



Minnesota Department of Natural Resources

Fisheries Management

LAKE SURVEY REPORT



DRAFT VERSION - PRELIMINARY DATA (AS OF 09/02/2016)

Lake Name: Clear

Survey Type: Standard Survey

DOW Number: 42-0055-00

Survey ID Date: 08/22/2016

Lake Identification

Alternate Lake Name: N/A
Primary Lake Class ID: 42

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

Lake Location

Primary County: Lyon

Nearest Town: Russell

Legal Descriptions

Lake Center: Township - 110N Range - 42W Section - 19
PLS Section Lake Center: 11004219

All Legal Descriptions:

Lyon County: Township - 110N Range - 42W Sections - 18, 19

Area Office

Area Name: Windom
Region Name: Southern

ORG Code: F418
Region Number: 4

Lake Access

(Information based on Re-Survey dated 08/25/2003)

Station ID	Ownership	Public Use	Type	Location / Comments
AC - 1	DNR	Open to Public use	Concrete	A CONCRETE ACCESS RAMP WAS CONSTRUCTED IN 1996.

Lake Characteristics

Lake Area (planimetered acres):	68.00	GIS Shoreline Length (miles):	1.29
GIS Lake Area (acres):	65.54	Maximum Fetch (miles):	0.86
DOW Lake Area (acres):	68.00	Fetch Orientation (degrees):	337
Littoral Area (acres):	65.76	USGS Quad Map Number:	U06c
Area in MN (acres):	65.54	USGS Quad 24K GIS Index:	4111
Maximum Depth (feet):	11.0		
Mean Depth (feet):	N/A		

Watershed Characteristics

Major Watershed

Name: Redwood River
Watershed Number: 27
Watershed size (acres): 447,531

Minor Watershed

Name: Redwood R
Watershed Number: 43
Watershed size (acres): 27,085

Surveys and Investigations

Initial Survey: 08/29/1995.
 Re-Survey: 08/25/2003.
 Population Assessment: 08/20/2012, 08/20/2007, 08/23/1999.
 Winter Kill Assessment: 04/19/2010.
 Dissolved Oxygen Check: 02/16/2016, 02/18/2015, 12/31/2013, 02/06/2013, 01/03/2013, 01/11/2012, 12/28/2010, 01/04/2010.
 Standard Survey: 08/22/2016.

Water Level History - Readings

Station ID	Date	Level	Reading (feet)	Reading Type
GA - 1	08/22/2012	Low	6.20	Direct Gauge Reading

Water Level History - Station Summary

Station ID	Minimum Level		Maximum Level		Range (feet)	Average Level (feet)	Reading Type (and number of readings)
	Feet	Date	Feet	Date			
GA - 1	6.20	08/22/2012	6.20	08/22/2012	0.00	6.20	Direct Gauge Reading (1)

Dissolved Oxygen and Temperature Profile of Lake Water

Station ID	Sampling Date	Bottom Depth (Feet)	Sample Depth (Feet)	Water Temperature (°F)	Dissolved Oxygen (ppm)
WQ - 1	08/29/2016	8.1	Surface	73.9	11.6
			1.0	73.9	11.7
			2.0	73.4	11.8
			3.0	73.2	11.7
			4.0	73.0	11.5
			5.0	72.7	10.7
			6.0	72.5	10.3
			7.0	72.1	9.0
			8.0	71.2	6.1

Field Measurements of Water Quality

Station ID	Sampling Date	Sample Depth (Feet)	Secchi Depth (Feet)	Field pH	Alkalinity (ppm)	Water Color	Color Cause
WQ - 1	08/29/2016	Surface	1.0	9.00	187	Brown Grn	Algae

Net Catch Summary by Numbers for GN

Standard gill net sets

Number of Sets: 1
First Set Date: 08/29/2016
Last Lift Date: 08/30/2016
Target Species: N/A

Abbr	Species	Total Fish	Number Per Set	Quartiles for Lake Class 42*		
				25%	50%	75%
BLB	Black Bullhead	89	89.00	9.63	39.75	91.42
NOP	Northern Pike	4	4.00	1.54	4.29	7.00
WAE	Walleye	94	94.00	1.00	2.50	7.33
WTS	White Sucker	3	3.00	0.50	2.00	7.44
YEP	Yellow Perch	14	14.00	3.00	8.00	26.50
Total Fish/Set:			204.00	* 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	Quartiles for Lake Class 42*		
					25%	50%	75%
BLB	Black Bullhead	23.99	23.99	0.27	0.18	0.28	0.49
NOP	Northern Pike	5.34	5.34	1.34	1.49	2.17	3.40
WAE	Walleye	125.74	125.74	1.34	0.95	1.58	2.80
WTS	White Sucker	5.12	5.12	1.71	0.99	1.78	2.24
YEP	Yellow Perch	5.43	5.43	0.39	0.14	0.20	0.28
Total Pounds Fish/Set:			165.62	* Quartiles for Mean Weight			

Net Catch Summary by Numbers for TN

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

Number of Sets: 6
First Set Date: 08/29/2016
Last Lift Date: 08/31/2016
Target Species: N/A

Abbr	Species	Total Fish	Number Per Set	Quartiles for Lake Class 42*		
				25%	50%	75%
BLB	Black Bullhead	103	17.17	2.20	17.30	60.46
NOP	Northern Pike	9	1.50	N/A	N/A	N/A
WAE	Walleye	56	9.33	0.40	0.86	1.94
WTS	White Sucker	3	0.50	0.28	0.67	2.20
Total Fish/Set:			28.50	* 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	Quartiles for Lake Class 42*		
					25%	50%	75%
BLB	Black Bullhead	21.75	3.63	0.21	0.19	0.30	0.50
NOP	Northern Pike	44.62	7.44	4.96	N/A	N/A	N/A
WAE	Walleye	164.12	27.35	2.93	0.59	1.53	2.56
WTS	White Sucker	4.01	0.67	1.34	1.14	1.79	2.50
Total Pounds Fish/Set:			39.09	* Quartiles for Mean Weight			

Length Frequency Distribution for GN

Standard gill net sets

(Field work conducted between 08/29/2016 and 08/30/2016)

	<u>BLB</u>	<u>NOP</u>	<u>WAE</u>	<u>WTS</u>	<u>YEP</u>
< 3.00	-	-	-	-	-
3.00 - 3.49	-	-	-	-	-
3.50 - 3.99	-	-	-	-	-
4.00 - 4.49	-	-	-	-	-
4.50 - 4.99	2	-	-	-	-
5.00 - 5.49	4	-	-	-	-
5.50 - 5.99	7	-	-	-	-
6.00 - 6.49	3	-	-	-	-
6.50 - 6.99	8	-	-	-	-
7.00 - 7.49	5	-	-	-	1
7.50 - 7.99	6	-	-	-	1
8.00 - 8.49	15	-	-	-	4
8.50 - 8.99	19	-	-	-	4
9.00 - 9.49	13	-	-	-	1
9.50 - 9.99	3	-	-	-	2
10.00 - 10.49	2	-	1	-	-
10.50 - 10.99	2	-	1	-	-
11.00 - 11.49	-	-	1	-	1
11.50 - 11.99	-	2	-	-	-
12.00 - 12.99	-	-	4	-	-
13.00 - 13.99	-	-	22	1	-
14.00 - 14.99	-	-	40	-	-
15.00 - 15.99	-	-	4	-	-
16.00 - 16.99	-	-	4	1	-
17.00 - 17.99	-	-	-	1	-
18.00 - 18.99	-	-	2	-	-
19.00 - 19.99	-	-	5	-	-
20.00 - 20.99	-	-	4	-	-
21.00 - 21.99	-	1	4	-	-
22.00 - 22.99	-	-	-	-	-
23.00 - 23.99	-	1	1	-	-
24.00 - 24.99	-	-	-	-	-
25.00 - 25.99	-	-	-	-	-
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>NOP</u>	<u>WAE</u>	<u>WTS</u>	<u>YEP</u>
Total	89	4	93	3	14
Min. Length	4.57	11.61	10.43	13.43	7.36
Max. Length	10.79	23.74	23.15	17.64	11.22
Mean Length	7.96	17.06	15.19	15.87	8.82
# Measured	89	4	93	3	14
No Lengths for	0	0	1	0	0

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 (for fish < 36.00 inches)

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

(Field work conducted between 08/29/2016 and 08/31/2016)

	<u>BLB</u>	<u>NOP</u>	<u>WAE</u>	<u>WTS</u>
< 3.00	-	-	-	-
3.00 - 3.49	-	-	-	-
3.50 - 3.99	-	-	-	-
4.00 - 4.49	6	-	-	-
4.50 - 4.99	15	-	-	-
5.00 - 5.49	5	-	-	-
5.50 - 5.99	17	-	-	-
6.00 - 6.49	7	-	-	-
6.50 - 6.99	6	-	-	-
7.00 - 7.49	1	-	-	-
7.50 - 7.99	3	-	-	-
8.00 - 8.49	10	-	-	-
8.50 - 8.99	18	-	-	-
9.00 - 9.49	7	-	-	-
9.50 - 9.99	-	-	-	-
10.00 - 10.49	3	-	-	-
10.50 - 10.99	3	-	-	-
11.00 - 11.49	-	-	-	-
11.50 - 11.99	-	-	-	-
12.00 - 12.99	-	-	2	-
13.00 - 13.99	-	-	-	1
14.00 - 14.99	-	-	2	1
15.00 - 15.99	-	-	-	-
16.00 - 16.99	-	-	-	-
17.00 - 17.99	-	-	-	-
18.00 - 18.99	-	-	6	1
19.00 - 19.99	-	-	11	-
20.00 - 20.99	-	-	9	-
21.00 - 21.99	-	2	19	-
22.00 - 22.99	-	2	6	-
23.00 - 23.99	-	-	-	-
24.00 - 24.99	-	-	1	-
25.00 - 25.99	-	-	-	-
26.00 - 26.99	-	1	-	-
27.00 - 27.99	-	1	-	-
28.00 - 28.99	-	-	-	-
29.00 - 29.99	-	-	-	-
30.00 - 30.99	-	-	-	-
31.00 - 31.99	-	-	-	-
32.00 - 32.99	-	-	-	-
33.00 - 33.99	-	1	-	-
34.00 - 34.99	-	1	-	-
35.00 - 35.99	-	-	-	-
= > 36.00	-	1	-	-

	<u>BLB</u>	<u>NOP</u>	<u>WAE</u>	<u>WTS</u>
Total	101	9	56	3
Min. Length	4.02	21.10	12.20	13.23
Max. Length	10.67	38.23	24.06	18.15
Mean Length	7.02	27.49	20.22	15.26
# Measured	48	9	56	3
No Lengths for	55	0	0	0

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 (for fish ≥ 36.00 inches)

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

(Field work conducted between 08/29/2016 and 08/31/2016)

	<u>BLB</u>	<u>NOP</u>	<u>WAE</u>	<u>WTS</u>
< 36.00	103	8	56	3
36.00 - 36.99	-	-	-	-
37.00 - 37.99	-	-	-	-
38.00 - 38.99	-	1	-	-
39.00 - 39.99	-	-	-	-
40.00 - 40.99	-	-	-	-
41.00 - 41.99	-	-	-	-
42.00 - 42.99	-	-	-	-
43.00 - 43.99	-	-	-	-
44.00 - 44.99	-	-	-	-
45.00 - 45.99	-	-	-	-
46.00 - 46.99	-	-	-	-
47.00 - 47.99	-	-	-	-
48.00 - 48.99	-	-	-	-
49.00 - 49.99	-	-	-	-
50.00 - 50.99	-	-	-	-
51.00 - 51.99	-	-	-	-
52.00 - 52.99	-	-	-	-
53.00 - 53.99	-	-	-	-
54.00 - 54.99	-	-	-	-
55.00 - 55.99	-	-	-	-
56.00 - 56.99	-	-	-	-
57.00 - 57.99	-	-	-	-
58.00 - 58.99	-	-	-	-
59.00 - 59.99	-	-	-	-
60.00 - 60.99	-	-	-	-
61.00 - 61.99	-	-	-	-
62.00 - 62.99	-	-	-	-
63.00 - 63.99	-	-	-	-
64.00 - 64.99	-	-	-	-
65.00 - 65.99	-	-	-	-
66.00 - 66.99	-	-	-	-
67.00 - 67.99	-	-	-	-
68.00 - 68.99	-	-	-	-
69.00 - 69.99	-	-	-	-
70.00 - 70.99	-	-	-	-
71.00 - 71.99	-	-	-	-
72.00 - 72.99	-	-	-	-
73.00 - 73.99	-	-	-	-
74.00 - 74.99	-	-	-	-
75.00 - 75.99	-	-	-	-
76.00 - 76.99	-	-	-	-
77.00 - 77.99	-	-	-	-
= > 78.00	-	-	-	-

	<u>BLB</u>	<u>NOP</u>	<u>WAE</u>	<u>WTS</u>
Total	103	9	56	3
Min. Length	4.02	21.10	12.20	13.23
Max. Length	10.67	38.23	24.06	18.15
Mean Length	7.02	27.49	20.22	15.26
# Measured	48	9	56	3
No Lengths for	55	0	0	0

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	28	0	N/A	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 09/02/2016), 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: Clear

Survey Type: Standard Survey

DOW Number: 42-0055-00

Survey ID Date: 08/22/2016

Survey Status: Field Work Complete

The following 21 (of 32) report components are not included in this Lake Survey Report:

1. Current Water Level
2. Benchmark And Gauge Descriptions / Locations
3. Water Level History¹
4. Lake Inlets
5. Additional Inlet Information
6. Lake Outlets
7. Additional Outlet Information
8. Water Control Structure (Dam)
9. Surrounding Watershed Characteristics, Shoreline Characteristics, and Riparian Landscape Observations²
10. Resorts And Campgrounds
11. Fish Spawning Conditions
12. Erosion And Pollution
13. Fish Diseases And Parasites
14. Aquatic Vegetation And Shoalwater Substrates
15. Laboratory Analysis Of Water Chemistry
16. Length At Capture With Last Incremental Length*
17. Back-Calculated Lengths
18. Age Class Frequency Distributions
19. Status Of Fishery And Field Notes
20. Water Quality (Winter Observations) (added to revision 01/21/2010)
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 after noon on 09/02/2016 may not be reflected in the Distribution tables until 09/03/2016.

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