

Lake Name: Shaokotan
DOW Number: 41-0089-00

Survey Type: Standard Survey
Survey ID Date: 08/05/2024

Lake Identification

Alternate Lake Name: Shoakotan
Primary Lake Class ID: 41

DNR Sounding Map Number: B0204
Alternate Lake Class ID: N/A

Lake Location

Primary County: Lincoln

Nearest Town: Ivanhoe

Legal Descriptions

Lake Center: Township - 111N Range - 46W Section - 23
PLS Section Lake Center: 11104623

All Legal Descriptions:

Lincoln County: Township - 111N Range - 46W Sections - 22, 23, 24, 26, 27, 28

Area Office

Area Name: Windom
Region Name: Southern

ORG Code: F418
Region Number: 4

Lake Access

(Information based on Population Assessment dated 08/12/1996)

<u>Station ID</u>	<u>Ownership</u>	<u>Public Use</u>	<u>Type</u>	<u>Location / Comments</u>
AC - 1	DNR	Open to Public use	Concrete	STATE OWNED BOAT ACCESS ON NORTH SIDE.

(Data excludes records where public use is not designated or is designated "No Public Use")

Lake Characteristics

Lake Area (planimetered acres): 995.00
GIS Lake Area (acres): 996.29
DOW Lake Area (acres): 1,043.00
Littoral Area (acres): 996.28
Area in MN (acres): 996.29
Maximum Depth (feet): 10.0
Mean Depth (feet): N/A

GIS Shoreline Length (miles): 8.73
Maximum Fetch (miles): 2.84
Fetch Orientation (degrees): 67
USGS Quad Map Number: U04a
USGS Quad 24K GIS Index: 4008

Watershed Characteristics

Major Watershed

Name: Minn R-Yellow Medicine R.
Watershed Number: 25
Watershed size (acres): 1,332,769

Minor Watershed

Name: L Shaokatan Outlet
Watershed Number: 147
Watershed size (acres): 8,817

Surveys and Investigations

Re-Survey: 08/07/2000, 08/17/1992, 07/06/1983.
Population Assessment: 07/28/2014, 07/29/2013, 08/01/2011, 08/04/2008, 08/02/2004, 08/12/1996, 08/15/198
Special Assessment: 08/12/2014, 08/13/2013, 09/28/2010, 08/05/2010, 08/02/2010, 10/19/2009, 08/04/200
 08/03/2009, 09/16/2008, 08/04/2008, 10/13/1999, 09/15/1998, 10/09/1996, 08/17/196
Dissolved Oxygen Check: 02/17/2016, 02/19/2015, 01/02/2014, 02/06/2013, 01/03/2013, 01/10/2012, 12/29/201
 01/05/2010.
Research Survey: 09/21/2021, 06/25/2014.
External Management Survey: 06/03/2009, 07/21/2008.
Standard Survey: 08/05/2024, 08/02/2021, 07/30/2018, 07/27/2015.
Targeted Survey: 09/26/2023, 09/20/2021, 07/23/2021, 01/08/2020, 09/16/2019, 01/19/2018, 02/08/201
 10/13/2016, 10/05/2015, 08/10/2015.

Current Water Level

<u>Station ID</u>	<u>Date</u>	<u>Level</u>	<u>Reading (feet)</u>	<u>Reading Type</u>
GA - 1	08/08/2024	Normal	2.78	Direct Gauge Reading

Benchmark and Gauge Descriptions / Locations

<u>Station ID</u>	<u>Location Description</u>
GA - 1	bridge west end of lake. upstream side

Water Level History - Readings

<u>Station ID</u>	<u>Date</u>	<u>Level</u>	<u>Reading (feet)</u>	<u>Reading Type</u>
BM - 1	08/02/2021	Low	-4.50	Above or below Benchmark
	07/30/2018	Normal	0.30	Above or below Benchmark
	07/28/2014	Normal	-5.10	Above or below Benchmark
	08/05/2010	Normal	-4.30	Above or below Benchmark
	08/05/2008	N/A	-4.80	Above or below Benchmark
GA - 1	08/08/2024	Normal	2.78	Direct Gauge Reading
	08/02/2021	Low	1.30	Direct Gauge Reading
	07/30/2018	Normal	2.50	Direct Gauge Reading
	07/30/2015	Normal	2.48	Direct Gauge Reading
	07/28/2014	Normal	2.63	Direct Gauge Reading
	08/01/2013	Normal	2.30	Direct Gauge Reading
	08/03/2011	Normal	2.14	Direct Gauge Reading
	08/05/2010	Normal	2.20	Direct Gauge Reading
	08/05/2008	N/A	1.70	Direct Gauge Reading
GA - 2	07/30/2018	Normal	11.95	Direct Gauge Reading

Water Level History - Station Summary

<u>Station ID</u>	<u>Minimum Level</u>		<u>Maximum Level</u>		<u>Range (feet)</u>	<u>Average Level (feet)</u>	<u>Reading Type (and number of readings)</u>
	<u>Feet</u>	<u>Date</u>	<u>Feet</u>	<u>Date</u>			
BM - 1	-5.10	07/28/2014	0.30	07/30/2018	5.40	-3.68	Above or below Benchmark (5)
GA - 1	1.30	08/02/2021	2.78	08/08/2024	1.48	2.23	Direct Gauge Reading (9)
GA - 2	11.95	07/30/2018	11.95	07/30/2018	0.00	11.95	Direct Gauge Reading (1)

Dissolved Oxygen and Temperature Profile of Lake Water

<u>Station ID</u>	<u>Sampling Date</u>	<u>Bottom Depth (Feet)</u>	<u>Sample Depth (Feet)</u>	<u>Water Temperature (°F)</u>	<u>Dissolved Oxygen (ppm)</u>
WQ - 1	08/08/2024	9.8	Surface	70.7	6.0
			1.0	70.7	5.9
			2.0	70.7	5.9
			3.0	70.7	5.9
			4.0	70.7	5.9
			5.0	70.7	5.9
			6.0	70.7	5.9
			7.0	70.7	5.9
			8.0	70.7	5.9
			9.0	70.7	5.9
			9.8	70.7	5.8

Field Measurements of Water Quality

<u>Station ID</u>	<u>Sampling Date</u>	<u>Sample Depth (Feet)</u>	<u>Secchi Depth (Feet)</u>	<u>Field pH</u>	<u>Alkalinity (ppm)</u>	<u>Water Color</u>	<u>Color Cause</u>
WQ - 1	08/08/2024	Surface	1.8	8.71	240	Brown Grn	Algae

Net Catch Summary by Numbers for GN

Standard gill net sets

Number of Sets: 3
First Set Date: 08/05/2024
Last Lift Date: 08/08/2024
Target Species: N/A

Abbr	Species	Total Fish	Number Per Set	Quartiles for Lake Class 41 ¹		
				25%	50%	75%
BLB	Black Bullhead	294	98.00	4.56	23.42	83.00
BLG	Bluegill	3	1.00	N/A	N/A	N/A
NOP	Northern Pike	2	0.67	1.20	3.50	7.79
WAE	Walleye	75	25.00	3.22	7.67	15.33
YEP	Yellow Perch	201	67.00	3.00	8.94	22.50
Total Fish/Set:			191.67	¹ Quartiles for Number Per Set		

Net Catch Summary by Weight for GN

Standard gill net sets

Abbr	Species	Total Weight (Pounds)	Pounds Per Set	Mean Weight ²	Quartiles for Lake Class 41 ¹		
					25%	50%	75%
BLB	Black Bullhead	198.73	66.24	0.68	0.21	0.38	0.60
BLG	Bluegill	1.68	0.56	0.56	N/A	N/A	N/A
NOP	Northern Pike	2.91	0.97	2.91	1.53	2.12	2.95
WAE	Walleye	184.79	61.60	2.46	0.88	1.37	1.90
YEP	Yellow Perch	22.04	7.35	0.11	0.14	0.24	0.36
Total Pounds Fish/Set:			136.72	¹ Quartiles for Mean Weight			

² Mean Weights are based on measured fish counts only.

Net Catch Summary by Numbers for TN

Standard 3/4-in mesh, double frame trap net sets

Number of Sets: 12
First Set Date: 08/05/2024
Last Lift Date: 08/08/2024
Target Species: N/A

Abbr	Species	Total Fish	Number Per Set	Quartiles for Lake Class 41 ¹		
				25%	50%	75%
BLB	Black Bullhead	234	19.50	1.33	14.73	78.13
BLG	Bluegill	11	0.92	1.05	3.00	14.93
NOP	Northern Pike	10	0.83	N/A	N/A	N/A
WAE	Walleye	87	7.25	0.31	0.73	1.69
YEP	Yellow Perch	221	18.42	0.25	0.81	2.62
Total Fish/Set:			46.92	¹ Quartiles for Number Per Set		

Net Catch Summary by Weight for TN

Standard 3/4-in mesh, double frame trap net sets

Abbr	Species	Total Weight (Pounds)	Pounds Per Set	Mean Weight ²	Quartiles for Lake Class 41 ¹		
					25%	50%	75%
BLB	Black Bullhead	232.48	19.37	0.96	0.21	0.36	0.59
BLG	Bluegill	0.84	0.07	0.08	0.16	0.25	0.38
NOP	Northern Pike	56.41	4.70	5.64	N/A	N/A	N/A
WAE	Walleye	223.52	18.63	2.58	0.85	1.63	2.41
YEP	Yellow Perch	27.47	2.29	0.12	0.13	0.20	0.31
Total Pounds Fish/Set:			45.06	¹ Quartiles for Mean Weight			

² Mean Weights are based on measured fish counts only.

Length Frequency Distribution for GN

Standard gill net sets

(Field work conducted between 08/05/2024 and 08/08/2024)

	<u>BLB</u>	<u>BLG</u>	<u>NOP</u>	<u>WAE</u>	<u>YEP</u>
< 3.00	-	-	-	-	-
3.00 - 3.49	-	-	-	-	-
3.50 - 3.99	-	-	-	-	-
4.00 - 4.49	-	-	-	-	-
4.50 - 4.99	3	-	-	-	-
5.00 - 5.49	8	-	-	-	3
5.50 - 5.99	4	-	-	-	104
6.00 - 6.49	3	-	-	-	67
6.50 - 6.99	3	-	-	-	19
7.00 - 7.49	5	-	-	2	2
7.50 - 7.99	3	-	-	9	2
8.00 - 8.49	2	1	-	2	1
8.50 - 8.99	3	2	-	-	1
9.00 - 9.49	5	-	-	-	1
9.50 - 9.99	57	-	-	2	-
10.00 - 10.49	103	-	-	-	-
10.50 - 10.99	40	-	-	-	-
11.00 - 11.49	8	-	-	-	-
11.50 - 11.99	-	-	-	-	-
12.00 - 12.99	30	-	-	-	-
13.00 - 13.99	17	-	-	-	-
14.00 - 14.99	-	-	-	3	-
15.00 - 15.99	-	-	-	2	-
16.00 - 16.99	-	-	-	3	-
17.00 - 17.99	-	-	-	4	-
18.00 - 18.99	-	-	-	13	-
19.00 - 19.99	-	-	-	18	-
20.00 - 20.99	-	-	-	10	-
21.00 - 21.99	-	-	-	1	-
22.00 - 22.99	-	-	1	3	-
23.00 - 23.99	-	-	-	1	-
24.00 - 24.99	-	-	-	1	-
25.00 - 25.99	-	-	-	1	-
26.00 - 26.99	-	-	-	-	-
27.00 - 27.99	-	-	-	-	-
28.00 - 28.99	-	-	-	-	-
29.00 - 29.99	-	-	-	-	-
30.00 - 30.99	-	-	-	-	-
31.00 - 31.99	-	-	-	-	-
32.00 - 32.99	-	-	-	-	-
33.00 - 33.99	-	-	-	-	-
34.00 - 34.99	-	-	-	-	-
35.00 - 35.99	-	-	-	-	-
= > 36.00	-	-	-	-	-

	<u>BLB</u>	<u>BLG</u>	<u>NOP</u>	<u>WAE</u>	<u>YEP</u>
Total	294	3	1	75	200
Min. Length	4.84	8.39	22.60	7.48	5.35
Max. Length	13.86	8.66	22.60	25.87	9.45
Mean Length	10.21	8.52	22.60	16.97	6.10
# Measured	294	3	1	75	176
No Lengths for	0	0	1	0	25

Note: Unless all fish were measured in the catch, totals shown for some length-frequency distributions may differ from the total number of fish in the catch, due to rounding of fractions used in the estimation of length frequency from a subsample of measured fish.

Length Frequency Distribution for TN

Standard 3/4-in mesh, double frame trap net sets

(Field work conducted between 08/05/2024 and 08/08/2024)

	<u>BLB</u>	<u>BLG</u>	<u>NOP</u>	<u>WAE</u>	<u>YEP</u>
< 3.00	-	-	-	-	-
3.00 - 3.49	-	-	-	-	-
3.50 - 3.99	1	2	-	-	-
4.00 - 4.49	1	4	-	-	-
4.50 - 4.99	6	4	-	-	-
5.00 - 5.49	17	1	-	-	20
5.50 - 5.99	4	-	-	-	59
6.00 - 6.49	3	-	-	-	96
6.50 - 6.99	-	-	-	-	27
7.00 - 7.49	-	-	-	13	6
7.50 - 7.99	-	-	-	24	3
8.00 - 8.49	-	-	-	5	3
8.50 - 8.99	-	-	-	2	3
9.00 - 9.49	-	-	-	-	-
9.50 - 9.99	-	-	-	-	2
10.00 - 10.49	1	-	-	-	-
10.50 - 10.99	-	-	-	-	-
11.00 - 11.49	3	-	-	-	-
11.50 - 11.99	4	-	-	-	-
12.00 - 12.99	136	-	-	-	-
13.00 - 13.99	57	-	-	-	-
14.00 - 14.99	-	-	-	-	-
15.00 - 15.99	-	-	-	-	-
16.00 - 16.99	-	-	-	2	-
17.00 - 17.99	-	-	-	1	-
18.00 - 18.99	-	-	-	2	-
19.00 - 19.99	-	-	-	2	-
20.00 - 20.99	-	-	-	6	-
21.00 - 21.99	-	-	-	1	-
22.00 - 22.99	-	-	-	2	-
23.00 - 23.99	-	-	-	6	-
24.00 - 24.99	-	-	-	8	-
25.00 - 25.99	-	-	1	5	-
26.00 - 26.99	-	-	2	4	-
27.00 - 27.99	-	-	1	2	-
28.00 - 28.99	-	-	1	-	-
29.00 - 29.99	-	-	-	-	-
30.00 - 30.99	-	-	2	-	-
31.00 - 31.99	-	-	2	-	-
32.00 - 32.99	-	-	-	-	-
33.00 - 33.99	-	-	1	-	-
34.00 - 34.99	-	-	-	-	-
35.00 - 35.99	-	-	-	-	-
= > 36.00	-	-	-	-	-

	<u>BLB</u>	<u>BLG</u>	<u>NOP</u>	<u>WAE</u>	<u>YEP</u>
Total	233	11	10	85	219
Min. Length	3.90	3.54	25.63	7.01	5.16
Max. Length	13.98	5.00	33.54	27.24	9.92
Mean Length	11.38	4.39	29.24	15.12	6.20
# Measured	181	11	10	84	172
No Lengths for	53	0	0	3	49

Note: Unless all fish were measured in the catch, totals shown for some length-frequency distributions may differ from the total number of fish in the catch, due to rounding of fractions used in the estimation of length frequency from a subsample of measured fish.

Other Species

Gear Type (1)	Other Species (Gender) (2)	Total Num	Number Measured	Length (inches) Min - Mean - Max	Number Weighed	Weight (pounds) Min - Mean - Max
TN	Painted Turtle	66	0	N/A	0	N/A
	Snapping Turtle	1	1	17.52	0	N/A

(1) Key to sampling gear abbreviations:

TN = Standard 3/4-in mesh, double frame trap net sets

(2) Gender: If identified and reported.

Approval Dates And Notices

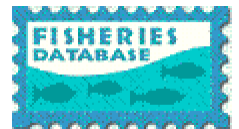
Date Approved By Windom Area Fisheries Supervisor: _____

Date Approved By Southern Region Fisheries Manager: _____

This DRAFT VERSION of the Lake Survey Report contains preliminary data (as of 08/09/2024), and is therefore subject to change at any time.



Minnesota Department of Natural Resources



By accepting the data in this report, the user agrees the data will be used for personal benefit and not for profit. Any other uses or publication of the data needs the consent of the Department. The Minnesota Department of Natural Resources assumes no responsibility for actual or consequential damage incurred as a result of any user's reliance on the data.

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REPORT OVERVIEW - FOR OFFICE USE ONLY

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Lake Name: Shaokotan
DOW Number: 41-0089-00

Survey Type: Standard Survey
Survey ID Date: 08/05/2024

Survey Status: Field Work Complete

The following 21 (of 34) report components are not included in this Lake Survey Report:

1. Water Level History¹
2. Lake Inlets
3. Additional Inlet Information
4. Lake Outlets
5. Additional Outlet Information
6. Water Control Structure (Dam)
7. Surrounding Watershed Characteristics, Shoreline Characteristics, and Riparian Landscape Observations²
8. Resorts And Campgrounds
9. Fish Spawning Conditions
10. Erosion And Pollution
11. Fish Diseases And Parasites
12. Aquatic Vegetation And Shoalwater Substrates
13. Water Quality (Winter Observations) (added to revision 01/21/2010)
14. Laboratory Analysis Of Water Chemistry
15. Zooplankton Sampling (added to revision 20221130)
16. Catch Summary (Pre-1993 Format) (added to revision 20201001)
17. Length At Capture With Last Incremental Length*
18. Back-Calculated Lengths
19. Age Class Frequency Distributions
20. Status Of Fishery And Field Notes
21. Survey Attachments (added to revision 20150622)

¹ Water Level History report: This data has not yet been migrated into the Fisheries LSM database. On 01/08/2009, two additional Water Level History report components (Readings and Station Summary) were added.

² Effective 03/25/2014, the Surrounding Watershed Characteristics, Shoreline Characteristics, and Riparian Landscape Observations report component was modified to be included in the Lake Survey report if it did not include any Watershed and Shoreline characteristics and only consisted of Riparian Landscape Observations.

* Length At Capture With Last Incremental Length report: The following criteria must be met for a report to be generated:

1. The fish species must have an assigned body scale constant.
2. Fish must have an "official" age assigned.
3. Fish must have a digitized measurement marked for back calculation use.

Note: The data source for Length and Age Class Frequency Distribution tables is updated twice daily - once at noon and once overnight. Any changes to the data made before noon on 08/09/2024 may not be reflected in the Distribution tables until after 12:30 pm on 08/09/2024.

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