



# Native Fish Conservation Report

As required by Minnesota Session Law 2023, Chapter 60, Article 4, Sec. 104

December 18, 2023

---

Report to the Minnesota Legislature

Minnesota Department of Natural Resources  
500 Lafayette Road  
Saint Paul, Minnesota 55155-4037  
651-259-5042  
[bob.meier@state.mn.us](mailto:bob.meier@state.mn.us)  
[mndnr.gov](http://mndnr.gov)

Pursuant to Minnesota Statutes, Section 3.197, the estimated cost to produce this report is approximately \$64,000.00. This includes staff time for drafting and reviewing the report.

*Upon request, this material will be made available in an alternative format such as large print, Braille or audio recording.*

The 2023 Minnesota Session Law Chapter 60, Article 4, Sec. 104 states:

(a) By August 1, 2023, the commissioner of natural resources must submit a written update on the progress of identifying necessary protection and conservation measures for native fish currently defined as rough fish under Minnesota Statutes, section 97A.015, subdivision 43, including buffalo, sucker, sheepshead, bowfin, gar, goldeye, and bullhead to the chairs and ranking minority members of the house of representatives and senate committees and divisions with jurisdiction over environment and natural resources.

(b) By December 15, 2023, the commissioner of natural resources must submit a written report with recommendations for statutory and rule changes to provide necessary protection and conservation measures and research needs for native fish currently designated as rough fish to the chairs and ranking minority members of the house of representatives and senate committees and divisions with jurisdiction over environment and natural resources. The report must include recommendations for amending Minnesota Statutes to separately classify fish that are native to Minnesota and that are currently designated as rough fish and invasive fish that are currently designated as rough fish. For the purposes of this paragraph, native fish include but are not limited to bowfin (*Amia calva*), bigmouth buffalo (*Ictiobus cyprinellus*), smallmouth buffalo (*Ictiobus bubalus*), burbot (*Lota lota*), longnose gar (*Lepisosteus osseus*), shortnose gar (*Lepisosteus platostomus*), goldeye (*Hiodon alosoides*), mooneye (*Hiodon tergisus*), and white sucker (*Catostomus commersonii*), and invasive fish include but are not limited to bighead carp (*Hypophthalmichthys nobilis*), grass carp (*Ctenopharyngodon idella*), and silver carp (*Hypophthalmichthys molitrix*).

This report fulfills the requirement outlined in (b).

## **Native Rough Fish Conservation Recommendations**

There are 23 native fish species classified as “rough fish” in Minnesota. Use of the term “rough” fish originated from early commercial fisheries. Fish with higher commercial value were filleted and prepared for the markets. Fish of lesser commercial value were not filleted and sold whole “in the rough,” or in the round. For decades, assumptions were made that rough fish were detrimental to aquatic habitats and competed with more desired gamefish species. Attitudes towards native rough fish have been shifting and interest in angling and bowfishing for native rough fish has greatly increased. Conservation interest in native rough fish has become a higher priority because research has demonstrated that native rough fishes are integral to healthy aquatic communities and deliver critical ecosystem services. Population status of many of these species is not well understood, but multiple potential threats to long-term sustainability have been raised, including impacts of harvest.

The Minnesota legislature directed the Department of Natural Resources (DNR) to develop a written report with recommendations for statutory and rule changes to provide necessary conservation measures and research needs for native fish currently designated as rough fish. The request also called for recommendations to amend Minnesota Statutes to separately classify Minnesota’s native rough fish from invasive fish. This report provides 1) an overview of the public engagement and data review process, 2) recommendations needing legislative actions, 3) a summary of research needs and activities, and 4) DNR action and initiative recommendations.

### **Public Engagement and Data Review Process**

The DNR engaged stakeholders through a public questionnaire and external work group. The external work group consisted of 14 individuals consisting of bowfishers, commercial fish harvesters, anglers, and representatives from conservation organizations (including The Nature Conservancy, Izaak Walton League, and Minnesota Conservation Federation), and roughfish.com. The work group met five times between April and July of 2023 and developed four recommendations to the DNR that focused on native rough fish.

1. Provide more education about native rough fish.
2. Increase environmental restoration efforts that benefit native rough fish.
3. Hire specialized staff to advance native rough fish initiatives.
4. Conduct more research on native rough fish.

The external work group helped develop content for a public questionnaire that was available from August 1, 2023 through September 15, 2023. A total of 592 responses were received. A few key takeaways from the questionnaire include:

1. 41-56% supported bag limits and 31-39% did not support bag limits (varied by species),
2. those that supported bag limits, supported the most conservative options (all species),
3. 81% believed that native rough fish are a critical ecosystem component,
4. 59% of respondents angled and 18% bowfished for native rough fish, and
5. >75% of respondents wanted fish ID materials/educational clips that highlight native rough fish.

The Mille Lacs Band of Ojibwe and Prairie Island Indian Community also provided feedback to the DNR on native rough fish management. The tribal feedback indicated support for moderate to restrictive bag limits, assertions that native rough fish are critical to aquatic ecosystems, interest in outreach materials about native rough fish, and that some native rough fish, such as suckers, hold cultural or spiritual importance.

A group of nine DNR Fisheries staff reviewed feedback from the external work group, public questionnaire, and tribal nations. The internal DNR team also assessed available data and considered species life histories. Based on the feedback and available biological data, the following recommendations were developed and are presented to the Minnesota legislature.

### **Recommendations Needing Legislative Actions**

To provide sufficient protections and management options for native fishes in Minnesota, the DNR recommends the following to the Minnesota legislature.

- 1) Eliminate the current “rough fish” definition in M.S. 97A.015 and replace with “native rough fish.”**
  - a) The specific action would be to remove carp from the definition and further define the list of native rough fishes.
  - b) This amendment to M.S. 97A.015 would facilitate the separation of native and invasive fishes.
  - c) The change would help remove the “rough fish” stigma by clearly indicating that rough fish are native species with intrinsic value.
  - d) Statutory and rulemaking changes associated with this recommendation are substantial.
    - Changes to the definitions in M.S. 97A.015 would be required.
    - Would need to address 70 uses of “rough fish” in 22 statutes and 14 rules.
    - Boundary water rules with North Dakota, South Dakota, Iowa, and Wisconsin would also need to be modified.
    - Appendix A includes a list of needed rule and statute changes.
- 2) Grant DNR expedited rulemaking authority to establish daily and possession limits on native rough fishes currently listed as rough fish using best available science and stakeholder engagement.**
  - a) The DNR has authority to establish fishing seasons and limits, but requests permission to establish daily and possession limits for native “rough” fishes in an expeditious manner in M.R. 6262.0200, M.R. 6262.0650, and several rule chapters associated with boundary waters.
  - b) The external work group was divided about the application of bag limits for native rough fishes.

### **Summary of Research Needs and Activities**

Because research on native rough fish has been limited, the recommendations below are assessment starting points. The external work group unanimously agreed that more research and data collection on native rough fishes are needed. No legislative actions are being requested in this section. Several of these projects could be proposed for funding through the Legislative-Citizen Commission on Minnesota

Resources (LCCMR) or other funding sources.

**1) Address where population-level issues exist in the native rough fish species.**

- a) To effectively manage fish species, age structure and population dynamics data (recruitment, growth, and mortality) are needed.
- b) Research priorities, based on perceived population vulnerability, would be in the following order: bowfin, gar, redhorses, buffalo, suckers, goldeye, quillback and carpsuckers, mooneye, and freshwater drum.
- c) Where research reveals population problems, movement/habitat association work becomes useful to understand landscape drivers and needed conservation measures.
- d) Sampling protocol limitations will be a challenge. We do not have established sampling strategies for native rough fish and will need to address biased data. Collecting these data are going to take time.

**2) Continuation of existing research projects that secure population-level data.**

- a) Morphometric and meristic traits investigations to identify redhorse species based on genetically confirmed individuals.
- b) Genetic diversity evaluation among and within redhorse populations in the lower Mississippi River basin to better understand connectivity and genetic health.
- c) Evaluation of age, size structure, population vital rates, natal recruitment sources, and the potential resiliency to increased mortality (e.g., targeted harvest, bycatch, disaster, or natural) for paddlefish, longnose gar, and shortnose gar.
- d) External research partnerships with University of Nebraska – Lincoln and the Department of Fisheries and Oceans – Canada on freshwater drum and bigmouth buffalo in the Red River basin.
- e) Telemetry monitoring of freshwater drum, buffalo, blue sucker, longnose gar, paddlefish, shovelnose sturgeon, flathead catfish, and lake sturgeon to better understand migration patterns and habitat utilization.
- f) Efforts to build Red River redhorse population dynamics dataset.
- g) Collaborate on the vital rates projects with the Long-Term Resource Monitoring portion of the Upper Mississippi River Restoration program on Pools 4 and 8 to better understand population dynamics on important native rough fish species.
- h) Leverage data collections associated with the invasive carp funding and projects to collect baseline information on native rough fish populations.

**3) Identify research needs and launch new research to secure population-level data.**

- a) Launch approved project with Bemidji State University on bowfin community interactions, population sizes, and population dynamics on three to nine inland lakes spanning the geographic range of the species (north to south) in Minnesota.
- b) Implement the LCCMR project on the Minnesota River that will include bigmouth buffalo diets and expanded benthic trawling surveys to secure baseline populations data.
- c) Develop an assessment of inland gar populations with Dr. Solomon David at the University of Minnesota.
- d) Identify critical spawning habitats and spawning success of important native rough fishes, including paddlefish, river redhorse, and longnose gar.
- e) Develop creel surveys, in combination with camera data, to secure information on bowfishing harvest to help answer questions about night-time usage of the resource.

- f) Establish a telemetry study on the Mississippi River between Grand Rapids and Brainerd on multiple native rough fish species to identify critical habitats.
- g) Develop a plan to work within our existing surveys and field efforts to collect enough specimens for population dynamics assessment to better determine what questions need to be answered on native rough fishes.
- h) Utilize a graduate student to launch a study on the status of large Catostomidae species in the Red River basin.
- i) Develop a training session/practicum to prepare staff to remove and age structures from various native rough fishes, particularly bowfin, buffalo, suckers, and redborses.

### **DNR Action and Initiative Recommendations**

There are numerous actions that the DNR is already taking or has the capacity to undertake. Based on recommendations from the external work group, feedback from the public questionnaire, and responses from tribal partners, the internal work team identified the following action and initiative recommendations for the DNR.

#### **1) Evaluate the state's wanton waste policy.**

- a) Secure additional stakeholder feedback about the practice of using native rough fish for fertilizer.
- b) As appropriate, develop a wanton waste recommendation for the 2025 legislature to potentially modify M.S. 97A.031.

#### **2) Hire a native fish biologist and give the position a charge to coordinate implementation of the December 2023 native fish legislative report recommendations.**

- a) The 2023 legislature provided a base funding increase for this position.
- b) The DNR is in the process of filling the vacancy.
- c) Hiring a native fish biologist was a recommendation from the external work group.

#### **3) Add a bowfishing license proposal to a future legislative licensing package request.**

- a) The license would be similar in form, function, and fees as a Minnesota spearing license.
- b) This license would provide data to better assess how many bowfishers are active in the state.
- c) The external work group supported development of a no-cost bowfishing endorsement, but the spearing community has called for a fair and equitable fee-based license.

#### **4) Review commercial harvest of native rough fish and consider populations data in inland commercial fishing in the northern and northwestern areas of the state for potential closure.**

- a) Review the inland commercial fishing areas and propose closures where appropriate.
- b) The external work group did not weigh in on this topic.

#### **5) Review the state's list of fishes that are considered endangered, threatened, or species of concern and consider making changes as appropriate.**

- a) Several native rough fishes have limited distribution in Minnesota, are found in extremely low densities, and/or have questionable population status that should be considered for addition to the state's list.
- b) Likewise, there are species currently on the list that should be considered for removal.
- c) Highlight the fishable species on the list in the fishing regulations booklet to encourage catch-and-release.

d) Proposed changes would need to be reflected in M.R. 6134.0200.

**6) Implement native fish educational and outreach initiatives.**

a) The external work group unanimously brought forth a general recommendation to “provide more education” about native rough fish.

b) *Launch development of a “Native Fish of Minnesota” calendar.*

- i. Members of the external work group suggested an educational campaign centered around the development of a native fish calendar.
- ii. For each month of the calendar, a native fish would be highlighted with a photo, Minnesota range map, important facts about the species, and possibly the state record size.
- iii. Intent is to develop a 2025 calendar that will be ready for distribution by August of 2024.

b) *Create state catch-and-release record options for more native fishes.*

- i. To generate more excitement about fishing for native fishes, the DNR intends to open more options for catch-and-release state records.
- ii. New catch-and-release record options would be opened for several traditionally angled species, but also for less traditional species including bowfin, bigmouth and smallmouth buffalo, freshwater drum, longnose and shortnose gar, and shovelnose sturgeon.
- iii. The external work group did not develop a recommendation on this topic.

c) *Develop a “Native Fishes of Minnesota Guide.”*

- i. At the request of the external work group, the native fish biologist will work to develop a native fishes of Minnesota and their important habitats guide.
- ii. The guide would be available in electronic and print formats and will include photos, identification tools, range maps, habitat requirements, and life history information on all the native Minnesota fishes.

d) *Other Outreach*

- i. In conjunction with the wanton waste rule clarifications, provide bowfishing tournament organizers with more information on what is allowed and not allowed for fish disposal.
- ii. More visibility at promotional events, such as the state fair and large fishing events,
- iii. Inclusion of more native fish information, including photos with identification, in the fishing regulations book,
- iv. Developing a native rough fish application for use on phones and other devices, and
- v. Posting informational signs about native rough fish at popular fishing locations.

**5) Implement habitat improvements that benefit native fishes.**

a) *Identify and implement ecosystem restoration projects.*

- i) The external work group strongly supported conservation efforts, including stream restorations, dam removals, carp trap removals, and increasing connectivity to native fish spawning and wintering areas to restore and maintain native fish populations.
- ii) Additional funding will be required to complete design and implementation of these projects.

b) *Utilize data from telemetry studies to refine habitat improvement projects.*

- i) Extensive telemetry studies are revealing important connections between many native fishes and the state’s stream and river habitats.
- ii) By utilizing telemetry data, we can better define habitats of greatest importance and focus efforts on habitat improvement projects.



**Appendix A.** The following statutes and rules would be impacted by a name change to rough fish. Each of these statutes/subdivisions and rules/subparts would need to be addressed.

<b>Minnesota Statute</b>	<b>Subdivision(s)</b>	<b>Minnesota Rule</b>	<b>Subpart(s)</b>
17.4996		6115.0231	2A
41A.02	6	6259.0100	2A, 2D
84B.061		6260.1400	Title, 1
97A.015	3b, 39, 43	6260.1500	1
97A.075	2(1)	6260.1600	1, 3
97B.037		6260.1800	1A, 7
97B.055	2(c)	6260.1900	1
97B.106	1, 2(c)	6260.2000	5
97C.035	3(3)	6262.0200	1Q
97C.041		6262.0600	Title, 1, 1a, 1b, 1d, new
97C.045		6262.0650	Title, A-H
97C.081	3a(2)	6262.0700	
97C.371	1, 5, new	6262.0750	
97C.375		6266.0200	2H, 4
97C.376	5	6266.0300	2K, 3, 8B
97C.381		6266.0400	2K, 3, 5B, 11
97C.391	1(2)	6266.0500	2B, 2E, 2M, 8
97C.395	2	6266.0600	1, 3A, 3C, 3E, 5, 5A
97C.801	2(a)(b)		
97C.805	4		
97C.811	2		
97C.831	1		
97C.835	3		