

**Environment and Natural Resources Trust Fund  
2012-2013 Request for Proposals (RFP)**

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**Project Title:**

**ENRTF ID: 006-A**

Assessing Impacts to Fish Populations in Minnesota River

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**Topic Area:** A. Fisheries & Wildlife Research

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**Total Project Budget:** \$ 527,000

**Proposed Project Time Period for the Funding Requested:** 3 yrs, July 2013 - June 2016

**Other Non-State Funds:** \$ 0

**Summary:**

Begin a Minnesota River long-term monitoring program with academic collaboration for measuring the health of river biota through annual fish population assessments, while tracking the emerging effects of Asian carp.

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**Sponsoring Organization:** MN DNR

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**Location**

**Region:** Central, Metro, SW, SE

**County Name:** Big Stone, Blue Earth, Brown, Carver, Chippewa, Dakota, Hennepin, Lac qui Parle, Le Sueur, Nicollet, Redwood, Renville, Scott, Sibley, Swift, Yellow Medicine

**City / Township:** Various

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_____ Funding Priorities	_____ Multiple Benefits	_____ Outcomes	_____ Knowledge Base
_____ Extent of Impact	_____ Innovation	_____ Scientific/Tech Basis	_____ Urgency
_____ Capacity Readiness	_____ Leverage	_____ Employment	_____ TOTAL _____%



# Environment and Natural Resources Trust Fund (ENRTF) 2012-2013 Main Proposal

**PROJECT TITLE: Assessing Impacts to Fish Populations in Minnesota River**

## I. PROJECT STATEMENT

The Minnesota River is a major recreational resource – for example, it is considered one of the top flathead catfish angling destinations in the United States, benefitting Minnesota’s economy via tourism. In addition, the Minnesota River is now nationally recognized by the Americas Great Outdoors Program and is designated as a National Blueway which is designed to highlight, enhance, and promote recreational activity throughout the basin. However, it has still not achieved its full recreational potential due to impaired water and habitat quality. Fish are not only of direct interest to anglers, but also prominent bio-indicators for measuring the health and integrity of the river ecosystem. Since the early 1990s, various water quality data have been collected for providing a better glimpse of pollutant problems and trends. However, fish monitoring on the main stem of the Minnesota River has been hampered by the large geographic area covered, complexity and diversity of habitats, limited DNR Fisheries or PCA staff available for large-river studies, and declining operational budgets for DNR Fisheries. As a result, fish survey information has been collected only irregularly and without a standardized approach.

Stakeholders and policymakers want to know; what fish are in the river, are conditions getting better or worse, and what effects will changing water quality or invasive species (e.g., Asian carp) have on the sport fish populations? Unfortunately, our current ability to answer these questions is very limited. Due to the large variability in river sampling conditions from year to year, we need intensive monitoring at an annual frequency in order to detect fish population changes or trends. The PCA’s planned TMDL studies on the main channel are only slated for 10-year intervals, leaving huge gaps of critical information on fish population dynamics and potential arrivals of invasive species such as Asian carp. DNR Fisheries is the agency with the best equipment and expertise to conduct large-scale fish population sampling. The purpose of this proposal is to jump-start the initial phase of a long-term fish monitoring program that will later become an operational standard and funded by DNR Fisheries. We have a short window to gain baseline information before the potential emergence of an Asian carp population, so it is vital to get the monitoring program going as soon as possible. The ability of DNR Fisheries to document, understand, and predict changes in the Minnesota River fish community and impacts caused by invasive species such as Asian carp can begin successfully with support from the ENRTF.

## II. DESCRIPTION OF PROJECT ACTIVITIES

**Activity 1:** Implement a long-term monitoring program that measures the health of the entire Minnesota River main channel biota through annual fish population and fish habitat assessments.

**Budget:** \$ 487,000

Outcome	Completion Date
1. Inventory, summarize, and reaffirm existing fish sampling assessments and historical data to identify gaps for designing long-term monitoring strategies for the Minnesota River main channel. Begin fish sampling in Fall 2013.	10/1/2013
2. Execute first season fish population monitoring protocols, establish sampling stations, assess over-wintering priority fish habitat, coordinate workshops with other agencies and academia interests to develop management strategies and priority objectives, and submit first annual report.	04/1/2014

3. Ramp up open-water survey schedule, executing all fish sampling techniques by establishing appropriate gear types per location during seasonal flow regimes. Continue fall and winter sampling and refine parameters measured.	Ongoing
4. Annual Report on fish species and invertebrate population status that sets baseline data requirements for long-term monitoring and assessment goals. Begin to incorporate fish IBI metrics with available TMDL measurement and eDNA tests to determine reaches of the river where fish thrive best.	04/1/2015
5. Continue second full season of fish population assessment and habitat sampling on main channel. Establish up to 100 sampling stations. Identify and map out key over-wintering fish habitat (catfish in particular).	Ongoing
6. Develop a Final Report which identifies future management strategies and charts a sampling schedule for effectively monitoring fish species; as bio-indicators for measuring the aquatic health of the Minnesota River.	06/1/2016

**Activity 2:** Incorporate two MSU graduate research thesis projects in conjunction with field data collection to develop a standardized fish population model that integrates water quality suitability indices.

**Budget:** \$ 40,000

Outcome	Completion Date
1. Collaborate with MSU to develop graduate research thesis projects.	11/1/2013
2. Establish sample sites, collect field data, begin modeling, report on season 1.	4/1/2015
3. Complete season 2 inventories, present at symposia, complete thesis.	6/30/2016

### III. PROJECT STRATEGY

#### A. Project Team/Partners

Assembling a Minnesota River Team (MRT) will require hiring one full-time Minnesota River Fisheries Biologist and two 75% seasonal technicians, all to function in the capacity as new DNR Fisheries employees. An important partnering component is to bring graduate research thesis projects into the monitoring program via grant agreements with Minnesota State University-Mankato (MSU). Up to four MSU student interns will complement the DNR team to safely operate two research boat crews. Two of these interns will be dedicated to their 2-year graduate thesis research projects and the others will be summer undergraduate interns. Facility space, indirect costs, and fleet trucks will be provided in-kind by the DNR. When possible, DNR Fisheries will contribute requested in-kind labor to assist the MRT during specific projects; estimated 0.25 FTE/yr or \$20,000/yr. Program design and monitoring will be closely coordinated with other organizations and academia, e.g., PCA, City and County governments.

#### B. Timeline Requirements

The MRT will coordinate, design, and implement the beginning phase of a long-term fish monitoring program during the first three years of ENRTF program funding. The MRT will establish sampling protocols, complete data analysis, develop learning workshops, and set-up program long-term goals and objectives during 2013-2016; later to be handed over to DNR Fisheries for full scale implementation.

#### C. Long-Term Strategy and Future Funding Needs

Because this is a long-term program, sampling and analysis must continue beyond the three-year pilot period for as long as the data is useful. Beginning in FY17, DNR Fisheries plans to re-prioritize their long-term monitoring efforts of the Minnesota River and commit to retaining a permanent Minnesota River Fisheries Biologist and River team.

## 2012-2013 Detailed Project Budget

**Project Title: Assessing Impacts to Fish Populations in Minnesota River**

### IV. TOTAL ENRTF REQUEST BUDGET 3 years

<u>BUDGET ITEM</u>	<u>AMOUNT</u>
<b>Personnel:</b> One (1) MN River Fisheries Biologist (new position, unclassified): 36 mo. FT (77% sal, 23% ben)	\$ 190,000
<b>Personnel:</b> Two (2) MN River NR Technician-Fisheries at FT 75% (new position, unclassified): 30 mo/each (77% sal, 23% ben)	\$ 160,000
<b>Contracts:</b> Two (2) Graduate Research Thesis Students employed via grant agreement. Projects will evaluate fisheries community aging structures, relationships between recruitment and habitat/water quality parameters, comparisons of fish species distribution, and an evaluation of backwater/oxbow fish use. Masters thesis projects will be completed in 24 months. Grant agreements supported by Minnesota State University-Mankato (MSU).	\$ 26,000
<b>Contracts:</b> Two (2) Undergraduate student interns employed two field seasons (spring-fall) to assist the DNR MRT with fish population assessments and data analysis. Grant agreements with Minnesota State University-Mankato (MSU).	\$ 14,000
<b>Equipment/Tools/Supplies:</b> Electrofishing equipment including an electrofishing boat, motor, trailer and specialized netting gear for use on entire MN River.	\$ 85,000
<b>Equipment/Tools/Supplies:</b> eDNA sampling supplies, PPEs, survey equipment.	\$ 2,000
<b>Acquisition (Fee Title or Permanent Easements):</b> N/A	\$ -
<b>Travel:</b> Fleet transportation; mileage partial op rate @ \$0.39/mi x 13,000 mi = \$5,000/yr.	\$ 15,000
<b>Travel:</b> In-state travel expenses; crew lodging and meals for distant and overnight status.	\$ 3,000
<b>Additional Budget Items:</b> DNR used a rate of 6.5% to calculate costs for direct support services, which are DNR's direct and necessary business services required to support this proposal	\$ 32,000
<b>TOTAL ENVIRONMENT AND NATURAL RESOURCES TRUST FUND \$ REQUEST =</b>	<b>\$ 527,000</b>

### V. OTHER FUNDS

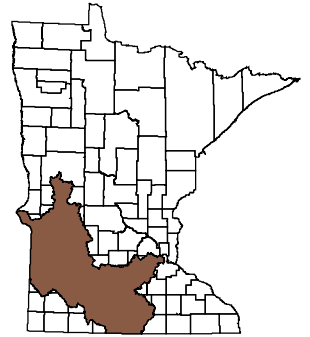
<u>SOURCE OF FUNDS</u>	<u>AMOUNT</u>	<u>Status</u>
<b>Other Non-State \$ Being Applied to Project During Project Period:</b> N/A	\$ -	
<b>Other State \$ Being Applied to Project During Project Period:</b> DNR office overhead, communications, IT computer equipment (\$18,000 Game & Fish Fund); DNR Fleet equipment monthly charges and additional operation rate for MRT program loaner pickup for 36 mo (\$13,000 Game & Fish Fund).	\$ 31,000	Secured
<b>Other State \$ Being Applied to Project During Project Period:</b> Area using additional DNR existing fleet trucks, boats, motors, and river survey equipment for 36 months to support the MRT phase 1 program, (\$75,000 Game & Fish Fund).	\$ 75,000	Secured
<b>In-kind Services During Project Period: Limited</b> - Existing DNR Fisheries staff will be temporarily re-assigned to assist with the core development and implementation of the MRT long-term fish monitoring program (approx 0.25 FTE or \$20,000/yr for 36 mo.)	\$ 60,000	Secured
<b>Remaining \$ from Current ENRTF Appropriation (if applicable):</b> N/A	\$ -	N/A
<b>Funding History:</b> DNR Fisheries crews spend two weeks annually on targeted fish assessments on the river near Granite Falls and on LQP Lake; fieldwork, fleet, and data analysis totals approximately \$40,000/year from the Game & Fish Fund.	\$ 40,000	Ongoing

# Assessing Impacts to Fish Populations in Minnesota River

## Project Site

— Minnesota River - 335 miles

— MN River Basin



# PROJECT MANAGER

## PROJECT TITLE: Assessing Impacts to Fish Populations in Minnesota River

**Project Manager:** Jack Lauer, MnDNR Southern Regional Fisheries Manager, New Ulm

### Responsibilities:

The Minnesota Department of Natural Resources' overall mission is to work with citizens to conserve and manage the state's natural resources, to provide outdoor recreation opportunities, and to provide for commercial uses of natural resources in a way that creates a sustainable quality of life.

- Administers DNR Fisheries operations, management, and programs for a 33-county area of the DNR Southern Region. Budget impacts the management of fisheries of several hundred intensively managed lakes, thousands of miles of warm, cool, and cold water streams, and fish production at two hatchery facilities.
- Direct, supervise, develop and implement fisheries programs, plans, and policies across five DNR Fisheries Administrative Areas and Regional Fisheries staff.
- Collaborate with state and federal agencies, local units of government, non-governmental organizations, landowners, stakeholders, and the angling public so that input and information is shared in order to make sound decisions on managing and protecting Minnesota's natural resources while promoting recreational opportunities.
- Jack has worked for the MnDNR for 27 years in all parts of the state and has extensive field experience with managing aquatic resources that protect and enhance our fish populations. He continues to coordinate with many internal and external partners to advance conservation strategies in Minnesota that has benefit both the natural resources and the recreational users, particularly in the MN River Basin.
- While spending the past decade in southern Minnesota, Jack has worked to prioritize best land stewardship practices with conservation partners and farmers for continually educating all parties about water quality and habitat in southern Minnesota's valued lakes, streams, and rivers and how that is integrated within the agricultural rich landscape.

**Interests, expertise, and vision:** Jack is interested in connecting people to outdoor recreation and having them experience the natural functions of our Minnesota landscape and waterways. He champions good fishing and hunting opportunities and has a passion to make wetland complexes better than he found them. He leads by example keeping conservation fundamentals in the fore-front with the understanding that all citizens have a choice on how to manage our lands and waters wisely. Certainly not everyone is paying attention to ways we promote healthy and sustainable growth, so he feels the sooner we get people to fish, the sooner they become conservationists.