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

Project Title: **ENRTF ID:** **037-C1**

Risk analysis of vulnerability to Asian carp

Topic Area: C1. Invasive Species - Aquatic

Total Project Budget: $ 400,000

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

Other Non-State Funds: $ 0

Summary:

Asian carp are a serious threat to Minnesota. A statewide risk analysis is needed to determine waters at greatest risk and to help prioritize prevention and control efforts.

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Sponsoring Organization: MN DNR

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Location

Region: Statewide

County Name: Statewide

City / Township:

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

PROJECT TITLE: Risk analysis of vulnerability to Asian carp

I. PROJECT STATEMENT

Asian carp are a serious threat to Minnesota, yet we do not know where these threats are greatest. A statewide risk analysis is needed to better understand potential impacts of Asian carp, to prioritize efforts to prevent or minimize their movements, and to control populations should they become established. This risk analysis must include evaluation of physical (stream length, flow, flood history), chemical (water hardness, temperature), and biological (native fish species, plankton abundance) conditions within our major watersheds, rivers and lakes to determine which areas are most at risk.

Since escaping aquaculture ponds in the South, Asian carps (bighead, silver, grass, black) have been moving up the Mississippi River and its tributaries. While considerable information is known about these species in their native ranges (Asia), less is known in the United States and little information is available regarding their potential for establishment in Minnesota.

There have been recent worrisome signs that these fish continue to expand their range into Minnesota. In April 2011 a commercial fisherman caught a bighead carp near the mouth of the St. Croix River. In March 2012 a commercial fisherman caught both a bighead and silver carp in the same seine haul near Winona. This represents the northern-most documented occurrence of a silver carp in the Mississippi River. In addition, eDNA testing has resulted in positive samples for silver carp in the Mississippi, St. Croix, and Minnesota rivers. Fortunately, follow-up commercial fishing where positive eDNA was detected has not collected any live fish.

In areas where Asian carp are abundant they make up a high percentage of the fish population and have caused negative impacts to native fish. In some locations, they are 80% to 90% of the Illinois River's fish biomass, which means they have pushed out native species. Adult silver carp can jump up to 10 feet when disturbed by boats and have seriously injured boaters. Bighead and silver carp consume large amounts of plankton, the building block of the food chain for many fish species. Black carp are molluscivores and could reduce mussel and snail species, on which some fish, waterfowl and vertebrate populations rely.

At this time, we have no evidence of natural reproduction and believe population levels are low and there is time to take action. It is critical to know which waters are most at risk in order to apply our limited resources in the most effective locations. The goals of this project are to compile detailed information for all of Minnesota's major rivers and tributaries to include: the location and effectiveness of existing fish barriers; stream physical, chemical, and biological conditions and their suitability for Asian carp; potential hydrologic connections between major watersheds (i.e. Minnesota and Red River basins); lake complexes at risk; and a priority ranking of waters most susceptible to establishment by Asian carp.

The project will achieve these goals through a comprehensive risk assessment conducted by a qualified contractor as administered by the Minnesota Department of Natural Resources and other partners.

II. DESCRIPTION OF PROJECT ACTIVITIES

Activity 1: Compile information and complete a report on existing fish barriers, water chemistry (hardness, temperature, chlorophyll a), hydrologic conditions (stream length, flow, discharge range),

hydrologic connections (potential linkages between watersheds), biological conditions (zooplankton, phytoplankton, native fish diversity) and other information that influences the establishment of Asian carp in the Minnesota, St. Croix, Mississippi, Red, and St. Louis River watersheds and major tributaries (HUC 8 watersheds and larger). **Budget:** $270,000

Outcome	Completion Date
1. Map of existing fish barriers and their effectiveness (permanent barrier with 100% blockage, partial barrier with blockage 80% of the time, etc)	January 1, 2014
2 Water chemistry information for major rivers, tributaries, and at risk lakes	February 1, 2014
3. Map and description of potential hydrologic connections between watersheds	March 1, 2014
4. Description of habitat and biological conditions within major rivers, tributaries, and at risk lakes including food sources and at risk native species and/or fish communities	April 1, 2014
5. Draft report compiling 1-4 above	May 1, 2014

Activity 2: Complete a report describing the overall risk of establishment of Asian carp in Minnesota's major rivers, key tributaries, and at risk lakes. The report would include a prioritized list of waters most at risk and suggested management actions to prevent, deter, or minimize Asian carp establishment. **Budget:** $130,000

Outcome	Completion Date
1. Description of overall risk of Asian carp establishment for each major river, tributary, and at risk lakes	August 1, 2014
2. Prioritized list of Minnesota waters most susceptible to establishment of Asian carp with an emphasis on waters most conducive to natural reproduction	September 1, 2014
3. Suggested management actions for preventing, deterring, or minimizing Asian carp establishment in priority waters	October 1, 2014
5. A comprehensive final report that includes all elements in Activity 1 and 2	November 1, 2014

III. PROJECT STRATEGY

A. Project Team/Partners

The project team would include representatives from the University of Minnesota, Minnesota Department of Natural Resources, National Park Service, Corps of Engineers, US Fish and Wildlife Service, and other partners that are interested in participating. The Minnesota Asian Carp Task Force, which includes a variety of state and federal agencies, local governments, and NGO's would also have an opportunity for input.

B. Timeline Requirements

There is urgency to completing this project. Contractor would have 10 months to compile the data needed to complete Activity 1, and 16 months to complete Activity 2.

C. Long-Term Strategy and Future Funding Needs

This information will be used to refine and implement Minnesota's Asian Carp Action Plan, additional risk assessment is not anticipated.

2012-2013 Detailed Project Budget

Risk analysis of potential impacts and mitigation options for controlling Asian carp

IV. TOTAL ENRTF REQUEST BUDGET - *2* years

BUDGET ITEM *(See list of Eligible and Non-Eligible Costs, p. 11)*	**AMOUNT**
Contracts: Project will be contracted using RFP process. Contractor will be responsible for products as identified in Main Proposal including: 1) Report providing a map of existing fish barriers and their effectiveness; description of water chemistry, biological conditions, and habitat conditions for rivers and at risk lakes; map of potential hydrologic connections between watersheds; description of overall risk of establishment of Asian carp by watershed; prioritized list of at risk waters; and suggested management actions to prevent, deter, or minimize Asian carp establishment.	$ 374,000
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.	$ 26,000
TOTAL ENVIRONMENT AND NATURAL RESOURCES TRUST FUND $ REQUEST =	$ 400,000

V. OTHER FUNDS

SOURCE OF FUNDS	**AMOUNT**	**Status**
In-kind Services During Project Period: DNR staff time to coordinate RFP process, administer and track contract, and distribute final report. Total 120 hours anticipated.	$ 4,800	

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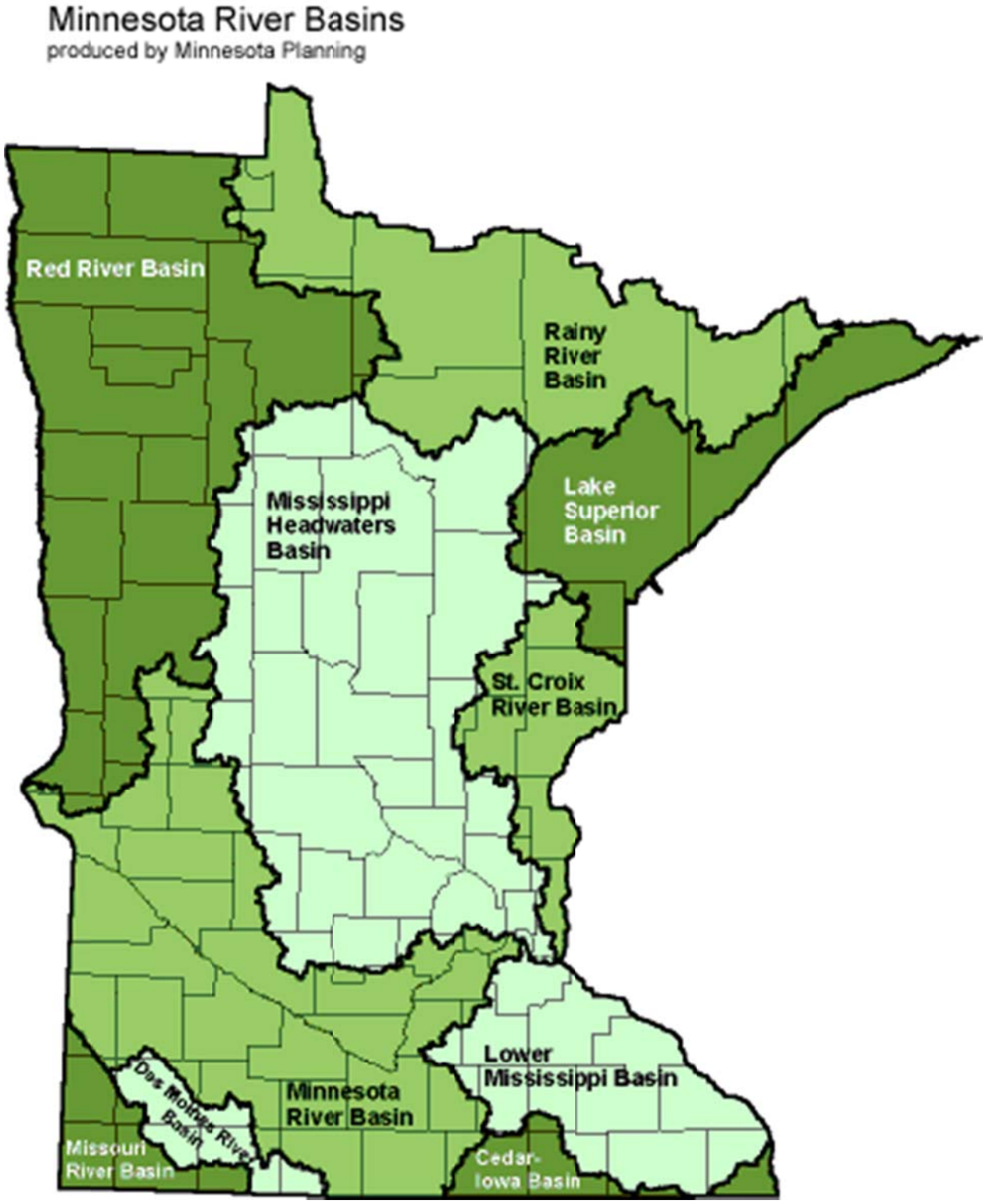
Minnesota River Basins
produced by Minnesota Planning
Red River Basin
Rainy River Basin
Lake Superior Basin
Mississippi Headwaters Basin
St. Croix River Basin
Lower Mississippi Basin
Minnesota River Basin
Des Moines River Basin
Missouri River Basin
Cedar-Iowa Basin

PROJECT TITLE: Risk analysis of potential impacts and mitigation options for controlling Asian carp

Project manager/organization qualifications

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Mr. Schlagenhaft has been with MN DNR over 20 years, most of that time working on the Mississippi River. He served as Area Fisheries Manager in Lake City from 1992-2001, and as a Mississippi River Planner since 2001.

For the past year Mr. Schlagenhaft has coordinated Asian carp activities for MN DNR. He co-chairs that Asian Carp Task Force and was instrumental in developing an Action plan which includes assessing the risk of Asian carp.

He has experience managing large-scale grant projects, having coordinated the efforts of the Lower Mississippi River Habitat Partnership which has received $1.7 million from Outdoor Heritage funding for habitat restoration on the Mississippi River.

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.