

2022-2032
Minnesota Sharp-tailed Grouse Management Plan -
“Saving Wide Open Spaces for the Firebird”

Excerpt of Goals and Strategies, and Best Management Practices

by the Minnesota Sharp-tailed Grouse Society

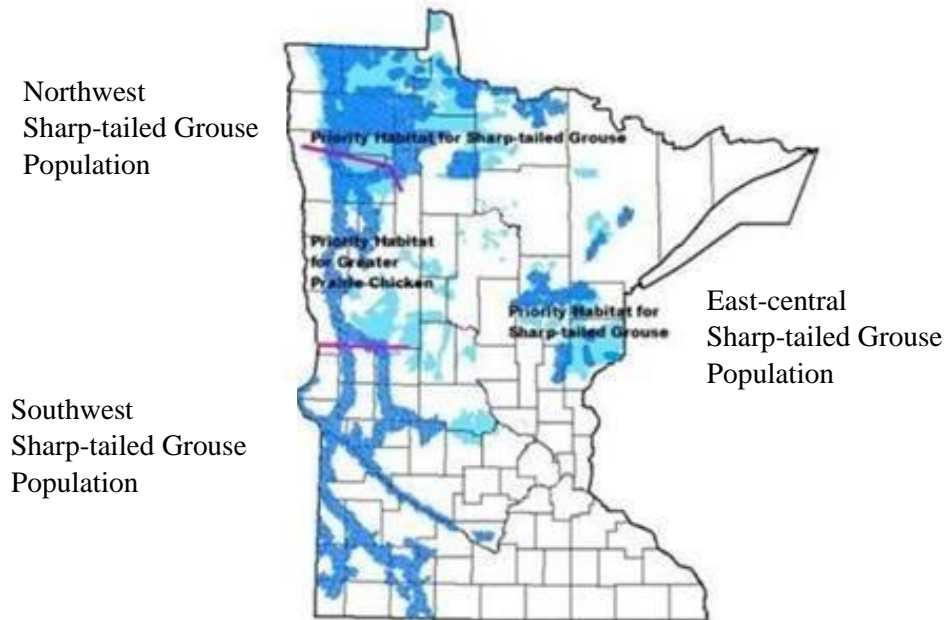
November 18, 2022



"...the grouse represents only a millionth
of either the mass or the energy of an acre.
Yet subtract the grouse and the whole thing is dead."
- Aldo Leopold, *A Sand County Almanac*, 1949



Map 1. Core habitat areas and corridors of grassland and shrubland in Minnesota for prairie grouse and other wildlife.



Dark blue represents core habitat areas and corridors (or primary habitat) that were identified in the Minnesota Prairie Conservation Plan for western Minnesota and by DNR Wildlife Managers in northcentral, northeast and east-central Minnesota based on lek locations and potential for habitat management. Light blue represents other potential habitat (priority open landscapes) identified in DNR Section Forest Resource Management Planning (or secondary habitat). The area in northwest Minnesota between the pink lines is priority habitat for greater prairie-chicken. This map was created for the interstate work group which is drafting range-wide plans for the plains and prairie sharp-tailed grouse and greater prairie-chicken. The project is endorsed by the Midwest and Western Associations of Fish and Wildlife Agencies. Digital shapefiles are available upon request.

SHARP-TAILED GROUSE MANAGEMENT

1. Habitat Goal – Maintain and expand abundant, high-quality grassland and shrubland habitats (ecosystems) within core habitat areas and corridors (Map 1) to save wide open spaces that support viable populations of sharp-tailed grouse. Four key limiting habitat factors must be addressed: sufficient large complexes, connectivity, upland nesting cover, and use of prescribed fire.

Strategies:

On Public and Private Lands –Sharp-tailed grouse must be managed across land ownerships to achieve large habitat complexes and connectivity.

1a. Support and collaborate on habitat projects across property lines to maximize project size, habitat complex size and connectivity by:

- Establishing habitat complexes of at least 10,000 acres (Temple 1992) within core habitat areas (Map 1). Development of habitat complexes of 50,000 acres is optimal in the long-term (Houts et al. 2022). Habitat complexes are located in ecologically appropriate landscapes (i.e., adapted to dynamic processes and historically composed of early successional habitats).
- Establishing blocks of habitat or “stepping stones” at least 1,280 acres in size, and preferably 2,560 acres (Berg 1999), that are 3 - 6 miles apart within corridors (Wisconsin DNR 2013, Minnesota DNR 2011).
- Using “Defend the Core, Grow the Core” management to prioritize, i.e., remaining expansive grassland and shrubland complexes, especially those with leks, will be defended foremost and similar habitats restored secondarily to grow larger complexes.
- Engaging in landscape planning efforts and teams in Minnesota, such as DNR’s Section Forest Resource Management Planning, NWR planning, Minnesota Forest Resource Council’s (MFRC) Landscape Program, Minnesota Forest Habitat Collaborative in the forest and transition regions, Local Technical Teams in the parkland and prairie regions, USDA State Technical Committee, Minnesota Association of Soil and Water Conservation Districts, NRCS/SWCD Local Work Groups, and Native American communities’ natural resource programs.
- Engaging in planning efforts and projects across states/provinces, such as the interstate work group’s range-wide plans for plains and prairie sharp-tailed grouse and greater prairie-chicken (Houts et al. 2022).
- Securing and utilizing funds such as Outdoor Heritage Funds (OHF).
- Advocating for dedicated funding through DNR for sharp-tailed grouse management (shrublands), like that for ducks (wetlands) and pheasants (grassland) via habitat stamps, with distribution of funds guided by this plan and its strategies.

1b. Maintain and create additional, upland grass and shrub habitats within core habitat areas and corridors, especially within their complexes and “stepping stones”, by:

- Designing and implementing timber harvests with large harvest units, shorter rotations, and no or very few reserves and snags, especially when adjacent to or near existing grassland or shrubland.
- Using the “rolling forest” harvest method around core grassland/shrubland areas where feasible.
- Discouraging establishment of rows and blocks of trees. Instead encourage perennial grass, forb, and shrub vegetation.

1c. Increase the amount of habitat treated with prescribed burning within core habitat areas and corridors, especially within their complexes and “stepping stones”, by:

- Conducting more burns in summer and fall and maximizing size of burn units.
- Collaborating within and across agencies and partners to secure necessary burn training, crews, and equipment.
- Engaging in the Minnesota Prescribed Fire Council to assist fire practitioners, policymakers, regulators, and citizens with issues surrounding prescribed fire use.

1d. Encourage the use of management techniques that are beyond the norm (i.e., prescribed burning in spring and mechanical brush treatment in winter) within core habitat areas and corridors, especially within their complexes and “stepping stones”, to increase tools in the toolbox and plant diversity by supporting:

- Prescribed burning and mowing during summer and fall (Roy et al. 2020),
- Conservation haying and grazing,

- Seeding to increase native plant diversity, and
- Selective herbicide treatments to control invasive plants and woody vegetation.

On Public Lands - Sharp-tailed grouse habitat must be managed on expansive, designated, public/protected grassland and shrublands to provide core habitat areas/strongholds less susceptible to changing land use and source populations to re-populate recovered habitat when opportunity arises, such as increase in CRP acres.

1e. Support management of public/protected grasslands and shrublands by:

- Advocating for sufficient prescribed fire funding for training, fire staff, and equipment.
- Facilitating habitat enhancement and restoration projects through funding and people power.
- Supporting forest management and policy that maximizes size of habitat complexes, such as harvest units, shorter rotations, and no or very few reserves and snags.
- Intensively managing habitat within one to two “Intensive Sharp-tailed Grouse Management Areas” (ISGMA) in east-central Minnesota for five years, then selecting new ISGMAs for the next five years, etc. to create large scale, dynamic disturbance.

1f. Support land protection and designation of public/protected lands for management of expansive, grassland and shrubland ecosystems by:

- Engaging in land and habitat management planning by land administrators, such as DNR, USFWS, and Counties, to designate WMAs, Waterfowl Production Areas, NWRs, and county lands for management.
- Advocating for land protection and “rounding out” of public/protected lands to improve access, increase management efficiency and effectiveness (such as for prescribed burns), and build upon large, secure habitat blocks.

1g. Secure funding for the above projects through OHF, CPL or other grants, either alone or with partners. Current and potential partners include PF, Rocky Mountain Elk Foundation, Minnesota Prairie Chicken Society (MPCS), The Nature Conservancy (TNC), American Bird Conservancy (ABC), the North American Grouse Partnership, Backcountry Hunters and Anglers, and more.

1h. Encourage agencies such as DNR and USFWS to make it a priority to budget for and allocate internal funds specifically targeted at grassland and shrubland management projects in core habitat areas and corridors, with highest priority on ISGMAs and “defending the core.”

On Private Lands - Sharp-tailed grouse must be managed on private lands to achieve sufficiently large, grassland and shrubland habitat complexes and connectivity. Private lands often provide much needed upland habitat for leks and nesting on hay lands and pastures.

1i. Support the Farm Bill Assistance Partnership which funds PF Farm Bill Biologists within sharp-tailed grouse range.

- Sustain the three positions out of Aitkin, Hinckley, and Thief River Falls.
- Seek additional biologists to fill staffing gaps, such as in Karlstad, Baudette, and Virginia.

1j. Promote and use federal and state conservation programs to conserve habitat within core habitat areas

and corridors. Programs available in Minnesota include CRP, EQIP, Working Land for Wildlife (WLFW), Grazing Lands Conservation Initiative, Regional Conservation Partnership Program, Agricultural Conservation Enhancement Program, Conservation Stewardship Program, and RIM.

- Capitalize on NRCS's recent designation of sharp-tailed grouse as a focus species for the EQIP Bird Pool.
- Advocate for the State Grassland Priority Zone (used in State CRP and Grasslands CRP ranking factors) and CRP State Acres for Wildlife Enhancement (SAFE) in Minnesota to include sharp-tailed grouse core habitat areas, especially in northwest Minnesota.
- Utilize the new WLFW Northern Bobwhite Grasslands and Savannas project which includes western and southern Minnesota.
- Collaborate with the Minnesota Grazing Lands Conservation Association.

- 1k. Facilitate prescribed burning by private landowners through training, equipment loans, burn contractor lists, funding, support for formation of prescribed burn associations, and other resources.
- 1l. Support working lands, such as pastures and hay lands, and incentives to rotationally graze and delay hay until after the prime nesting season (August 1). The Audubon Conservation Ranching initiative that will begin certifying ranches in Minnesota in 2023 can be one key tool.
- 1m. Encourage enhancement of other agricultural lands with cover crops, small grain food plots, and establishment of perennial grass and forb cover where soils are not productive or erodible.

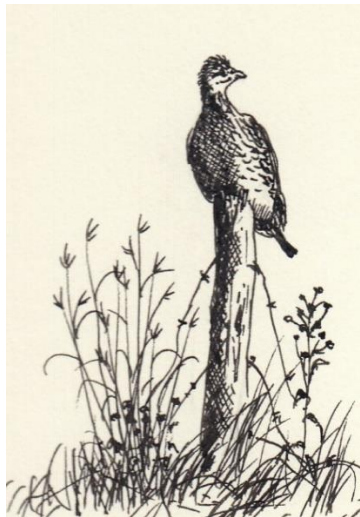


2. Population Goal - Maintain and grow viable sharp-tailed grouse populations within core habitat areas, using them as flagship, umbrella, and indicator species. Specifically, by 2032, increase the east-central Minnesota population and range to 2012 levels, and increase the northwest population by 10% from the 2022 population level.

Strategies:

- 2a. Strongly support continued annual lek surveys throughout sharp-tailed grouse range. They are the most effective approach to monitoring population trends, habitat use, and success toward goals.
- 2b. Support harvest of sharp-tailed grouse populations when feasible to maintain our hunting heritage, support from hunters, and funding toward sharp-tailed grouse management.
- 2c. Advocate for re-opening the east-central hunting season via a lottery system when the population attains a level similar to 2010-2012 for at least three years (i.e., the number of leks with at least two males exceed 50 and average males per lek is greater than 7). Support use of a lottery system for at least the first five years to closely monitor harvest and population recovery.

- 2d. Encourage DNR to summarize hunter harvest by northwest and east-central sharp-tailed grouse range rather than statewide to present a more accurate representation of hunter harvest.
- 2e. Encourage DNR to set population triggers for adjusting harvest from a regular season to a lottery or closed season if a population declines. These triggers would prevent delayed regulatory management action and potential harm from hunting mortality becoming additive.
- 2f. Expand surveys to potential habitat, such as in southwest Minnesota, to assess capacity for population growth and benefit of targeted habitat projects.
- 2g. Resist translocation of sharp-tailed grouse to areas of low population to increase population numbers (such as east-central Minnesota) or genetically rescue a population unless sufficient quality habitat exists at the release area (Fandel and Hull 2011; Roy and Gregory 2019; Mussman et al. 2017). Genetic diversity in east-central Minnesota was adequate when assessed indicating that lack of quality habitat is the problem.



3. Outreach Goal - Raise public awareness, understanding, and support for grassland, shrubland, and sharp-tailed grouse conservation across a diverse audience, especially those known to value outdoor recreation, biodiversity, clean water, carbon sequestration, and benefits to local communities. Maintain and cultivate partnerships to facilitate the above habitat and population goals.

Strategies:

- 3a. Share this plan to communicate the need, core habitat areas and corridors, and strategies with partners and landowners via MSGS’s social media, newsletter, and events, and partner outlets.
 - Key partners to ensure are aware and understand the plan include DNR’s Fish and Wildlife, Ecological and Water Resources, Parks and Trails, and Forestry Divisions, USFWS, NRCS, SWCDs, PF, MPCS, TNC, American Bird Conservancy, County Land Departments, Tribal Nations, MFRC, and Ducks Unlimited.
 - It is especially critical that organizations facilitating tree planting, such as DNR Forestry’s Cooperative Forest Management Unit, SWCDs, and TNC, are aware and encouraged to help meet habitat goals for grassland and shrubland landscapes.

- 3b. Increase access to prescribed burn training, equipment, contractors, funding, and other resources for landowners.
- 3c. Encourage sharp-tailed grouse viewing blinds where populations are stable or increasing to connect and inspire the public with these amazing birds, their habitats and other wildlife (Roy and Coy 2021).
- 3d. Inform the public and stakeholders about importance of the Legacy Amendment passed in 2008, the resulting OHF and habitat projects, and need to support renewal of the Legacy Amendment when its 25-year span is done.
- 3e. Support continued use and promotion of the DNR “Window on Wildlife” camera and other cameras on sharp-tailed grouse leks, and create school curriculum around them.
- 3f. Continue MSGS’s bi-annual Spring Flings and annual Volunteer Brush Cut Habitat Days for grouse enthusiasts.
- 3g. Support access to, walking trails at, and informational signage in expansive grassland and shrubland habitats on public lands.
- 3h. Collaborate with ranchers and grazing organizations to enhance grazing lands for sharp-tailed grouse and promote their products.
- 3i. Update sharp-tailed grouse habitat management pamphlets, prescribed burn pamphlets, and other related materials with the best science. Distribute through key in-person outlets and social media.
- 3j. Share the latest habitat and sharp-tailed grouse related news via the MSGS newsletter and social media, and partner outlets such as newspapers, magazines, social media, television, videos, and podcasts.
- 3k. Collaborate with conservation partners that have aligning missions, especially for expansive, open, upland habitats. These partners include the 30 listed below. Their letters of endorsement and gratitude can be found in Appendix III. MSGS cannot and should not meet its mission alone. We are better together.



APPENDIX 2. BEST MANAGEMENT PRACTICES FOR SITE-LEVEL SHARP-TAILED GROUSE HABITAT PROJECTS IN MINNESOTA

These best habitat management practices (BMP) were added for convenience of managers of private and public lands that want to sustain viable sharp-tailed grouse populations. Their implementation, especially in core habitat areas and corridors, will help provide sharp-tailed grouse the space, food, and cover they need throughout their life cycle. Much of the information comes from Berg 1999. It still rings true today. Management to create and maintain open habitats is not “rocket science” – think BIG and OPEN the habitat up! The work is in the details. Each project site and landscape are different.

1. Develop and implement a habitat management plan.

- Use thoughtful, long-term planning that considers the below BMPs to meet sharp-tailed grouse habitat needs in the landscape and on the land and site of interest.
- Map and plan which habitats need management, when they need it, and what techniques to use.

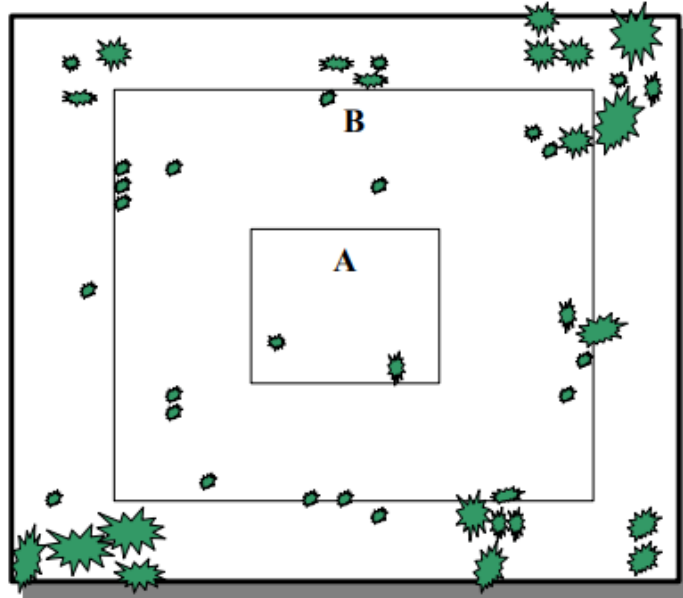
2. Conserve existing open habitats, especially in large, open complexes.

- The larger and more diverse the complex, the greater probability it will meet an array of sharp-tailed grouse life cycle needs.
- Large areas of natural, less frequently disturbed habitats such as prairies, grasslands, savanna, sedge meadow, shrub swamp, open bog, or old fields are critical, especially upland.
- Well managed pasture, hay land and cropland can complement the natural habitats.
- Minimum habitat size depends on its configuration in the landscape. Where suitable habitat is remotely scattered, habitat size must be a minimum of 2 square miles, preferably 4 square miles.
- Where habitat exists rather uniformly in scattered but connected blocks, open habitat must be at least ½ square mile.
- The optimum habitat composition is 35% grass-legume, 15% cropland, 7% sedge, 13% young aspen/willow/birch, and 25% lowland brush. See the below image for an example of suitable brush and tree distribution.

3. Add open habitats to complexes where feasible to meet the above criteria by restoring/seeding native vegetation, removing woody vegetation, and establishing pasture and hay land where feasible.

4. Treat/disturb natural, open habitats every 5-10 years or as needed to set back succession.

- Maintain optimum cover of shrubs 3-7 feet tall and a scattered shrub density of 10-38%.
- Use techniques such as prescribed burning, mowing, chopping, grazing/browsing by livestock, timber harvest, hand cutting, and selective herbicide treatment.
- For nesting habitat, strive for structurally diverse habitat, dominated by dense herbaceous cover and small shrubs or small trees to nest near or under. Nesting generally occurs within 0.5 to 2 miles of the lek.
- For brood-rearing habitat, strive for more open habitat with less woody vegetation (such as unmowed hay land, lightly grazed pasture, and burned habitats) and abundant forbs and insects, though some shrubs can provide cover.
- For winter habitat, strive for a higher shrub component, especially at the periphery of open habitats, to provide cover, browse, and snow roosts. Important woody species include quaking aspen, birch, willow, bog birch, serviceberry, snowberry, and hawthorn. Sharp-tailed grouse may travel several miles in winter.



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Example of brush and young tree distribution in one square mile of habitat, showing 40 acres of open area where dancing ground would be located (A), and scattered clumps of woody vegetation (B). The perimeter may contain some hardwoods (aspens), but should be as open as possible. Conifers must be avoided.

5. **Maintain existing leks and create new leks where feasible.** As the hub of sharp-tailed grouse populations, lek sites are crucial and require special consideration.
 - Remove and do not plant trees, especially conifers, within a ½ mile.
 - 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, hay, crop stubble, open pasture, or tilled cropland.
 - In the absence of existing leks, new ones can be created by mowing a 100-200 foot oval area in the midst of quality nesting habitat in the fall. Two to three sites per 160 acres is adequate.
6. **Do not fragment open habitats by planting trees within them.** Blocks and rows of trees fragment the open vista needed by sharp-tailed grouse, and provide raptor perches and predator denning sites and travel lanes.
7. **Prevent and control invasive plant species** to maintain native plant diversity and thus quality food and cover.
 - Prevent, detect early, and swiftly treat invasive plants to stop their spread.
 - Ensure all equipment such as OHVs, mowers, and logging equipment are thoroughly clean before arriving at and leaving habitat sites.
8. **Use rotational grazing and rest periods in pastures.**
 - Light to moderately graze pasture with adequate rest periods to leave at least 6 inches of cover.
 - Alternate timing of grazing to promote plant diversity.
 - Graze leks more heavily to keep them open and attractive to males in spring.

- 9. Delay haying and mowing of roadsides until August 1**, after the prime nesting season to reduce harm to nests and young broods.
- Use flushing bars and haying from the inside to outside of fields.
- 10. Plant small grain food plots (at least 1 acre), a diversity of cover crops, avoid fall tillage, and leave row crops and small grains** adjacent to, or within ¼ mile of winter cover and/or the lek for brood-rearing and winter food.
- A diversity of small grains (such as wheat, oats, flax, buckwheat, and rye), crop residue, and waste grain can provide valuable food.
 - Avoid corn, sorghum or sunflowers near leks due to their height.
 - Remove trees near food plots and/or locate food plots at least 100 yards away from trees over 15-20 feet tall to minimize predation by raptors.
 - Where food plots are not feasible, baled small grain can be transported to the site.
- 11. Limit use of chemicals** in agricultural practices. Evidence is growing that some chemicals, such as certain pesticides, are harmful directly and indirectly to wildlife and insects.
- 12. Encourage neighboring landowners to also manage sharp-tailed grouse habitat** and follow these BMPs. It is essential to collaborate to manage large, open habitat complexes.
- 13. Connect open habitats across the landscape** by collaborating with private and public landowners to promote gene flow and the ability to move and adapt to climate change.
- Provide stepping stones of habitat every 3-6 miles.

