



Scout Lake, 2021

Fish Survey of Scout Lake (ID #19-0198), Apple Valley, Dakota County, Minnesota in 2021

Survey Dates: September 22-24, 2021

MnDNR Permit Number: 32508

Prepared for:
City of Apple Valley and
MnDNR



Prepared by:
Steve McComas
Jo Stuckert
Blue Water Science
St. Paul, MN

November 30, 2021

Fish Survey of Scout Lake (ID #19-0198), Apple Valley, Dakota County, Minnesota in 2021

Scout Lake is a 9 acre lake located in Apple Valley, Dakota County, Minnesota.

On September 22-24, 2021, a fish survey using two mini-trapnets (2 ft x 3 ft frame) and two trapnets (3 ft x 5 ft frame) was conducted for Scout Lake. The objective of the fish survey was to characterize existing fish conditions and to determine if fish densities were high enough to be contributing to the observed poor water quality in Scout Lake.

Results of the 2021 fish survey along with 2 previous surveys are shown in Table 1. Six species of fish were observed in Scout Lake in 2021. The fish catch was dominated by bluegill sunfish and green sunfish (Table 1). It appears the combined sunfish density may be controlling bullheads in Scout Lake.

Table 1. Historical trapnet fish survey records.

	Trapnet Results			
	Fish per Net 2016 (BWS) (n=8)	Fish per Net 2019 (BWS) (n=8)	Fish per Net 2021 (BWS) (n=8)	Normal Range (MnDNR)
Black bullheads	163	152	6.4	1.8 - 26.3
Bluegill sunfish		56	104	3.1 - 24.9
Fathead minnow		0.3	0.3	NA
Green sunfish		32	88	0.2 - 12.4
Hybrid sunfish		30	9.5	NA
Pumpkinseed		1.1	1.8	0.8 - 7.2
Yellow perch		0.1		NA
Turtles - painted	0.6	0.3	1.0	--
Turtles - snapping	0.1	0.5	0.8	--
TOTAL FISH	163	271	210	--
Number of Fish Species	1	7	6	--



Figure 1. Sunfish and crappies were abundant in Scout Lake.

Fish Results: Six species were sampled in Scout Lake on September 22-24, 2021. The fish catch was dominated by bluegill sunfish and green sunfish. The number of bluegills and green sunfish caught per net was high with the average haul well exceeding the normal MnDNR range for similar lakes (Table 2).

Turtle Results: Snapping turtles and painted turtles were also sampled in the trapnets and were common in Scout Lake. Turtles likely do well because the majority of the shoreline is in a natural state.

Table 2. Scout Lake trapnet results for the fish survey conducted in September 2021.

	Fish Captured (September 22-24, 2021)								Total Catch	Fish per Net (n=8)	Normal Range (MnDNR)
	Net 1		Net 2		Net 3		Net 4				
	Day 1	Day 2	Day 1	Day 2	Day 1	Day 2	Day 1	Day 2			
Black bullheads (<i>Ameiurus melas</i>)	19	7	13	4		7		1	51	6	1.8 - 26.3
Bluegill sunfish (<i>Lepomis macrochirus</i>)	119	92	212	36	8	168	141	52	828	104	3.1 - 24.9
Fathead minnow				2					2	0.3	NA
Green sunfish (<i>L. cyanellus</i>)	104	176	180	68	10	52	85	27	702	88	0.2 - 12.4
Hybrid sunfish (<i>L. sp</i>)	5	13	8	4	9	15	15	7	76	10	NA
Pumpkinseed sunfish (<i>Lepomis gibbosus</i>)	3	4	1			1	3	2	14	1.8	0.8 - 7.2
TOTAL FISH	250	292	414	114	27	243	244	89	1673	209	
Turtles - painted			2	1		5			8	1.0	--
Turtles - snapping	1		1	2				2	6	0.8	--



Figure 2. Sunfish were the dominant fish species sampled in 2021 in Scout Lake.

Fish Lengths: Fish lengths are shown in Table 3. Several year classes of black bullheads are present. Likewise, several year classes of 4 sunfish species are present as well. It appears sunfish are growing well in Scout Lake and also are successfully spawning.

Table 3. Length frequency of fish species (as total length) for the Scout Lake fish survey.

SCOUT LAKE	Black bullhead	Bluegill	Fathead minnows	Green sunfish	Hybrid sunfish	Pumpkinseed
<3.0		33				
3			2	11		
3.5		4		14		1
4	15	94		27		5
4.5	1	70		13	3	6
5	1	30		12	2	2
5.5	1	8		8	12	
6	11	1		11	16	
6.5	10			10	14	
7	6	1		12	16	
7.5	2			15	7	
8	2			3	2	
8.5	2			1		
Measured	51	241	2	137	72	14
TOTAL	51	828	2	702	76	14

Fish Stocking: A stocking program of largemouth bass and bluegill sunfish emphasizing a predator control component occurred in the fall of 2017. A total of 500 bluegills and 500 largemouth bass were stocked. No largemouth bass were observed in the 2021 fish survey.

Fish Removal: A bullhead removal project occurred from October 14 to November 2, 2017. A total of 935 pounds of bullheads (104 pounds/acre) were removed using 22 pockets of hoopnets and 2 screen box minnow traps.

Winter Aeration: A winter aeration system has been installed in 2017 with the objective to sustain the fish community over winter. In the past, low winter dissolved oxygen conditions have resulted in either a complete or a partial fish winterkill.

Conclusions: One of the objectives of this fish survey was to determine if fish were having an impact on water quality of Scout. It does not appear the fish community structure would contribute to poor water quality.

As of 2021, there has been a significant bullhead reduction compared to 2016 and an increase in sunfish species. Because largemouth bass do not appear to be able to survive in Scout Lake, it may be best to determine if the sunfish population can continue to exert control on bullheads in the next year or two. If bullhead numbers increase, then stocking largemouth bass could be considered at that time.

Another fish survey in a year or two should be conducted to evaluate the balance of the fish community.



Some of the bullheads removed in 2017.

Additional Information

Fish Survey of Scout Lake (ID #19-0198), Apple Valley, Dakota County, Minnesota in 2021

Background: Scout Lake (MnDNR ID: 19-0198) is a 9-acre shallow lake, located within the City of Apple Valley, in Dakota County, Minnesota. In September 2021, the City of Apple Valley sponsored a fish survey conducted by Blue Water Science under permit number 35208 granted from the MnDNR. The objectives were to characterize the fish community in Scout Lake.

Methods: Four trapnets, 2 mini 2 ft x 3 ft trapnets and 2 3 ft x 5 ft trapnets, were used for 2 days to survey fish in Scout Lake. The mini-trapnet was a MnDNR-style with a 2 x 3 feet square frame with two funnel mouth openings and 50-foot lead. Net mesh size was 1/8 inch. Two MnDNR-style trapnets with a 3 x 5 feet square frame with five hoops, two funnel mouth openings and a 50-foot lead. Net mesh size was 3/8 inch (bar length). The trapnets were set on Wednesday morning September 22, 2021. The nets were fished for the following 2 days (September 23-24). Trapnet locations are shown in Figure 3 and pictures of a typical trapnet are shown in Figure 4.

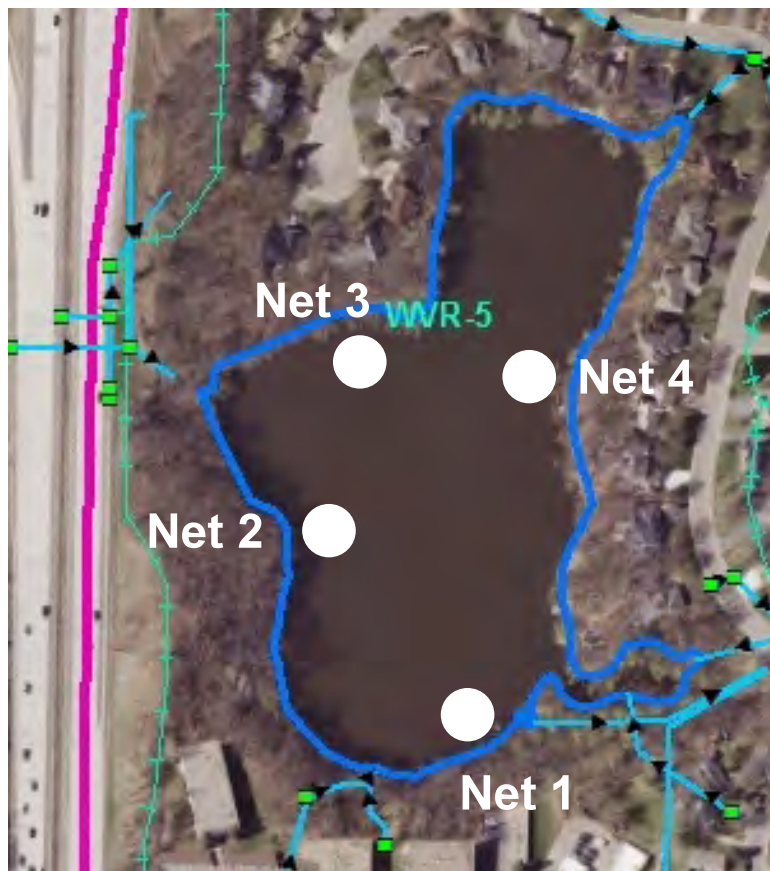


Figure 3. Map of trapnet sets in Scout Lake.



A trapnet is a live fish trap. Fish run into the 50-foot lead net and follow it back through a series of hoops with funnel mouths. Fish end up in the back hoop. A buoy marks the end of the back hoop. This picture is from another lake but shows the net set-up.



Fish are emptied out of the net and are transferred to tubs, then they are counted, measured, and released.

Figure 4. Fish sampling in the Scout Lake fish survey.

Appendix: Minnesota DNR Fish Survey Notification

From: Steve McComas [mailto:mccomas@pclink.com]
Sent: Monday, September 20, 2021 3:16 PM
To: DeBates, TJ (DNR); Capt. Jason Peterson
Cc: 'Samantha Berger'
Subject: Scout Lake fish survey

Hello all,

Blue Water Science will be conducting a fish survey in Scout Lake (MN ID 19-019800), Dakota County, starting on Wednesday, September 22, 2021. We will set 1-3x5 ft trap net and 3-2x3 ft trap nets for a total of 4 nets in the lake. The nets will be monitored daily and removed on Friday (September 24, 2021) and all fish will be weighed, measured, and returned to the lake. The nets will be removed from the lake on Friday, September 24, 2021. The fish survey is sponsored by the City of Apple Valley with the objectives of characterizing the existing fish community structure and assessing potential impacts of fish on water quality.

This survey is being conducted under the permit number: 32508.

Thank you,
Steve McComas
BLUE WATER SCIENCE
550 South Snelling Avenue
St. Paul, MN 55116
651 690 9602
mccomas@pclink.com