

AN ACTION PLAN FOR MINNESOTA WILDLIFE

ASPEN PARKLANDS SUBSECTION PROFILE



Minnesota's Comprehensive Wildlife Conservation Strategy



SUBSECTION OVERVIEW

The Aspen Parklands Subsection, located in northwestern Minnesota, is a mix of lacustrine plain and shoreline (beach) ridges formed by Glacial Lake Agassiz, with extensive forested peatlands to the east and tallgrass prairie to the west. The subsection is the southern end of a much larger province that stretches north and west into Canada and serves as the transition zone between the prairie and forest areas. The large Roseau and Red rivers are in this subsection, and flooding is common due to the level topography. Deep lakes are rare. This subsection contains large complexes of wetlands, aspen and brush prairie with dry prairie on beach ridges.

Well over 60 percent of this subsection is in agriculture, mostly in the southern half. In the northern half, extensive areas have recently been cleared for farming. Still, some remnants of large contiguous patches of native plant communities, including wetlands, remain. Wild rice cultivation is common in the eastern edge of this area. Motorized recreation is on the rise.

SPECIES IN GREATEST CONSERVATION NEED

85 Species in Greatest Conservation Need (SGCN) are known or predicted to occur within the Aspen Parklands. These SGCN include 30 species that are federal or state endangered, threatened, or of special concern. The table, SGCN by Taxonomic Group, displays by taxonomic group the number of SGCN that occur in the subsection, as well as the percentage of the total SGCN set represented by each taxon. For example, 7 mammal SGCN are known or predicted to occur in the state.

SGCN BY TAXONOMIC GROUP

Taxa	# of SGCN	Percentage of SGCN Set by Taxon	Examples of SGCN
Amphibians	1	16.7	Common Mudpuppy
Birds	63	64.9	Upland sandpiper
Fish	1	2.1	Lake Sturgeon
Insects	7	12.5	Garita skipper
Mammals	7	31.8	Least weasel
Mollusks	3	7.7	Black sandshell
Reptiles	2	11.8	Common snapping turtle
Spiders	1	12.5	Marpissa grata

SPECIES SPOTLIGHT

American bitte	ern (Botaurus lentiginosus)
Distribution	Primarily found in marshlands of central, western, and northwestern Minnesota.
Abundance	Uncommon. This bird has declined significantly because of wetland drainage. The best remaining population appears to be in the vicinity of the Agassiz National Wildlife Refuge in northwestern Minnesota.
Legal Status	Federally protected migratory bird.
Comments	This species has a broad range across North America, but many sites formerly occupied are vacant, suggesting that there could be other detrimental factors at work in addition to habitat loss. Telemetry research on habitat use and migratory patterns has been carried out in recent years at the Agassiz NWR.



Current Land Use/Land Cover



HIGHLIGHTS

- Gray wolves, sharp-tailed grouse, sandhill cranes, eared grebes, northern harriers, marbled godwits, American bitterns, Franklin's gulls, Assiniboia skipper, great gray owls and moose make this subsection unique. It is also a major migratory stopover and breeding area for waterfowl.
- Areas important for SGCN include Agassiz NWR; Thief Lake, Roseau River, Twin Lakes, and Elm Lake WMAs; Lake Bronson and Old Mill SPs; and Gully Fen, Two Rivers Aspen Prairie Parkland, and Lake Bronson Parkland SNAs.



Number of SGCN records per township 0 1 - 10 11 - 20 . Th. 21 - 5051 - 100 101 - 400 401 - 781 Roseau **MCBS** animal surveys Marshall not completed **Public and conservancy** property **County boundary** Polk This map depicts the number of validated records of Penningtor m. 11. species in greatest conservation need since 1990 per township and public land/conservancy land. in the suggests relationships between known SGCN 1.41 occurrences and conservation management lands. It 14 also displays areas that have not been surveyed for Red Lake 11 rare animals by MCBS. v/4/ 5 10 15 Miles n

SGCN ELEMENT OCCURRENCES BY TOWNSHIP

Sources: MN DNR Natural Heritage database, MN DNR County Biological Survey (MCBS), MN DNR Statewide Mussel Survey, MN DNR Fisheries Fish database. Areas with no MCBS animal surveys may have had mussel and fish surveys, as well as reports of other species occurrences recorded in the MN DNR Natural Heritage database.

SPECIES PROBLEM ANALYSIS

The species problem analysis provides information on the factors influencing the vulnerability or decline of SGCN that are known or predicted to occur in the subsection. The table lists the nine problems, or factors, used in the analysis, and the percentage of SGCN in the subsection for which each factor influences species vulnerability or decline. The results of the species problem analysis indicate that habitat loss and degradation in the subsection are the most significant challenges facing SGCN populations.

NOTE: The inverse of the percentages for each problem does not necessarily represent the percentage of SGCN for which the factor is not a problem, but instead may indicate that there is not sufficient information available to determine the level of influence the factor has on SGCN in the subsection.

Problem	Percentage of SGCN in the Subsection						
	for Which This Is a Problem						
Habitat Loss in MN	89						
Habitat Degradation in MN	94						
Habitat Loss/Degradation Outside of MN	42						
Invasive Species and Competition	24						
Pollution	32						
Social Tolerance/Persecution/Exploitation	25						
Disease	6						
Food Source Limitations	5						
Other	12						

It

KEY HABITATS - For Species in Greatest Conservation Need

The CWCS identified key habitats for SGCN within the subsection using a combination of five analyses, labeled A-E below. The table depicts the five analyses, and under which analyses the key habitats qualified. To qualify as a key habitat for the subsection, the habitat had to meet the criteria used in at least one of the five analyses, as specified in the descriptions to the right of the table. The graphs below depict results from four (A-D) of the five analyses used in determining key habitats. Those habitats that meet the criteria are highlighted in **RED** in the graph for that analysis. Those habitats that do not meet the criteria are shaded in **GOLD**. Analysis E is not represented by a graph; the results of this analysis are presented as a list of key rivers/streams in Appendix I. For a more detailed explanation of the five analyses used, see <u>Chapter 7</u>, <u>Methods and Analyses</u>.

	ANALYSIS							
KEY HABITATS	A	B	С	D	E			
Shrub/Woodland-Upland (Brush prairie)			X					
<u>Prairie</u>	X	X	X					
<u>Wetland-Nonforest</u> (Wet prairie)	X	X	X					
Grassland	X							
Lake-Shallow				X				
<u>River-Headwater to Large</u>					X			

Description of Analyses

A: <u>Terrestrial habitat use analysis</u> - terrestrial habitats that represent more than 5% of 1890s or 1990s landcover and are modeled to have the most SGCN using them based on a z-test with p<0.01.

B: <u>Specialist terrestrial habitat use analysis</u> - terrestrial habitats that represent more than 5% of 1890s or 1990s landcover and have more than 15 species, 20% of which use 2 or fewer habitats (specialist species).

C: <u>Terrestrial habitat change analysis</u> - terrestrial habitats that represent more than 5% of the 1890s landcover and have declined by more than 50% in the 1990s landcover. For wetlands this change was based on an analysis done by Anderson & Craig in *Growing Energy Crops on Minnesota's Wetlands: The Land Use Perspective* (1984).

D: <u>Aquatic habitat use analysis</u> - lake or stream habitats that have the most SGCN use based on a z-test with p<0.01 of all subsections.

E: <u>The Nature Conservancy/SGCN occurrence analysis</u> - stream reaches identified in the Areas of Aquatic Biodiversity Significance in the four TNC Ecoregional Assessments and reaches with high SGCN occurrences (see <u>Appendix I</u> for list of stream reaches).

A/B – Terrestrial Habitat Use/Specialist Terrestrial Habitat Use



Number of Species

C – Terrestrial Habitat Change



D – Aquatic Habitat Use



E – The Nature Conservancy/SGCN Occurrence

To reference the key rivers and streams for the subsection, see Appendix I.

DISTRIBUTION OF KEY HABITATS AND SPECIES RICHNESS BY TOWNSHIP



SUBSECTION HABITAT PERCENTAGES AND HABITAT USE BY SGCN TAXA

This table presents information on the percentages for each habitat in the subsection (showing changes in coverage between the mid- to late 1800s and the 1990s), as well as habitat use by SGCN taxonomic group. Habitats are listed in ranked order for percent coverage within the subsection in the 1990s. Key habitats for the subsection (as identified on previous page) are listed in **BOLD**. SGCN habitat use is broken down by taxonomic group, with a total number of species for all taxonomic groups listed at the far right of the table.

			SGCN BY TAXONOMIC GROUP								
HABITAT	Percentage of Subsection (1890s)	Percentage of Subsection (1990s)	Amphibians	Birds	Fish	Insects	Mammals	Mollusks	Reptiles	Spiders	Total Number of Species
Cropland	N/A	65.6		8			4				12
Wetland-Nonforest (Wet prairie)	21.3	8.5		38			4		1	1	44
Forest-Upland Deciduous (Aspen-oak)	11.7	7.9		11			3				14
Grassland	N/A	7.5		21			7		1	1	30
Forest-Lowland Coniferous	6.4	5.8		13			1				14
Forest-Upland Deciduous (Hardwood)	0.0	2.5		11			4				15
Shrub/Woodland-Upland (Brush prairie)	24.3	1.3		14		2	5		1		22
Lake-Shallow	N/A	0.5		15					1		16
Developed	N/A	0.3		4			3				7
Forest-Lowland Deciduous	1.1	0.1		13			1				14
Forest-Upland Coniferous	0.0	0.0		13			4		1		18
Prairie	34.8	0.0		19		7	6		1	1	34
Shoreline-dunes-cliff/talus	N/A	N/A		10			2				12
Shrub-Lowland	N/A	N/A		20			5				25
River-Headwater to Large	N/A	N/A	1	2				3	1		7
River-Very Large	N/A	N/A	1		1			2	1		5

N/A: Insufficient data available to determine percent coverage within subsection. We have no data to indicate the existence of cropland, grassland, or developed land prior to settlement by people of European descent, although these land uses likely did occur at very low levels. NOTE: 0.0 indicates less than 0.05 percent coverage.

Ten-Year Goals, Management Challenges, Strategies, and Priority Conservation Actions

Goal I: Stabilize and increase SGCN populations

Management Challenge 1 – There has been significant loss and degradation of SGCN habitat Strategy I A – Identify key SGCN habitats and focus management efforts on them

Priority Conservation Actions to Maintain, Enhance, and Protect the Key Habitats

- 1. Brush prairie habitats, actions include:
 - a. Manage invasive species
 - b. Use prescribed fire and other practices to maintain brush prairie
 - c. Provide technical assistance and protection opportunities to interested individuals and organizations
- 2. <u>Native prairie habitats</u>, actions include:
 - a. Manage invasive species
 - b. Use prescribed fire and other practices to maintain prairie
 - c. Manage grasslands adjacent to native prairie to enhance SGCN habitat
 - d. Encourage prairie restoration efforts
 - e. Provide technical assistance and protection opportunities to interested individuals and organizations
 - Nonforested wetlands, actions include:
 - a. Enforce the Wetlands Conservation Act
 - b. Manage habitats (e.g., grasslands) adjacent to wetlands to enhance SGCN values
 - c. Manage invasive species

3.

4.

- d. Provide technical assistance and protection opportunities to interested individuals and organizations
- High-quality grassland habitats, actions include:
- a. Maintain high-quality grasslands
- b. Support the maintenance of pasture and grassland habitats valuable to SGCN
- c. Encourage when appropriate transformation of plowed fields into pasture/grasslands
- d. Provide technical assistance and protection opportunities to interested individuals and organizations
- 5. <u>Shallow lake habitats</u>, actions include:
 - a. Maintain good water quality in shallow lakes
 - b. Enhance near-shore terrestrial and aquatic habitats
 - c. Provide technical assistance and protection opportunities to interested individuals and organizations
- 6. Stream habitats, actions include:
 - a. Maintain good water quality, hydrology, geomorphology, and connectivity in priority stream reaches
 - b. Maintain and enhance riparian areas along priority stream reaches
 - c. Provide technical assistance and protection opportunities to interested individuals and organizations

Management Challenge 2 – Some SGCN populations require specific management actions Strategy I B – Manage federal and state listed species effectively

Priority Conservation Actions for Specific SGCN

- 1. Implement existing federal recovery plans
- 2. Develop and implement additional recovery plans
- 3. Provide technical assistance to managers, officials, and interested individuals related to listed species
- 4. Enforce federal and state endangered species laws, as well as other wildlife laws and regulations

Strategy I C – Manage emerging issues affecting specific SGCN populations

Priority Conservation Actions for Specific SGCN

- 1. Work with partners to effectively address emerging issues affecting SGCN populations
- 2. Enforce federal and state wildlife laws and regulations

Goal II: Improve knowledge about SGCN

Management Challenge 1 – More information about SGCN and SGCN management is needed Strategy II A – Survey SGCN populations and habitats

Priority Conservation Actions for Surveys

- 1. Survey SGCN populations within the subsection, actions include:
 - a. Continue MCBS rare animal surveys
 - b. Survey SGCN populations related to key habitats
 - c. Survey wildlife taxa underrepresented by MCBS animal surveys

Priority Conservation Actions for Surveys (continued)

- 2. Survey SGCN habitats within the subsection, actions include:
 - a. Assess the amount and quality of key habitats and map their locations

Strategy II B – Research populations, habitats, and human attitudes/activities

Priority Conservation Actions for Research

- 1. Research important aspects of species populations within the subsection, actions include: a. Better understand the life history and habitat requirements of important SGCN
- 2. Research important aspects of SGCN habitats within the subsection, actions include:
 - a. Identify best management practices for maintaining and enhancing key habitats
 - b. Identify important patterns and distributions of key habitats to better support SGCN populations
 - c. Identify important functional components within key habitats to support specific SGCN
 - d. Explore important, emerging SGCN habitat management issues
- 3. Research important aspects of people's understanding of SGCN within the subsection, actions include:
 - a. Identify people's attitudes and values regarding SGCN
 - b. Identify places and ways people can enjoy and appreciate SGCN

Strategy II C – Monitor long-term changes in SGCN populations and habitats

Priority Conservation Actions for Monitoring

- 1. Monitor long-term trends in SGCN populations, actions include:
 - a. Continue existing population monitoring activities
 - b. Develop additional monitoring activities for specific SGCN populations
- 2. Monitor long-term trends in SGCN habitats, actions include:
 - a. Develop long-term monitoring activities for important SGCN habitats

Strategy II D – Create performance measures and maintain information systems

Priority Conservation Actions for Performance Measures and Information Systems

- 1. Create and use performance measures, actions include:
 - a. Develop partner-specific performance measures within the subsection
 - b. Develop project-specific performance measures for SWG-funded projects
 - c. Actively incorporate monitoring and performance measure information to enhance adaptive management
- 2. Maintain and update information management systems

Goal III: Enhance people's appreciation and enjoyment of SGCN

Management Challenge 1 – Need for greater appreciation of SGCN by people Strategy III A – Develop outreach and recreation actions

Priority Conservation Actions for Outreach and Recreation

- 1. Create new information and communicate with people to enhance their appreciation of SGCN
- 2. Create opportunities for people to appropriately enjoy SGCN-based recreation

Tomorrow's Habitat for the Wild and Rare: An Action Plan for Minnesota Wildlife

How to use this subsection profile

Intended audience: Natural resource professionals and interested stakeholders

- Identify how the priority conservation actions and key habitats intersect and inform your current and future priorities.
- Using your additional insights and local knowledge, "step-down" the priority conservation actions into more detailed actions and practical on-ground tasks.
- Use it to understand species in greatest conservation need priorities and tell a story about the subsection (its history, biology, ecology, demography) to other natural resource professionals, managers, decision makers and land owners.
- Visit our website, or give us a call, and tell us how you're using it, how others are using it, and ideas that "step-down" the priority conservation actions.

Website:

www.dnr.state.mn.us/cwcs

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