

Appendix A: Birds

Bank Swallow

Riparia riparia

Federal Listing	N/A
State Listing	SC
Global Rank	G5
State Rank	S3
Regional Status	High



Photo by Jason Lambert

Justification (Reason for Concern in NH)

Aerial insectivores (here including nightjars, swifts, flycatchers, and swallows) have recently received increased conservation attention due to significant declines in several species (Hunt 2009, Nebel et al. 2010). Because all species share a common prey base of flying insects, there has been much speculation on a potential common cause for many of the declines. Much current research has been directed toward swifts and swallows in North America, resulting in greater knowledge of potential threats. Swifts and swallows have several ecological characteristics in common. All are highly aerial, and feed entirely on insects captured during sustained flight – often quite high in the air column. Threats identified for the group as a whole include changes in food supply, effects of insecticides on adults or young, loss of nesting locations, climate change. It should be noted that any of these factors could be affecting birds at any point in their annual cycle, and knowledge of their winter ecology is currently largely unknown. Like many aerial insectivores, populations of Bank Swallow are in strong decline. Based on BBS (Sauer et al. 2014) data the species has declined at 9.25% annually since 1966 in NH (-8.46% from 2003-2013). Regionally, declines are higher in the north (BCR 14: -10.59%) than the south (BCR 30: -4.09%) (see also Nebel et al. 2010). Repeated Breeding Bird Atlases have documented declines in occupancy of 30-45% (Cadman et al. 2007, McGowan and Corwin 2008, Renfrew 2013).

Distribution

Holarctic in distribution. In North America breeds (generally) from Alaska and northern California (where rare) east to southern Labrador and Chesapeake Bay. Bulk of North American population winters in South America (south to northern Argentina), with smaller numbers in western Mexico (Garrison 1999). It is found statewide in NH, although scarce in the seacoast area where suitable habitat is rare (Foss 1994).

Habitat

Bank Swallows breed in exposed vertical banks along rivers, lakes, and oceans, where regular erosion by currents or wave action results in new substrate continually being exposed. They will also use exposed sand or dirt banks created in sand and gravel quarries and road cuts, and even dirt piles at construction sites. The largest colonies in New Hampshire have historically been on dynamic stretches of higher-order rivers such as the Connecticut, Merrimack, and Saco, and their larger tributaries. Some colonies in sand pits can also get quite large, although their persistence is often limited by ongoing extraction and nearby human activity

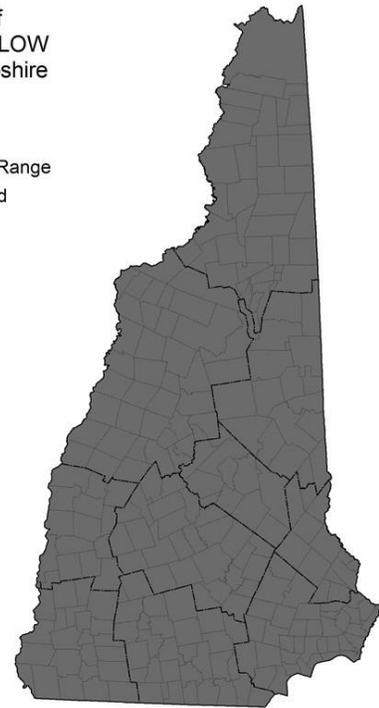
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NH Wildlife Action Plan Habitats

- Large Warmwater Rivers
- Warmwater Rivers and Streams
- Coldwater Rivers and Streams
- Developed Habitats
- Grasslands
- Lakes and Ponds with Coldwater Habitat
- Marsh and Shrub Wetlands

Distribution of
BANK SWALLOW
in New Hampshire

■ Current Range
▨ Localized



Distribution Map

Current Species and Habitat Condition in New Hampshire

Significant range wide population declines and some range retraction (see Justification).

Population Management Status

Management is not currently in place for this species.

Regulatory Protection (for explanations, see Appendix I)

- Comprehensive Shoreland Protection Act - NHDES
- Migratory Bird Treaty Act (1918)

Quality of Habitat

Highly variable, depending on local river management or activity at gravel pits.

Habitat Protection Status

Highly variable.

Habitat Management Status

Habitat management has not been implemented for this species. If anything, much management activity along rivers (bank stabilization, dams) is a detriment to this species (see threats).

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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.

Species disturbance and habitat impacts from mining (sand & gravel) (Threat Rank: High)

Although sand and gravel mining operations create new habitat for Bank Swallows, there are no guarantees that nesting swallows are protected during normal excavation activity at such sites. An entire colony may be destroyed if the portion of bank it is using is targeted for excavation, and unlike disturbances at natural river banks (e.g., floods), these disturbances may be more concentrated during the breeding season.

Habitat conversion and impacts from bank stabilization, altered erosional patterns and shoreline hardening (Threat Rank: High)

Bank Swallows nest primarily in river banks that have been exposed by erosion, and are adapted to shift colony locations within a local area as habitat is lost and becomes available elsewhere through natural processes. Structures such as dams or bank stabilization projects have the potential to alter natural erosional patterns and reduce overall habitat availability (Silver and Griffin 2009, Bank Swallow Technical Advisory Committee 2013), and such effects may be complicated by the more frequent and/or intense flooding events predicted by some climate change scenarios. Such extreme flood events can eliminate an entire breeding season's productivity if they occur in the summer, and destroy whole colonies at any time of year (Szép 2006). Although Bank Swallows are adapted to shifting habitats, increased frequency of habitat loss may result in additional stress to populations. Stabilization projects conducted during the breeding season are also likely to result in direct mortality of nests and young, and possibly even adults (Bank Swallow Technical Advisory Committee 2013).

Disturbance and mortality from winter drought (Threat Rank: Medium)

Considerable research in both Europe and North America has linked annual survival in several swallow species (including Bank) to long-term climate cycles such as El Niño and the North Atlantic Oscillation. In such cases, lower survival generally follows periods in these climate cycles where the winter grounds experience drought (Szép 1995, Robinson et al. 2008, Garcia-Pérez et al. 2014), and if drought increases as a result of climate change then one would expect such periods of low survival to become more frequent. There also appear to be carry-over effects in which productivity is higher in the breeding season following winters with more favorable conditions (Saino et al. 2003).

Species impacts from agricultural pesticide use causing prey declines (Threat Rank: Medium)

There is increased evidence from studies on other species of swallows that increased use of insecticides is impacting prey availability (Evans et al. 2007). Research in Canada has documented a variety of negative effects on Tree Swallows using heavily agricultural areas, including lower adult mass, lower clutch size, poor nestling condition and survival, and reduced annual return rates (Ghilain and Bélisle 2008, Paquette et al. 2014).

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List of Lower Ranking Threats:

Mortality from pesticide use in South America
Disturbance from agricultural pesticide use in North America
Disturbance and mortality from spring cold snaps and intense storms

Actions to benefit this Species or Habitat in NH

Bank Swallow surveys

Objective:

Detailed information on colony locations

General Strategy:

There is still incomplete information on the locations and sizes of Bank Swallow colonies in New Hampshire. Successful prioritization and implementation of habitat management requires knowledge of where significant colonies – or habitat for such – are located. Encourage paddlers and birders to keep their eyes out for active colonies and report their locations.

Political Location:

Statewide

Watershed Location:

Bank Swallow habitat research

Objective:

Identify characteristics of high quality Bank Swallow habitat.

General Strategy:

Using data on colony locations, characterize river segments that have the highest potential for occupancy and prioritize them for conservation and/or appropriate management.

Political Location:

Statewide

Watershed Location:

Gravel pit Best Management Practices (BMPs)

Primary Threat Addressed: Species disturbance and habitat impacts from mining (sand & gravel)

Specific Threat (IUCN Threat Levels): Energy production & mining

Objective:

minimize impacts of sand and gravel operations on nesting Bank Swallows

General Strategy:

Develop BMPs for potential use in sand and gravel pits and promote them with pit operators/owners

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Political Location:

Statewide

Watershed Location:

Bank stabilization assessment

Primary Threat Addressed: Habitat conversion and impacts from bank stabilization, altered erosional patterns and shoreline hardening

Specific Threat (IUCN Threat Levels): Natural system modifications

Objective:

Minimize impacts of bank stabilization projects on nesting Bank Swallows and their habitat

General Strategy:

Require bank stabilization projects to first assess the site – and adjacent areas – for signs of Bank Swallow nesting activity

Political Location:

Statewide

Watershed Location:

Bank Stabilization mitigation

Primary Threat Addressed: Habitat conversion and impacts from bank stabilization, altered erosional patterns and shoreline hardening

Specific Threat (IUCN Threat Levels): Natural system modifications

Objective:

minimize impacts of bank stabilization projects on nesting Bank Swallows and their habitat

General Strategy:

Require mitigation for bank stabilization or similar projects, especially in Bank Swallow concentration areas

Political Location:

Statewide

Watershed Location:

Bank restoration

Primary Threat Addressed: Habitat conversion and impacts from bank stabilization, altered erosional patterns and shoreline hardening

Specific Threat (IUCN Threat Levels): Natural system modifications

Objective:

Restore armored riverbanks to a condition suitable for nesting Bank Swallows

General Strategy:

Remove revetment from sections of rivers where it is feasible and has the potential to restore Bank Swallow habitat

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Political Location:

Statewide

Watershed Location:

References, Data Sources and Authors

Data Sources

Trend data from BBS and Breeding Bird Atlases (citations above)

Data Quality

The highly colonial nature of this species potentially confounds BBS data because colonies can move in space between years. However, the declines indicated by BSS are corroborated by the more systematic data collected by Atlases.

2015 Authors:

Pamela Hunt, NHA

2005 Authors:

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