



**Minnesota Department of Natural Resources  
Fisheries Management**

**STREAM SURVEY REPORT**

**Stream Name:** Minnesota River

**Survey Type:** IBI Survey

**Kittle ID Number:** M-55

**Survey ID Dates:** 8/01/2022–8/31/2022

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**Reason for survey:** Monitor the biological health of the Minnesota River by conducting annual index of biotic integrity (IBI) electrofishing assessments

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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

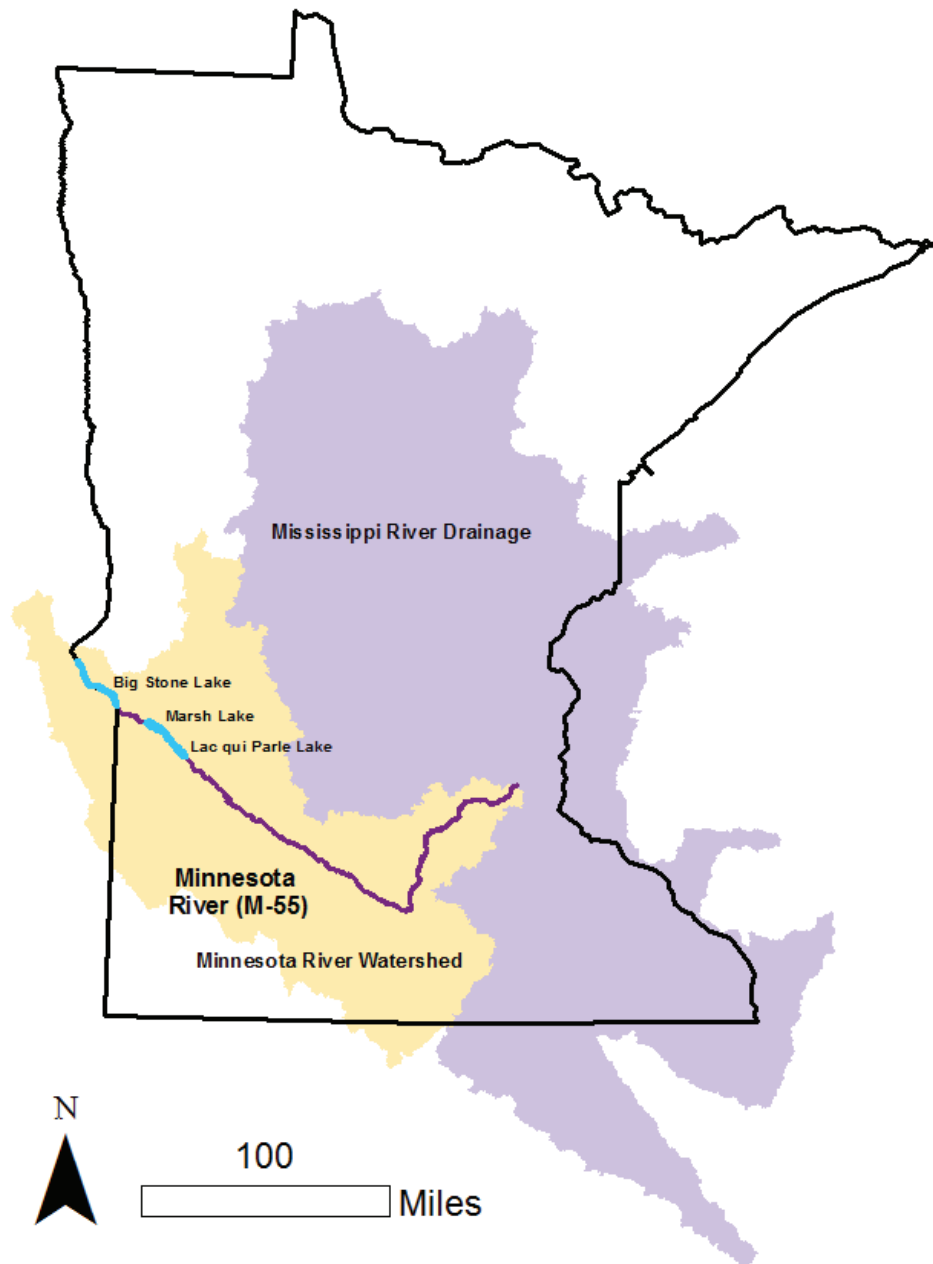
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**STUDY AREA**

**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**

**Minnesota River**

The Minnesota River is a 7th–8th order river that flows approximately 320 miles from Big Stone Lake on the Minnesota–South Dakota Border to its confluence with the Mississippi River in St. Paul, MN and serves as an important aquatic ecosystem, fishery, and recreational resource in Southern Minnesota. The approximately 17,000 square mile watershed of the Minnesota River drains portions of Minnesota (14,751 mi<sup>2</sup>), South Dakota, and Iowa that are dominated by agricultural use and urban development. As a result, the Minnesota River is impacted by increased erosion, sedimentation, nutrient inputs, and flow.

Unlike many medium to large rivers, the flow of the Minnesota River is altered by very few dams and the lower 240 miles are completely free flowing. From upstream to downstream, the dams are Big Stone Lake (RM 317), Big Stone National Wildlife Refuge (RM 303), Marsh Lake Dam (RM 289), Lac qui Parle Dam (RM 272), and Granite Falls Dam (RM 240). Most of the dams are associated with impoundments that have fisheries managed independently from the Minnesota River. Granite Falls Dam is the one exception and is used for hydro-power generation. Granite Falls Dam also acts as a major barrier to fish movement and therefore the fish community upstream of Granite Falls Dam is less complex than downstream and lacks many large river species such as Flathead Catfish and Shovelnose Sturgeon.

Despite the altered nature of the Minnesota River and its unstable flow regime it is home to a diversity of biota and supports healthy populations of gamefish and important non-game fish. In recent years, over 80 fish species have been documented in the Minnesota River making it one of the most species rich fish communities in the state. Primary sportfish species in the Minnesota River include Channel Catfish, Flathead Catfish, and Walleye with secondary sportfish species including Northern Pike, Freshwater Drum, Sauger, and White Bass. Current management of the Minnesota River fishery includes monitoring, harvest regulations, and limited stocking. However, Big Stone Lake, Big Stone Lake National Wildlife Refuge, Marsh Lake, and Lac qui Parle Lake receive regular Walleye stocking which undoubtedly contributes to the Walleye population in the Minnesota River. Similarly, a 20-year Lake Sturgeon stocking program on Big Stone Lake began in 2015 which is also expected to contribute Lake Sturgeon to the Minnesota River.

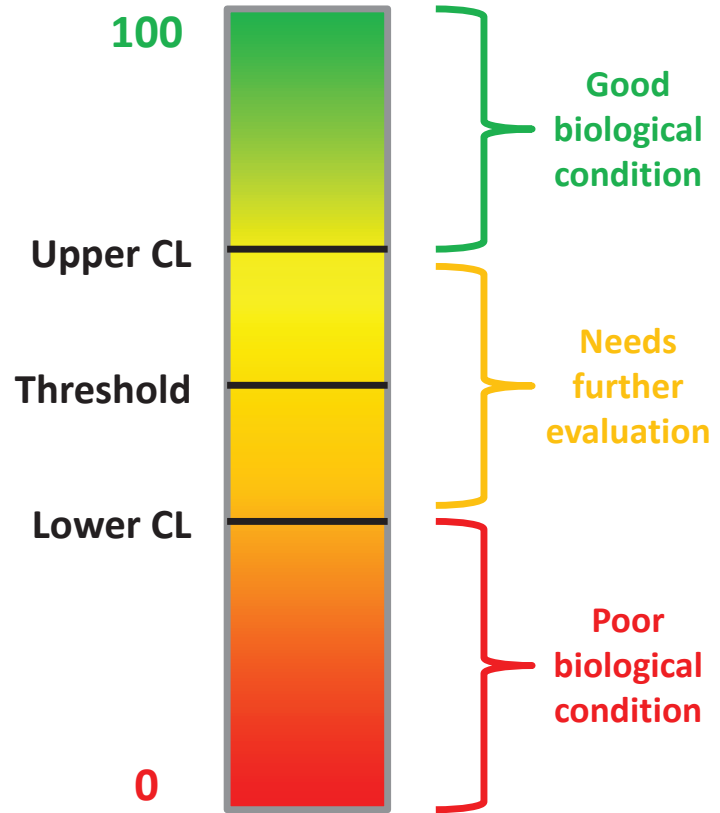
Anglers regularly target Channel Catfish, Walleyes, and other species on the Minnesota River and trophy Flathead Catfish angling has grown in popularity over the last 30 years. Yet, relative to its size, angling effort on the Minnesota River is perceived as much lower than on area lakes. This can likely be attributed to the fact that many boaters are intimidated by the large size, variable flow, and navigation obstacles (log jams, sand bars, rocks) of the Minnesota River while some anglers may perceive the Minnesota River as “dirty” because of its turbid water and past pollution issues. Although not all portions of the Minnesota River are easy to navigate with large fishing boats, the Minnesota River has over 50 boat ramps and canoe accesses in addition to many parks, trails, and shore fishing access locations.

Protecting, promoting, and restoring the Minnesota River are priorities of the Minnesota Department of Natural Resources (MN DNR). In an effort to monitor the biological health of the Minnesota River, MN DNR Fisheries conducts annual fish index of biotic integrity (IBI) assessments. During 2022, IBI assessments were conducted at 13 of 16 fixed sites (Figure 3 & Table 3). Below average discharge during most of August through September prohibited access to several IBI sites.

### Fish Index of Biotic Integrity

In the past, water quality has been tested to evaluate the health of aquatic systems. However, water quality parameters don't necessarily reflect the cumulative effect of various chemical, physical, and biological stressors. Biological communities (e.g., fish, macroinvertebrates) on the other hand are subjected to the cumulative impact of these stressors and ultimately provide a better representation of ecosystem health. During the early 1980s biologists began developing methods for using biotic communities to measure ecosystem biotic integrity. In Minnesota, the Minnesota Pollution Control Agency (MPCA) has been using index of biotic integrities (IBIs) for stream assessments since the 1990's, and more recently developed a statewide fish-based IBI to assess the health of Minnesota's streams and rivers. Fish IBI scores are based on a suite of fish community metrics (Table 1 & Table 2) derived from standardized sampling protocols and provide insight into the biotic health of aquatic systems.

Scores vary from 0 to 100, with degraded fish communities comprised of a few tolerant species receiving low fish IBI scores and healthy diverse fish communities receiving high fish IBI scores. Since streams of different types and sizes have different native fish communities, separate IBI indices have been developed for several Minnesota stream classes. The Minnesota River is classified as a Southern River and the MPCA has identified the impairment threshold as 46 for Southern Rivers with a confidence interval of 35–57. Fish IBI scores above the upper confidence limit reflect good biological condition, scores below the lower confidence limit reflect poor biological condition, and scores within the confidence interval require further interpretation. For more information on the MPCA's fish-based index of biotic integrity see: MPCA (2014), Development of a fish-based index of biological integrity for assessment of Minnesota's rivers and streams, document number wq-bsm2-03.



**Figure 2. Diagram describing fish IBI score interpretation.**

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**Table 1. Description of metrics used to calculate Southern River fish index of biotic integrity scores.**

Metric name	Category	Response	Metric description
DetNWQTXPct	trophic	negative	Relative abundance (%) of taxa that are detritivorous
GeneralPct	trophic	negative	Relative abundance (%) of individuals that are generalist feeders
Insect-TolPct	trophic	positive	Relative abundance (%) of individuals that are insectivore species (excludes tolerant species)
Piscivore	trophic	positive	Taxa richness of piscivorous species
SLvdPct	life history	negative	Relative abundance (%) of individuals that are short-lived
SSpnTXPct	reproductive	negative	Relative abundance (%) of taxa that are serial spawners (multiple times per year)
TolPct	tolerance	negative	Relative abundance (%) of individuals that are tolerant
VtolTXPct	tolerance	negative	Relative abundance (%) of taxa that are very tolerant
SensitiveTXPct	tolerance	positive	Relative abundance (%) of taxa that are sensitive (scoring adjusted for gradient)
SLithop	reproductive	positive	Taxa richness of simple lithophilic spawning species (scoring adjusted for gradient)
DomTwoPct	dominance	negative	Combined relative abundance of two most abundant taxa
FishDELTpct	tolerance	negative	Relative abundance (%) of individuals with Deformities, Eroded fins, Lesions, or Tumors

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**Sample Locations**

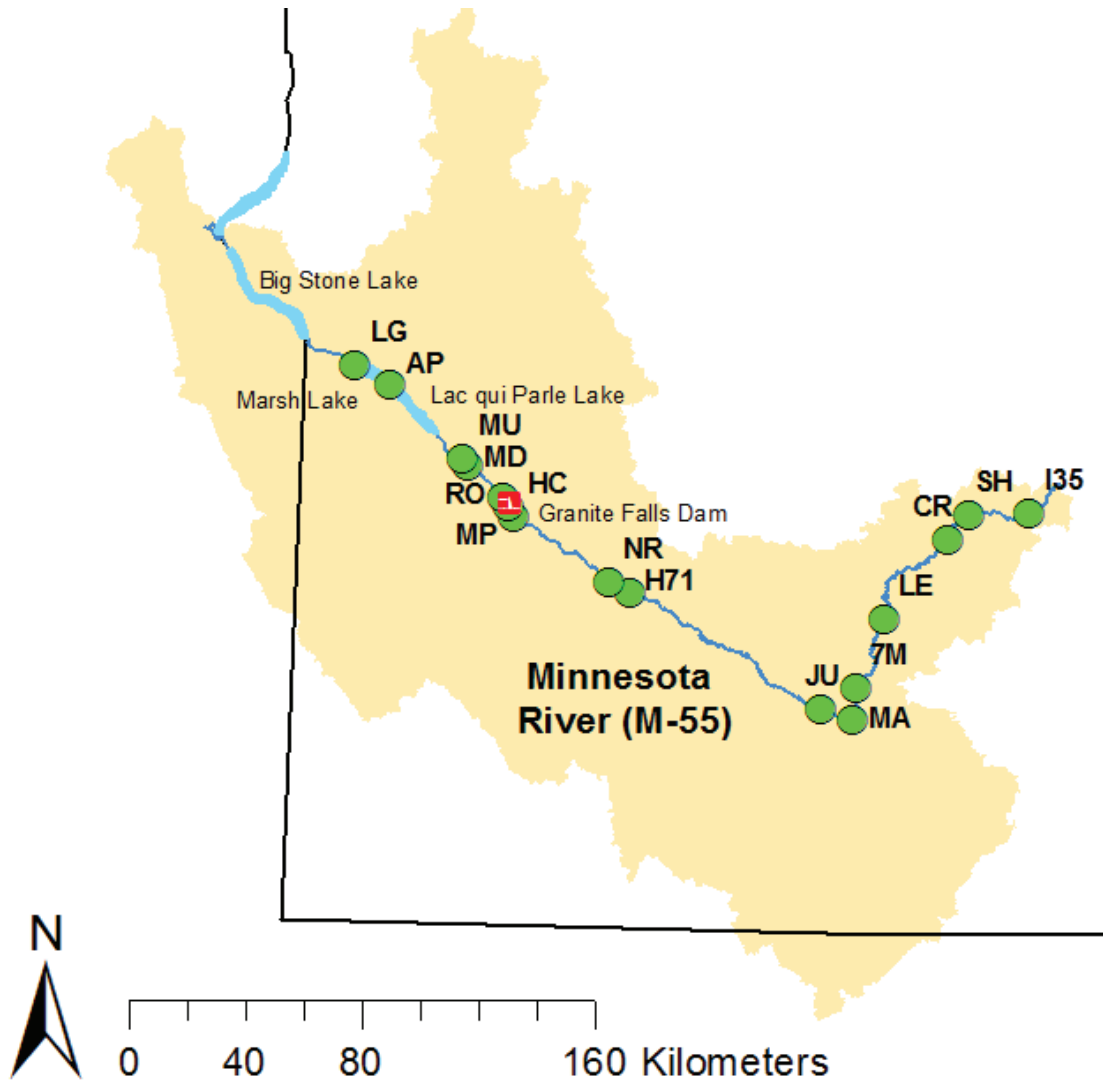


Figure 3. Locations of 16 fixed index of biotic integrity sample sites on the Minnesota River.

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**Table 2. Coordinates (UTM; 15N) of Minnesota River IBI sample site endpoints.**

Site	Name	Downstream endpoint		Upstream endpoint	
		Easting	Northing	Easting	Northing
03MN079	I35	478185	4961516	477691	4961454
03MN080	SH	457479	4961006	457127	4960652
03MN081	MD	285226	4977729	285181	4978089
03MN082	LG	246882	5012538	246463	5012282
03MN083	AP	258828	5005655	258363	5005824
03MN084	MU	283679	4980096	283447	4980504
03MN085	RO	297161	4966998	297098	4967455
03MN086	HC	301185	4959946	300910	4960276
03MN087	7M	418470	4901416	418080	4901109
03MN088	LE	427985	4925282	427831	4924805
03MN089	CR	449889	4952486	450345	4952477
03MN090	MA	417587	4890802	417109	4890657
03MN091	JU	406691	4894131	406215	4894263
03MN092	H71	340908	4934171	340548	4934277
03MN093	NR	333485	4937954	333947	4938096
04MN002	MP	299170	4964150	298700	4964317

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**Table 3. Sample site data for 13 Minnesota River IBI electrofishing assessments performed during 2022.**

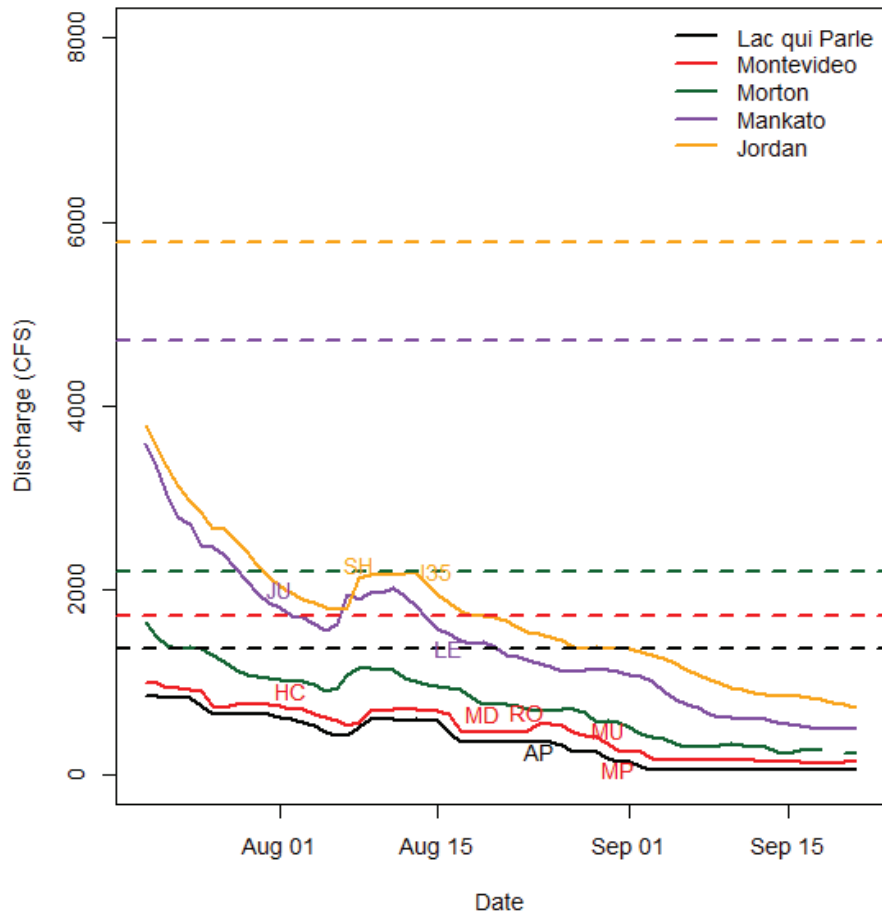
Site	Name	Date	River mile	Effort (sec)	Water temp (°C)	Transparency tube (cm)	Conductivity (µS/cm)	Peak amps	Peak volts	Rate (pps)	Duty cycle
03MN083	AP	8/24/2022	304	3560		24	975			60	30
03MN090	MA	8/3/2022	112	3540	26	20	876			60	30
03MN091	JU	8/1/2022	122	3600	25	20	829			60	30
03MN086	HC	8/2/2022	251	3600	26	23	867			60	30
03MN079	I35	8/15/2022	10	3485						60	30
03MN080	SH	8/8/2022	26	3600		25	758			60	30
04MN002	MP	8/31/2022	257	3540			801			60	30
03MN088	LE	8/16/2022	75	3550	23	20	682			60	30
03MN081	MD	8/19/2022	274	3600		30	823			60	30
03MN092	H71	8/5/2022	210	3600	25	20	882			60	30
03MN093	NR	8/12/2022	218	3540						60	30
03MN085	RO	8/23/2022	260	3460	24	36	833			60	30
03MN084	MU	8/30/2022	277	3240		30	886			60	30



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**Hydrology**



**Figure 4. Discharge (cfs) of the Minnesota River at Lac qui Parle, Montevideo, Morton, Mankato, and Jordan during July 20<sup>th</sup>–September 21<sup>st</sup>, 2022. Dashed lines indicate target maximum discharge (median July 21<sup>st</sup> discharge 1993–2013) levels for standardized IBI assessments. Site codes indicate dates that IBI surveys were performed on corresponding hydrograph lines. All 2022 IBI assessments were conducted when river discharge was significantly below target levels.**

**BIOLOGICAL COMMUNITY SURVEY**

**Fish Community Sampling**

Since 2003, the Minnesota Department of Natural Resources (MN DNR) has monitored the biological health of the Minnesota River by conducting annual fish IBI electrofishing assessments at 16 fixed sites. During 2022, IBI electrofishing assessments were completed at 13 of 16 fixed sites between 1 August and 31 August (Table 4). Electrofishing assessments followed MPCA protocols (<http://www.pca.state.mn.us/index.php/view-document.html?gid=6087>). Each assessment consisted of three 500-m electrofishing runs; one run along each bank and one run focusing on mid-channel habitats. The boat operator attempted to complete each run in 1,200 seconds (20 minutes). All electrofishing assessments were performed with two netters equipped with 3.175 mm mesh nets and one boat operator. Abnormally low water levels during most of August through September prohibited access to

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several IBI sites and impacted efficacy of electrofishing efforts for most if not all completed assessments (Figure 4).

During the 2022 IBI assessments, a total of 51 fish species were captured. Among the 13 sites, species diversity varied 15–33 and total catch varied 155–1,431 (Table 4–Table 17). Four species were collected at all 13 sites (Common Carp, Emerald Shiner, Freshwater Drum, Shorthead Redhorse) and the most abundant species were Emerald Shiner (3,189) and Spotfin Shiner 416; Table 18).

**Table 4. Catch summary for 10 IBI sites sampled on the Minnesota River during 2022.**

Site	Name	Species count	Total catch
03MN083	AP	21	155
03MN090	MA	21	232
03MN091	JU	29	354
03MN086	HC	24	166
03MN079	I35	15	1,431
03MN080	SH	17	848
04MN002	MP	33	426
03MN088	LE	23	479
03MN081	MD	19	183
03MN092	H71	32	398
03MN093	NR	28	324
03MN085	RO	23	412
03MN084	MU	19	204

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**Table 5. Species collected during the 2022 Minnesota River IBI assessment at the Appleton site (03MN083).**

Species	Total catch
freshwater drum	55
orangespotted sunfish	16
white bass	16
bluegill	13
shorthead redhorse	12
white sucker	7
black crappie	4
channel catfish	4
common carp	4
emerald shiner	4
northern pike	4
largemouth bass	3
bigmouth buffalo	2
hybrid sunfish	2
silver redhorse	2
walleye	2
Johnny darter	1
spotfin shiner	1
spottail shiner	1
yellow bullhead	1
yellow perch	1

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**Table 6. Species collected during the 2022 Minnesota River IBI assessment at the Mankato site (03MN090).**

Species	Total catch
emerald shiner	122
gizzard shad	20
common carp	17
spotfin shiner	16
river carpsucker	10
sauger	7
mimic shiner	6
bluntnose minnow	5
shorthead redhorse	4
smallmouth buffalo	4
white bass	4
bigmouth buffalo	3
mooneye	3
shovelnose sturgeon	3
freshwater drum	2
blue sucker	1
green sunfish	1
highfin carpsucker	1
Johnny darter	1
quillback	1
shortnose gar	1

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**Table 7. Species collected during the 2022 Minnesota River IBI assessment at the Judson site (03MN091).**

Species	Total catch
emerald shiner	122
spotfin shiner	59
walleye	24
black bullhead	19
freshwater drum	14
gizzard shad	13
green sunfish	13
common carp	11
quillback	9
bullhead minnow	8
fathead minnow	7
river carpsucker	7
shovelnose sturgeon	7
shortnose gar	6
shorthead redhorse	5
smallmouth buffalo	5
channel catfish	4
sand shiner	3
sauger	3
spottail shiner	3
bigmouth buffalo	2
flathead catfish	2
slenderhead darter	2
banded darter	1
bluegill	1
golden redhorse	1
northern hog sucker	1
orangespotted sunfish	1
silver redhorse	1

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**Table 8. Species collected during the 2022 Minnesota River IBI assessment at the Hazel Creek site (03MN086).**

Species	Total catch
emerald shiner	52
mimic shiner	20
bigmouth buffalo	18
bluntnose minnow	9
gizzard shad	8
channel catfish	6
common carp	6
shortnose gar	6
silver redhorse	6
freshwater drum	5
sand shiner	5
walleye	5
spotfin shiner	4
sauger	3
brassy minnow	2
mooneye	2
shorthead redhorse	2
blue sucker	1
common shiner	1
highfin carpsucker	1
quillback	1
river carpsucker	1
shovelnose sturgeon	1
spottail shiner	1

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**Table 9. Species collected during the 2022 Minnesota River IBI assessment at the I35 site (03MN079).**

Species	Total catch
emerald shiner	1350
gizzard shad	42
sauger	15
common carp	3
freshwater drum	3
quillback	3
smallmouth bass	3
spotfin shiner	3
bluntnose minnow	2
white bass	2
bigmouth buffalo	1
orangespotted sunfish	1
shorthead redhorse	1
silver chub	1
walleye	1

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**Table 10. Species collected during the 2022 Minnesota River IBI assessment at the Shakopee site (03MN080).**

Species	Total catch
emerald shiner	794
green sunfish	20
mimic shiner	5
freshwater drum	4
sauger	4
bullhead minnow	3
common carp	3
gizzard shad	3
bluegill	2
orangespotted sunfish	2
river carpsucker	2
black crappie	1
bluntnose minnow	1
fathead minnow	1
shorthead redhorse	1
shortnose gar	1
white bass	1



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**Table 11. Species collected during the 2022 Minnesota River IBI assessment at the Memorial Park site (04MN002).**

Species	Total catch
emerald shiner	173
spotfin shiner	30
shorthead redhorse	28
bigmouth buffalo	27
channel catfish	26
gizzard shad	23
freshwater drum	20
golden redhorse	12
common carp	10
river carpsucker	9
walleye	9
bluntnose minnow	7
silver redhorse	7
quillback	5
smallmouth buffalo	5
bluegill	4
bullhead minnow	4
fathead minnow	4
largemouth bass	4
spottail shiner	3
blue sucker	2
logperch	2
orangespotted sunfish	2
black crappie	1
blackside darter	1
creek chub	1
green sunfish	1
Johnny darter	1
sand shiner	1
sauger	1
slenderhead darter	1
smallmouth bass	1
white sucker	1

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**Table 12. Species collected during the 2022 Minnesota River IBI assessment at the Le Sueur site (03MN088).**

Species	Total catch
emerald shiner	379
bluntnose minnow	20
bigmouth buffalo	11
shorthead redhorse	11
freshwater drum	9
river carpsucker	7
mimic shiner	5
spotfin shiner	5
shortnose gar	4
smallmouth buffalo	4
walleye	4
common carp	3
gizzard shad	3
mooneye	2
orangespotted sunfish	2
silver redhorse	2
slenderhead darter	2
bullhead minnow	1
fathead minnow	1
flathead catfish	1
sauger	1
smallmouth bass	1
white bass	1

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**Table 13. Species collected during the 2022 Minnesota River IBI assessment at the Montevideo Downstream site (03MN081).**

Species	Total catch
spotfin shiner	50
shorthead redhorse	37
emerald shiner	24
common carp	23
bigmouth buffalo	13
freshwater drum	10
white sucker	6
silver redhorse	5
channel catfish	2
golden redhorse	2
river carpsucker	2
white bass	2
bluegill	1
highfin carpsucker	1
northern pike	1
slenderhead darter	1
smallmouth bass	1
spottail shiner	1
walleye	1

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**Table 14. Species collected during the 2022 Minnesota River IBI assessment at the Montevideo Upstream site (03MN084).**

Species	Total catch
spotfin shiner	72
emerald shiner	56
common carp	11
silver redhorse	11
shorthead redhorse	10
channel catfish	6
freshwater drum	6
spottail shiner	6
white sucker	5
golden redhorse	4
bluegill	3
northern pike	3
white bass	3
smallmouth bass	2
walleye	2
bigmouth buffalo	1
fathead minnow	1
orangespotted sunfish	1
quillback	1

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**Table 15. Species collected during the 2022 Minnesota River IBI assessment at the Highway 71 site (03MN092).**

Species	Total catch
bluntnose minnow	73
emerald shiner	70
mimic shiner	44
freshwater drum	32
gizzard shad	29
spotfin shiner	26
sand shiner	19
bullhead minnow	16
quillback	10
channel catfish	9
shortnose gar	8
walleye	8
common carp	7
shorthead redhorse	7
mooneye	5
river carpsucker	4
silver redhorse	4
slenderhead darter	4
smallmouth bass	4
blue sucker	3
bigmouth buffalo	2
highfin carpsucker	2
shovelnose sturgeon	2
smallmouth buffalo	2
blackside darter	1
brassy minnow	1
fathead minnow	1
golden redhorse	1
longnose gar	1
orangespotted sunfish	1
sauger	1
spottail shiner	1

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**Table 16. Species collected during the 2022 Minnesota River IBI assessment at the North Redwood site (03MN093).**

Species	Total catch
spotfin shiner	80
emerald shiner	35
bluntnose minnow	26
mimic shiner	25
freshwater drum	24
common carp	14
gizzard shad	14
shorthead redhorse	13
channel catfish	12
bullhead minnow	11
sand shiner	11
quillback	7
river carpsucker	7
bigmouth buffalo	6
shortnose gar	6
slenderhead darter	5
smallmouth buffalo	5
shovelnose sturgeon	4
smallmouth bass	4
sauger	3
blackside darter	2
blue sucker	2
silver redhorse	2
walleye	2
bluegill	1
golden redhorse	1
highfin carpsucker	1
northern hog sucker	1

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**Table 17. Species collected during the 2022 Minnesota River IBI assessment at the Roe site (03MN085).**

Species	Total catch
freshwater drum	87
spotfin shiner	70
slenderhead darter	48
channel catfish	33
blackside darter	30
shorthead redhorse	21
spottail shiner	20
common carp	19
fathead minnow	14
northern pike	12
bluegill	9
brassy minnow	9
white sucker	9
emerald shiner	8
golden redhorse	6
smallmouth bass	6
Johnny darter	3
bigmouth buffalo	2
white bass	2
bluntnose minnow	1
green sunfish	1
silver redhorse	1
walleye	1

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**Table 18. Ranked fish species frequency of occurrence and total catch for 13 index of biotic integrity electrofishing assessments performed on the Minnesota River during 2022.**

Species	Frequency	Total Catch
emerald shiner	100	3189
freshwater drum	100	271
shorthead redhorse	100	152
common carp	100	131
spotfin shiner	92	416
bigmouth buffalo	92	88
walleye	85	59
silver redhorse	77	41
gizzard shad	69	155
bluntnose minnow	69	144
channel catfish	69	102
river carpsucker	69	49
sauger	69	38
quillback	62	37
spottail shiner	62	36
bluegill	62	34
white bass	62	31
orangespotted sunfish	62	26
smallmouth bass	62	22
slenderhead darter	54	63
shortnose gar	54	32
fathead minnow	54	29
golden redhorse	54	27
mimic shiner	46	105
bullhead minnow	46	43
smallmouth buffalo	46	25
sand shiner	38	39
green sunfish	38	36
white sucker	38	28
shovelnose sturgeon	38	17
blue sucker	38	9
highfin carpsucker	38	6
blackside darter	31	34
northern pike	31	20
mooneye	31	12
Johnny darter	31	6
brassy minnow	23	12
black crappie	23	6
largemouth bass	15	7
flathead catfish	15	3
northern hog sucker	15	2



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black bullhead	8	19
hybrid sunfish	8	2
logperch	8	2
banded darter	8	1
common shiner	8	1
creek chub	8	1
longnose gar	8	1
silver chub	8	1
yellow bullhead	8	1
yellow perch	8	1

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**Fish Index of Biotic Integrity Scores**

Complete (13–16 sites) fish IBI assessments were conducted on the Minnesota River annually between 2010 and 2019 (Table 19). Partial (6–12 sites) assessments were completed in 2003, 2004, 2009, and 2021. No IBI assessments were conducted during 2020 because of the COVID-19 pandemic. During 2022, low water conditions only allowed for the completion of IBI assessments at 13 of 16 sites. Fish IBI scores for 11 of 13 sites evaluated during 2022 exceeded the upper confidence level threshold of 57, indicating good biological condition. The IBI score at the Le Sueur site was right at the impairment threshold value of 57 and the Shakopee site had a low IBI score of 36. The low score for the Shakopee site was peculiar given that the average IBI score was 69 from 2016–2021. Low water conditions or some other factor likely contributed to low species diversity sampled at that site during 2022. The historical mean fish IBI score for the Minnesota River has exceeded the impairment threshold since annual IBI assessments were implemented in 2010 (mean IBI scores vary from 58 in 2013 to 75 in 2021), and the mean score was right at the long-term mean of 63 for 2022. Results from the 2022 IBI assessment should be interpreted carefully since three of the sites were not assessed and low water levels during the survey period created abnormal river conditions during electrofishing assessments. Fish IBI scores from sites downstream of the Granite Falls Dam are generally greater than fish IBI scores from sites upstream of Granite Falls Dam. However, like 2011, the mean IBI score of 4 upstream sites (71) was greater than the mean IBI score of 9 downstream sites (60) during 2022.

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**Table 19. Fish IBI scores for 16 sites on the Minnesota River sampled 2003–2022.**

Site	Year														2021*	2022*	Mean
	2003	2004	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020			
<b>Downstream of Granite Falls Dam</b>																	
I35	-	-	-	69	69	76	66	76	68	72	71	78	83	<b>COVID</b>	77	63	72
Shakopee	-	-	-	80	65	72	39	73	75	68	65	68	73		70	36	65
Carver	-	-	-	57	40	-	54	60	55	-	57	58	66		-	-	56
LeSueur	-	-	-	67	59	61	63	73	66	60	69	76	61		73	57	65
7 Mile	-	-	-	70	63	-	72	73	64	65	59	68	73		-	-	67
Mankato	-	-	-	66	73	66	56	67	68	58	58	68	75		82	58	66
Judson	-	-	-	72	67	74	57	68	57	58	65	60	78		64	63	65
Hwy 71	-	-	-	52	65	71	72	54	73	65	80	59	73		-	60	66
North Redwood	69	54	-	55	62	-	64	61	65	68	63	48	67		-	69	62
Hazel Creek	63	58	-	60	54	72	58	50	62	37	55	58	65		81	60	60
Memorial Park	-	53	66	41	50	68	42	58	76	61	75	72	77	83	71	64	
Downstream mean	-	-	-	63	61	70	58	65	66	61	65	65	72	76	60	64	
<b>Upstream of Granite Falls Dam</b>																	
Roe	64	67	70	66	56	80	63	79	79	62	49	52	62	<b>COVID</b>	-	69	66
Monte Down	58	52	58	59	64	62	60	64	70	49	45	59	68		61	72	60
Monte Up	56	49	51	44	66	64	51	48	51	47	35	52	76		78	66	56
Appleton	43	39	54	58	56	58	48	58	55	59	63	74	66		76	76	59
Louisburg	42	47	61	51	76	76	59	67	52	67	69	76	67		-	-	62
Upstream mean	53	51	59	56	64	68	56	63	61	57	52	63	68		72	71	60
Mean	-	-	-	60	62	69	58	64	65	60	61	64	71	75	63	63	
*impacted by extremely low water conditions																	

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**CONCLUSION**

**Status of the fishery**

The Minnesota River flows approximately 320 miles from Big Stone Lake on the Minnesota–South Dakota Border to its confluence with the Mississippi River in St. Paul, MN and serves as an important aquatic ecosystem, fishery, and recreational resource in Southern Minnesota. Although much of the Minnesota River watershed has been highly altered for agricultural use and urban development, the river itself is highly undeveloped. Anglers and paddlers often feel far away from civilization while lost among the endless bends of the Minnesota River. Anglers also quickly discover that the Minnesota River is full of great fishing holes with a wealth of log jams, deep holes, current eddies, tributary mouths, and rocky habitats. The large size (>320 miles), fluctuating water levels, and boating hazards (log jams, sand bars, rocks) may intimidate some anglers and boaters, but fortunately there are numerous parks and shore fishing spots scattered along the banks of the river along with over 50 boat ramps and canoe accesses.

The primary fisheries management goal for the Minnesota River is to maintain biological integrity and species diversity by promoting and protecting self-sustaining populations of gamefish species and non-game fish species. Since 2010, the biological condition and health of the Minnesota River fish community has been evaluated by the Minnesota Department of Natural Resources with comprehensive fish index of biotic integrity (IBI) electrofishing assessments. Fish IBI scores reflect several fish community metrics that provide insight into the health of the system. Scores range from 0 to 100, where degraded fish communities comprised of a few tolerant species receive low fish IBI scores and healthy diverse fish communities receive high fish IBI scores. Mean fish IBI scores from 2010–2021 exceeded the impairment threshold established by the Minnesota Pollution Control Agency. The 2022 IBI assessment was affected by low water conditions that prohibited access to 3 of the 16 sites and impacted the effectiveness of electrofishing assessments. Despite challenges associated with low river conditions, the mean fish IBI scores for the 13 Minnesota River IBI sites assessed in 2022 was 63, which again exceeds the impairment threshold of 57 and indicates good biological condition. During the 2022 assessment, a total of 51 fish species were collected which highlights the rivers tremendous fish species diversity.

The primary sportfish species managed in the Minnesota River include Channel Catfish, Flathead Catfish, and Walleye. Secondary sportfish species include Freshwater Drum, Northern Pike, Sauger, and White Bass. Anglers also target Common Carp and a variety of other fish species that may not be typically considered sportfish. Additionally, some of the Minnesota River backwaters provide outstanding fishing for other species such as “crappies” and Largemouth Bass. Although some gamefish species are captured during IBI assessments, these surveys are not effective methods for assessing the status of the gamefish populations.

Despite many human alterations to the Minnesota River and its watershed, the fish community remains in good biological condition. This is likely a result of continued efforts to improve land, soil, and water management within the watershed and the resiliency of the fish community native to the Minnesota River. Yet, with the continued threat of various chemical (e.g., nitrogen, phosphorous), physical (e.g., erosion, sediment, floods, climate change), and biological stressors (e.g., invasive species) impacting the Minnesota River, it is important to continue monitoring biological health and the potential impacts of these stressors.

