

SPECIES PROFILE

Seaside Sparrow

Ammodramus maritimus

Federal Listing: Not listed

State Listing: Not listed legally, but identified as of special concern

Global Rank: G4

State Rank: S1B

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ELEMENT 1: DISTRIBUTION AND HABITAT

1.1 Habitat Description

Seaside sparrows inhabit salt marshes, or grass-dominated tidal wetlands existing in the transition zone between ocean and upland (Niering and Warren 1980) (see Salt Marshes habitat profile). In New England, seaside sparrows breed in both high and low marsh areas where smooth cordgrass, saltmeadow grass, and blackgrass dominate (Post and Greenlaw 1994). Sparrows forage mostly in open stands of smooth cordgrass, areas of wrack, and the edges of ditches, pools, and salt pannes (Post and Greenlaw 1994). Their diet consists primarily of adult and larval insects, spiders, and amphipods (Post and Greenlaw 1994).

1.2 Justification

Seaside sparrows are designated a species of high conservation priority by Partners in Flight (Breeding Tier I) (PIF) and a species of special concern in New Hampshire. Long-term studies of this species have not been conducted in New Hampshire, and few data exist on population trends, estimates, and threats in the state. Habitat loss and degradation are probably the most pressing threats to seaside sparrows in New Hampshire.

Seaside sparrows are salt marsh obligates and area-sensitive. High-quality salt marsh habitat available in large patches across a landscape is required for

population persistence and growth. Tidal restrictions in salt marshes have resulted in invasive reeds and grasses, such as cattails and common reed, replacing salt marsh vegetation (Sinicrope et al. 1990, Burdick et al. 1997, Brawley et al. 1998). Areas of invasive plants in and around salt marshes decrease the suitable habitat for seaside sparrows.

The current lack of knowledge of seaside sparrow abundance and threats in New Hampshire is similar to that for closely related salt marsh birds, such as the saltmarsh sharp-tailed sparrow and Nelson's sharp-tailed sparrow. Human impacts on salt marshes are thought to affect these species in similar ways. Additional research and monitoring may allow this salt marsh guild to serve as an indicator of marsh health, the effects of marsh degradation, and the success of management practices such as restoration.

1.3 Protection and Regulatory Status

- The Migratory Bird Treaty Act of 1918 legally protects seaside sparrows from the take, transport, and use of the species, including eggs, nests, and feathers.
- NHDES regulates activities that affect salt marsh habitat. Activities that may involve filling, dredging, or destroying wetlands are subject to strict guidelines and require approved permits before work can commence (RSA 482-A).

1.4 Population and Habitat Distribution

The geographic range of the seaside sparrow includes the Atlantic and Gulf coasts of North America (Post 1974). In northern New England, seaside sparrow populations are uncommon, relatively small, and susceptible to local extinction (Marshall and Reinert 1990). New Hampshire is the historical northern edge of the breeding range for seaside sparrows along

the Atlantic coast. In New Hampshire, seaside sparrows have only been located in 1 marsh within the large Hampton salt marsh complex during the breeding season (Gavutis 1994, NHBR, McElroy and Babbitt, unpublished data). This marsh, a historical site for breeding, is located off Route 1A in Hampton between Routes 101 and 101E (Gavutis 1994, NHBR, McElroy and Babbitt, unpublished data).

1.5 Town Distribution Map

Not completed for this species.

1.6 Habitat Map

1.7 Sources of Information

A literature review was conducted to obtain habitat, distribution, and population status information for seaside sparrows. The NHA database of Bird Records gave historical information on the distribution of seaside sparrows in New Hampshire. A population survey in 2004 by researchers at UNH provided information on current abundance and distribution.

1.8 Extent and Quality of Data

Historical bird records from NHA are sightings reported by birders. Although this information is vital to understanding historical distribution, it does not accurately describe population size or confirmed breeding locations throughout the state. The most comprehensive dataset comes from UNH researchers, and it indicates no breeding populations of seaside sparrows in New Hampshire. Although that dataset is spatially extensive, it covers only one year. Significant gaps still exist in knowledge of this species in the state, and long-term trends in population locations and sizes in New Hampshire are still unknown.

1.9 Distribution Research

Because of their habitat requirements, breeding seaside sparrows are likely to be found only in Hampton. A long-term survey (i.e., point counts during breeding season) throughout the Hampton marsh is recommended.

ELEMENT 2: SPECIES/HABITAT CONDITION

2.1 Scale

The New Hampshire conservation unit for seaside sparrow is the Coast (including Rye, Hampton, and Seabrook).

2.2 Relative Health of Populations

Fewer than 5 seaside sparrows are thought to live in New Hampshire during the breeding season (McElroy and Babbitt, unpublished data). Because a long-term survey of seaside sparrows has not been conducted and Breeding Bird Survey routes do not sufficiently cover salt marshes, population trends are unknown. In 2004, a complete survey of all potential breeding sites in New Hampshire's salt marshes in New Hampshire revealed no evidence of breeding activity. One individual was observed during a visit to the site of known historical occurrence for this species (see table 1) (McElroy and Babbitt, unpublished data).

In New Hampshire, the seaside sparrow is at the periphery of its geographic range. Therefore, it is scarce and not widely distributed in the state. New populations are unlikely to colonize sites in New Hampshire. The best potential for a breeding population is at the known historical breeding site: the Route 1A/101 marsh in Hampton. In 1985, a breeding population of 6-8 pairs of seaside sparrows occurred at this site (Gavutis 1994), but that level of abundance has not been recorded in subsequent years (NHBR). In the breeding seasons of 1986 through 2001, few seaside sparrows were reported, and from 2002 to 2004 only 1 individual was reported each breeding season (NHBR). All reported sightings during the breeding season occurred at the historical breeding site at the Hampton marsh.

2.3 Population Management Status

There are no ongoing population management efforts for seaside sparrows in New Hampshire. The only site where seaside sparrows currently occur in New Hampshire is the Route 1A/Route 101 marsh in Hampton. Therefore, this site would be high priority for any conservation actions.

2.4 Relative Quality of Habitat Patches

Throughout their range, seaside sparrows breed in large, unrestricted, *Spartina*-dominated marshes with pannes, pools, and creeks for foraging (Post and Greenlaw 1994). The historical site for seaside sparrows off Route 1A in Hampton is dominated by smooth cordgrass and salt hay, and it has many pannes, pools, and creeks (see Salt Marshes habitat profile).

2.5 Habitat Patch Protection Status

See *Salt Marshes habitat profile (element 2.5)*.

2.6 Habitat Management Status

See *Salt Marshes habitat profile (element 2.5)*.

2.7 Sources of Information

A literature review was performed to obtain information on research and habitat management. Research conducted by UNH scientists was used to determine the current status of the population and management efforts. Information on habitat protection and management came from the New Hampshire Coastal Program's Web site and published articles on restoration efforts.

2.8 Extent and Quality of Data

The most extensive dataset comes from a survey conducted by scientists at UNH. However, it covers only one field season. A long-term study is needed to assess population trends and habitat suitability. Significant gaps exist in knowledge of seaside sparrow populations in the state and the effectiveness of habitat restoration.

2.9 Condition Assessment Research

A complete survey is needed for seaside sparrows in the marshes of Hampton, New Hampshire. Long-term, standardized point counts during the breeding season could be used to identify areas of sparrow use and potential breeding sites. Maps based on long-term monitoring of sparrow presence/absence, abundance, and breeding activity could be produced to discern key spots for research, conservation, and habitat protection. This information is vital for conservation and

research efforts for seaside sparrows and assessment of habitat suitability in New Hampshire. The lack of research and monitoring of salt marsh-dependent birds in New Hampshire leaves open the possibility that marshes outside of Hampton marsh provide suitable habitat for aspects of seaside sparrow life history (e.g., migratory stopover sites).

ELEMENT 3: SPECIES AND HABITAT THREAT ASSESSMENT

3.1.1 Development (Habitat Loss and Conversion)

(A) Exposure Pathway

See Salt Marshes habitat profile and Saltmarsh Sharp-tailed Sparrow profile

(B) Evidence

Habitat loss is a primary factor in the decline of wetland birds, especially species such as the seaside sparrow that depend on salt marshes for nesting (Post and Greenlaw 1994). Seaside sparrows tend to occur in large, contiguous marsh systems, making them vulnerable to habitat loss through land development.

3.2.2 Development (Fragmentation, Habitat Conversion Loss and Conversion)

See *Salt Marshes habitat profile and Saltmarsh Sharp-tailed Sparrow profile*

3.2.3 Altered Hydrology (Tidal Restriction), Transportation Infrastructure

See *Saltmarsh Sharp-tailed Sparrow profile*

3.2.4 Altered Hydrology (Mosquito Ditching), Altered Natural Disturbance

See *Saltmarsh Sharp-tailed Sparrow profile*

3.2.5 Introduced Species (Introduced Plants), Development (Habitat Loss and Conversion)

See *Saltmarsh Sharp-tailed Sparrow profile*

3.2.6 Mercury, Non-Point Source Pollution

See *Saltmarsh Sharp-tailed Sparrow profile*

3.3 Sources of Information

Information on threats to seaside sparrows was obtained from a literature review, New Hampshire Coastal Program, NHNHB, and Biodiversity Research Institute in Gorham, Maine.

3.4 Extent and Quality of Data

Threats to seaside sparrows have recently gained significant attention from scientists and managers. It is well documented that marsh degradation from human activities correlates with declines in sparrow populations. Researchers studying mercury are attempting to evaluate the significance of this new threat to seaside sparrows and other salt marsh nesting birds.

3.4.5 Threat Assessment Research

Scientists are investigating threats to seaside sparrow populations throughout the northeast in Massachusetts, Connecticut, and Rhode Island (see references for published studies). Two important areas for future research are impacts of invasive plants and increased human disturbance near marsh habitat (e.g., road density and noise).

More research is needed to determine the effects of methylmercury on seaside sparrow populations in the region. Methylmercury has become a widespread ecological and human health concern. The Biodiversity Research Institute is investigating the effects of mercury on salt marsh birds in New England. Once mercury's impacts are determined through scientific research, conservation actions can combat the issue.

Studies of sparrow abundance are needed to provide a foundation for threat assessment. Little is known about New Hampshire's seaside sparrows, such as whether a breeding population exists.

ELEMENT 4: CONSERVATION ACTIONS

4.1.1 Protecting remaining salt marsh habitat and surrounding upland buffer habitat, Habitat Protection

See Salt Marshes habitat profile and Saltmarsh Sharp-tailed Sparrow profile

(C) Conservation Performance Objective

The conservation performance objective is to maintain or improve salt marsh structure and function in areas that could serve as breeding sites for seaside sparrows, such as the Hampton marsh that historically was documented as a breeding site.

(D) Performance Monitoring

Performance monitoring should be conducted regularly at large salt marshes within the conservation unit, especially the Hampton marsh along Route 1A. Monitoring and research should include habitat use (migration/breeding), abundance, density, breeding, nesting activity, and site population trends.

(E) Ecological Response Objective

The desired ecological response to salt marsh protection is stabilized or increasing populations of seaside sparrows at one or more sites. The response should begin immediately at natural, undisturbed sites protected from further human disturbance. Salt marsh protection would be deemed successful if 2 to 4 pairs breed annually in Hampton.

4.1.2 Restoring degraded salt marshes back to *Spartina*-dominated systems, Restoration and Management

See Salt Marshes habitat profile and Saltmarsh Sharp-tailed Sparrow profile

(D) Performance Monitoring

The Hampton marsh complex is the most likely site for any future colonization by seaside sparrows. Portions of the marsh on the Blackwater River and Hampton River were ditched extensively. Any habitat restoration initiatives to raise water level on the marsh could benefit seaside sparrows by increasing smooth cordgrass abundance. Assessment of restoration success with respect to seaside sparrows should include habitat use (migration/breeding), abundance, density, breeding and nesting activity, nest success, foraging success, and site population trends.

(F) Response Monitoring

The response indicator for successful marsh restoration is the colonization and persistence of breeding seaside sparrows. Bird surveys, such as standardized point counts, conducted during the breeding season on an annual basis can be used to determine presence or absence at a restored site. Monitoring should be

conducted every breeding season over the long term until the data indicate stable or increasing populations. Subsequently, monitoring frequency could be reduced to sampling perhaps 1 breeding season every 3 years.

ELEMENT 5: REFERENCES

5.1 Literature:

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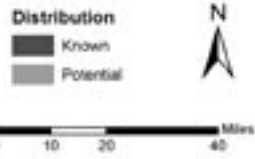
Warren, R. S., P. E. Fell, R. Rozsa, A. H. Brawley, A. C. Orsted, E. T. Olson, V. Swamy, and W. A. Niering. 2002. Salt marsh restoration in Connecticut: 20 years of science and management. *Restoration Ecology* 10:497-513.

5.2 Data Sources:

NHBR. New Hampshire Bird Records, New Hampshire Audubon, Concord, New Hampshire.

PIF (Partners in Flight). Species assessment database. Bird conservation regions: breeding scores for BCR 30 and BCR 14. PIF homepage: <http://www.rmbo.org/pif/pifdb.html> Accessed 2005 April.

Distribution of Seaside Sparrow in New Hampshire



Known = confirmed breeding observations as reported in the NH Natural Heritage Bureau's Element Occurrence Database and obtained from a University of New Hampshire survey.

