

## MN Teaming With Wildlife Coalition Members:

Audubon MN

American Fisheries Society–MN Chapter

Fish & Wildlife Legislative Alliance

Izaak Walton League MN Division

MN Conservation Federation

The Wildlife Society–MN Chapter

National Wild Turkey Federation

MN Prairie Chicken Society

Society for Conservation Biology

The Nature Conservancy



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INVESTING IN WILDLIFE SINCE 2000



# STATE WILDLIFE GRANTS

February, 2014

# Minnesota's State Wildlife Grants Program

*Preventing species in greatest conservation need (SGCN) from becoming threatened or endangered and aiding in the recovery of those already listed.*



*Prairie monitoring to improve prairie and grassland conservation*

*Over the past thirteen years, Minnesota has received \$16.5 million in State Wildlife Grants (SWG) to support over 60 projects benefiting SGCN and their habitats. Many of these projects will inform the investment of other conservation funds, including funds from the Legacy Amendment and the Environmental and Natural Resources Trust Fund.*

This booklet highlights, by Congressional District, a few of Minnesota's 2010-2013 SWG projects.

For more information about Minnesota's SWG Program visit: [mndnr.gov/cwcs/swg.html](http://mndnr.gov/cwcs/swg.html)



**Preventing species from becoming threatened or endangered makes economic sense...**

Preventing species from becoming threatened or endangered is less costly than aiding their recovery once listed. With this in mind Congress created the State Wildlife Grants program with two aims: to prevent species from becoming threatened or endangered and to aid recovery of species already listed.

**Wildlife Benefits for Minnesotans...**

Wildlife and their habitats provide economic and ecological benefits including:

- groundwater recharge
- flood mitigation
- water purification
- pest control
- pollination of crops and natural vegetation
- natural beauty
- wildlife viewing
- hunting and fishing

**Minnesota's Wildlife Action Plan...**

The Minnesota Department of Natural Resources and its conservation partners identified species in greatest conservation need that are rare, declining or vulnerable to decline, and outlined conservation actions to aid in their protection and recovery.



**8th Congressional District**

**Project:** Protecting Minnesota's lakeshores

**Target species:** Over 30 birds, representing nearly 1/3 of the bird species on Minnesota's Species in Greatest Conservation Need (SGCN) list and four SGCN fish

**Conservation need:** Local units of government are seeking new tools to evaluate whether current strategies and regulations are sufficient to protect sensitive shoreline areas from increased development pressures. DNR scientists worked with counties in northern Minnesota to identify the shorelines that provide the greatest benefit to wildlife.

**Outcomes:**

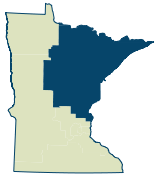
- Science-based methodologies were developed by DNR for the identification of lakeshore areas that provide unique and critical habitats for SGCN and other wildlife.
- Cass County adopted the State's first conservation development standards and enacted resource protection districts to protect sensitive shorelines.
- Crow Wing County was selected as an Environmental Initiative Awards finalist in the Natural Resource Protection and Restoration category for the overhaul of their Land Use Ordinance, which MN Public Radio called one of the most "progressive in the state."
- DNR's Shoreland Habitat Program implemented 24 restoration projects, benefiting fish and birds in greatest conservation need on ten lakes in Cass County. A maintenance plan for each site was developed to ensure the long-term success of the restorations.

**MNDNR partners:** Local units of government, lake associations and private landowners.



Lakeshore restoration project in progress





## 8th Congressional District

**Project:** Identification and conservation of large areas of older forest

**Target species:** Northern goshawk, and other species such as the boreal owl, red-shouldered hawk, veery, eastern wood-pewee and numerous warbler species

**Conservation Need:** Minnesota's northern forests have experienced a decline in the number of large, connected mature forest areas. The average size of these areas has decreased by 50% since the 1930s. This decline is expected to continue. The northern goshawk is a species in greatest conservation need that is dependent on large patches of older forest. Protecting northern goshawk habitat is also expected to benefit a number of other species in greatest conservation need that require large patches of mature forest.

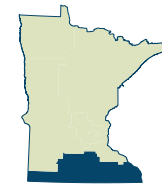
### Outcomes:

- Identified and prioritized forest patches on public lands that are the best candidates for management as large, older forests (highly preferred northern goshawk habitat greater than 300 acres in size).
- Monitored breeding activity in northern goshawk territories so that habitat requirements continue to be incorporated into forest management. From 2010 to 2013, 76 northern goshawk territories were monitored each year.
- DNA from northern goshawk feathers was analyzed to determine if individual birds could be identified. The results indicate that this technique could be used to track the movements of breeding adults and the dispersal of young birds, and monitor the turnover of individuals at nesting territories.
- Information from this project will be used in discussions with forest managers and others to encourage a large-scale habitat management approach to ensure that large patches of habitat remain distributed across the landscape.

**DNR Partners:** Chippewa and Superior National Forests, Lake, St. Louis, Crow Wing, Cass, Aitkin, and Koochiching counties.



A northern goshawk nest



## 1st Congressional District

**Project:** Restoring habitats to benefit species in greatest conservation need (SGCN)

**Target species:** Timber rattlesnake, six-lined racerunner, gophersnake and other species that utilize bluff prairie, oak savanna and oak woodland habitats

**Conservation Need:** Southeast Minnesota's bluff prairies and oak savannas and woodlands provide habitat for an abundance of wildlife. Natural fires historically maintained these habitats. However, reduction in fire frequency, along with other changes, has resulted in invasive species, such as eastern red cedar and buckthorn, making these habitats unsuitable for many wildlife species.

### Outcomes:

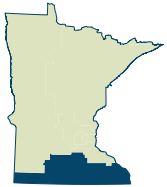
- 687 acres of habitat restored on 45 privately-owned lands. Additional work is planned.
- 538 acres of habitat restored on publicly-owned lands. Additional work is planned.
- SGCN surveys conducted on 92 sites (68 private, 24 public).
- Timber rattlesnakes observed at eight sites. Because rattlesnakes are difficult to detect, this is not a measure of the total number of sites that contain timber rattlesnakes.
- Other SGCN observed include: six-lined racerunner, gophersnake, milksnake, smooth green snake, eastern racer, tiger beetles and eastern whip-poor-wills.

**MNDNR Partners:** Prairie Enthusiasts, Conservation Corps Minnesota, Iowa DNR, and WI DNR.



Improving bluff prairie habitat





## 1st Congressional District

**Project:** Collecting baseline information on bat fatalities at commercial wind farms in southeast Minnesota

**Target species:** Northern long-eared myotis (under consideration for listing as endangered by USFWS), tricolored bat, big brown bat, little brown myotis, silver-haired bat, hoary bat, and eastern red bat

**Conservation Need:** Minnesota legislation requires utilities to derive 25 percent of their energy production from renewable sources by 2025. This could result in the installation of more than 2,000 additional wind turbines. All seven Minnesota bat species are susceptible to fatality from wind turbines. Because bats control insects, pollinate plants, and disperse seeds, a decline in Minnesota's bat populations would likely have far reaching economic and ecological impacts. Information from this study will inform the sighting of future turbines, thereby sustaining bat populations and the public's support of commercial wind farms.

### Outcomes:

- Bat fatality monitoring conducted at three wind facilities in southeast MN from early July through October 31, 2013. This is the first year of the four-year study.
- A majority of the fatalities observed were eastern red bats and hoary bats.
- Observations suggest most of the fatalities are likely migrating bats.

**MNDNR Partners:** MN Department of Commerce-Energy Facilities Permitting, Minnesota Public Utilities Commission.



Roosting big brown bats



## 8th Congressional District

**Project:** A collaborative project with Iowa, Wisconsin and Michigan to improve riverine turtle habitat

**Target species:** Wood turtle

**Conservation Need:** Turtle populations inhabiting rivers and streams have been declining. These declines are attributed to the loss and fragmentation of habitat, increased frequency of flood events which destroy nest sites, increased nest predation and road fatalities. This project will provide important information on threats to Minnesota's wood turtle populations, resulting in more effective conservation actions.

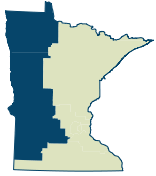
### Outcomes

- 30-40 wood turtles will be surveyed and tracked to help determine the causes of population declines in Minnesota.
- The impacts of predation on the population will be assessed by using predator exclusion cages at 24 nest sites along the Cloquet and St. Louis rivers.
- 50 acres of jack pine habitat within one-half mile of the Cloquet River will be restored to improve nesting habitat.
- Ten nesting sites in areas identified as being safe from flooding will be enhanced.



Wood turtle





## 7th Congressional District

**Project:** Identifying golden-winged warbler habitat preferences and life history characteristics to inform conservation throughout its breeding range

**Target species:** Golden-winged warbler

**Conservation need:** The golden-winged warbler has been in decline at such a dramatic rate that the U.S. Fish and Wildlife Service was petitioned to consider it for listing under the Endangered Species Act. Minnesota is a stronghold for the species, with at least 40% of the global population nesting in the state. Minnesota is the only state in which the population has increased over the past decade, making it an ideal place to study the habitat preferences and life history characteristics of this warbler.

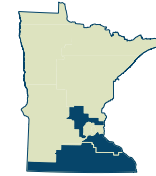
### Outcomes:

- Monitoring and habitat data indicate that the highest golden-winged warbler productivity occurs where cover types are diverse and include upland shrublands and dense mid-successional forest stands interspersed within a mature forest. Previously, wildlife managers had assumed that the golden-winged warbler only needed shrubland habitat, but this study found that older forest types are also needed.
- Monitored 90 nesting attempts at Tamarac National Wildlife Refuge. An estimated 58% of females successfully nested, producing an average of 4.4 fledglings per successful nest.
- Radio-monitored 68 fledglings from 40 successful nests. An estimated 53% survived to independence from adult care.
- Habitat used by nesting females and fledglings was evaluated at Tamarac National Wildlife Refuge and other research sites.

**DNR Partners:** Minnesota Cooperative Fish and Wildlife Research Unit and U.S. Fish and Wildlife Service.



Golden-winged warbler



## 1st, 2nd and 6th Congressional Districts

**Project:** A collaborative project with Iowa, Wisconsin and Michigan to improve riverine turtle habitat

**Target species:** Smooth softshell turtle

**Conservation Need:** Turtle populations inhabiting rivers and streams have been declining. These declines are attributed to the loss and fragmentation of habitat and increased frequency of major flood events, which destroy nest sites and increased nest predation. This project will provide important information on threats to Minnesota's smooth softshell turtle populations, and result in more effective conservation actions.

### Outcomes:

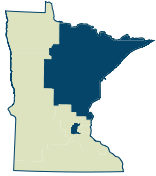
- Smooth softshell turtles will be surveyed and ten turtles tracked to help determine the causes of population declines in Minnesota.
- The impacts of predation on the population will be assessed through use of predator exclusion cages at four nest sites and removing predators at two other sites.
- Habitat will be improved at one nest site and nest success monitored within that area.

**MNDNR Partners:** USFWS, Army Corp of Engineers.



Smooth softshell turtle





## 3rd and 8th Congressional Districts

**Project:** Developing accurate techniques to assess the size and distribution of reptile populations over time

**Target species:** Gophersnake, ratsnake, smooth greensnake, western foxsnake, North American racer and the plains hog-nosed snake

**Conservation need:** Monitoring the population size of reptile species is difficult due to their secretive nature and widespread distribution across the landscape. However, many reptile species gather at wintering sites. Developing methods for locating and monitoring reptiles at these sites could provide biologists with significantly improved population data for targeted conservation.

### Outcomes:

- Wintering sites identified at Crow-Hassan Park Reserve and Wild River State Park. Time-lapse cameras placed at burrow sites to record snake activity and fidelity to the wintering sites.
- Seven gophersnakes at Crow-Hassan Park Reserve and nineteen at Wild River State Park marked to track the snakes over time.
- Similar work is being conducted with ratsnakes in southeast Minnesota.

**MNDNR Partners:** Three Rivers Park District - Crow Hassan Park Reserve, Wild River State Park staff and volunteers.



Gophersnake

Prairie/grassland insects are important pollinators and are high quality food for birds and other animals. Monitoring their abundance and diversity may provide valuable information on habitat quality and management.

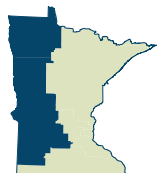
- Identified, developed and tested insect sampling methods.
- Collected and analyzed insect samples on native prairie and restored grassland sites to test whether the presence and abundance of some species may be indicators of habitat quality.
- Identified a previously unknown moth species, found at three prairie sites!

**MNDNR Partner:** The Nature Conservancy of Minnesota and the U.S. Fish and Wildlife Service.



Mounted specimens of several prairie moth species





## 7th Congressional District

**Project:** Monitoring the effectiveness of prairie and grassland conservation actions for species in greatest conservation need

**Target species:** Birds such as the greater prairie chicken, eastern meadowlark, grasshopper sparrow, upland sandpiper, marbled godwit, sedge wren, and butterflies such as the regal fritillary, Dakota, Arogos, and Leonard's skippers, and numerous amphibians and reptiles

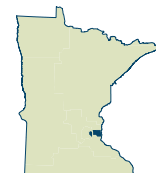
**Conservation Need:** Minnesota's Prairie Conservation Plan (MPCP) outlines a 25-year strategy to protect, restore, and enhance western Minnesota's native prairie, grassland and wetlands, and provides a strategic approach to the investment of Clean Water, Land and Legacy Amendment funds. The State Wildlife Grants program is making a significant contribution to the MPCP by funding comprehensive prairie vegetation and species monitoring projects. Monitoring will help assess the effectiveness of the Minnesota's Prairie Conservation Plan in meeting Minnesota's Wildlife Action Plan goals for prairie habitats and wildlife.

**Outcomes:** The Prairie and Grassland Monitoring Partnership is monitoring habitat conditions as well as the status and population trends of prairie birds.

- Since 2008, habitat characteristics and bird species data collected on 39 of 40 long-term monitoring sites. So far, 167 bird species have been recorded: 55 species of greatest conservation need, 18 of which are state listed. Twenty-six of the 167 species are grassland dependent species.



Porcupine grass and other prairie grasses at the Mickelson Prairie Bank site



## 4th and 5th Congressional Districts

**Project:** Restoration and monitoring of freshwater mussels.

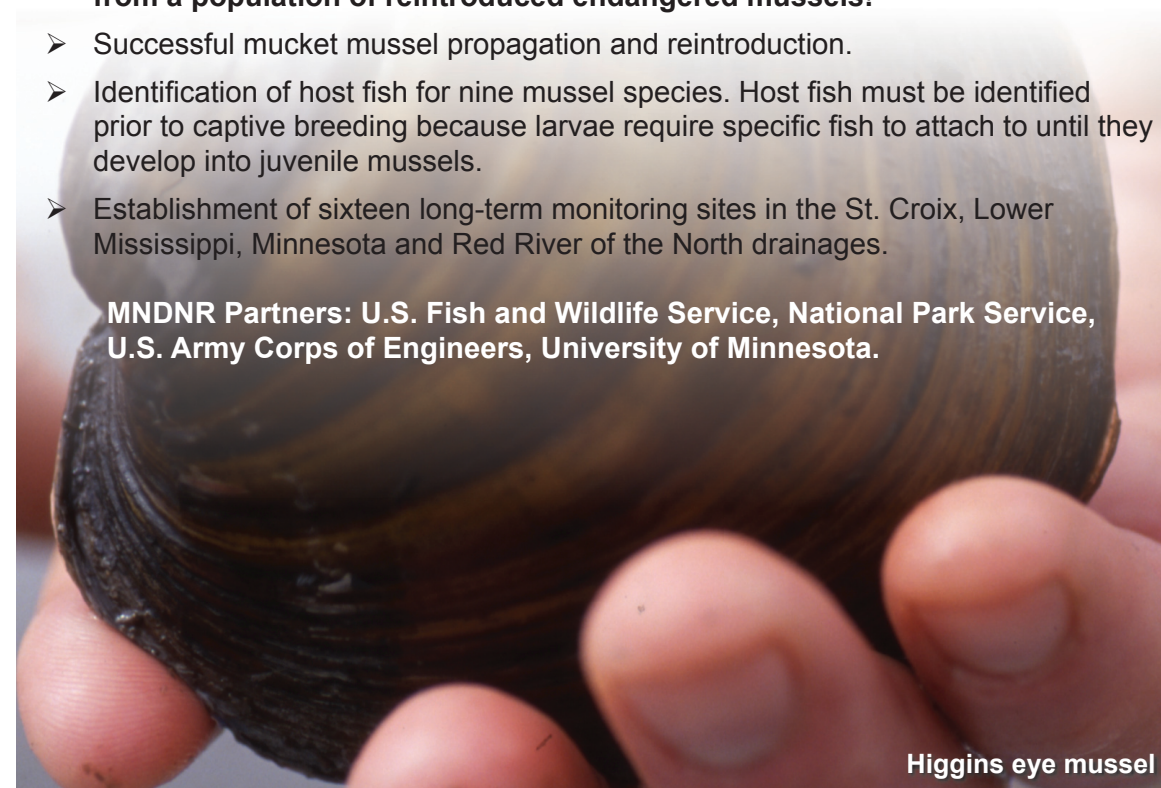
**Target species:** The 26 Minnesota mussel species in greatest conservation need (SGCN)

**Conservation Need:** Freshwater mussels are among the most imperiled of all creatures in North America. Overharvesting, widespread habitat destruction, pollution, land use change, and invasive species have caused populations to decline or disappear. While improved water quality in some Minnesota rivers and streams is once again providing suitable habitat, the limited mobility of mussels and barriers to dispersal, such as dams, prevent mussels from recolonizing historic habitats. Captive breeding and reintroduction programs are essential for the recovery of mussel populations.

### Outcomes:

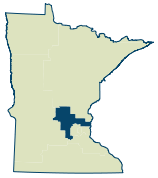
- Released more than 5,200 captive-reared SGCN mussels into the Mississippi River gorge in St. Paul, from 2010- 2013.
- Discovered two juvenile Higgins eye mussels in the Hidden Falls area during monitoring. **This is the first verification of successful natural reproduction from a population of reintroduced endangered mussels!**
- Successful mucket mussel propagation and reintroduction.
- Identification of host fish for nine mussel species. Host fish must be identified prior to captive breeding because larvae require specific fish to attach to until they develop into juvenile mussels.
- Establishment of sixteen long-term monitoring sites in the St. Croix, Lower Mississippi, Minnesota and Red River of the North drainages.

**MNDNR Partners:** U.S. Fish and Wildlife Service, National Park Service, U.S. Army Corps of Engineers, University of Minnesota.



Higgins eye mussel





## 6th Congressional District

**Project:** Developing a forest management plan to sustain sites of high biological diversity at Sand Dunes State Forest

**Target species:** Uncas skipper, Leonard's skipper, Blanding's turtle, red-shouldered hawk and numerous other species

**Conservation Need:** The Sand Dunes State Forest (SDSF) in Sherburne County contains eleven outstanding or high biological diversity ranked native plant communities. Its dry barrens-oak savanna community is considered the most imperiled native plant community in the Midwest and supports nine state-listed animal species. Surveys funded through a previous State Wildlife Grant identified the habitats within the Sand Dunes State Forest and the adjacent Sherburne National Wildlife Refuge that contain large and diverse concentrations of rare animals.

The Sand Dunes State Forest is located on the Anoka Sandplain, which serves as a critical filter for the aquifer that provides the Twin Cities and east-central Minnesota with drinking water. The objective of the management plan is to balance opportunities for recreation, economic investment, water quality, biodiversity, and wildlife habitat.

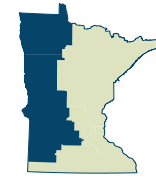
### Outcome:

- Operational plan for the management of the Sand Dunes State Forest completed in January of 2013. Approximately 1800 acres will be managed for native plant communities, including oak savanna, prairie, woodland, tamarack swamp and wetlands, and the rare species that occur within these habitats.
- Clean Water, Land and Legacy Amendment funds secured to restore and enhance 2,953 acres of wildlife habitat within the Sand Dunes State Forest and Anoka Sandplain.

**MNDNR Partners:** The Anoka Sandplain Partnership, which includes more than twenty-three government agencies and organizations working to protect, enhance and restore the lands and waters of the Anoka Sandplain.



Oak woodland habitat



## 7th Congressional District

**Project:** Identifying and mapping priority areas for grasshopper sparrow conservation

**Target species:** Grasshopper sparrow and other prairie species

**Conservation Need:** The National Breeding Bird Survey documented a significant decline in the grasshopper sparrow population in Minnesota. However, current data may not provide sufficient population information for targeting conservation actions. This project will provide information to the U.S. Fish and Wildlife Service, which expects to develop a grasshopper sparrow conservation plan within the next few years. The information will also be used in the implementation of other conservation initiatives such as the Minnesota Prairie Conservation Plan and the Prairie Pothole Region Integrated Landscape Conservation Strategy.

### Outcomes:

- Breeding bird surveys implemented at 47 private and public sites.
- Grasshopper sparrows recorded at 32 sites. Surveys will continue in 2014.
- Habitat data collected at each site in order to relate the abundance and distribution of grasshopper sparrows to habitat characteristics.
- Data on other bird species recorded for each site. This information will help determine if the presence of grasshopper sparrows is an indicator of habitat for other grassland birds.

**MNDNR Partners:** University of Minnesota.



Grasshopper sparrow