

Species Status Assessment

Class: Birds
Family: Emberizidae
Scientific Name: *Ammodramus maritimus maritima*
Common Name: Seaside sparrow

Species synopsis:

Seven subspecies of seaside sparrow breed along the Atlantic Coast from Maine to the Gulf Coast. The most northerly subspecies, *A. m. maritimus*, breeds from southern Maine to Virginia where salt marshes occur. In New York, seaside sparrow occurs in estuarine and salt marsh habitat primarily on the south shore of Long Island, though populations also persist on Long Island Sound (Westchester County) and the east end of Long Island. Though some birds remain in New York during the winter, most move to coastal areas in the southern United States.

Long-term losses documented in New York since the late 1800s (Schneider 1998, Greenlaw 2008) have been attributed to habitat alteration (mosquito ditching and filling) and to predation, especially by Norway rats. A 25% decline in occupancy is documented by the second Breeding Bird Atlas for the period 1980-85 to 2000-05.

I. Status

a. Current and Legal Protected Status

- i. **Federal** Not Listed **Candidate?** No
- ii. **New York** Special Concern

b. Natural Heritage Program Rank

- i. **Global** G4
- ii. **New York** S2S3B **Tracked by NYNHP?** Yes

Other Rank:

Partners in Flight – Tier I
USFWS – Nongame bird of management concern
IUCN – Least Concern

Status Discussion:

Seaside sparrow was formerly a locally common breeder in the Coastal Lowlands but has declined in the last 100 years due to loss of coastal marshes. It does not occur outside of the coastal areas. Birds are regular though uncommon during the winter.

II. Abundance and Distribution Trends

a. North America

i. Abundance

declining increasing stable unknown

ii. Distribution:

declining increasing stable unknown

Time frame considered: 2000-2010

b. Regional

i. Abundance

declining increasing stable unknown

ii. Distribution:

declining increasing stable unknown

Regional Unit Considered: New England/Mid-Atlantic Coast

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: _____ Special Concern _____ SGCN? Yes _____

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

i. Abundance

 X declining ____ increasing ____ stable ____ unknown

ii. Distribution:

____ declining ____ increasing X stable ____ unknown

Time frame considered: Abundance down since 1960s; distrib. stable since 1970s

Listing Status: _____ Not Listed _____ SGCN? Yes _____

NEW JERSEY **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? Yes _____

| | | |
|---------------------|---------------------------------|----------------------|
| ONTARIO | Not Present <u> X </u> | No data _____ |
| PENNSYLVANIA | Not Present <u> X </u> | No data _____ |
| QUEBEC | Not Present <u> X </u> | No data _____ |
| VERMONT | Not Present <u> X </u> | No data _____ |

d. NEW YORK **No data** _____

i. Abundance

 X declining ___ increasing ___ stable ___ unknown

ii. Distribution:

 X declining ___ increasing ___ stable ___ unknown

Time frame considered: 1980-85 to 2000-05

Monitoring in New York.

The Saltmarsh Habitat and Avian Research Program (SHARP) monitors populations of tidal marsh birds and the health of tidal habitats in the New England and Mid-Atlantic states. Seaside sparrow is one of the focus species being monitored at 89 sites on Long Island.

A demographic study of salt marsh birds is being conducted by a graduate student at State University of New York College of Environmental Science and Forestry (ESF) through a Memorandum of Understanding with DEC. This study replicates the demographic studies conducted by SHARP at four other sites along the Atlantic Coast. The goal of the study is to understand the potential for climate change and human development to affect salt marsh bird populations, with emphasis on the saltmarsh sparrow, but also including the seaside sparrow.

Additionally, Biodiversity Research Institute (BRI) has been conducting mercury exposure monitoring, food web and demographic studies of saltmarsh sparrows on Long Island, NY; seaside sparrows is included in this research.

Trends Discussion:

Greenlaw (2008) outlined the history of the seaside sparrow’s long-term decline in New York beginning in the late 1800s with its disappearance from Piermont Marsh in Rockland County and from Orient Point in Suffolk County by the early 1900s.

The Breeding Bird Survey in New York documented a 25% decline in occupancy from 1980-85 to 2000-05. Changes during this period include the loss of breeding birds from the north shore of Long Island west of the North Fork and the confirmation of continued breeding on Staten Island, first confirmed in 1992 (Greenlaw 2008). Breeding Bird Survey data for New York are too sparse to show a trend, but data for the Mid-Atlantic Coast show a nonsignificant increase of 1.5% per year from 2000-2010.

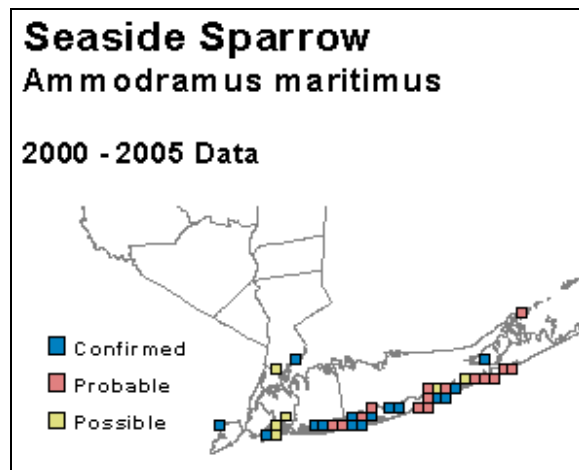


Figure 1. Seaside sparrow occurrence in New York State during the second Breeding Bird Atlas (McGowan and Corwin 2008).

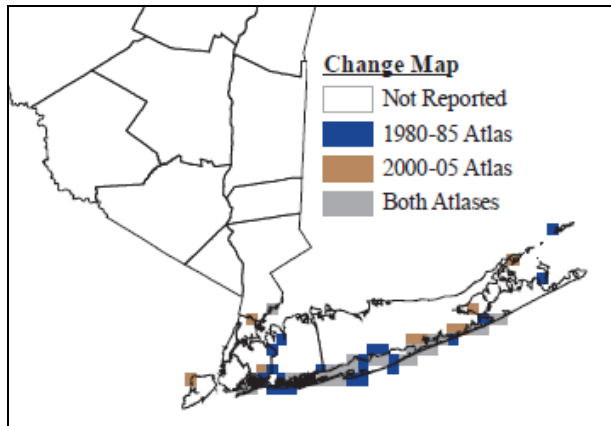


Figure 2. Change in Seaside sparrow occurrence in New York State between the first Breeding Bird Atlas and the second Breeding Bird Atlas (McGowan and Corwin 2008).

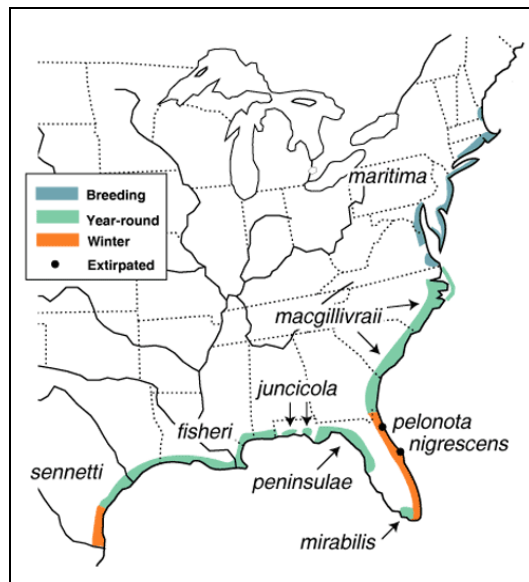


Figure 3. Distribution of seaside sparrow in North America (Birds of North America Online).

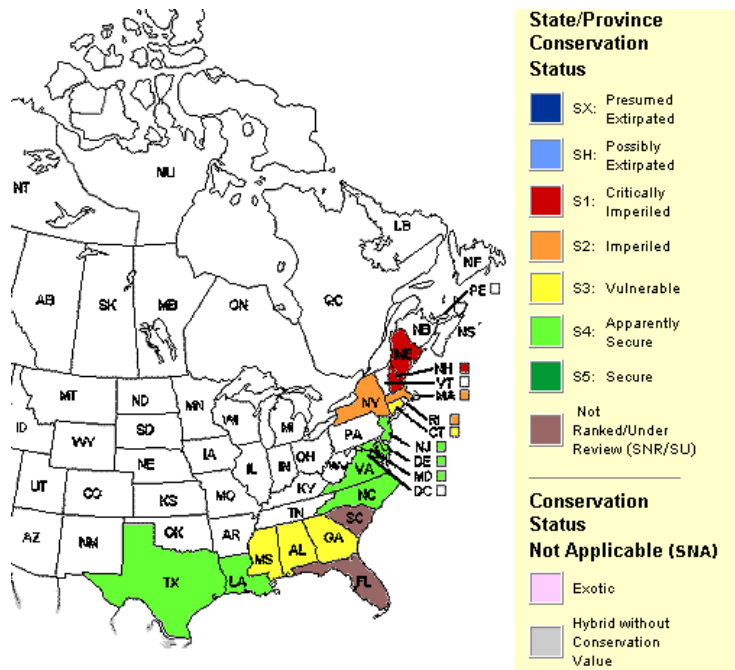


Figure 4. Conservation status of seaside sparrow in North America (NatureServe 2012).

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:

The first Breeding Bird Atlas (1980-85) documented occupancy in 48 survey blocks statewide. All were on the south shore of Long Island from Jamaica Bay (Kings County) to Shinnecock Bay (Suffolk County); on Long Island Sound in Westchester County; on Gardiners Island; and in two locations on the north shore.

| 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 36 survey blocks statewide, a decline of 25% since the first Atlas. The distribution along the south shore of Long Island remained the same. Breeding was reported in Baychester (Bronx County), a historic site where seaside sparrows were not reported during the first Atlas. Continued breeding on Staten Island is notable (Greenlaw 2008).

New York's Contribution to Species North American Range:

| % of NA Range in New York | Classification of New York Range |
|----------------------------------|---|
| <u> X </u> 0-5% | <u> X </u> Core |
| ___ 6-10% | ___ Peripheral |
| ___ 11-25% | ___ Disjunct |
| ___ 26-50% | Distance to core population: |
| ___ >50% | _____ |

IV. Primary Habitat or Community Type:

1. Estuarine, Brackish Intertidal, Tidal Wetland, High Marsh
2. Estuarine, Brackish Intertidal, Tidal Wetland, Low Marsh
3. Estuarine, Brackish Intertidal, Benthic Geomorphology, Tidal Creek
4. Estuarine Ditch

Habitat or Community Type Trend in New York:

Declining **Stable** **Increasing** **Unknown**

Time frame of decline/increase: Since the early 1900s

Habitat Specialist? **Yes** **No**

Indicator Species? **Yes** **No**

Habitat Discussion:

Seaside sparrows are found in coastal areas where they are considered a sentinel species, reflecting the health of the salt and brackish marshes where they breed. Optimal habitat is said to be in marshes with expanses of medium-high cordgrass (*Spartina spp.*) with a turf of clumped, residual stems. Especially suitable are spots not subject to extreme flooding that have open muddy areas for feeding (Post et al. 2009).

In New York, seaside sparrows are found primarily in the upper intertidal zone of unaltered marshes (Greenlaw 1983). Both high marsh and low marsh are used. In high marsh, nests are placed on edges dominated by marsh elder (*Iva frutescens*) while in low marsh, patches of smooth cordgrass (*Spartina alterniflora*) are used (Greenlaw 1983). Seaside sparrows will also use ditched marshes on grassy marsh elder-dominated spoil deposits, though in lower densities (Post 1970, 1974, Greenlaw 1983). Although territory sizes, commuting distances, and feeding behavior differed greatly between ditched and natural salt marshes, reproductive success did not (Post 1974, Greenlaw 1992).

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:

From Post et al. (2009): Both sexes begin breeding in the spring after their hatching year. Two broods are reared successfully by some pairs in New York (Greenlaw 1992). The number of young fledged per female per year in New York is estimated to be 4.43 (Post and Greenlaw 1982). The estimated lifetime reproductive output of an average female is 2.72 in New York (Post et al. 1983).

Minimum annual survival of breeding adult *maritimus* (based on cumulative return rates): 1967–1972 year classes, calculated through 1980: females 60.4% ($n = 169$); males: 57.0%; 1976–1977 year classes, through 1980: females, 41.4%; males, 52.8%. Survival of juveniles is lower, or dispersal greater than in non-migratory groups. Survival from fledging to independence in New York was calculated at 36% (Post and Greenlaw 1982). Nest mortality in New York is caused mainly by storm flooding and predation, primarily by Norway rats but also by northern harrier, fish crow, and garter snake (Post et al. 1983). Adults reneest quickly after nest loss—the first egg in a replacement nest can be laid in as little as three to four days—and recolonize other sites on marsh (Post 1974, Greenlaw 1983, Marshall and Reinert 1990). Average nest success in New York in 2013 was low, calculated at 17.15% ($n = 55$) (Koczek and Cohen 2013).

Adults are highly philopatric, and some first-year birds in New York return to breed in their natal marshes (Greenlaw 1992). Potential life span of males and females of several populations reported as 8–9 yr (Sykes 1980).

VI. Threats:

Historically and currently, seaside sparrow populations have been negatively affected by the loss and degradation of salt marsh habitats, which are regularly filled or ditched for mosquito control (Austin 1983, Greenlaw 1992). Though breeding still occurs in compromised marshes, productivity is lower. Ditching eliminates preferred foraging patches (*Spartina alterniflora*), associated mud pools and mudflats, which are replaced by woody species and reed and have relatively low feeding value (Merriam 1983). In the Northeast in particular, common reed (*Phragmites australis*) has expanded its range in response to lowering of water levels, replacing salt meadow grasses and degrading breeding habitats (Paxton et al. 2007). Lowering of water levels and invasion of bushes along ditch banks increase access to predators (see Post et al. 2009).

Climate change is expected to affect the extent and quality of salt marshes. In the next century, a predicted sea-level rise of 2-4+ mm/yr, accompanied by increased storm frequency, would accelerate loss of tidal marshes. The effect would be most severe in the Northeast, where sediment delivery rates are lower than in Southeast (Shriver et al. 2004, Erwin et al. 2006). Seaside sparrow was classified as “moderately vulnerable” to predicted climate change in an assessment of vulnerability conducted by the New York Natural Heritage Program (Schlesinger et al. 2011).

Because of its narrow coastal range and localized distribution, populations of seaside sparrow in any given area may be displaced or extirpated by storms (flooding), fires, or oil spills. Also, a low incidence of pox disease occurs in New York (Greenlaw 1992).

Exposure to mercury is a threat to seaside sparrows; high exposure may result in detrimental physiological and behavioral changes, including reduced reproductive success (Lane et al. 2011, NYSERDA 2012). On Long Island, mercury concentration levels in the blood and/or flight feathers of this sparrow were high enough to indicate a reduction in reproductive success in more than half of all individuals sampled (NYSERDA 2012).

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

No Unknown

Yes

Seaside sparrows are protected under the Migratory Bird Treaty Act of 1918. The New York State Tidal Wetlands Act of 1973 protects saltmarsh habitat from being filled and developed.

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

Continued protection of habitats is necessary. An analysis of the effectiveness of the New York Tidal Wetlands Act of 1974 was conducted by comparing aerial photos from 1974 and 1995. Freshwater

wetlands were gained at both Shinnecock Bay (161 acres) and Moriches Bay (100 acres) during this period.

From NatureServe (2012): Management intervention may be necessary to enhance or restore habitat. Since poorly-drained sections of tidal wetland where medium-length cordgrass grows is favored, managers should consider blocking selected ditches on altered marshes to create additional habitat. Intervention that forms a mosaic of habitat patches consisting of favorable nesting substrate and suitable foraging sites should increase local populations significantly. Predator control may be necessary in some areas. On high marsh, shallow pools constructed near spoil deposits encourage sparrows to settle, albeit at relatively low densities (Greenlaw 1992, Post and Greenlaw 1994). Controlled burning during the August-November wet season maintains favorable habitat (Post and Greenlaw 1994). Densely vegetated areas should be burned every five years and less dense areas every 8-10 years, with no more than 10% of the available habitat for a population burned in any given year.

Continued research and monitoring of mercury levels in breeding seaside sparrows and their habitat and prey items is recommended because this species is an important bioindicator of mercury contamination in mid-Atlantic coastal systems (Lane et al. 2011, NYSERDA 2012). 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 |
| Land/Water Management | Habitat/Natural Process Restoration |
| Law/Policy Actions | Legislation Change/Implementation- formal government sector legislation or policies at all levels |
| Law/Policy Actions | Legislation Change/Implementation- affecting implementation of laws at all levels |
| Livelihood/Economic/Other Incentives | Promote Alternative Products/Services |
| Livelihood/Economic/Other Incentives | Market Forces to Change Behaviors |
| Livelihood/Economic/Other Incentives | Conservation Payments to Change Behaviors |
| External Capacity Building | Institutional & Civil Society Development |
| External Capacity Building | Conservation Finance Raising/Providing Funds |

The Comprehensive Wildlife Conservation Strategy (NYSDEC 2005) includes recommendations for the following actions for salt marsh breeding birds, which includes seaside sparrow.

Habitat Management:

- ___ Develop coordinated and specific habitat management and restoration projects for identified focus areas.
- ___ Integrate bird conservation interests in agency planning, management, research, restoration, and permitting actions, within the context of agency missions.
- ___ Protect extant salt marsh habitat through:
 - Developing and implementing a salt marsh management and restoration plan.

- Mapping extant salt marshes in the Lower Hudson/Long Island Bays Watershed.
- Implementing a “no net increase” in shoreline armoring for all estuaries, bays, and harbors in the watershed.
- Protecting land and requiring upland buffers associated with salt marsh habitat.
- Establishing vegetated buffers landward of salt marshes.
- Protecting salt marsh platforms of shoals and flats created by temporary barrier island beaches and overwash fans.
- Modifying tidal wetland laws, regulations, and policies to address sea level rise.

Habitat Monitoring:

___ Regularly monitoring status and trends of salt marsh habitat through aerial surveys and site-based monitoring.

Habitat Research:

___ Identify strategies and develop a plan for slowing the loss of emergent tidal salt marsh to erosion, fragmentation, and invasive species.

Habitat Restoration:

___ Alternative methods of mosquito control should be investigated to allow the modification of mosquito ditching to restore native ecological habitats, by allowing vegetated tidal wetlands to take precedence over mosquito control efforts in some areas. Mosquito ditching should be removed/closed when possible.

___ Financial incentives for landowners to remove bulkheads and plant native vegetation in upland buffer area to protect salt marshes.

___ Work with State, Federal, Local, and NGOs to identify tidal wetlands and fund their restoration to intact emergent salt marsh. Develop coordinated and specific habitat restoration projects for identified focus areas.

___ Develop NYS guidelines for salt marsh restoration. The guidelines should include information on the following:

- Phragmites control
- Reconnecting disjunct or fragmented salt marshes
- Reducing nutrient loading into salt marshes from road run-off septic systems, fertilizers, etc.
- Naturalizing and softening the shoreline
- Natural and “soft” alternatives to bulkheads

Invasive Species Control:

___ Develop plan for addressing habitat loss to invasive Phragmites reed.

Life History Research:

___ Identify critical habitat components for supporting each species.

Population Monitoring:

___ Initiate statewide, comprehensive salt marsh-breeding bird survey for Seaside Sparrow, Salt Marsh Sharp-tailed Sparrow, Black Rail, and Clapper Rail. Resurvey active sites annually, and all habitat sites every 5 years. Continue annual tern surveys and gull surveys every three years as part of Long Island Colonial Waterbird Survey.

Statewide Baseline Survey:

___ Initiate statewide, comprehensive salt marsh-breeding bird survey for Seaside Sparrow, Salt marsh Sharp-tailed Sparrow, Black Rail, and Clapper Rail.

Statewide Management Plan:

___ Develop coordinated, statewide management plan that takes into consideration differences in habitat needs, species distribution, life histories, and human impacts.

VII. References

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Date last revised: December 2014