Environment and Natural Resources Trust Fund
2014 Request for Proposals (RFP)

Project Title: **ENRTF ID: 108-D**

Southwest Minnesota Asian Carp Watershed Deterrents

Category: D. Aquatic and Terrestrial Invasive Species

Total Project Budget: $ 3,268,800

Proposed Project Time Period for the Funding Requested: 3 Years, July 2014 - June 2017

Summary:

Prohibit Asian carp migration into sub-watersheds and core recreational lakes near Mankato and Willmar, Minnesota by installing physical deterrents and electric barriers at strategic sites along streams and ditches.

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Sponsoring Organization: MN DNR

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Web Address

Location

Region: Southwest

County Name: Blue Earth, Brown, Chippewa, Cottonwood, Faribault, Jackson, Kandiyohi, Lac qui Parle, Le Sueur, Lincoln, Lyon, Martin, McLeod, Meeker, Murray, Nicollet, Nobles, Pipestone, Redwood, Renville, Rock, Sibley, Swift, Waseca, Watonman, Yellow Medicine

City / Township: Madison Lake Area; Willmar Area

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

I. PROJECT STATEMENT

There is growing concern about the consequences of Asian carp introductions into North America. Asian carp (e.g., bighead carp, silver carp, grass carp, and black carp) risk assessments and data collections have been ongoing in recent years in the Midwest, with common findings that these carp species can cause substantial ecological and economic damage to waterways where they have colonized. Asian carp, particularly bighead and silver carp, have exhibited tremendous population growth in parts of the Mississippi and Missouri River basins during recent years. Asian carp populations have had cascading negative ecological impacts by competing for food and habitat and even causing changes in water quality through their voracious feeding characteristics. They have been shown to predate heavily on zooplankton and strongly compete with young native fish species. Their ability to migrate long distances through connected rivers and streams in North America has challenged scientists and decision-makers in finding solutions to stay ahead of the leading edge of Asian carp dispersal.

Connections between the Mississippi River and Minnesota River basins in southern and west-central Minnesota create a high potential of Asian carp introductions into adjacent watersheds. Furthermore, the many tributary streams and ditches draining to the Minnesota River magnify the probability of Asian carp migration into Minnesota's core recreational lakes, primarily near the cities of Mankato and Willmar at this time. A vast amount of surface water and drainage water moves across southern Minnesota during high precipitation and flood events, thereby elevating the risk of invasive fish migration through an altered hydrologic landscape.

The goal and purpose of this project is to install physical deterrents that will prohibit Asian carp advancement through stream or ditch connections into clusters of core recreational lakes near Mankato and Willmar; protecting 230 lakes and wetlands totaling 25,000 acres. We have identified several tributary sites in priority watersheds that have the greatest likelihood at holding back Asian carp by installing electrical barrier arrays and/or new fish deterrent technologies. For example, an open-ditch electric barrier downstream of Madison Lake, near Mankato, would be a strategic site that is both cost-effective and realistically addresses the problem.

This approach would continue to enable free movement of fishes in the main-stem of the Minnesota River. Maintaining native fish populations is critical because such populations are imperative to naturally suppress Asian carp and other potential invasive species. Reductions in native fish diversity and abundance by limiting migration abilities using barriers in the main-stem of the Minnesota River may provide the open niche for Asian carp to dominate the river system should a breach in the barrier occur. Accordingly, placement of small barriers closer to the core recreational lakes would provide a prevention mechanism to maintain the integrity of high-value lakes where most economically important fisheries resources are managed. The smaller, more manageable (and cost-effective) barriers would likely be more effective, and due to the lower cost of such barriers this approach could provide the surplus resources necessary to duplicate barriers. The ability to duplicate barriers increases the effectiveness by lowering the possibility of a single system failure.

II. DESCRIPTION OF PROJECT ACTIVITIES

Activity 1: Install electrode arrays in tributary streams and ditch systems **Budget: $ 2,968,800**

Description: MN DNR has completed an initial risk assessment that identified and evaluated watershed connections for potential Asian carp pathways into southwestern Minnesota. This assessment was refined by GIS and LIDAR imagery detection tools to pinpoint best locations for installing electric barriers; site inspections ensued and projects prioritized. Activity 1 is the implementation phase; contracting a vendor to design and install small-scale electric barriers, and land agreements for operating at least six systems.

Outcome	Completion Date
1. Site identifications in Le Sueur River, Shakopee Creek, and Hawk Creek watersheds	Done
2. Field surveys, ground-truth stream and tile connections, contact LGUs & landowners	In progress
3. Contract hydraulic analyses, engineering contracts, lease agreements if needed	12/31/2014
4. Develop & submit contractor request for proposals (RFP) for up to six project locations	6/30/2015
5. Finalize landowner lease agreements, fee simple or easement acquisition for project sites	9/30/2015
6. Review and accept detailed engineering design – proceed to construction, supply equipment, permit fees, inspection & oversight, final start-up & operate electric barriers	6/30/2016
7. Safety measures installed, adjustments, inspections, equipment or site maintenance	6/30/2017

Activity 2: Incorporate new or alternate methods for closing watershed breaches at sites where electric barriers are not feasible **Budget: $ 300,000**

Description: During the electric barrier land survey and design phase, alternate plans or options are discovered within local watersheds, because of utility, land, or flowage issues. This might require implementing other deterrent methods such as, but not limited to; earthen berm placement, specialized culverts, water control structures, and acquiring land for buffer with controlled access, for example, a flowage easement. If alternate plans are not necessary, then this budget line item should be used for additional barrier products in Activity 1.

Outcome	Completion Date
1. Identify back-up locations for installing deterrents, safety considerations	In progress
2. Hydraulic analysis, engineering contracts, landowner lease agreements, create RFPs	6/30/2015
3. Engineering review, accept designs – proceed to construction, site maintenance	6/30/2017

III. PROJECT STRATEGY

A. Project Team/Partners

There are five primary watershed protection areas in this proposal that are shovel-ready: three in the Le Sueur River watershed and two in the Shakopee/Chetamba-Hawk Creek watershed. The project will be led by the DNR Division of Fish & Wildlife, Section of Fisheries for program administration and technical field support, and other DNR Divisions will provide technical and legal assistance. Seventeen supporting affiliations will partner on project elements via technical assistance or community outreach; tasks will be in-kind or engineering contracts.

B. Timeline Requirements

We have confirmed six site locations to install electric barriers on streams and ditches, with additional barrier sites in southern Minnesota also identified for implementation if enough resources become available, e.g., Crow River or the Upper Des Moines River watersheds. The timeline for vendor engineering surveys, hydraulic analyses, barrier designs, construction and operation will take two years from commencement of the funds appropriated. An additional year will be needed for continuing installation of alternative barrier deterrents.

C. Long-Term Strategy and Future Funding Needs

This project seeks to protect Minnesota's core recreational lakes in southwestern Minnesota. While we still have resilient native fish populations in this agricultural region, we believe that strategic electric barrier deployment in streams and ditches is a proactive and prudent last line of defense for controlling potential impacts of Asian carp colonization into priority lakes. This is our first LCCMR request at targeting upper watersheds in the Minnesota River basin with an anticipated second phase planned for more barriers where we have a high degree of reasonableness and confidence at protecting Minnesota's valued aquatic resources.

2014 Detailed Project Budget

Project Title: Southwest Minnesota Asian Carp Watershed Deterrents

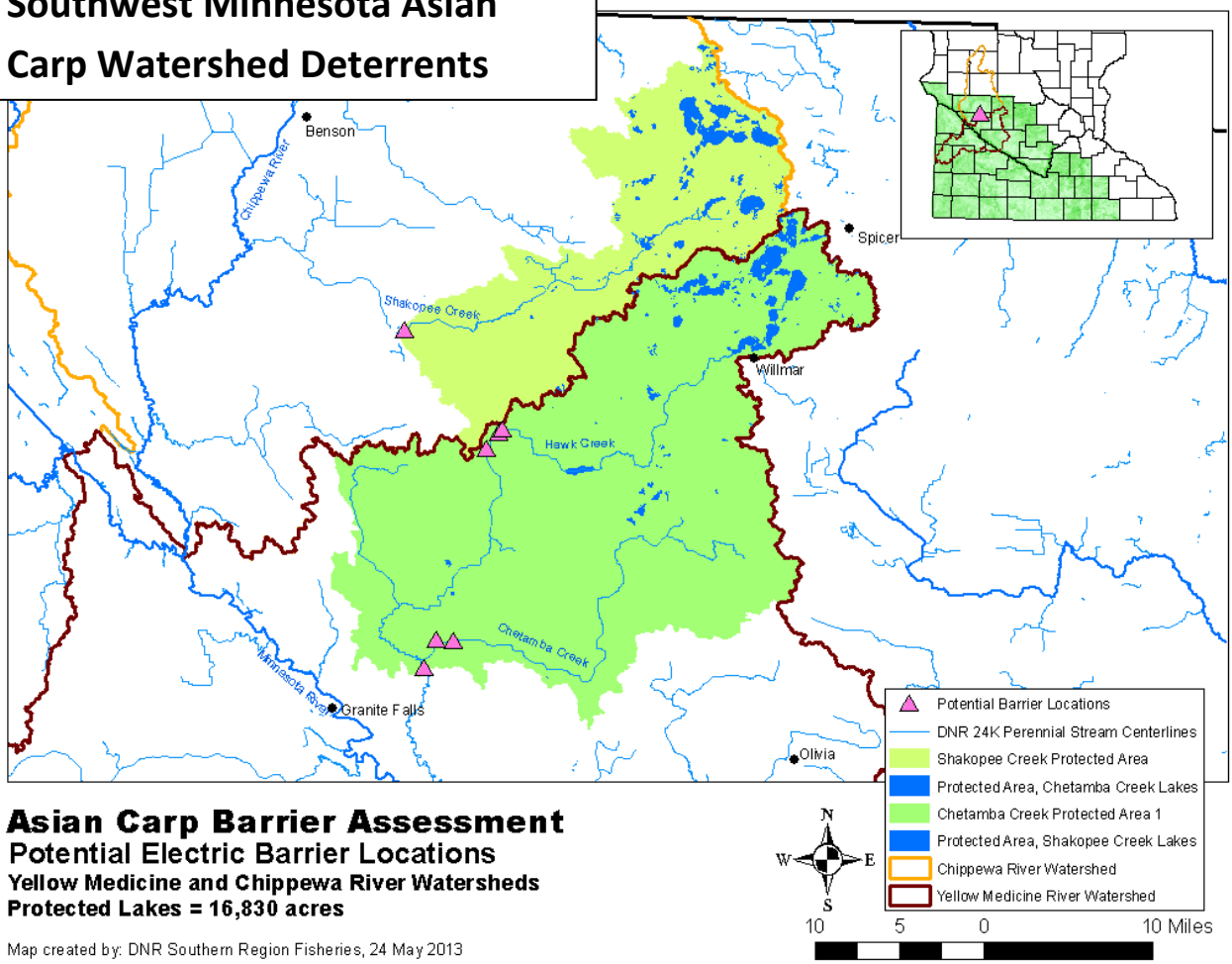
IV. TOTAL ENRTF REQUEST BUDGET 3 years

BUDGET ITEM	AMOUNT
Personnel:	N/A
Contracts: Professional/Technical Service Contract for electric barriers; requires detailed engineering design, hydraulic analyses, supply of equipment, installation, commission & training, construction inspection, maintenance, and oversight. Contractors will be sought through state contact and/or request for bid process. Elements of preliminary scoping may include Joint Power Agreements with other LGUs for their engineering services	$ 2,700,000
Equipment/Tools/Supplies:	N/A
Acquisition (Fee Title or Permanent Easements): Barrier sites installed on private property may need land acquisition or lease agreements for acreages to be determined during engineering design - see Additional Budget Items for description	$ -
Direct and Necessary Costs: DNR direct & necessary costs via FAW calculation tool.	$ 268,800
Additional Budget Items: Implementing other deterrent methods such as, but not limited to; earthen berm placement, specialized culverts, water control structures, land acquisition, easement, or lease agreements for controlled access around barrier site and land impacted, e.g., a flowage easement. If alternate barrier deterrent plans are not necessary, then this budget line item will be used for construction of additional electric barrier sites already prioritized and awaiting deliverables as listed under Contracts above	$ 300,000
TOTAL ENVIRONMENT AND NATURAL RESOURCES TRUST FUND $ REQUEST =	$ 3,268,800

V. OTHER FUNDS

SOURCE OF FUNDS	AMOUNT	Status
Other Non-State $ Being Applied to Project During Project Period: USFWS continues to seek Federal funds for Great Lakes states engaged and in close coordination, research, and implementation of Asian carp activities. Funds are competitive and pending Federal approval.	$ 80,000	Pending
Other Non-State $ Being Applied to Project During Project Period: There are over 17 partners [LGUs, organizations, and associations] that have supported DNR efforts for controlling Asian carp migration into the Le Sueur River, Shakopee and Hawk Creek watersheds. Some will provide various cash or in-kind services pre, during, and after this 3-year funding project.	$ 20,000	Pending
Other State $ Being Applied to Project During Project Period: MN DNR Ecological & Water Resources will submit a FY15 L-SOHC funding proposal for statewide Asian carp - protecting aquatic habitat. It is not prescriptive to sections in this LCCMR SW MN project proposal and was not submitted at the time of this proposal. Status is pending.	$ -	Pending
In-kind Services During Project Period: MN DNR Fisheries field staff in SW MN have been conducting assessments and barrier coordination at a rate of approximately $100,000 (per year) of in-kind salary from the Game & Fish Fund. This is planned to continue during FY14-FY16 for this proposal. Additionally, about $20,000 (per year) of in-kind salary from MN DNR Ecological & Waters Resources and Engineering for technical assistance on these SW MN barrier sites will be contributed for early coordination, modeling, and prevention assessments.	$ 120,000	Secured
Funding History: MN DNR Fisheries field staff in SW MN have conducted field assessments, GIS work, and barrier coordination of over $100,000 in FY13 in-kind salary from the G&F Fund.	$ 100,000	Spent

Southwest Minnesota Asian Carp Watershed Deterrents



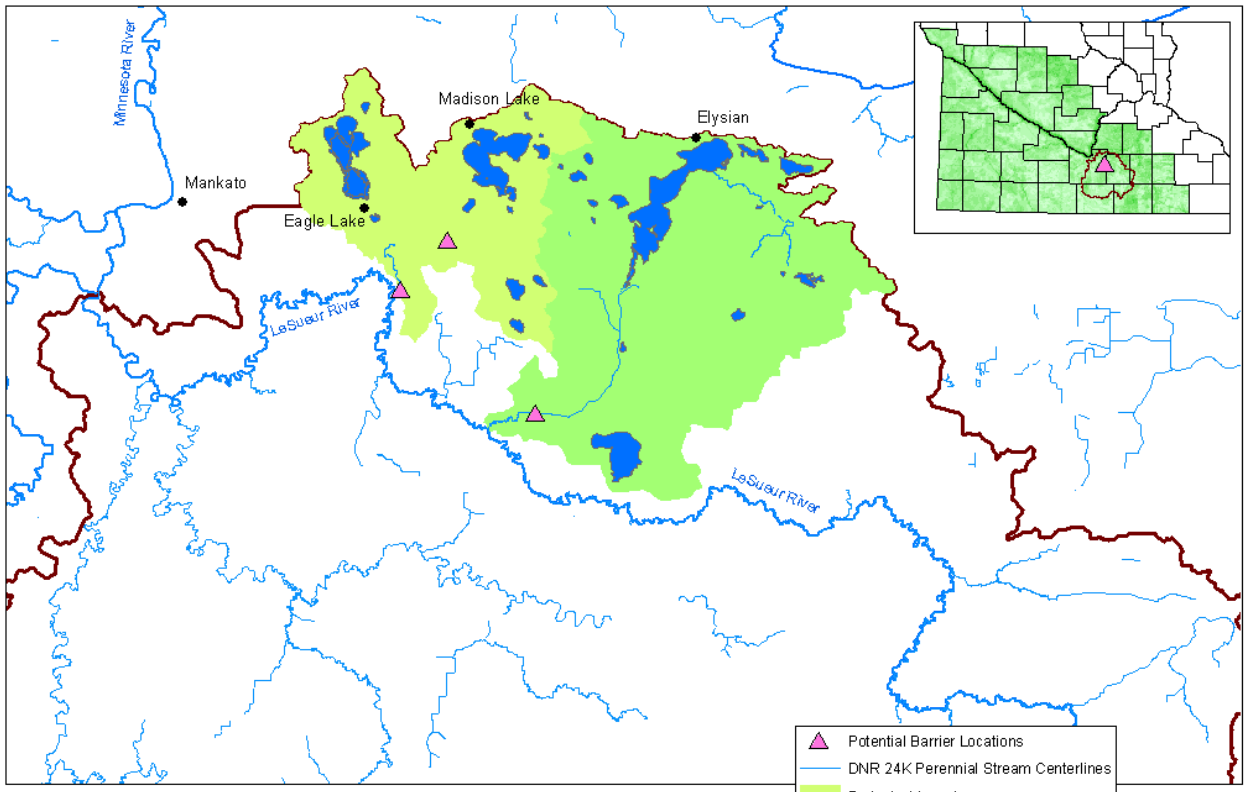
Asian Carp Barrier Assessment

Potential Electric Barrier Locations

Yellow Medicine and Chippewa River Watersheds

Protected Lakes = 16,830 acres

Map created by: DNR Southern Region Fisheries, 24 May 2013



Asian Carp Barrier Assessment

Potential Electric Barrier Locations

LeSueur River Watershed

Protected Lakes = 7,881 acres

Map created by: DNR Southern Region Fisheries, 24 May 2013

PROJECT MANAGER

PROJECT TITLE: Southwest Minnesota Asian Carp Watershed Deterrents

Project Manager: Jack Lauer, MN DNR 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.

- Jack Lauer has worked for the MN DNR, Division of Fish & Wildlife for 28 years spending time in many regions of the state, with the past 12 years managing the Fisheries Section in southern Minnesota. He has extensive field experience in lake and stream surveys, data analysis, report and management planning, budget administration, and delivers constant agency coordination on managing aquatic resources that protect and enhance our fish and wildlife populations.

- He administers DNR Fisheries operations, management, and programs for a 33-county area of the DNR Southern Region. Budget impacts on the management of fisheries for several hundred intensively managed lakes, thousands of miles of warm, cool, and cold water streams, and fish production at two hatchery facilities.

- He has worked in priority watersheds to initiate conservation partners, farmers, and municipalities to identify and prioritize best land stewardship practices so all parties are educated about water quality and aquatic habitat in southern Minnesota's valued lakes, streams, and rivers and how that is integrated within the agricultural rich landscape.

- He directs and supervises fisheries programs, plans, and policies across five DNR Fisheries Administrative Areas and oversees 35 regional staff.

- He collaborates with state and federal agencies, local units of government, non-governmental organizations, landowners, farmers, 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.

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 - in order to promote healthy and sustainable growth. He strongly feels the sooner we get people to fish, the sooner they become conservationists.