlands, yet over half the original wetlands in the conterminous U.S. have been destroyed (Tiner 1984). The most serious losses have occurred among palustrine emergent wetlands, of which about 4.75 million acres (1.92 million ha) were lost between the mid-1950s and mid-1970s (Tiner 1984). Inland, freshwater wetlands, the most important nesting and wintering areas, are among the most threatened habitats (Tiner 1984). Larger wetlands (greater than 10 ha) may support large portions of regional nesting populations, and loss of these wetlands can be critical to populations in many areas. Fortunately, many of the larger emergent marshes and marsh complexes in New York are publicly owned and managed for wildlife habitat.

Agricultural chemicals may have significant, indirect effects by entering wetlands via runoff from upland areas and reducing prey populations. Many of this bird's prey, including aquatic insects, crayfish, and amphibians, are vulnerable to agricultural pesticides.

Threat from acid rain is related to high proportion of amphibians in the American bittern's diet. However, wetlands are typically buffered against shifts in acidity. Wading birds tend to be susceptible to many diseases such as avian cholera, botulism, lice and mites, but little is known about the effects of disease and parasites on reproduction (NatureServe 2013).

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

No Unknown

Yes

American bittern 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. Small wetlands that serve as important alternate feeding sites and as "stepping stones" during movements between larger wetlands, receive no legal protection in New York.

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

Large wetlands (>12 acres) with abundant emergent vegetation need preservation, protection, and improvement (Gibbs and Melvin 1992). It is important to prevent chemical contamination, siltation, eutrophication, and other forms of pollution in marsh habitats and to control invasive species (such as purple loosestrife). When managing large wetland complexes for waterfowl, consider retaining areas with cattails and bulrush.

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

Conservation Actions	
Action Category	Action
Education and Awareness	Awareness & Communications
Education and Awareness	Training
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
Land/Water Management	Habitat & Natural Process Restoration

The Comprehensive Wildlife Conservation Strategy (NYSDEC 2005) includes recommendations for the following actions for freshwater marshbirds.

Curriculum development:

- ___ Utilize education as a tool for reducing wetland loss and the possible detrimental effects of human disturbance.

Fact sheet:

- ___ Promote the establishment of buffer areas around agricultural fields and developments.

Habitat management:

- ___ Restore wetland habitat and improve water level control.
- ___ Evaluate the extent to which management actions can reduce nest and chick losses via predator management and water level regulation.

- ___ Promote the use of Farm Bill and Landowner Incentive program funds to manage and restore appropriate habitat.
- ___ Adapt wetland management practices throughout the range of these species so they can simultaneously benefit waterfowl, marsh birds, and other water birds.
- ___ For endangered, threatened or rapidly declining marsh bird species/populations, protect all sites currently in use, and all historic sites of suitable habitat.

Habitat monitoring:

- ___ Identify and prepare a catalog of key migratory staging, molting areas, and wintering grounds.
- ___ Prepare a catalog, where possible, of breeding sites, identifying and mapping sites at a course scale to select those worthy of monitoring.
- ___ Investigate diet and nutrition in relation to breeding habitat quality and prey populations.

Habitat research:

- ___ Evaluate habitats by a variety of techniques at multiple scales to better understand the micro- and macro- habitat features important to nest site selection.
- ___ Conduct controlled experiments to see which management actions are effective locally in producing habitat suitable for marsh birds.

Invasive species control:

- ___ Identify invasive species which have the potential to negatively impact marsh birds and quantify impact.
- ___ Reduce the spread and colonization of new sites by invasive exotic species.
- ___ Where feasible, control invasive species, which are known to have detrimental effects on marsh birds, to reduce negative impact (i.e. promote the implementation of biological controls to combat purple loosestrife).

Life history research:

- ___ Conduct demographic studies at selected sites across the species' breeding range to identify "source" and "sink" populations, thus the regions most important for maintaining a breeding population.
- ___ Conduct studies of habitat use, prey availability, and diet at migratory staging and molting areas and wintering grounds to assess possible threats and limiting factors.
- ___ Investigate aspects of behavioral ecology, such as mate selection, mate fidelity, spacing behavior, coloniality, dispersal, and post-fledging parental care.
- ___ Periodically monitor the levels of contaminants in marsh birds and their eggs to assess trends and determine effects on eggshell thinning, behavioral modification, chick development, nesting success, and juvenile survival.

Modify regulation:

- ___ Concurrently with management actions, efforts should be pursued vigorously to protect the quality and quantity of available wetland habitat and minimize wetland loss.

New legislation:

- ___ Develop and implement a noxious weed law to control the introduction and distribution of invasive exotic species.

New regulation:

- ___ Maintain water quality in nesting marshes and discourage use of pesticides on public lands to prevent reduction of insect populations and contamination of wetlands.

Population monitoring:

- ___ Refine monitoring techniques to better detect population trends and determine the cause of these changes.

- Initiate baseline population surveys to determine abundance and distribution and periodically resurvey to detect trends
- Study metapopulation dynamics and demography, focusing on such parameters as survival, age at first breeding, recruitment, dispersal, and the factors that affect them, using color-banded or radio-tagged birds.

Regional management plan:

- Collaborate with existing planning initiative such as the North American Waterbird Plan, Bird Conservation Regional Plans and other regional efforts.

VII. References

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