Chapter 1

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

Tomorrow's Habitat for the Wild and Rare: An Action Plan for Minnesota Wildlife (referred to in this document as Minnesota's Comprehensive Wildlife Conservation Strategy or CWCS) is a strategic plan to better manage populations of "species in greatest conservation need" in Minnesota. The essence of this strategy's approach is for the partnership of conservation organizations across Minnesota to work together to ensure that these species populations are sustained for future generations. Members of the partnership include the Minnesota Department of Natural Resources, the U.S. Fish and Wildlife Service, The Nature Conservancy, Audubon Minnesota, and the University of Minnesota, as well as many other agencies and conservation organizations (see chapter 2, Developing and Implementing the Comprehensive Wildlife Conservation Strategy, for a more complete list of partners). This plan outlines priority conservation actions that partners and interested individuals can use as a menu for action, to adopt and adapt to their unique interests and capacities. Development of Minnesota's Comprehensive Wildlife Conservation Strategy was supported by State Wildlife Grant Program funding (grant T-2-P-1).

Species in greatest conservation need (SGCN) are defined by this strategic plan as animals whose populations are rare, declining, or vulnerable to decline and are below levels desirable to ensure their long-term health and stability. There are 292 species in Minnesota's set of SGCN, including those species legally defined as endangered or threatened by the state and the federal government as well as many other species whose populations are in decline. This number represents roughly one-quarter of the almost 1,200 known native wildlife species that occur in Minnesota. This plan relied on available research and professional knowledge to identify these species (the criteria used to define the set of SGCN are described in chapter 3, Minnesota's Species in Greatest Conservation Need).

The Purpose of Tomorrow's Habitat for the Wild and Rare

State Wildlife Grants Program

In 2001, Congress created the State Wildlife Grants Program (SWG) to protect, manage, and address the unmet needs of wildlife species in greatest conservation need. This program provides funding to the states to proactively address species endangerment and habitat conservation. It continues the long history of cooperation between the federal government and the states for managing and conserving wildlife species, going back to landmark laws like the 1937 Pittman-Robertson Wildlife Restoration Act and the 1950 Dingell-Johnson Sportfish Restoration Act. Funding is allocated to states based on a

formula that considers population and land area. Since 2001, the program has allocated more than $7 million to Minnesota.

Table 1.1. Funding of the State Wildlife Grants Program, 2001–2006

	2001	2002	2003	2004	2005	2006	Totals
Federal SWG	$50 million	$80 million	$60 million	$64 million	$69 million	$68.5 million	$391.5 million
MN SWG	$971,000	$1.6 million	$1.1 million	$1.2 million	$1.2 million	$1.2 million	$7.3 million

Almost $5 million in SWG funds has been used for a variety of projects in Minnesota during the first four years of the program:

- Approximately $900,000 was used to fund grants for surveys, research, habitat enhancement, and educational projects by DNR programs that resulted from an internal Request for Proposals in 2001 (educational projects were eligible for funding only the first year federal dollars were available).
- Over $500,000 has been set aside to develop the CWCS.
- Approximately $485,000 is being used to acquire habitat for SGCN.
- Over $700,000 was used to fund CWCS partnership grants for surveys, research, and habitat enhancement projects that benefit SGCN.
- Approximately $500,000 has been used to accelerate completion of the Minnesota County Biological Survey, a systematic, county-by-county survey of the state's rare features.
- $400,000 has been used to improve and update the information system that catalogs Minnesota's SGCN.
- Approximately $400,000 has been used to expand the technical assistance and survey work that DNR staff provide to guide the management of SGCN and to fund the Important Bird Areas initiative.
- More than $500,000 is being used to complete a statewide mussel survey and initiate a long-term mussel monitoring program.

The SWG Program works in concert with other wildlife and habitat conservation efforts, most notably the DNR Nongame Wildlife Program, supported by the tax check-off revenues; the DNR Natural Heritage and Nongame Wildlife Research Program, supported by a variety of funding sources; and the traditional fish and wildlife programs supported by Minnesota's hunting and fishing communities. Minnesota's species in greatest conservation need clearly have benefited considerably from these programs, and the SWG Program is not intended to supplant these important efforts. On the contrary, the program was established to broaden the conservation community's capacity to provide for the full assemblage of Minnesota's wildlife.

The Comprehensive Wildlife Conservation Strategy Requirement

The U.S. Congress mandated that to participate in the SWG Program, states and territories, in partnership with other conservation agencies and organizations, must develop a Comprehensive Wildlife Conservation Strategy (CWCS) to identify and

manage their species in greatest conservation need. The Minnesota CWCS project is our state's response to this congressional mandate.

The Eight Elements

Specifically, each state's Comprehensive Wildlife Conservation Strategy must address the following eight elements:

1. Provide information on the distribution and abundance of species of wildlife, including low and declining populations as the state fish and wildlife agency deems appropriate, that are indicative of the diversity and health of the state's wildlife.
2. Describe locations and conditions of key habitats and community types essential to the conservation of species identified in element 1.
3. Describe problems that may adversely affect species identified in element 1 or their habitats, and priority research and survey efforts needed to identify factors that may assist in restoration and improved conservation of these species and habitats.
4. Describe conservation actions proposed to conserve the identified species and habitats and assign priorities for implementing such actions.
5. Describe plans to monitor species identified in element 1 and their habitats, monitor the effectiveness of the conservation actions proposed in element 4, and adapt these conservation actions to respond appropriately to new information or changing conditions.
6. Describe procedures to review the CWCS at intervals not to exceed 10 years.
7. Coordinate the development, implementation, review, and revision of the CWCS with federal, state, and local agencies and Indian tribes that manage significant land and water areas within the state or administer programs that significantly affect the conservation of identified species and habitats.
8. Describe public participation in the development, revision, and implementation of the CWCS.

Working Together to Sustain All of Minnesota's Wildlife

A Historic Opportunity

In 2001, when the U.S. Congress created the State Wildlife Grants Program and required all states to complete a CWCS, it provided a historic opportunity to consider the condition of all native wildlife, including birds, mammals, fish, amphibians, reptiles, mussels, spiders, and insects. In response to this opportunity, the Minnesota CWCS effort created a project structure that engaged well over 100 conservationists across the state. Individuals with a broad range of technical expertise—including knowledge of individual native species, habitats and conservation planning—comprehensively reviewed the best available information to create a set of species in greatest conservation need and a conservation approach that seeks to ensure the survival of all Minnesota's wildlife for future generations to experience and enjoy.

CWCS Philosophy and Approach

The conservation philosophy for the CWCS project is intentionally simple and direct: Work together with conservation organizations, businesses and industries, and Minnesota residents to sustain all wildlife for future generations. A great number of important conservation efforts are already being implemented throughout Minnesota, and each one plays an important role in the broader conservation picture. When individual organizations lay out their conservation priorities, it is important for the conservation community to step back and consider how these goals and missions work together to forge a common vision for the future.

Minnesota is an ecologically diverse state with almost 1,200 known native wildlife species. Approximately one-quarter (292) of the known species have been identified as Minnesota's species in greatest conservation need by the CWCS project because (1) they are rare, (2) their populations are declining, or (3) they face serious threats of decline. These species are rare owing to many interconnected factors, including habitat loss, habitat deterioration and fragmentation, disease, pollution, exploitation, and predation. After careful review of these factors in relation to the SGCN, the Minnesota CWCS project asserts that habitat loss and deterioration are the primary causes of these species' rarity (see chapter 4, Framework: Goals, Challenges, and Priority Conservation Actions, for more detail on Species Problem Analysis.)

Recognizing habitat loss and degradation as the primary problems, the CWCS identifies specific key habitats to be enhanced in each of Minnesota's 25 ecological subsections. The key habitats are those that are most important to Minnesota's SGCN. They were identified through a number of analyses that looked closely at the needs of the 292 SGCN. Specifically, they have been identified by delineating those habitats that:

- are used by the greatest number of SGCN;
- experienced the most alteration over the past 100 years;
- contain high percentages of SGCN that are habitat specialists; or
- are designated by The Nature Conservancy as important stream segments.

Because Minnesota's CWCS must coexist with the current land uses in the state—working alongside agricultural and forestry interests, mining, and urban development—the CWCS does not call for the maintenance or restoration of habitats everywhere. The CWCS habitat goal is to encourage targeted conservation work that benefits species in greatest conservation need. The menu of strategies is diverse and can be applied at multiple scales depending on the conservation issues and challenges at hand. Actions may include providing technical assistance and financial incentives to private landowners, habitat management and/or restoration, research to address a particular management challenge, or habitat protection options.

Minnesota's CWCS paints this broad vision of a better future for wildlife and provides a simple but challenging pathway to success: Conserve key habitats used by

Minnesota's species in greatest conservation need in order to conserve the majority of Minnesota's wildlife and, for the species that fall through this coarse filter, identify individual species-level actions necessary for their conservation. While the coarse-filter/fine-filter approach is not new, the CWCS partnership believes that it offers the best way to conserve all of Minnesota's wildlife. In addition, the new concept of mesofilter conservation is an approach likely to be further developed through CWCS as more information becomes available (Hunter 2005; see below for a further description of mesofilter conservation).

The CWCS's coarse-filter/fine-filter conservation approach offers a simple yet compelling way to address the complex and challenging task of conserving Minnesota's 292 species in greatest conservation need. Another benefit to this approach is that gathering information about the status and distribution of plant communities is easier than gathering detailed information about the multitude of animal species supported by the plant communities. Furthermore, the CWCS provides a framework to apply the coarse-filter habitat approach that can be scaled up or down depending on the problem. This ability to work at multiple conservation levels is critical to ensuring that the full range of wildlife is conserved. Finally, by focusing on key habitats and habitat complexes, the coarse-filter approach can apply important system-level ecological concepts such as structure, function, and process, which are important for ensuring the survival of animal populations (some of these concepts are explained in greater detail in chapter 6, Habitat Descriptions).

Some species will not benefit from a strictly coarse-filter habitat conservation approach. One such group of species is mussels, for example. According to the American Fisheries Society and The Nature Conservancy, mussels are one of North America's most imperiled groups of animals. The decline of many mussel species is due in part to habitat degradation, but also to other challenges such as low population levels still recovering from intensive collection in the past and the current spread of the invasive zebra mussel. Further, the populations of several mussel species are at such vulnerable levels that immediate action is required to ensure their survival. For example, the Minnesota DNR and other organizations are currently removing larval Higgins eye mussels, a state and federally endangered mussel, from the zebra mussel–infested lower reaches of the Mississippi River and relocating them upstream, where zebra mussels are still uncommon. This is a stopgap measure to ensure the survival of this species until habitat is improved and zebra mussels pose less of a threat.

Another fine-filter example is timber rattlesnake conservation. Killed for a bounty in Minnesota until 1989, this species continues to be persecuted through organized raids on its winter dens and by individuals who perceive it to be a threat. In addition to managing the timber rattlesnake's uncommon bluffland habitat, important actions to conserve the species include educating citizens about its value and the fact that it rarely harms people, and enforcing the law against illegal killing of this protected species.

Another important tenet of the CWCS's approach is to conserve quality habitat before restoring habitat that has been lost or degraded. The cost of restoration is many

times greater than proactive conservation. Once high-quality habitat has been conserved, it is important to buffer, connect, and restore adjacent areas. Most key habitats identified in the subsections exist in relationship to other important habitats. Understanding the relationships among these habitats will allow them to be managed within their broader ecological context.

The intent of the coarse-filter/fine-filter approach is to protect the full complement of natural ecosystems and their constituent processes, structures, and species within a network of ecological reserves (Hunter 2005). However, managing landscapes for the benefit of species in greatest conservation need can and must extend into semi-natural areas managed primarily for other reasons. These "working landscapes" cover roughly 90 percent of the earth's surface and, in most places, surround and impact natural reserves (Hunter 2005).

Mesofilter conservation is a new term for the concept of managing seminatural, cultivated, and urban ecosystems and is based on the idea that most ecosystems "contain certain features that are critical to the welfare of many species" (Hunter 2005). While there is much yet to be learned, many opportunities exist to manage for elements within a working landscape that will benefit species in greatest conservation need, as well as more common species and human communities.

Working landscapes often coincide with the places where people live. Identification of key habitats or habitat elements in these landscapes provides opportunities to educate people about SGCN and their habitats. Although these areas may not be ecologically "pristine," they offer opportunities for people to observe wildlife close to home and participate in habitat restoration efforts. These experiences can be the foundation for motivating residents to get involved in conservation actions.