



Fish Caught in a Mini-Trapnet in Sea Lake, September 2016

Fish Survey for Sea Lake, 2016

Fish Surveys Conducted: September 20-22, 2016

Minnesota DNR Permit Number: 21641

Prepared for:
Comfort Lake - Forest Lake
Watershed District and
Minnesota DNR



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Fish Survey for Sea Lake, 2016

Summary

A total of 7 fish species were sampled in 4 mini-trapnets over 2-days in Sea Lake on September 21-22, 2016. The fish catch was dominated moderate levels of small black bullheads (Table S1). Several species of minnows were also captured and golden shiners and fathead minnows were the dominant minnow species.

The results of this survey indicate Sea Lake likely has occasional winterkills. Fish lengths indicate all fish were 2 years old or younger. Also 3 mud minnows were observed and they are known to survive at low dissolved oxygen conditions. Also the maximum depth in Sea Lake was found to be 8 feet in 2016. This shallow lake is going to be susceptible to winterkill. Low fish densities in 2016 are likely related to good water clarity and abundant aquatic plants in Sea Lake. No young carp were captured and Sea Lake is probably not acting as a carp refuge.

Table S1. Sea Lake mini-trapnet results for the fish survey conducted in September 2016.

	2016 Fish per Net (n=8)	Normal Range (MnDNR)
Black bullhead (<i>Ameiurus melas</i>)	56.5	1.3 - 26.0
Bluegill sunfish (<i>Lepomis macrochirus</i>)	0.3	6.5 - 59.6
Golden shiner (<i>Notemigonus crysoleucas</i>)	10.0	0.1 - 1.4
Northern pike (<i>Esox lucius</i>)	0.1	NA
Minnows		
Fathead	12.6	NA
Mud	0.4	NA
Shiner	0.3	NA
TOTAL FISH	80.2	
Turtles		
Painted	1.3	NA



Fish Survey for Sea Lake, 2016

Introduction

The fish community of Sea Lake was unknown and no previous surveys were found. A method to evaluate the fish community was the placement of mini-trapnets in Sea Lake. The fish survey was conducted in September of 2016 with the objective of characterizing fish community structure and for assessing potential impacts of fish on water quality.

Lake characteristics are summarized in Table 1 and lake locations are shown in Figure 1.

Table 1. Characteristics of Sea Lake.

	Minnesota Protected Water ID	Size (ac)	Maximum Depth (ft)	Last Fish Survey MnDNR
Sea Lake	82-005300	51	8	NA

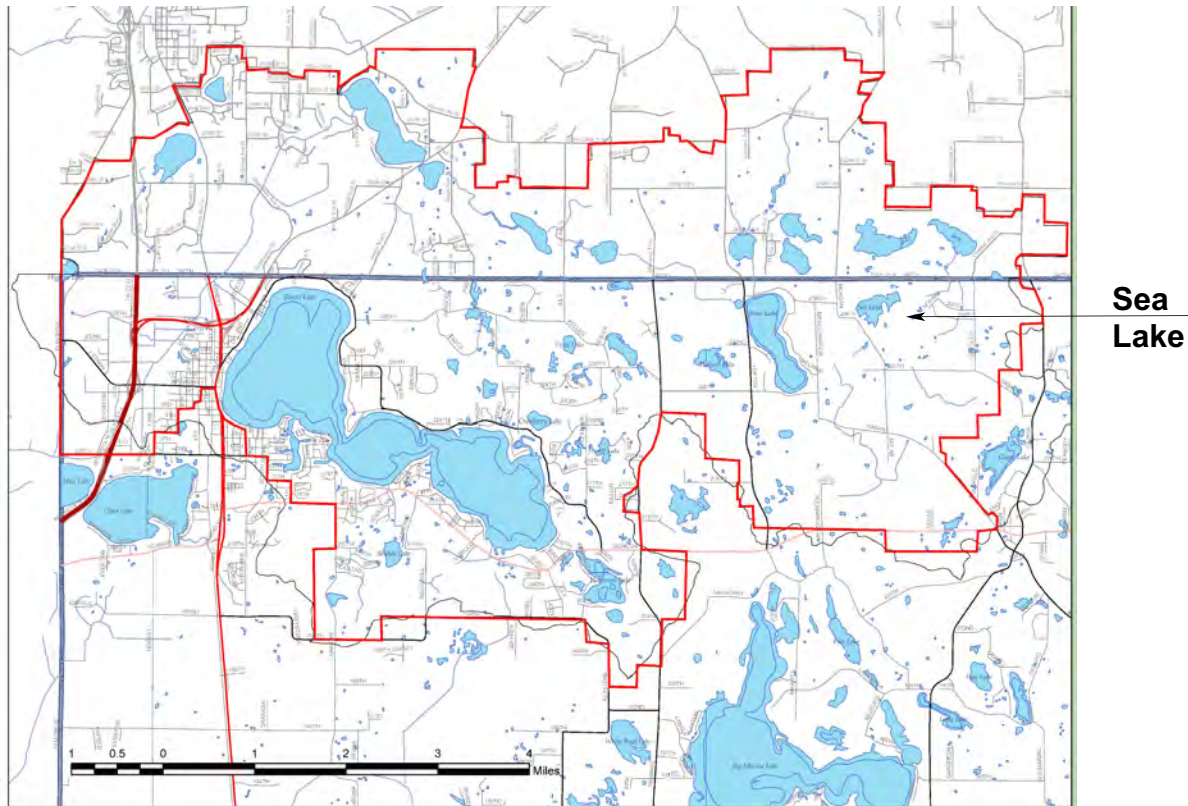


Figure 1. Lake location within the Comfort Lake/Forest Lake Watershed.

Methods

Fish Survey: Fish were sampled using mini-trapnets that consisted of 2x3 foot frames with four hoops and one mouth with a 25-foot lead. The mesh size was 3/16 inches. In 2016, 4 mini-trapnets were set in Sea Lake in September for two days (Figure 2). The nets were set on September 20 and then sampled the following two days (September 21 and 22). All fish were counted, measured, and returned to the lake.



Figure 2. Net locations for the mini-trapnet survey in Sea Lake.

Methods - continued



Figure 3. Fish sampling in Sea Lake. A trapnet is a live fish trap. The net is staked on the shoreline. From the shoreline and running perpendicular to shore is the 25-foot lead, which looks like a seine. The lead net is attached to a frame. A series of hoops with funnel mouths are attached to the frame. Fish end up in the back hoop. The net is removed from the water and the fish are then removed from the back hoop, transferred to a tub to be measured, and returned to the lake.

Sea Lake Fish Survey Results

A total of 7 fish species were sampled in 4 mini-trapnets over 2-days in Sea Lake on September 15-16, 2016. The fish catch was dominated by small black bullheads. The number of black bullheads caught per net was high with the average haul of 56.5 fish per net (Table 2). This is higher than the normal range of 1.3 - 26 bullheads per lift for a lake like Sea Lake. One 16-inch pike was also netted. It was about 2 years old.

Table 2. Sea Lake mini-trapnet results for the fish survey conducted in September 2016.

	Fish Captured (September 21-22, 2016)								Total Catch	2016 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 bullhead (<i>Ameiurus melas</i>)	31	102	27	8	160	15	98	11	452	56.5	1.3 - 26.0
Bluegill sunfish (<i>Lepomis macrochirus</i>)	1	1							2	0.3	6.5 - 59.6
Golden shiner (<i>Notemigonus crysoleucas</i>)	7	8		7	23	5	26	4	80	10.0	0.1 - 1.4
Northern pike (<i>Esox lucius</i>)			1						1	0.1	NA
Minnows											
Fathead	4	19	2	13	22	8	30	3	101	12.6	NA
Mud	1				1		1		3	0.4	NA
Shiner			2						2	0.3	NA
TOTAL FISH	44	130	32	28	206	28	155	18	641	80.1	
Turtles											
Painted			7	3					10	1.3	NA



Figure 4. [left] Three types of minnows were caught during the fish survey. Here is a fathead minnow. [right] Painted turtles were common.

Fish Lengths: Fish lengths are shown in Table 3.

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

Inches	Black bullhead	Bluegill	Fathead	Golden shiner	Mud minnow	Northern pike	Shiner
1							
1.5							
2	2		4	1			2
2.5	2		2	5			
3	11			26			
3.5	23	2		21	1		
4	44			16	2		
4.5	31			4			
5	40			3			
5.5	30			1			
6	8			2			
6.5	3			1			
7							
16						1	
Measured	194	2	6	80	3	1	2
Counted	258		95				
TOTAL	452	2	101	80	3	1	2



Figure 5. [left] Black bullheads were dominated by fish in the range of 3.5 - 5.5 inches. [right] Fish were measured, recorded, and were returned to the lake.

Representative Fish From Sea Lake

Examples of the fish species sampled in Sea Lake in 2016 are shown in Figure 6.



Figure 6. Sea Lake had a number of fish species caught in the 2 days of sampling.
[top-left] Black bullhead. [top-right] Bluegill.
[middle-left] Golden shiner. [middle-right] Northern pike.
[bottom-left] Mud minnow. [bottom-right] Minnow.

Appendix - Notification

From: Steve McComas [mailto:mccomas@pclink.com]
Sent: Monday, September 19, 2016 12:59 PM
To: Capt. Jason Peterson; DeBates, TJ (DNR)
Cc: Michael Kinney
Subject: Fish Survey Notification for Sea Lake, Washington Co

Hello all,

Blue Water Science will be conducting a fish survey in Sea Lake (MN ID 82005300), Washington County, starting on Tuesday, September 20, 2016. We will set 4 fyke nets on Tuesday. The nets will be monitored daily on Wednesday and Thursday and all fish will be weighed and measured and returned to the lake. The nets will be removed from the lake on Thursday, September 22. The fish survey is sponsored by the Comfort Lake/Forest Lake Watershed District with the objectives of characterizing the existing fish community structure and assess potential impacts of fish on water quality.

This survey is being conducted under the permit number: 21641.

Thank you,

Steve McComas

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