

Appendix A: Birds

Grasshopper Sparrow

Ammodramus savannarum

Federal Listing	N/A
State Listing	T
Global Rank	G5
State Rank	S2
Regional Status	Very High



Photo by Len Medlock

Justification (Reason for Concern in NH)

Populations of most grassland birds are in strong decline, both in the Northeast and sometimes across larger portions of their continental ranges. For this reason, most species were included in the Northeast list of SGCN, with those that occur regularly in NH retained for the NH WAP revision. Based on BBS data (Sauer et al. 2014), Grasshopper Sparrow populations in the Northeast have declined at 4.26% annually since 1966 (-3.4%/year from 2003-2013). Because of the species' overall rarity, BBS data on smaller scales (e.g., NH) are less accurate, although the species also shows a significant annual decline of 3.64% in BCR 30. There have also been declines of 15-75% based on repeated Breeding Bird Atlases in the northeast (Cadman et al. 2007, McGowan and Corwin 2008, Renfrew 2013, MassAudubon 2014). Grasshopper Sparrows were never common in New Hampshire, but have declined since the 1960s and are now found primarily at 5-6 sites in the southern part of the state.

Distribution

Grasshopper Sparrows breed across the United States and extreme southern Canada, although this distribution is more disjunct west of the Great Plains (Vickery 1996). Most of this population winters in Mexico and the southeastern United States. There are also isolated resident populations in Central America, the Greater Antilles, and extreme northwestern South America. In New Hampshire, the species has historically occurred south of the White Mountains, with most records in the Connecticut and Merrimack Valleys and near the seacoast (Foss 1994). Known current sites include the Keene, Concord, and Pease airports, and "Cemetery Fields" in Amherst. Other recent sites include the old Manchester landfill and the Manchester Airport, but neither has been checked since the mid-2000s (Hunt).

Habitat

In the eastern United States, Grasshopper Sparrows use dry fields with sparse grasses (usually bunch grasses) and weeds, few shrubs, and patches of bare ground. Although areas with more than 35% shrub cover are rarely used, a few scattered shrubs or other tall plants provide important song perches. Airports, abandoned agricultural fields, blueberry barrens, capped landfills, and sandplain grasslands provide suitable habitat (Vickery 1996). The Grasshopper Sparrow prefers large fields over 40 ha (100 ac), although the species will use sites as small as 12 ha (30 ac). However, not all large grasslands may be used. In Maine, sparrows occupied only 50% of suitable sites over 100 ha (250 ac; Vickery et al. 1994), and in Massachusetts only 1% of hayfields and 8% of barrens over 64 ha (160 ac) were occupied (Vickery et al. 1994). In the Midwest and Great Plains, Grasshopper Sparrows use smaller fields more regularly, but this may vary across regions (Helzner and Jelinski 1999, Heckert 1994, Davis 2004). Davis (2004) also determined that sparrows were less likely to occur in patches with a perimeter-area ratio less than 0.018 m/m². This result is corroborated by work in Minnesota where

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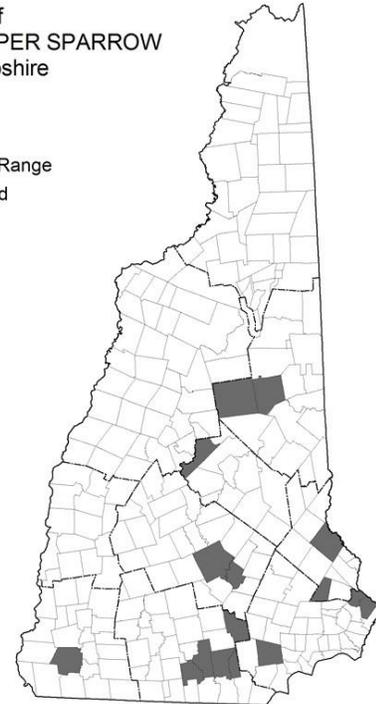
sparrow nests were more likely to be located at least 45 m from a forest edge (Johnson and Temple 1986). Habitat in New Hampshire is generally of the sparse dry grassland type described above, and almost exclusively at airports.

NH Wildlife Action Plan Habitats

- Grasslands

Distribution of
GRASSHOPPER SPARROW
in New Hampshire

■ Current Range
▨ Localized



Distribution Map

Current Species and Habitat Condition in New Hampshire

Most Grasshopper Sparrow populations have not been sufficiently monitored to determine how they vary in size or productivity. Five sites (Keene, Concord, Pease, Amherst, and Merrimack) monitored during the early 2000s seemed to maintain fairly constant populations, although sparrows disappeared from the latter two sites around 2005. Sparrows reappeared at Amherst in 2012. Species is declining overall (see Justification)

Population Management Status

Management is not currently in place for this species.

Regulatory Protection (for explanations, see Appendix I)

- Endangered Species Conservation Act (RSA 212-A)
- Migratory Bird Treaty Act (1918)

Quality of Habitat

Of the sites currently occupied by Grasshopper Sparrows, those at the Concord, Keene, and Pease airports are considered high quality. All contain extensive acreage of suitable grassland or grassy heath. Habitat management is already in place at Pease to benefit Upland Sandpipers, and the

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mowing schedule should benefit sparrows. Mowing at the Concord airport does not currently occur during the sparrows' breeding season, and historically didn't occur at the most important sparrow areas at the Keene airport (but recent information is lacking). Smaller sites (Manchester landfill, Amherst) are also not subject to mowing that would interfere with sparrow breeding activity.

Habitat Protection Status

None of the active sites for Grasshopper Sparrow are protected in the conventional sense. Grassland habitat protected by Great Bay National Wildlife Refuge is adjacent to that at the Pease Airfield, but grasshopper sparrows have not been documented there. Management agreements or memoranda of understanding are in place at the Concord and Pease airports and at Cemetery Fields.

Habitat Management Status

Most of the sites currently known to support Grasshopper Sparrow populations are managed in either a beneficial or neutral manner. Such activities include late mowing (Concord Airport, parts of Keene Airport) and partial mowing timed to benefit Upland Sandpipers (Pease Tradeport). At Cemetery Fields in Amherst, there is a Memorandum of Agreement between the Town of Amherst Cemetery Trustees and NHFG that allows the latter to manage the site in a manner beneficial to Grasshopper Sparrows. Specifically, each half of the site will be mowed on alternate years and mowing will not occur between 15 May and 7 August. The management agreement for the Concord Airport (Fuller et al. 2003) stipulates that safety areas at the airport not be mowed until after 1 October, and that adjacent areas be mowed every 3 years. At Pease, mowing of safety zones is initiated before 1 May, but all remaining areas are not mowed until August or later. At the smaller sites such as capped landfills and old gravel pits, mowing is not currently done in a manner compatible with maintaining Grasshopper Sparrow populations, although at least one land manager (Manchester landfill) is amenable to implementing such management. Although areas of the Keene Airport that support the majority of its sparrow population are not mowed until late in the season, sparrows do use areas that are mowed more regularly. Implementation of a mowing protocol similar to that at Pease may ultimately benefit birds at Keene without detracting from the airport's need to comply with safety regulations.

Threats to this Species or Habitat in NH

Threat rankings were calculated by groups of taxonomic or habitat experts using a multistep process (details in Chapter 4). Each threat was ranked for these factors: Spatial Extent, Severity, Immediacy, Certainty, and Reversibility (ability to address the threat). These combined scores produced one overall threat score. Only threats that received a "medium" or "high" score have accompanying text in this profile. Threats that have a low spatial extent, are unlikely to occur in the next ten years, or there is uncertainty in the data will be ranked lower due to these factors.

Habitat conversion and impacts from airport construction (Threat Rank: High)

Expansion of runways or addition of new infrastructure (e.g., hangers) has the potential to remove suitable grassland habitat at the more important sites for this species in the state.

Habitat conversion due to development and impacts from fragmentation (Threat Rank: Medium)

Although a threat to area-sensitive species like the Grasshopper Sparrow (Heckert 1994), development is not a significant threat in New Hampshire because all known sites are either airports or otherwise very unlikely to be developed. Thus, although historic sites have been lost in this manner, development should actually be considered a low-ranking threat for this species.

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Mortality and nest disturbance resulting from frequency and timing of mowing (Threat Rank: Medium)

Mowing is generally considered the greatest threat to grassland birds because it either destroys nests outright or exposes them to greater predation risk. Frequency of mowing varies with location and land use. With respect to Grasshopper Sparrows, it is most frequent at airports, which are required to mow areas adjacent to runways and taxiways for safety reasons. At other sites, mowing is used primarily as a management tool to prevent succession (e.g., at landfills) or to maintain the open character of the site. Mowing for economic reasons (i.e., hay harvest) is not a significant threat at any of the sites currently used by Grasshopper Sparrows in New Hampshire.

Habitat degradation and disturbance from airport runway maintenance (Threat Rank: Medium)

This threat is separate from both mowing and construction, and pertains to human activity associated with existing infrastructure. Such activity includes paving, light installation, and other things that might result in vehicles and other equipment being parked off-runway in potential sparrow habitat.

Habitat degradation and conversion from a lack of field maintenance and associated succession (Threat Rank: Medium)

In the absence of periodic mowing, grassland sites revert to shrublands and eventually to forest. However, since most sites for Grasshopper Sparrows in New Hampshire are at airports, this is not in reality a significant threat to the species.

List of Lower Ranking Threats:

- Habitat impacts and mortality from insecticide use
- Habitat impacts from introduced or invasive plants
- Disturbance to nest sites from recreational activity (walkers, dog walkers)

Actions to benefit this Species or Habitat in NH

Grassland management

Primary Threat Addressed: Mortality and nest disturbance resulting from frequency and timing of mowing

Specific Threat (IUCN Threat Levels): Agriculture & aquaculture

Objective:

Implement mowing practices beneficial to Grasshopper Sparrows at the sites where they occur

General Strategy:

Airports are the primary sites for Grasshopper Sparrows in New Hampshire, and where possible these should be approached about possible changes to management that would benefit this species. Potential specific actions could include: 1) modify mowing regimes (location and timing) as allowable under FAA guidelines and 2) install flushing bars on mowing equipment.

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Political Location:

Cheshire County, Hillsborough County,
Merrimack County, Rockingham County

Watershed Location:

Lower CT
Watershed, Merrimack Watershed,
Coastal Watershed

Grassland bird monitoring

Objective:

Monitor trends for rare grassland birds in NH

General Strategy:

Periodic surveys of key areas for grassland birds (e.g., focal areas, see grasslands habitat profile) are needed to assess trends in distribution and abundance because broad-scale surveys like the BBS fail to capture these species in sufficient numbers. Surveys need not be annual, but should employ consistent methodology among years. With specific reference to Grasshopper Sparrow, detailed surveys should continue at the Concord Airport and Cemetery Fields and be reinstated at the Keene Airport and Manchester landfill. Encourage technicians working with Upland Sandpipers at Pease to record and report locations of Grasshopper Sparrows at that site. See also the grassland habitat profile for more detail on broad actions that may benefit Grasshopper Sparrow.

Political Location:

Statewide

Watershed Location:

Statewide

Location Description:

For key areas see grasslands habitat profile

References, Data Sources and Authors

Data Sources

Trend data from Breeding Bird Survey (Sauer et al. 2014, above).
NH distribution data from NHBR/NH eBird

Data Quality

Current data on overall population status are limited because most of the important airport sites have not been regularly visited since the early 2000s.

2015 Authors:

Pamela Hunt, NHA

2005 Authors:

Pamela Hunt, NHA

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