

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

Project Title:

ENRTF ID: 042-C1

Detection and Monitoring of Asian Carp Populations

Topic Area: C1. Invasive Species - Aquatic

Total Project Budget: \$ 540,000

Proposed Project Time Period for the Funding Requested: 2 yrs. July 2013 - June 2015

Other Non-State Funds: \$ 0

Summary:

An aggressive search and monitoring program directly targeting Asian carp will provide vital information on the status of these species and allow the development of potential control strategies.

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Location

Region: Statewide

County Name: Statewide

City / Township:

| | | | | | | | |
|--------------------------|--------------------|--------------------------|-------------------|--------------------------|-----------------------|--------------------------|----------------------------------|
| <input type="checkbox"/> | Funding Priorities | <input type="checkbox"/> | Multiple Benefits | <input type="checkbox"/> | Outcomes | <input type="checkbox"/> | Knowledge Base |
| <input type="checkbox"/> | Extent of Impact | <input type="checkbox"/> | Innovation | <input type="checkbox"/> | Scientific/Tech Basis | <input type="checkbox"/> | Urgency |
| <input type="checkbox"/> | Capacity Readiness | <input type="checkbox"/> | Leverage | <input type="checkbox"/> | Employment | <input type="checkbox"/> | TOTAL <input type="checkbox"/> % |



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

PROJECT TITLE: Detection and Monitoring of Asian Carp Populations and Movements

I. PROJECT STATEMENT

Asian carp are a real and serious threat to Minnesota's aquatic ecosystems. In April of 2011, an adult bighead carp was caught by a commercial fisherman at the mouth of the St. Croix River. On March 2, 2012 an adult bighead and an adult silver carp were captured in Pool 6 of the Mississippi River near Winona. Catches of these and previous large adult fish could indicate the front of the invasion wave of Asian carp or the individual wanderings of rogue fish. An aggressive search and monitoring program will provide vital information on the status of these species and allow development of potential strategies for control.

When Asian carp are present in low numbers, collection of live specimens is very difficult, especially in large river systems such as the Mississippi, Minnesota, and St. Croix Rivers. As such, a technique that identifies the presence of the DNA from Asian carp in the environment (eDNA) has been developed and used in other area. Results of eDNA sampling conducted in 2011 were positive for silver carp in several locations in the three rivers, suggesting their presence. These locations included the Mississippi River above and below Coon Rapids Dam and below the Ford Dam, and in the St. Croix River below St. Croix Falls. However, follow up efforts with traditional fisheries sampling gears and contracting with a commercial fisherman failed to catch any Asian carp. This suggests that Asian carp are here in Minnesota waters, but at very low levels.

The eDNA technique, while useful for indicating presence of fish, does not provide further detailed information. To quickly and effectively respond to the threat posed by Asian carp, we need more detailed information regarding the actual fish themselves. Several important questions need to be answered. Which species, silver, bighead, or their hybrids are present? Are only adult fish present, or are juveniles also present? What specific rivers, reaches, and habitats are the Asian carp using at various times of the year?

The Minnesota DNR Division of Fish and Wildlife, Section of Fisheries continues to do surveys and sampling of our major rivers. However, enhancing this effort to detect Asian carp is impossible at current staffing levels. This project will determine the distribution and abundance of any Asian carp in Minnesota waters above Pool 4 of the Mississippi River and use this information to inform rapid response efforts. It will also delineate the leading edge of Asian carp reproductive success. Locating the areas and habitats these fish are using, when they appear to be in very low numbers and have not yet established spawning populations, is vital to targeting removal or other control efforts.

II. DESCRIPTION OF PROJECT ACTIVITIES

Activity 1: Enhanced eDNA sampling and verification

Budget: \$140,000

The eDNA sampling conducted in 2011 suggested the presence of silver carp. The science behind eDNA indicates that repeated sampling over time clarifies and confirms results. The location of positive results from eDNA sampling is vital to inform areas where targeted traditional fisheries sampling and commercial fishing should be deployed in the most efficient manner.

| Outcome | Completion Date |
|--|---------------------|
| 1. Collect and analyze eDNA samples throughout Minnesota | July 2013-June 2015 |
| 2. Coordinate eDNA sampling with federal agencies | July 2013-June 2015 |

Activity 2: Targeted commercial fishing

Budget: \$150,000

All Asian carp caught to date in Minnesota waters have been collected in commercial fishing gear, especially seining. Commercial fishermen possess the necessary gear and have the local knowledge to deploy it in an effective manner. Contracting with commercial fishermen is a cost effective method of collecting adult Asian carp if they are present.

| Outcome | Completion Date |
|---|---------------------|
| 1. Deploy and direct commercial fishermen in likely Asian carp habitats | July 2013-June 2015 |
| 2. Deploy and direct commercial fishermen in response to eDNA results | July 2013-June 2015 |

Activity 3: Accelerated sampling with traditional fisheries techniques.

Budget: \$250,000

Experiences in Minnesota waters and other states indicate that commercial fishing gears are the most cost effective manner of capturing adult Asian carp. However, it is absolutely critical that we determine if, and if so, where, Asian carp are spawning in Minnesota waters. Research continues in other states as to what gears and habitats are most likely to confirm the presence of viable eggs or juveniles. These gears include electrofishing, trap nets, gill nets, trammel nets, trawls, drift nets, and hoop nets, all traditional fisheries sampling techniques.

| Outcome | Completion Date |
|---|---------------------|
| 1. Deploy gears in appropriate habitats to target juvenile Asian carp | July 2013-June 2015 |
| 2. Incorporate new methods and techniques as appropriate | July 2013-June 2015 |

III. PROJECT STRATEGY

A. Project Team/Partners

Participants in the Asian Carp Task Force support increased monitoring for detection of the Asian carp invasion front. This project will leverage and enhance ongoing efforts. 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.

B. Timeline Requirements

July 2013 through June 2015

C. Long-Term Strategy and Future Funding Needs

This proposal will coordinate and enhance all current efforts that are available to monitor the invasion front and inform our response to it. The results and products of this two year phase will inform long-term needs and questions.

2013-2015 Detailed Project Budget

Project Title: Detection and Monitoring of Asian Carp Populations and Movements

IV. TOTAL ENRTF REQUEST BUDGET 3 years

| <u>BUDGET ITEM</u> | <u>AMOUNT</u> |
|--|-------------------|
| Personnel: Two (2) NR Specialist-Fisheries (new positions, unclassified): 24 mo/each (77% sal, 23% ben) | \$ 205,000 |
| Personnel: Two (2) undergraduate student interns employed two field seasons (May-Aug) | \$ 24,000 |
| Contracts: One (1) commercial fishing operation to utilize seines and large mesh gill nets and trammel nets to follow up on eDNA results or sample likely backwater/oxbow or other fish habitats. | \$ 100,000 |
| Contracts: For analysis of up to 1,000 water samples per year for Asian carp eDNA | \$ 110,000 |
| Equipment/Tools/Supplies: Boat, motor, trailer and specialized netting and sampling gears for use in a variety of habitats in the Mississippi, St. Croix, and Minnesota Rivers. | \$ 50,000 |
| Equipment/Tools/Supplies: eDNA sampling supplies, PPEs, survey equipment. | \$ 5,000 |
| Acquisition (Fee Title or Permanent Easements): N/A | \$ - |
| Travel: Fleet transportation; mileage operation rate @ \$0.39/mi x 10,000 mi = \$4,000/yr. | \$ 8,000 |
| Travel: In-state travel expenses; crew lodging and meals for distant and overnight status. | \$ 3,000 |
| Additional Budget Items: 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 | \$ 35,000 |
| TOTAL ENVIRONMENT AND NATURAL RESOURCES TRUST FUND \$ REQUEST = | \$ 540,000 |

V. OTHER FUNDS

| <u>SOURCE OF FUNDS</u> | <u>AMOUNT</u> | <u>Status</u> |
|---|---------------|---------------|
| Other Non-State \$ Being Applied to Project During Project Period: N/A | \$ - | |
| Other State \$ Being Applied to Project During Project Period: Use additional DNR existing fleet trucks, boats, motors, and river survey equipment for 24 months to support the Asian carp monitoring program, (\$20,000 Game & Fish Fund). | \$ 20,000 | Secured |
| In-kind Services During Project Period: Limited - Existing DNR Fisheries staff will assist with the development and implementation of the Asian carp monitoring program (approx 0.25 FTE or \$20,000/yr for 24 mo.) | \$ 40,000 | Secured |
| Remaining \$ from Current ENRTF Appropriation (if applicable): N/A | \$ - | N/A |
| Funding History: DNR Fisheries spends about 12 weeks annually on fisheries and habitat assessments on the St. Croix River and Pools 1 and 2 of the Mississippi River directed by our East Metro Fisheries Area. Similar assessments and efforts on Pools 3-9, including Lake Pepin, are completed annually by our Lake City Fisheries Area. Cost of fieldwork, fleet, and data analysis totals approximately \$250,000/year from the Game & Fish Fund. | \$ 250,000 | Ongoing |

Project Manager Qualifications

Lead Team Member1: Bradford Parsons is the Central Region Fisheries Manager in St. Paul. He has been in this position for 18 months and with DNR for 25 years. The Central Region encompasses 24 counties, from Todd in the Northwest to Houston in the Southeast, and covers over 75% of the state's population. As the Regional Manager, Brad oversees seven area fisheries offices including the lakes areas of Little Falls, Hinckley, and Montrose, an outstanding metro fishing area, the Mississippi and St. Croix Rivers, and the trout streams of the Driftless area. Prior to moving to St. Paul in 2010, Brad spent 24 years as a Fisheries Research Scientist in Glenwood. His research focused primarily on walleye stocking evaluations, panfish recruitment and exploitation, and fish/wetland interactions.

Lead Team Member2: Gerald Johnson started as East Metro Supervisor in June 2007. He began with the department as a college intern in 1978. After graduation from Minnesota State University, Jerry worked as a NR Technician in Brainerd and Hutchinson Area Fisheries. Jerry moved up to head the aquatic plant management program in the metro area before being selected as Metro Region Project Coordinator. Prior to his current position, Jerry was the Federal Aid Coordinator for the Division of Fish & Wildlife. The East Metro Management area includes 73 lakes of fish management priority 3 and above, and covers 96 miles of two major rivers, Mississippi Pool 2 and the Lower St. Croix.

Organizational Description: The Minnesota Department of Natural Resources works with citizens to conserve and manage the state's natural resources, to provide outdoor recreation opportunities, and provide for commercial uses of natural resources in a way that creates a sustainable quality of life. This mission requires sharing stewardship with citizens and partners, working together to address often-competing interests.

