Credit Jim Williams

Barn Swallow
Minnesota Conservation Summary

Audubon Minnesota
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ENVIRONMENT AND NATURAL RESOURCES TRUST FUND

Audubon MINNESOTA

The *Blueprint for Minnesota Bird Conservation* is a project of Audubon Minnesota written by Lee A. Pfannmuller (leepfann@msn.com) and funded by the Environment and Natural Resources Trust Fund. For further information please contact Mark Martell at mmartell@audubon.org (651-739-9332).

Barn Swallow

Priority for Minnesota's Bird Conservation Plan:
- Boreal Hardwood Transition: High Level Priority

Other Status Classifications:
- Partners in Flight (PIF) Species of Regional Concern in BCR12; Action: Management

Population Information:
- North America population estimate: 51,000,000 (U.S. PIF Plan)
- Estimated Minnesota population: 1,500,000; no target is specified
    - ✓ Estimated MN population in BCR11: 670,000
    - ✓ Estimated MN population in BCR12: 200,000
    - ✓ Estimated MN population in BCR22: 110,000
    - ✓ Estimated MN population in BCR23: 500,000
- Human activity has had strong positive effects on this species; construction of artificial structures has provided abundant nesting sites, leading to a population size that is probably several orders of magnitude greater than before European settlement of North America (BNA)

Minnesota BBS Data:
- Blue level of regional credibility
- 1966-2009: decreasing trend (not statistically significant) of -0.4; 1999-2009: decreasing trend of -1.4
- Minnesota is not one of the species centers of distribution
- 2.89% of the Barn Swallow's North American breeding distribution occurs in Minnesota; 0.8% of the Bank Swallow's global population occurs in Minnesota
- BBS Average # birds/BBS Route is 18.16; present on 66/74 BBS routes

Minnesota Residency:
- Breeds throughout Minnesota.

Habitat Requirements: Town

Historically found in areas w/caves &rock crevices for nesting; birds also used hollow trees. Now found in various habitats including agricultural areas, cities & along highways. Habitat contains open areas for foraging, nest site w/vertical or horizontal substrate underneath some type of roof or ceiling & a body of water w/mud for nest-building. (Birds of North America).

The Barn Swallow is the most widely distributed and abundant swallow in the world. Originally nesting primarily in caves, the Barn Swallow has almost completely converted to breeding under the eaves of buildings or inside artificial structures such as bridges and culverts. In North America, this shift in nest sites began before European settlement and was virtually complete by the mid-twentieth century; nowadays natural nestings are rarely seen and usually reported in print if they occur. As with other swallows that have shifted to nesting on human-made structures, such as the Purple Martin (*Progne subis*), Barn Swallows now sometimes nest in larger colonies than probably occurred in natural settings. (BNA).

From WBCI Species Profile:
Throughout its range, the Barn Swallow is a habitat generalist and uses a wide variety of open wetland, grassland and agricultural or rural habitats for foraging and nesting. In Wisconsin it commonly nests in urban areas as well as open wetland and agricultural habitats. Nests are often placed under a horizontal ledge or overhang, such as those found on docks, barns, houses, bridges, or cliffs and are located near an accessible mud source.

Migration: Neotropical

Climate Change Vulnerability: Medium (2); climate change models predict the species distribution and abundance in Minnesota will not change

Threats/Issues:
From BNA Species Profile:
- Use of vinyl and metal siding on buildings has reduced nesting sites in some areas (although in other areas widespread construction of concrete bridges and culverts has apparently led to major population increases and range expansion. (BNA)
- Conversion to modern buildings and farming practices was cited as reason for Barn Swallow declines early in the 20th century in New England, where nesting sites were altered in ways that made them less suitable. But with more bridges and culverts, however, there has been a net gain in nesting sites within the last 50-60 years (BNA).

From WBCI Species Profile:
- As land use practices in rural areas intensify, foraging habitats and food resources may become more limited.
- Additionally, the aerial spraying of insecticides and pesticides reduces prey resources and has been implicated in the Barn Swallow's decline in Israel.

From Environment Canada
The Barn Swallow is one of several species of aerial-foraging insectivores showing widespread declines in Canada. Causes of these declines remain unclear, but changes in aerial insect populations have been suggested as one possible common factor as well as landscape changes, toxic chemicals, and climate change (Blancher et al. 2009, Nebel et al. 2010). Specific to the species, the modernization of farms and agriculture may have reduced the number of nest sites available to the birds in certain areas. However, the construction of bridges and other infrastructure has increased the number of nest sites in other areas (Brown and Brown 1999). The completion of second breeding bird atlas projects across the country will provide important trend information for the northern part of the species' range, which is currently not well covered by Breeding Bird Survey.

From Nebel et al. 2010:
- One of North America's aerial insectivores that has incurred a significantly stronger decline from 1966 to 2006 than other passerines. Long-range transport of pollutants and their impact on reducing calcium (which is less available to insects) is thought to be a principal factor in the species' decline.

OVERALL MINNESOTA GOAL: Monitor population trends

BEST MANAGEMENT PRACTICES

From BNA Species Profile:

- All measures in North America are very local in scope. Farmers in some areas nail narrow wooden ledges to walls or under eaves to give birds support for their nests.
- Birds can sometimes be enticed to relocate their nests to more desirable sites if intact nest with nestlings is moved slowly and then reattached.
- Attempts to improve stability of nests and to relocate nests are usually successful.

From WBCI Species Profile:

- Protect and restore artificial nesting sites on buildings, bridges and other overhanging structures adjacent to open agricultural and wetland habitats.
- Homeowners should consider using building materials compatible with this species' nesting requirements (i.e. brick, stone, concrete) and limit use of vinyl or metal. In some cases, artificial platforms may be required.
- Limit the use of pesticides and other harmful chemicals in important nesting and foraging areas.

From British Columbia (http://www.geog.ubc.ca/biodiversity/factsheets/pdf/Hirundo_rustica.pdf)

- Current and historical nest sites should be monitored regularly to determine long-term population trends.
- Protect known nest sites from human disturbance and/or work with homeowners or operators to reduce nest use conflicts.
- Work to retain a suitable mosaic of preferred nest sites (e.g. buildings) with adjacent foraging and roosting areas.
- Utilize integrated pest management programs to reduce and avoid the need for traditional chemical pest control methods.
- In areas of suitable foraging habitat, nest platform programs should be initiated or continued to increase nesting opportunities.
- Public information and education products should continue to be developed to encourage landowners to conserve and enhance nesting and foraging habitats and understand the value swallows provide in natural insect pest control services.

MONITORING RECOMENDATIONS

The Federal Breeding Bird Survey is an adequate tool for monitoring Barn Swallow populations.

CONSERVATION ACTIONS

- Identify and target high priority landscapes and habitats for conservation action

  Action: Identify Important Bird Areas that are a priority for this species in Minnesota

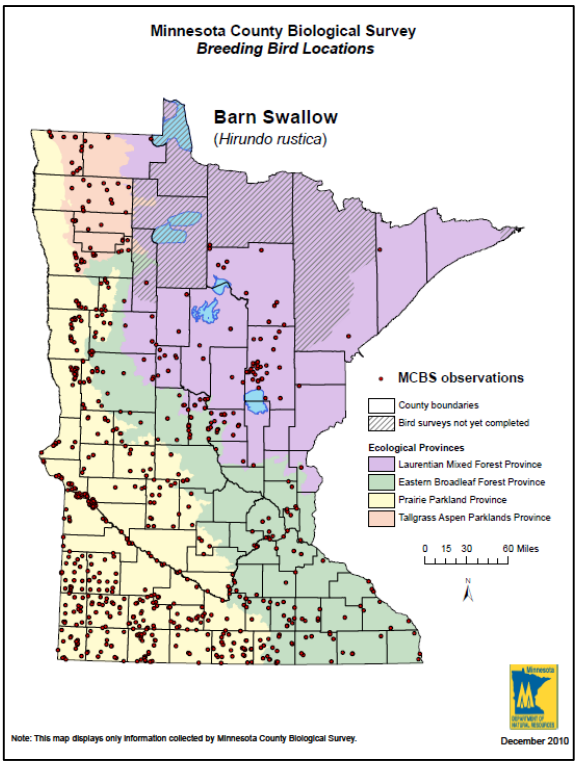
RESEARCH NEEDS

From WBCI Species Profile:

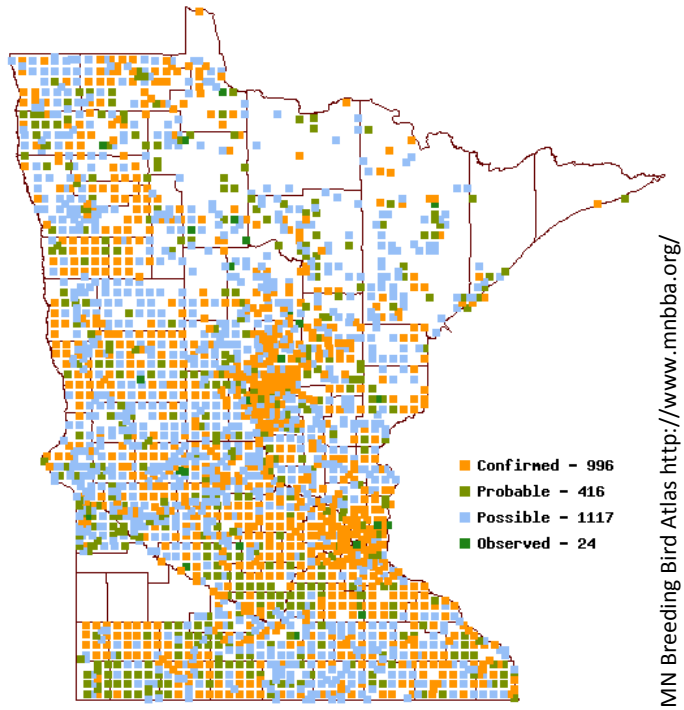
- More research is needed to identify population limiting factors, including the impacts of pesticides on food resources.
- Information on winter habitat requirements is lacking and warrants study.

Barn Swallow Distribution Maps

Birds of North America http://bna.birds.cornell.edu/bna/



MN DNR http://www.dnr.state.mn.us/eco/mcbs/bird_map_list.html



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MN Breeding Bird Atlas http://www.mnbba.org/