

**Environment and Natural Resources Trust Fund**

# 2021 Request for Proposal

## **General Information**

**Proposal ID:** 2021-427

**Proposal Title:** Applying New Tools and Techniques Against Invasive Carp

## **Project Manager Information**

**Name:** Brian Nerbonne

**Organization:** MN DNR - Fish and Wildlife Division

**Office Telephone:** (651) 259-5789

**Email:** Brian.Nerbonne@state.mn.us

## **Project Basic Information**

**Project Summary:** This project will enhance the current MN DNR Invasive Carp program by integrating new control and detection methods to manage invasive carp expansion in Minnesota waterways.

**Funds Requested:** $577,000

**Proposed Project Completion:** 2024-06-30

**LCCMR Funding Category:** Aquatic and Terrestrial Invasive Species (D)

## **Project Location**

**What is the best scale for describing where your work will take place?** Statewide

**What is the best scale to describe the area impacted by your work?** Statewide

**When will the work impact occur?** During the Project and In the Future

## **Narrative**

**Describe the opportunity or problem your proposal seeks to address. Include any relevant background information.**

Early detection and response efforts are important for protecting MN resources from the negative environmental and economic impacts of invasive carp. When abundant, invasive carp can harm native fish populations and make water recreation dangerous due to leaping fish. With the capture in Minnesota of three bighead carp in 2018, 18 combined invasive carp in 2019, and over 50 invasive carp already in pool 8 of the Mississippi river in 2020, it is apparent that invasive carp are at our doorstep but that control efforts are showing success in the upper reaches of Minnesota waters. The Minnesota Department of Natural Resources (DNR) began its grant-funded invasive carp program in 2012, and expanded the program using 2013, 2017, and (2020 tentatively approved) LCCMR grants. DNR is seeking additional funding to continue our invasive carp work, and implement promising new techniques. This proposal is being submitted at the originally proposed funding amount and not the pending tentative recommendation which is currently in the legislature. If the tentative recommended amount is approved for 2020 funding, this proposal would be withdrawn and we would accept our tentatively recommended amount.

**What is your proposed solution to the problem or opportunity discussed above? i.e. What are you seeking funding to do? You will be asked to expand on this in Activities and Milestones.**

The Minnesota DNR regularly communicates with researchers and similar programs in other states to improve our effectiveness. Several new advancements show promise to increase our effectiveness to disrupt invasive carp before they become established in Minnesota. This proposal builds on the previous successes from LCCMR- funded work, expanding effective techniques while adding others. Improving fish tracking capability, investment in specialized nets, incorporating new technologies, and implementing new capture methods outlined in the proposal will increase our ability to disrupt invasive carp before they become established. Specifically, the implementation of using food attractants, completing one Modified-Unified method and increasing public knowledge by distributing flyers and fact sheets about invasive carp will enhance in the removal of invasive carp in Minnesota waters. We have chosen to focus our efforts on the St. Croix, Minnesota, and Mississippi Rivers near the Twin Cities to detect invasive carp and remove early invaders. These are locations where our other effective detection and removal tool, commercial angling, is not as common as further south on the Mississippi. Our program targets the leading edge of the invasion, and protects waters further upstream. Work will also be done throughout the Mississippi River to the Iowa border.

**What are the specific project outcomes as they relate to the public purpose of protection, conservation, preservation, and enhancement of the state’s natural resources?**

Invasive carp, especially Bighead Carp and Silver Carp, are a real and serious threat to Minnesota’s aquatic ecosystems. The Minnesota DNR Division of Fish and Wildlife, Section of Fisheries, continues to conduct surveys and sampling of our major rivers. Enhancing this effort to detect and remove Invasive Carp is important to Minnesota’s Invasive Carp management strategy. This project will continue improving MN DNR Invasive Carp field activities to determine the distribution and abundance of any Invasive Carp in Minnesota waters, remove carp, and inform other management efforts. It will also delineate the leading edge of Invasive Carp reproduction.

## **Activities and Milestones**

### **Activity 1: Integrate new techniques and outreach into detection and removal of invasive carp**

**Activity Budget:** $470,000

**Activity Description:**The United States Geologic Survey (USGS), in partnership with Illinois and Missouri, has tested an intensive method utilized in China to capture invasive carp. The technique, known as the “unified method”, uses a large amount of net tended by several fishing crews to surround and then herd fish into a smaller area where they can be captured. DNR fisheries staff, in collaboration with USGS Researchers, would use this method in conjunction with tagged invasive carp to learn about the ability to capture fish in locations with low densities found in Minnesota. By disrupting pre-spawn activities in this way, the DNR may be able to reduce the potential for invasive carp to spawn successfully.  
A second promising area of research we propose to implement is food attractants. USGS and the University of Minnesota (U of MN) have found attractants can concentrate invasive carp, but have only tested them in high-density locations. We plan to test the effectiveness in low-density waters of Minnesota.   
The public has limited knowledge of invasive carp. Using printed and online material, we will encourage public participation in detection of these species and increase the amount of fish removed due to more eyes on the water.

**Activity Milestones:**

|  |  |
| --- | --- |
| **Description** | **Completion Date** |
| Print and distribute 1,000 flyers/brochures to the public to increase awareness and input | 2024-06-30 |
| Build and deploy a mechanism to deliver food attractant twice yearly, over a 3-week period. | 2024-06-30 |
| Detect and remove invasive carp via 25 netting and 25 electrofishing days per year. | 2024-06-30 |
| Add one Modified-Unified method exercise to disrupt pre-spawn invasive carp activites. | 2024-06-30 |

### **Activity 2: Invasive carp tracking**

**Activity Budget:** $22,000

**Activity Description:**The DNR, in partnership with the US Fish and Wildlife Service (USFWS) and other upper Mississippi River states, built a receiver network in the Mississippi River to track tagged fish including invasive carp. Minnesota law was changed in 2017 to allow DNR to tag and track invasive carp; DNR tagged and began tracking a captured bighead carp in July 2017. Tracking has provided DNR staff with previously unknown information about preferred habitats and seasonal movements in Minnesota waters. Netting in a location frequented by this fish led to the capture and removal of two additional bighead carp in the spring of 2018. These captures would not have occurred without the ability to track a tagged carp. Funding will be used to tag additional carp, track them, target removal in habitats being used by tagged carp, and analyze tagging data to identify seasons and locations where invasive carp congregate, allowing planning for future removal efforts.

**Activity Milestones:**

|  |  |
| --- | --- |
| **Description** | **Completion Date** |
| Maintain 50-70 tracking receivers and annually contract for professional data analysis | 2024-06-30 |
| Use Traitor fish to identify opportunistic locations and attempt 4 full-scale netting efforts | 2024-06-30 |
| Year round tracking and analysis of data to monitor for overwinter and potential spawning locations. | 2024-06-30 |

### **Activity 3: Contracted commercial fishing and incorporating deep water sampling**

**Activity Budget:** $85,000

**Activity Description:**Funding to contract with commercial anglers is vital to MN DNR detection and removal efforts because of their ability to deploy large-scale and specialized gears, as evidenced by past success of commercial anglers in capturing >70% of invasive carp found to date in Minnesota. Without new funding, there is currently no alternative funding to contract for commercial fishing in the waters targeted by our program.  
 Tracking data indicates that invasive carp spend a large portion of time in the deeper waters of Lake St. Croix. To improve capture probability in deep areas, the DNR purchased a large seine that is more commonly used in deep reservoir and marine habitats. The 2,000-foot purse seine requires specialized boats and equipment to deploy and retrieve. The MN DNR does not own this equipment but contracts with a commercial angler who has this capability.

**Activity Milestones:**

|  |  |
| --- | --- |
| **Description** | **Completion Date** |
| Employ deep water sampling gears 3 times per year to target invasive carp habitat | 2024-06-30 |
| Contract commercial fishermen to deploy 14 seine and 32 gill net days over 3 years | 2024-06-30 |

## **Long-Term Implementation and Funding**

**Describe how the results will be implemented and how any ongoing effort will be funded. If not already addressed as part of the project, how will findings, results, and products developed be implemented after project completion? If additional work is needed, how will this be funded?**The DNR invasive carp field program is grant supported. It has been and is funded by a variety of sources that include: Minnesota Environment and Natural Resource Trust Fund, the DNR's Game and Fish fund, Minnesota Outdoor Heritage Fund, and USFWS grants. NPS and USFWS field crews have provided additional field support. DNR will continue seeking additional grants and partnerships. These additional funding sources will continue to add to the program that is already in place and continue to work on using new techniques to remove invasive carp.

## **Other ENRTF Appropriations Awarded in the Last Six Years**

|  |  |  |
| --- | --- | --- |
| **Name** | **Appropriation** | **Amount Awarded** |
| Invasive Bighead Carp and Silver Carp and Native Fish Evaluation – Phase II | M.L. 2017, Chp. 96, Sec. 2, Subd. 06c | $500,000 |

## **Project Manager and Organization Qualifications**

**Project Manager Name:** Brian Nerbonne

**Job Title:** Region 3 Fisheries Manager- Minnesota Department of Natural Resources

**Provide description of the project manager’s qualifications to manage the proposed project.**Brian Nerbonne is the Region 3 Fisheries Manager for the Minnesota Department of Natural Resources (DNR). He oversees eight area offices plus regional DNR Fisheries programs in central and southeast Minnesota. The regional DNR Fisheries annual budget is $1.3 million, and includes over 50 full time employees. Brian has a B.S. in Natural Resources and an M.S. in Fisheries Science, and has worked for the DNR for over 20 years. Brian has previously managed nine different grants from the Lessard Sams Outdoor Heritage Fund totaling over $32 million, fulfilling obligations to maintain fund integrity, managing projects, managing budgets, and submitting status updates and final reports. He is currently the project manager for the DNR’s ML2017 Invasive Bighead Carp and Silver Carp and Native Fish Evaluation – Phase II LCCMR appropriation, funded at $500,000.

**Organization:** MN DNR - Fish and Wildlife Division

**Organization Description:**The Minnesota Department of Natural Resources works to integrate and sustain the interdependent values of a healthy environment, a sustainable economy, and livable communities. DNR’s integrated resource management strategy shares stewardship responsibility with Minnesotans and partners to manage for multiple interests. DNR protects the state’s natural heritage by conserving the diversity of natural lands, waters, and fish and wildlife that provide the foundation for Minnesota’s recreational and natural resource-based economy. DNR manages natural lands such as forests, wetlands, and native prairies; maintains healthy populations of fish and wildlife; and protects rare plant and animal communities throughout the state. DNR manages the state’s water resources, sustaining healthy waterways and ground water resources. DNR provides access to enrich public outdoor recreational opportunities, such as hunting, fishing, wildlife-watching, camping, skiing, hiking, biking, motorized recreation, and conservation education through a state outdoor recreation system that includes parks, trails, wildlife management areas, scientific and natural areas, water trails, and other facilities. DNR supports natural resource-based economies, managing state forest lands for multiple forest values, ensuring the maximum long-term economic return from school trust lands and providing

## **Budget Summary**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Category / Name** | **Subcategory or Type** | **Description** | **Purpose** | **Gen. Ineli gible** | **% Bene fits** | **# FTE** | **Class ified Staff?** | **$ Amount** |
| **Personnel** |  |  |  |  |  |  |  |  |
| Invasive Carp Specialist |  | Specialist will conduct at least 200 field sampling days annually, oversee commercial fishing operations, and compile, analyze, and report findings |  |  | 30% | 3 |  | $210,000 |
| Student Interns |  | Interns will assist with field data collection activities in support of project objectives |  |  | 0% | 0.75 |  | $50,000 |
|  |  |  |  |  |  |  | **Sub Total** | **$260,000** |
| **Contracts and Services** |  |  |  |  |  |  |  |  |
| TBD | Professional or Technical Service Contract | Commercial Fishing including deep water sampling: Contracted directed commercial seines and large mesh gill nets. Licensed commercial fisherman will be hired to set 11 gill net days and 5 seine days per year or 32 gill net days total and 14 seine days total over 3 years. |  |  |  | 0 |  | $85,000 |
| USGS | Professional or Technical Service Contract | Unified Method (cost based on estimate from USGS for one Unified Method exercise incuding: additional nets, boats, people, time, and effort). One Unified Method exercise in conjunction with our tagged Bighead Carp would provide a greater understanding of Invasive Carp as well as potentially remove a large number of fish. |  |  |  | 0 |  | $70,000 |
| Creative Services | Professional or Technical Service Contract | Using printed and online material, we will encourage public participation in detection of these species. Outreach using Creative Services to create 1,000 fliers/brochures to be distributed to the public. |  |  |  | 0 |  | $15,000 |
| VEMCO | Professional or Technical Service Contract | VEMCO data processing fee for 2 locations for 3 years as well as receiver maintenance. VEMCO will assist in analyzing tagging data to identify seasons and locations where invasive carp congregate, allowing planning for future removal |  |  |  | 0 |  | $22,000 |
|  |  |  |  |  |  |  | **Sub Total** | **$192,000** |
| **Equipment, Tools, and Supplies** |  |  |  |  |  |  |  |  |
|  | Tools and Supplies | Replacement nets, specialized nets including large mesh gill nets (4 @ $300 = $1,200), trammel nets (4 @ $400 = $1,600), and mini-fyke nets (6 @ $600 = $3,600); associated supplies to deploy nets such as rope, anchors, floats (Quantity depends on needs as they arise, approx. $2,500); miscellaneous supplies such as personal protective equipment, repairs, replacements, etc. (Quantity depends on needs $21,000)(No single piece of equipment will exceed $5,000). Costs are based on expected bids and may vary. Attractanct station ($30,000) Note: $10,000 of Attractant Station is services provided by USGS. | Nets, buoys, rope, anchors are necessary to capture invasive carp at various life stages and in various habitats. All other equipment such as PPE's, repairs, and replacements are essential in continuing our operations and completing our objectives. The attractant station is a new technology and will hopefully increase the amount of invasive carp we can remove from Minnesota waters. |  |  |  |  | $60,000 |
|  |  |  |  |  |  |  | **Sub Total** | **$60,000** |
| **Capital Expenditures** |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  | **Sub Total** | **-** |
| **Acquisitions and Stewardship** |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  | **Sub Total** | **-** |
| **Travel In Minnesota** |  |  |  |  |  |  |  |  |
|  | Miles/ Meals/ Lodging | Meals and lodging for distant and overnight status up to 25 nights per year for 3 years | Travel allows staff to sample various locations throughout the state as needed to capture invasive carp. |  |  |  |  | $8,000 |
|  | Other | Fleet transportation expense for 3 years; base of operation will be Warner Road, St. Paul Fisheries office. | Fleet costs allow staff to use state vehicles in order to better meet goals and objectives. |  |  |  |  | $25,000 |
|  |  |  |  |  |  |  | **Sub Total** | **$33,000** |
| **Travel Outside Minnesota** |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  | **Sub Total** | **-** |
| **Printing and Publication** |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  | **Sub Total** | **-** |
| **Other Expenses** |  |  |  |  |  |  |  |  |
|  |  | DNR's Direct and Necessary Costs- Direct and necessary costs cover HR Support ($6,897), Safety Support ($1,248), Financial Support ($5,116), Communication Support ($1,388), IT Support ($16,404), Planning Support ($1,138). | Direct and Necessary costs pay for activities that are directly related to and necessary for accomplishing appropriated programs/projects |  |  |  |  | $32,000 |
|  |  |  |  |  |  |  | **Sub Total** | **$32,000** |
|  |  |  |  |  |  |  | **Grand Total** | **$577,000** |

### **Classified Staff or Generally Ineligible Expenses**

|  |  |  |  |
| --- | --- | --- | --- |
| **Category/Name** | **Subcategory or Type** | **Description** | **Justification Ineligible Expense or Classified Staff Request** |

### **Non ENRTF Funds**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Category** | **Specific Source** | **Use** | **Status** | **Amount** |
| **State** |  |  |  |  |
|  |  |  | **State Sub Total** | **-** |
| **Non-State** |  |  |  |  |
| Cash | FY 2021 USFWS Invasive Carp Grant | Funding to support and maintain fieldwork for detection and monitoring of invasive carp populations. | Secured | $100,000 |
| Cash | FY 2021 USFWS Grant | Funding to support and maintain fieldwork for detection and monitoring of invasive carp population. | Pending | $312,000 |
| Cash | FY 2022- FY 2025 Invasive Carp Grant | Funding to support and maintain fieldwork for detection and monitoring of invasive carp population. (Total grant varies) | Potential | $70,000 |
| Cash | FY 2022- FY 2025 USFWS State/Interstate ANS Grant | Funding to supplement existing invasive carp program for fieldwork monitoring and detection of invasive carp. (Total grant varies) | Potential | $20,000 |
|  |  |  | **Non State Sub Total** | **$502,000** |
|  |  |  | **Funds Total** | **$502,000** |

## **Attachments**

### **Required Attachments**

#### **Visual Component**

File: [ed8d82ca-e3e.pdf](https://lccmrprojectmgmt.leg.mn/media/map/ed8d82ca-e3e.pdf)

#### **Alternate Text for Visual Component**

The one-pager has a few pictures that show some of the work we do as well as some of the technology and invasive carp. It also highlights the issues with invasive carp and highlights some of our major goals that we look to accomplish in our proposal.

## **Administrative Use**

**Does your project include restoration or acquisition of land rights?**   
 No

**Does your project have patent, royalties, or revenue potential?**   
 No

**Does your project include research?**   
 No

**Does the organization have a fiscal agent for this project?**   
 No