



Credit Jim Williams

# Sharp-tailed Grouse Minnesota Conservation Summary

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

# Sharp-tailed Grouse

## Priority for Minnesota's Bird Conservation Plan:

- Aspen Parklands: High Level Priority

## Other Status Classifications:

- Classified as a Minnesota Species of Greatest Conservation Need
- On Audubon Minnesota's Action List
- USFS Sensitive Species on the Chippewa and Superior National Forests
- A Focal Species in the Prairie Pothole Joint Venture Region
- A Focal Species for the Plains and Prairie Pothole Landscape Conservation Cooperative
- Identified by Partners in Flight (PIF)-National as a Species of Stewardship Priority; Action is Long-term Planning and Responsibility: Responsible Region: Prairie
- PIF BCR11: Regional Concern Species and Continental and Regional Stewardship Species: Action is Management
- The Sharp-tailed Grouse is a game species in Minnesota. Each year Minnesota hunters harvest about 10,000 sharp-tailed Grouse; in the 1940s over 100,000 were annually harvested (MNDNR Species Account; USDA Species account). The season in 2011 is from September 17 through November 30. The daily limit is 3 birds; the possession limit is 6 birds.

## Population Information:

- U.S. and Canada population estimate: 1,200,000 (U.S. PIF Plan)
- Continental Population Objective: Maintain
- 49% of the species global population occurs within the Prairie Pothole Joint Venture region.
- Aside from the poor BBS data, few attempts have been made to estimate local or range-wide sharp-tail populations, and population indices have been based on hunter harvests since 1949 and annual dancing ground counts. The latter were begun in 1975 to document long-term population trends. From 1981-1995, there was a net loss of 77% in both the northwest and east-central Minnesota populations.
- In the spring of 2010, a total of 2,096 Sharp-tailed Grouse was observed at 195 dancing grounds with  $\geq 2$  males grouse (Grouse surveys in Minnesota during spring 2010). Appears to be a 10 year cyclic pattern of abundance.
- The Minnesota population is divided into two regions: about two-thirds of the population occurs in the grass/brushland and boreal peatland of the Agassiz and Tamarack lowlands ecoregions; the remaining one-third of the population occurs in east-central Minnesota.
- Minnesota population estimate: 29,000
  - ✓ Estimated MN population in BCR11: 20,000
  - ✓ Estimated MN population in BCR12: 8,900
  - ✓ Estimated MN population in BCR22: No BCR Data
  - ✓ Estimated MN population in BCR23: No BCR Data

## Minnesota BBS Data:

- Red Level of Regional Credibility
- 1966-2009: increasing trend (**not statistically significant**) of +7.2; 1999-2009; increasing trend of +20.5
- Minnesota does not include one of the species centers of highest abundance
- 3.90% of the Clay-colored Sparrow's North American breeding range occurs in Minnesota; 2.4 % of the grouse's population occurs in Minnesota.
- Average # birds/route is 0.11; found on 7 of 74 routes

## Minnesota Residency:

- Permanent Resident in northern Minnesota
- Flocks of thee open-land grouse were once so large that pioneers said they sometimes blocked the sun. Once found throughout the state, today the Sharp-tailed Grouse is restricted to northwestern and east-central Minnesota. The once-thriving population has declined sharply in the last 50 years. (MNDNR Species Account)
- The Sharp-tailed Grouse is the only prairie grouse indigenous to Minnesota.

Habitat Requirements: Grassland

The breeding habitat of the Sharp-tailed Grouse is dominated by dense herbaceous cover and shrubs. The structural diversity of its habitat, including stands of grasses, shrubs and forbs, provides a high-quality nesting area. Habitat requirements are narrower in winter, when the species often relies on riparian areas, deciduous hardwood shrub draws, and deciduous and open coniferous woods. Sharp-tailed Grouse are emblematic of the Aspen Parkland Ecoregion (Birds of North America/Cornell Lab of Ornithology).

*From Berg 1997 Species Account:*

- Primary sharp-tail habitat in Minnesota is open grass-brushland dominated by various grasses, sedges, and willows. These habitats are sometimes associated with small grain and livestock farming.
- Other open habitats that support sharp-tails (but usually in lower densities) include the large open boreal peatlands which exist mainly on glacial lake beds and the large man-made taconite ore tailings basins and overburden dumps related to northeastern Minnesota iron mining operations.
- Although agriculture is not a necessary habitat component, sharp-tails flourish in brushland habitats with small farms in pasture or small grains. However, they disappear when open grass and brushland habitats have all been converted to large agricultural monotypes.

*From USDA Species Account:*

- The key to sharp-tailed grouse habitat is a complex of grassland mixed with a mosaic of brush and open woodland. These are typically large grass or herbaceous cover areas resulting from fire, logging, abandoned farms, and sometimes abandoned iron mine tailings basins.
- Habitat typically consists of natural meadows, pastures, open bogs, abandoned farm clearings, small grain cropland and inactive commercial rice paddies.
- The brushland surrounding the lek (1/4-1/2 mile radius) satisfies most of the birds basic needs for shelter, nesting cover and food.
- However, once the woody vegetation becomes established and matures, the habitat will be of little value to sharp-tails.

*From Wisconsin Bird Conservation Initiative (WBCI) Species Profile:*

- Sharp-tailed Grouse use a variety of habitat types in Wisconsin including brush prairie, barrens, cut or burned over forestland, wet meadows, pine/oak savannah, mixed deciduous-conifer forest and abandoned farmland.
- Wherever they occur, dense herbaceous cover and shrubs are important habitat components.
- Considered area-sensitive, Sharp-tailed Grouse require large open blocks of early successional habitat.
- In Minnesota, blocks of contiguous habitat must be at least 5 km<sup>2</sup>, and complexes of inter-connected smaller areas must contain parcels of at least 15 ha. However, the exact amount of habitat needed to sustain a viable population likely varies by ecological landscape and state.
- Dancing grounds or leks are commonly found in more open areas while nests are generally located in relatively heavy cover, often under or near shrubs or small trees.
- Winter sites may contain higher shrub cover and less snow cover than random locations.

Migration: Permanent Resident

Area Sensitivity: Classified as an Area Sensitive Species by Birds and Forests (Green)

Climate Change Vulnerability: Medium (3)

Threats/Issues:

*From Berg 1997 Species Account:*

- Natural succession causing fragmentation and closing of the open landscape is the primary reason for the declining sharp-tail habitat base in Minnesota's east-central sharp-tail range, and to a lesser extent, in the northwest. This range-wide successional trend has been most pronounced in the more fertile transitional grass-brushlands, and slowest in the more acidic muskegs. Although these muskegs support the lowest sharp-tail densities, they comprise the most secure sharp-tail habitats in Minnesota.
- Conifer plantings on open lands, many of which were never forested, continue and cause habitat fragmentation for the species.

*From WBCI Species Profile:*

- Extensive sedge meadows and barren habitats have been lost to draining, ditching, cranberry farming, and grazing.
- Many of the early-successional habitats used by Sharp-tailed Grouse are ephemeral and threatened by succession and development.
- Primary threats include habitat loss, fragmentation, wildlife suppression and lack of timber harvest.

**OVERALL MINNESOTA GOAL: Maintain current populations in Minnesota by supporting brushland habitat conservation and management through the Minnesota Department of Natural Resources Subsection Forest Resources Management Planning process**

## BEST MANAGEMENT PRACTICES

*From Berg 1997:*

- The primary management needs are to maintain the open character of lands currently supporting sharp-tails, and to rejuvenate decadent habitat having a recent sharp-tail history.
- Habitat management techniques include extensive prescribed burning, mechanical treatment (shearing, hydro-axe, roller chopping, hand cutting) and limited herbicide application.
- Timber management is most often by clearcutting which provides temporary sharp-tail habitat.
- Experimental management techniques include mowing and hand-cutting of encroaching brush near dancing grounds, and the construction of new dancing ground sites.
- Consult the Minnesota Department of Natural Resources Forestry-Wildlife Habitat Management Guidelines for Sharp-tailed Grouse (Berg 1981)

*From USDA Species Profile:*

- Large open areas of habitat are preferred as sharp-tails need an open vista to warn them of approaching predators.
- Conifer plantings or hybrid poplar plantations fragment open vistas, and are not compatible with sharp-tail management.
- Leks should be a minimum of 1/8 mile in diameter and relatively free of woody vegetation. The terrain should be flat to slightly convex and consist of grass, sedge, tame hay, crop stubble, open pasture, or tilled cropland.
- Optimum brushland cover consists of fruiting shrubs 3-7 feet high.

- Sharp-tails are usually intolerant of any conifers within  $\frac{1}{4}$  miles of the lek and relatively intolerant of conifers within  $\frac{1}{2}$  mile. Once conifers approximately  $\frac{1}{4}$  mile from the lek center exceed 20 feet, or if conifers  $\frac{1}{2}$  mile distant exceed 40 feet, the habitat will become unsuitable.
- **Refer to attached page for management recommendations at the end of this account.**

*From WBCI Species Profile:*

- Sharp-tailed Grouse habitat is ephemeral and largely dependent on disturbance to maintain appropriate vegetative condition.
- Traditional habitat management efforts have focused on mowing, prescribed fire, and timber harvest.
- However, recent research suggests that birds may respond more positively to new habitat created as a result of timber harvest
- Sharp-tailed Grouse habitat management needs to occur in large continuous blocks of at least 100 hectares and on a landscape scale.
- Emphasis should be placed on connecting or linking large core populations through partnerships among local, state and federal agencies as well as private landowners.

## MONITORING RECOMENDATIONS

- Conventional survey methodologies often are not adequate for this species. It is rarely recorded on the BBS routes. Annual surveys of Minnesota's identified leks the most effective monitoring approach.

## 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

**Action:** Support the designation of Priority Open Landscapes in appropriate Land type Associations as part of the Minnesota Department of Natural Resources Subsection Forest Resources Management Planning process. The DNR's target is to designate 44 LTAs across the forest and transition zones of Minnesota as priority open landscape areas. See attached MNDNR Indicator Sheet on Brushland Habitat Conservation and the MNDNR brochure on Managing Your Brushland for Wildlife:  
<http://files.dnr.state.mn.us/assistance/backyard/privatelandsprogram/brushlandmgmt.pdf>

## RESEARCH NEEDS

*From WBCI Species Profile:*

- Additional research and monitoring efforts to identify new lek locations on private lands and evaluate their importance to the overall statewide population is warranted.
- Studies that investigate the minimum area requirement for sustaining viable populations also are needed.

Minnesota Sharp-tailed Grouse Society: <http://www.sharptails.org/>

## Sharp-tailed Grouse Distribution Maps

