



**Minnesota Department of Natural Resources  
Fisheries Management**

**STREAM SURVEY REPORT**

**Stream Name:** Minnesota River

**Survey Type:** Targeted Survey

**Kittle ID Number:** M-55

**Survey ID Dates:** 7/05/2022–7/21/2022

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**Reason for survey:** Monitor Channel Catfish and Flathead Catfish populations in the Minnesota River.

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**Stream Location**

**Counties:** Big Stone, Blue Earth, Brown, Carver, Chippewa, Dakota, Hennepin, Lac Qui Parle, Le Sueur, Nicollet, Redwood, Renville, Scott, Sibley, Yellow Medicine

**Location of Mouth:** UTM 188180 4971427 (Mississippi River)

**Location of Source:** UTM 229370 5022352 (Big Stone Lake)

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**Area Fisheries Office**

**Area Name:** Hutchinson                      **ORG Code:** F401

**Region Name:** Southern Region              **Region Number:** 4

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**Watershed Characteristics**

**Drainage Basin:** Minnesota River

**Size (mi<sup>2</sup>):** 17,008 mi<sup>2</sup> (44,052 km<sup>2</sup>)

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**Stream Characteristics**

**Stream Length (miles):** 320 (515 km)              **Stream Type:** Warmwater

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**Surveys and Investigations**

**Full IBI Survey:** 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2022

**Partial IBI Survey:** 2003, 2004, 2009, 2021

**Population Assessment:** 1985, 1992, 1998, 2004

**Hoop Net Assessments:** 2014, 2015, 2016, 2017, 2018, 2019, 2021, 2022

**Other:** Creel survey–1998, creel survey-2022

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SPECIAL ASSESSMENT ON MINNESOTA RIVER (M-55)

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**LOCATION**

**Stream Map**

**Figure 1. Location of the Minnesota River and Minnesota River Watershed within the Mississippi River Drainage of Minnesota.**

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**INTRODUCTION**

The Minnesota River flows approximately 320 miles (515 km) from Big Stone Lake on the Minnesota–South Dakota Border to its confluence with the Mississippi River in St. Paul, MN (**Figure 1**). The Minnesota River has an important recreational fishery for both Channel Catfish and Flathead Catfish (downstream of Granite Falls Dam), including relatively abundant “trophy” sized fish of both species. In fact, a creel survey conducted during 2022 revealed that 50% of Minnesota River anglers specifically target “catfishes” and they likely spend around 50,000 or more hours fishing the river annually. The Minnesota Department of Natural Resources monitors and evaluates the Channel Catfish and Flathead Catfish populations with annual hoop net assessments. In addition, various other sampling techniques are utilized, including low-frequency electrofishing methods for indexing the relative abundance of juvenile (< 400 mm) Flathead Catfish. This annual report only summarizes summer hoop net assessments conducted during 2022. Refer to the Minnesota River Fisheries Management Plan 2018–2022 for detailed explanations of assessment objectives, goals, and methods (**Figure 2**).

***Fisheries Management Goals:***

1. Monitor and promote quality recreational fisheries for Channel Catfish, Flathead Catfish, Freshwater Drum, Norther Pike, Sauger, Walleye, and White Bass.
  - Maintain July hoop net catch rates of  $\geq 1.0$  Flathead Catfish/net-night and  $\geq 3.0$  Channel Catfish/net-night downstream of Granite Falls Dam.
  - Maintain trophy fisheries downstream of Granite Falls Dam with hoop net catch rates of memorable size (860 mm) Flathead Catfish  $\geq 0.2$ /net-night and trophy size (1020 mm) Flathead Catfish  $\geq 0.1$ /net-night. Maintain hoop net catch rates of preferred size (610 mm) Channel Catfish  $\geq 0.3$ /net-night and memorable size (710 mm) Channel Catfish  $\geq 0.15$ /net-night.

**Figure 2. Excerpt of the catfish management goals from the Minnesota River Fisheries Management Plan 2018–2022.**

**SUMMER HOOP NET ASSESSMENTS**

Summer hoop net assessments are conducted within one of five Minnesota River reaches each year following a rotating schedule and typically consist of 112–164 nets set at 4–6 sample sites. During 2022, hoop net assessments were conducted in reach 4 which extends 24 km from Granite Falls Dam downstream to the confluence with Hawk Creek. One hundred two hoop nets effectively fished across four sites. Mean hoop net catch/net-night (**Table 1**) exceeded goals established in the 2018–2022 Minnesota River Fisheries Management Plan. Similarly, size-specific catch rates and size structure goals were exceeded with 43.2% of captured Flathead Catfish exceeding memorable length (860 mm) and 13.5% of Channel Catfish exceeding preferred length (610 mm; **Table 2 & Table 3**; refer to **Table 4 for length categories**).

Table 1. Summary of Channel Catfish and Flathead Catfish catches (catch/net-night) from the Minnesota River during summer hoop net assessments.

Species	Nets	Mean CPE	SD
Chanel Catfish	102	26.1	48.3
Flathead Catfish	102	1.7	3.2

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Table 2. Summer hoop net catch rates (catch/net-night) of preferred- and memorable-length (710 mm) Channel Catfish and memorable- and trophy-length (1020 mm) Flathead Catfish.

Length & Species	Nets	Mean CPE	SD
≥ 610 mm Chanel Catfish	129	1.3	2.2
≥ 710 mm Chanel Catfish	129	0.5	1.1
≥ 860 mm Flathead Catfish	129	0.7	1.7
≥ 1020 mm Flathead Catfish	129	0.2	0.7

Table 3. Incremental proportional size distribution (PSD) of Channel Catfish and Flathead Catfish captured in summer hoop nets. Flathead Catfish are not fully recruited to hoop nets until they reach quality length; therefore, PSD S-Q is not reported.

Incremental Length Category	Channel Catfish PSD	Flathead Catfish PSD
S-Q	59.3	NA
Q-P	27.1	21.0
P-M	8.2	35.2
M-T	5.2	29.0
T-E	0	10.8
E	NA	3.4

Table 4. Proportional size distribution length categories for Flathead Catfish and Channel Catfish (including the addition of an “Exceptional” length category for Flathead Catfish).

Length categories	Flathead Catfish		Channel Catfish	
	mm	inches	mm	inches
Stock (S)			280	11
Quality (Q)	510	20	410	16
Preferred (P)	710	28	610	24
Memorable (M)	860	34	710	28
Trophy (T)	1020	40	910	36
Exceptional (E)	1120	44		



## Minnesota Department of Natural Resources Fisheries Management

### STREAM SURVEY REPORT

#### CONCLUSION

Standardized annual monitoring of Minnesota River catfish populations are in their infancy, and future assessments will allow for meaningful evaluation of population trends. In recent years, average hoop net catches downstream of Granite Falls Dam tended to vary 2–4 Channel Catfish/net-night and 1–2 Flathead Catfish/net-night. Generally, greater than 25% of Flathead Catfish captured in hoop nets exceed memorable length (860 mm) and greater than 5% of Channel Catfish exceed memorable length (710 mm). For the 2022 summer hoop net assessment (conducted from Granite Falls Dam downstream to the confluence with Hawk Creek), mean catch rates were 1.7 Flathead Catfish/net-night and 26.1 Channel Catfish/net-night with 43.2% of Flathead Catfish and 5.2% of Channel Catfish exceeding memorable lengths.

Relatively high catch rates of Channel Catfish during 2022 indicate that Channel Catfish relative abundance may be greater in the reach downstream of Granite Falls Dam than in further downstream reaches. Yet, catch rates during the 2022 assessment were much lower than catch rates typical from upstream of Granite Falls Dam. Previously, it was hypothesized that Granite Falls Dam acted as a discrete barrier between a high-density Channel Catfish population upstream and a lower density Channel Catfish population downstream. The 2022 hoop net assessment provides evidence that there might be a gradient from high relative abundance to lower relative abundance of Channel Catfish downstream of Granite Falls Dam.

Portions of the study reach sampled during 2022 are upstream of Minnesota Falls. Prior to its removal in 2013, Minnesota Falls Dam acted as the upstream-most boundary of the Flathead Catfish distribution in the Minnesota River. Interestingly, catch rates of Flathead Catfish in nets upstream of Minnesota Falls were particularly high (2.6 Flathead Catfish/net-night), which demonstrates the ability of Flathead Catfish to quickly recolonize the reach of river upstream of the dam removal site and the importance and suitability of the additional habitat that is now available to them.

Overall, the size structure and relative abundance of Channel Catfish and Flathead Catfish in the Minnesota River downstream of Granite Falls Dam is favorable for anglers. Although densities of “trophy” size Flathead Catfish likely vary among microhabitats within the Minnesota River, they can be caught in any reach of the river from Granite Falls Dam to the confluence with the Mississippi River. Population characteristics are indicative of high annual survival for both Channel Catfish and Flathead Catfish. Low mortality indicates that current harvest levels likely have a small impact, and that trophy and memorable length fish are likely to remain abundant. Hoop net assessments should be conducted annually to monitor relative abundance and size structure of catfishes in the Minnesota River. All captured Flathead Catfish should be checked for and tagged with PIT tags to provide information about movement, growth, and relative abundance.

In-depth analyses, results, and interpretations will be provided in future investigational reports.

