



Minnesota Department of Natural Resources

Fisheries Management

LAKE SURVEY REPORT



DRAFT VERSION - PRELIMINARY DATA (AS OF 06/28/2016)

Lake Name: East Twin

Survey Type: Standard Survey

DOW Number: 42-0070-00

Survey ID Date: 06/20/2016

Lake Identification

Alternate Lake Name: N/A
Primary Lake Class ID: 38

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

Lake Location

Primary County: Lyon

Nearest Town: Florence

Legal Descriptions

Lake Center: Township - 109N Range - 43W Section - 29
PLS Section Lake Center: 10904329

All Legal Descriptions:

Lyon County: Township - 109N Range - 43W Sections - 20, 28, 29, 32, 33

Area Office

Area Name: Windom
Region Name: Southern

ORG Code: F418
Region Number: 4

Lake Access

(Information based on Re-Survey dated 06/24/1996)

Station ID	Ownership	Public Use	Type	Location / Comments
AC - 1	DNR	Open to Public use	Carry-In	DNR OWNED ACCESS ON SW SIDE OF LAKE.

Lake Characteristics

Lake Area (planimetered acres):	352.00	GIS Shoreline Length (miles):	4.99
GIS Lake Area (acres):	356.47	Maximum Fetch (miles):	1.70
DOW Lake Area (acres):	280.00	Fetch Orientation (degrees):	315
Littoral Area (acres):	224.00	USGS Quad Map Number:	V05a
Area in MN (acres):	351.26	USGS Quad 24K GIS Index:	4210
Maximum Depth (feet):	22.0		
Mean Depth (feet):	N/A		

Watershed Characteristics

Major Watershed

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

Minor Watershed

Name: unknown DNR Minor Wshd
Watershed Number: 17
Watershed size (acres): 5,206

Surveys and Investigations

Re-Survey: 06/24/1996, 06/22/1987.
Population Assessment: 06/25/2012, 06/23/2008, 06/21/2004, 06/19/2000, 06/27/1992.
Special Assessment: 10/10/2000.
Dissolved Oxygen Check: 02/17/2016, 02/19/2015, 01/02/2014, 02/06/2013, 01/03/2013, 01/10/2012, 12/29/2010, 01/05/2010.
Standard Survey: 06/20/2016.

Current Water Level

Station ID	Date	Level	Reading (feet)	Reading Type
BM - 1	06/22/2016	Normal	1.50	Direct Gauge Reading

Benchmark and Gauge Descriptions / Locations

Station ID	Location Description
BM - 1	N/A

Water Level History - Readings

Station ID	Date	Level	Reading (feet)	Reading Type
BM - 1	06/22/2016	Normal	1.50	Direct Gauge Reading
	06/26/2008	High	-5.00	Above or below Benchmark
BM - 2	06/27/2012	High	1.84	Direct Gauge Reading
	06/26/2008	N/A	1.78	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			
BM - 1	-5.00	06/26/2008	-5.00	06/26/2008	0.00	-5.00	Above or below Benchmark (1)
BM - 1	1.50	06/22/2016	1.50	06/22/2016	0.00	1.50	Direct Gauge Reading (1)
BM - 2	1.78	06/26/2008	1.84	06/27/2012	0.06	1.81	Direct Gauge Reading (2)

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	06/20/2016	22.8	Surface	75.0	6.7
			1.0	75.0	6.8
			3.0	75.0	6.8
			5.0	74.8	6.8
			7.0	74.8	6.8
			9.0	74.8	6.9
			11.0	74.8	6.9
			13.0	74.8	6.9
			15.0	74.8	6.9
			17.0	74.7	6.9
			19.0	74.7	6.9
			21.0	74.7	6.8
			22.0	74.8	6.9

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	06/20/2016	Surface	5.3	8.70	255	Clear	N/A

Net Catch Summary by Numbers for GN

Standard gill net sets

Number of Sets: 3
First Set Date: 06/20/2016
Last Lift Date: 06/23/2016
Target Species: N/A

Abbr	Species	Total Fish	Number Per Set	Quartiles for Lake Class 38*		
				25%	50%	75%
BLB	Black Bullhead	7	2.33	7.73	35.00	104.69
BLC	Black Crappie	2	0.67	1.67	6.83	17.50
WAE	Walleye	48	16.00	0.75	1.67	3.75
WTS	White Sucker	6	2.00	0.50	1.08	2.25
YEP	Yellow Perch	36	12.00	2.00	8.50	22.25
Total Fish/Set:			33.00	* 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 38*		
					25%	50%	75%
BLB	Black Bullhead	6.04	2.01	0.86	0.17	0.30	0.46
BLC	Black Crappie	0.47	0.16	0.23	0.13	0.20	0.28
WAE	Walleye	34.66	11.55	0.72	1.36	2.32	2.99
WTS	White Sucker	15.48	5.16	2.58	1.63	2.05	2.48
YEP	Yellow Perch	12.23	4.08	0.34	0.09	0.12	0.18
Total Pounds Fish/Set:			22.96	* Quartiles for Mean Weight			

Net Catch Summary by Numbers for TN

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

Number of Sets: 8
First Set Date: 06/20/2016
Last Lift Date: 06/23/2016
Target Species: N/A

Abbr	Species	Total Fish	Number Per Set	Quartiles for Lake Class 38*		
				25%	50%	75%
BLB	Black Bullhead	13	1.63	1.50	9.00	58.00
BLC	Black Crappie	2	0.25	2.08	5.50	24.13
BLG	Bluegill	19	2.38	3.51	15.92	57.13
CAP	Common Carp	6	0.75	0.38	1.00	2.38
WAE	Walleye	34	4.25	0.25	0.50	0.80
WTS	White Sucker	5	0.63	0.20	0.50	1.17
YEP	Yellow Perch	3	0.38	0.38	1.00	2.81
Total Fish/Set:			10.25	* 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	Mean	Quartiles for Lake Class 38*		
		(Pounds)	Per Set	Weight	25%	50%	75%
BLB	Black Bullhead	12.15	1.52	0.93	0.18	0.29	0.53
BLC	Black Crappie	0.56	0.07	0.28	0.17	0.24	0.36
BLG	Bluegill	6.92	0.86	0.36	0.13	0.19	0.32
CAP	Common Carp	43.11	5.39	7.18	1.79	3.00	5.09
WAE	Walleye	24.28	3.04	0.71	0.90	2.05	3.49
WTS	White Sucker	18.08	2.26	3.62	1.33	1.97	2.50
YEP	Yellow Perch	1.15	0.14	0.38	0.10	0.14	0.23
Total Pounds Fish/Set:			13.28	* Quartiles for Mean Weight			

Electrofishing Catch Summary for EF

Standard electrofishing

Total run-time for all stations: 01:00:00

Total on-time for all stations: 01:00:00

First Sampling Date: 05/17/2016

Last Sampling Date: 05/17/2016

Daylight Sampling: No

Target Species: All ages smallmouth bass

Abbr	Species	Summary By Numbers			Summary By Weight (pounds)			
		Total Number	Number per Hour		Total Weight	Lbs per Hour		Mean Weight
			Run-Time	On-Time		Run-Time	On-Time	
SMB	Smallmouth Bass	108	108.00	108.00	77.52	77.52	77.52	0.72

Length Frequency Distribution for GN

Standard gill net sets

(Field work conducted between 06/20/2016 and 06/23/2016)

	<u>BLB</u>	<u>BLC</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	-	-	-	-	-
5.00 - 5.49	-	-	-	-	-
5.50 - 5.99	-	-	-	-	-
6.00 - 6.49	-	-	-	-	-
6.50 - 6.99	-	-	-	-	-
7.00 - 7.49	-	-	-	-	3
7.50 - 7.99	-	1	-	-	10
8.00 - 8.49	-	1	-	-	5
8.50 - 8.99	-	-	4	-	2
9.00 - 9.49	-	-	8	-	3
9.50 - 9.99	1	-	13	-	8
10.00 - 10.49	1	-	10	-	4
10.50 - 10.99	2	-	3	-	1
11.00 - 11.49	2	-	2	-	-
11.50 - 11.99	1	-	-	-	-
12.00 - 12.99	-	-	-	-	-
13.00 - 13.99	-	-	-	-	-
14.00 - 14.99	-	-	-	-	-
15.00 - 15.99	-	-	-	-	-
16.00 - 16.99	-	-	-	2	-
17.00 - 17.99	-	-	1	1	-
18.00 - 18.99	-	-	1	2	-
19.00 - 19.99	-	-	2	1	-
20.00 - 20.99	-	-	1	-	-
21.00 - 21.99	-	-	2	-	-
22.00 - 22.99	-	-	-	-	-
23.00 - 23.99	-	-	-	-	-
24.00 - 24.99	-	-	1	-	-
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>BLC</u>	<u>WAE</u>	<u>WTS</u>	<u>YEP</u>
Total	7	2	48	6	36
Min. Length	9.96	7.87	8.54	16.34	7.28
Max. Length	11.73	8.03	24.61	19.84	10.71
Mean Length	10.87	7.95	11.55	17.79	8.72
# Measured	7	2	48	6	36
No Lengths for	0	0	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

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

(Field work conducted between 06/20/2016 and 06/23/2016)

	<u>BLB</u>	<u>BLC</u>	<u>BLG</u>	<u>CAP</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	-	-	-	-	-	-	-
5.00 - 5.49	-	-	-	-	-	-	-
5.50 - 5.99	-	-	-	-	-	-	-
6.00 - 6.49	-	-	2	-	-	-	-
6.50 - 6.99	-	-	5	-	-	-	-
7.00 - 7.49	-	-	4	-	-	-	-
7.50 - 7.99	-	2	6	-	1	-	-
8.00 - 8.49	-	-	1	-	-	-	1
8.50 - 8.99	-	-	1	-	4	-	-
9.00 - 9.49	-	-	-	-	10	-	1
9.50 - 9.99	-	-	-	-	6	-	-
10.00 - 10.49	-	-	-	-	2	-	1
10.50 - 10.99	1	-	-	-	4	-	-
11.00 - 11.49	5	-	-	-	2	-	-
11.50 - 11.99	7	-	-	-	-	-	-
12.00 - 12.99	-	-	-	-	-	-	-
13.00 - 13.99	-	-	-	-	-	-	-
14.00 - 14.99	-	-	-	-	-	-	-
15.00 - 15.99	-	-	-	-	-	-	-
16.00 - 16.99	-	-	-	-	-	-	-
17.00 - 17.99	-	-	-	-	-	-	-
18.00 - 18.99	-	-	-	1	-	1	-
19.00 - 19.99	-	-	-	-	-	1	-
20.00 - 20.99	-	-	-	1	1	1	-
21.00 - 21.99	-	-	-	-	2	2	-
22.00 - 22.99	-	-	-	-	-	-	-
23.00 - 23.99	-	-	-	-	1	-	-
24.00 - 24.99	-	-	-	-	1	-	-
25.00 - 25.99	-	-	-	-	-	-	-
26.00 - 26.99	-	-	-	1	-	-	-
27.00 - 27.99	-	-	-	3	-	-	-
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>BLC</u>	<u>BLG</u>	<u>CAP</u>	<u>WAE</u>	<u>WTS</u>	<u>YEP</u>
Total	13	2	19	6	34	5	3
Min. Length	10.63	7.72	6.26	18.94	7.87	18.31	8.31
Max. Length	11.93	7.95	8.66	27.95	24.02	21.46	10.31
Mean Length	11.44	7.83	7.28	24.78	11.47	20.04	9.29
# Measured	13	2	19	6	34	5	3
No Lengths for	0	0	0	0	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 EF

Standard electrofishing

(Field work conducted on 05/17/2016)

	<u>SMB</u>
< 3.00	-
3.00 - 3.49	-
3.50 - 3.99	-
4.00 - 4.49	-
4.50 - 4.99	-
5.00 - 5.49	-
5.50 - 5.99	-
6.00 - 6.49	1
6.50 - 6.99	6
7.00 - 7.49	6
7.50 - 7.99	5
8.00 - 8.49	1
8.50 - 8.99	4
9.00 - 9.49	9
9.50 - 9.99	21
10.00 - 10.49	19
10.50 - 10.99	6
11.00 - 11.49	4
11.50 - 11.99	1
12.00 - 12.99	10
13.00 - 13.99	6
14.00 - 14.99	2
15.00 - 15.99	2
16.00 - 16.99	2
17.00 - 17.99	2
18.00 - 18.99	-
19.00 - 19.99	1
20.00 - 20.99	-
21.00 - 21.99	-
22.00 - 22.99	-
23.00 - 23.99	-
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>SMB</u>
Total	108
Min. Length	6.46
Max. Length	19.21
Mean Length	10.45
# Measured	108
No Lengths for	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	13	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 06/28/2016), 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

(This page is not part of the Lake Survey Report and should be discarded)

Lake Name: East Twin

Survey Type: Standard Survey

DOW Number: 42-0070-00

Survey ID Date: 06/20/2016

Survey Status: Field Work Complete

The following 19 (of 32) 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. Laboratory Analysis Of Water Chemistry
14. Length At Capture With Last Incremental Length*
15. Back-Calculated Lengths
16. Age Class Frequency Distributions
17. Status Of Fishery And Field Notes
18. Water Quality (Winter Observations) (added to revision 01/21/2010)
19. 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 06/28/2016 may not be reflected in the Distribution tables until 06/29/2016.

The following survey component was flagged to be specifically excluded from this report: TN - 9

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