



Minnesota Department of Natural Resources
Fisheries Management



STANDARD LAKE SURVEY REPORT

DRAFT VERSION - PRELIMINARY DATA (AS OF 06/04/2015)

Lake Name: East Graham

Survey Type: Standard Survey

DOW Number: 53-0020-00

Survey ID Date: 06/01/2015

Lake Identification

Alternate Lake Name: N/A
Primary Lake Class ID: 43

DNR Sounding Map Number: C2873
Alternate Lake Class ID: N/A

Lake Location

Primary County: Nobles

Nearest Town: Fulda

Legal Descriptions

Lake Center: Township - 104N Range - 39W Section - 23
PLS Section Lake Center: 10403923

All Legal Descriptions:

Nobles County: Township - 104N Range - 39W Sections - 14, 22, 23, 26, 27

Area Office

Area Name: Windom
Region Name: Southern

ORG Code: F418
Region Number: 4

Lake Access

(Information based on Re-Survey dated 06/05/1995)

Station ID	Ownership	Public Use	Type	Location / Comments
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(Data excludes records where public use is not designated or is designated "No Public Use")

Lake Characteristics

Lake Area (planimetered acres): 604.00	GIS Shoreline Length (miles): 6.75
GIS Lake Area (acres): 511.33	Maximum Fetch (miles): 2.40
DOW Lake Area (acres): 523.00	Fetch Orientation (degrees): 22
Littoral Area (acres): 511.33	USGS Quad Map Number: W08c
Area in MN (acres): 511.33	USGS Quad 24K GIS Index: 4515
Maximum Depth (feet): 8.0	
Mean Depth (feet): N/A	

Watershed Characteristics

Major Watershed

Name: Des Moines-Headwaters
Watershed Number: 51
Watershed size (acres): 798,595

Minor Watershed

Name: From Jack L
Watershed Number: 39
Watershed size (acres): 5,366

Surveys And Investigations

Initial Survey: 06/02/1986.
 Re-Survey: 06/02/2003, 06/05/1995.
 Population Assessment: 05/31/2011, 06/04/2007, 06/07/1999, 06/04/1991.
 Special Assessment: 03/30/1995, 08/26/1948.
 Dissolved Oxygen Check: 02/25/2015, 12/30/2013, 02/07/2013, 01/07/2013, 02/17/2012, 01/26/2012, 12/28/2010,
 01/11/2010.
 Standard Survey: 06/01/2015.

Current Water Level

Station ID	Date	Level	Reading (feet)	Reading Type
GA - 1	06/04/2015	Low	1.39	Direct Gauge Reading

Benchmark and Gauge Descriptions / Locations

Station ID	Location Description
GA - 1	N/A

Water Level History - Readings

Station ID	Date	Level	Reading (feet)	Reading Type
BM - 1	06/01/2011	Normal	N/A	Above or below Benchmark
	06/04/2007	Normal	-5.50	Above or below Benchmark
GA - 1	06/04/2015	Low	1.39	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	-5.50	06/04/2007	-5.50	06/04/2007	0.00	-5.50	Above or below Benchmark (1)
GA - 1	1.39	06/04/2015	1.39	06/04/2015	0.00	1.39	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	06/04/2015	6.6	Surface	68.5	11.3
			1.0	68.4	11.3
			2.0	68.0	11.3
			3.0	67.8	11.3
			4.0	67.1	10.7
			5.0	66.6	10.0
			6.0	66.6	9.0

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	06/04/2015	Surface	1.2	8.53	136	Brown Grn	Sediment

Net Catch Summary by Numbers for GN

Standard gill net sets

Number of Sets: 3
 First Set Date: 06/01/2015
 Last Lift Date: 06/04/2015
 Target Species: N/A

Abbr	Species	Total Fish	Number Per Set	Quartiles for Lake Class 43*		
				25%	50%	75%
BIB	Bigmouth Buffalo	109	36.33	0.75	2.58	6.96
BLB	Black Bullhead	261	87.00	30.34	75.58	150.62
BLC	Black Crappie	2	0.67	1.41	3.71	13.75
CCF	Channel Catfish	8	2.67	N/A	N/A	N/A
CAP	Common Carp	11	3.67	1.00	3.33	13.75
NOP	Northern Pike	25	8.33	1.08	3.00	8.00
WAE	Walleye	24	8.00	2.28	6.83	18.06
WTS	White Sucker	3	1.00	0.81	2.33	6.50
YEP	Yellow Perch	4	1.33	2.65	8.00	25.00
Total Fish/Set:			149.00	* 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 43*		
					25%	50%	75%
BIB	Bigmouth Buffalo	135.91	45.30	1.25	N/A	N/A	N/A
BLB	Black Bullhead	82.42	27.47	0.32	0.17	0.26	0.39
BLC	Black Crappie	0.40	0.13	0.20	0.16	0.25	0.35
CCF	Channel Catfish	14.39	4.80	1.80	N/A	N/A	N/A
CAP	Common Carp	34.95	11.65	3.18	0.81	1.98	3.70
NOP	Northern Pike	56.67	18.89	2.27	1.82	2.50	3.35
WAE	Walleye	21.32	7.11	0.89	1.01	1.53	2.30
WTS	White Sucker	3.23	1.08	1.08	0.93	1.58	2.02
YEP	Yellow Perch	0.70	0.23	0.18	0.13	0.21	0.31
Total Pounds Fish/Set:			116.66	* 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: 06/01/2015
 Last Lift Date: 06/04/2015
 Target Species: N/A

Abbr	Species	Total Fish	Number Per Set	Quartiles for Lake Class 43*		
				25%	50%	75%
BIB	Bigmouth Buffalo	7	0.88	0.17	0.38	1.04
BLB	Black Bullhead	1,159	144.88	11.50	42.00	132.61
BLC	Black Crappie	4	0.50	1.17	4.88	20.50
CCF	Channel Catfish	2	0.25	N/A	N/A	N/A
CAP	Common Carp	20	2.50	1.00	2.44	5.51
NOP	Northern Pike	13	1.63	N/A	N/A	N/A
QBS	Quillback	3	0.38	N/A	N/A	N/A
WAE	Walleye	13	1.63	0.50	1.33	2.95
WTS	White Sucker	26	3.25	0.34	0.88	2.58
YEB	Yellow Bullhead	2	0.25	0.50	1.13	2.50
YEP	Yellow Perch	10	1.25	0.33	1.37	3.76
Total Fish/Set:			157.38	* 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 43*		
					25%	50%	75%
BIB	Bigmouth Buffalo	83.27	10.41	11.90	2.56	3.75	5.83
BLB	Black Bullhead	531.35	66.42	0.46	0.18	0.28	0.40
BLC	Black Crappie	2.94	0.37	0.74	0.22	0.34	0.50
CCF	Channel Catfish	3.11	0.39	1.55	N/A	N/A	N/A
CAP	Common Carp	72.52	9.06	3.63	1.42	2.92	4.58
NOP	Northern Pike	35.32	4.41	2.72	N/A	N/A	N/A
QBS	Quillback	3.71	0.46	1.24	N/A	N/A	N/A
WAE	Walleye	13.70	1.71	1.05	0.82	1.44	2.28
WTS	White Sucker	51.57	6.45	1.98	1.05	1.47	2.04
YEB	Yellow Bullhead	0.85	0.11	0.42	0.31	0.48	0.67
YEP	Yellow Perch	1.77	0.22	0.18	0.11	0.18	0.30
Total Pounds Fish/Set:			100.01	* Quartiles for Mean Weight			

Length Frequency Distribution For GN

Standard gill net sets

(Field work conducted between 06/01/2015 and 06/04/2015)

	<u>BIB</u>	<u>BLB</u>	<u>BLC</u>	<u>CAP</u>	<u>CCF</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	-	-	-	-	-	-	-	-	-
5.00 - 5.49	-	4	-	-	-	-	-	-	-
5.50 - 5.99	-	14	-	-	-	-	-	-	-
6.00 - 6.49	-	25	-	-	-	-	-	-	-
6.50 - 6.99	-	26	-	-	-	-	-	-	3
7.00 - 7.49	-	42	1	-	-	-	-	-	-
7.50 - 7.99	-	24	1	-	-	-	1	-	-
8.00 - 8.49	-	4	-	-	-	-	1	-	1
8.50 - 8.99	2	28	-	-	-	-	-	-	-
9.00 - 9.49	-	48	-	-	-	-	-	-	-
9.50 - 9.99	3	26	-	-	-	-	-	1	-
10.00 - 10.49	4	12	-	-	-	-	-	-	-
10.50 - 10.99	7	4	-	-	-	-	-	-	-
11.00 - 11.49	20	1	-	3	-	-	-	-	-
11.50 - 11.99	26	2	-	1	-	-	-	-	-
12.00 - 12.99	40	-	-	-	-	-	11	-	-
13.00 - 13.99	1	-	-	-	-	1	3	-	-
14.00 - 14.99	-	-	-	-	1	3	5	-	-
15.00 - 15.99	-	-	-	-	1	3	2	-	-
16.00 - 16.99	-	-	-	-	2	2	-	-	-
17.00 - 17.99	-	-	-	1	-	1	-	1	-
18.00 - 18.99	1	-	-	1	2	-	-	-	-
19.00 - 19.99	-	-	-	-	2	-	-	-	-
20.00 - 20.99	1	-	-	-	-	1	1	-	-
21.00 - 21.99	-	-	-	2	-	-	-	-	-
22.00 - 22.99	-	-	-	-	-	4	-	-	-
23.00 - 23.99	-	-	-	1	-	1	-	-	-
24.00 - 24.99	2	-	-	1	-	2	-	-	-
25.00 - 25.99	-	-	-	-	-	3	-	-	-
26.00 - 26.99	-	-	-	-	-	3	-	-	-
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	-	-	-	-	-	-	-	-	-
34.00 - 34.99	-	-	-	-	-	-	-	-	-
35.00 - 35.99	-	-	-	-	-	-	-	-	-
= > 36.00	-	-	-	-	-	-	-	-	-
	<u>BIB</u>	<u>BLB</u>	<u>BLC</u>	<u>CAP</u>	<u>CCF</u>	<u>NOP</u>	<u>WAE</u>	<u>WTS</u>	<u>YEP</u>
Total	107	260	2	10	8	25	24	2	4
Min. Length	8.62	5.08	7.40	11.30	14.21	13.70	7.72	9.69	6.61
Max. Length	24.21	11.73	7.68	24.76	19.06	27.68	20.79	17.36	8.39
Mean Length	12.03	8.07	7.54	17.33	17.30	20.77	13.29	13.52	7.14
# Measured	96	260	2	10	8	25	24	2	4
No Lengths for	13	1	0	1	0	0	0	1	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 06/01/2015 and 06/04/2015)

	<u>BIB</u>	<u>BLB</u>	<u>BLC</u>	<u>CAP</u>	<u>CCF</u>	<u>NOP</u>	<u>QBS</u>	<u>WAE</u>	<u>WTS</u>	<u>YEB</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	-	26	-	-	-	-	-	-	-	-	1
7.00 - 7.49	-	49	-	-	-	-	-	-	-	-	4
7.50 - 7.99	-	13	1	-	-	-	-	-	-	-	3
8.00 - 8.49	-	5	-	-	-	-	-	-	-	1	-
8.50 - 8.99	-	105	-	-	-	-	-	-	-	-	-
9.00 - 9.49	-	206	-	-	-	-	-	-	-	1	-
9.50 - 9.99	-	193	-	1	-	1	-	-	-	-	-
10.00 - 10.49	-	57	-	1	-	-	-	1	-	-	-
10.50 - 10.99	-	30	-	2	-	-	-	-	1	-	-
11.00 - 11.49	-	2	3	3	-	-	-	-	1	-	-
11.50 - 11.99	-	10	-	2	-	-	1	-	-	-	-
12.00 - 12.99	-	16	-	2	-	-	1	4	-	-	-
13.00 - 13.99	-	18	-	-	-	-	-	3	-	-	-
14.00 - 14.99	-	-	-	-	-	1	-	2	-	-	-
15.00 - 15.99	-	-	-	-	1	-	-	2	8	-	-
16.00 - 16.99	-	-	-	-	-	-	1	-	7	-	-
17.00 - 17.99	-	-	-	-	-	-	-	-	8	-	-
18.00 - 18.99	-	-	-	-	1	-	-	-	-	-	-
19.00 - 19.99	1	-	-	-	-	-	-	-	-	-	-
20.00 - 20.99	-	-	-	-	-	-	-	-	-	-	-
21.00 - 21.99	-	-	-	-	-	1	-	1	-	-	-
22.00 - 22.99	-	-	-	1	-	1	-	-	-	-	-
23.00 - 23.99	1	-	-	-	-	1	-	-	-	-	-
24.00 - 24.99	1	-	-	1	-	2	-	-	-	-	-
25.00 - 25.99	-	-	-	5	-	3	-	-	-	-	-
26.00 - 26.99	-	-	-	-	-	2	-	-	-	-	-
27.00 - 27.99	1	-	-	-	-	1	-	-	-	-	-
28.00 - 28.99	1	-	-	1	-	-	-	-	-	-	-
29.00 - 29.99	1	-	-	-	-	-	-	-	-	-	-
30.00 - 30.99	-	-	-	-	-	-	-	-	-	-	-
31.00 - 31.99	-	-	-	-	-	-	-	-	-	-	-
32.00 - 32.99	1	-	-	-	-	-	-	-	-	-	-
33.00 - 33.99	-	-	-	-	-	-	-	-	-	-	-
34.00 - 34.99	-	-	-	-	-	-	-	-	-	-	-
35.00 - 35.99	-	-	-	-	-	-	-	-	-	-	-
= > 36.00	-	-	-	-	-	-	-	-	-	-	-
	<u>BIB</u>	<u>BLB</u>	<u>BLC</u>	<u>CAP</u>	<u>CCF</u>	<u>NOP</u>	<u>QBS</u>	<u>WAE</u>	<u>WTS</u>	<u>YEB</u>	<u>YEP</u>
Total	7	730	4	19	2	13	3	13	25	2	8
Min. Length	19.17	6.61	7.64	9.92	15.55	9.84	11.50	10.08	10.51	8.03	6.61
Max. Length	32.05	13.27	11.22	28.23	18.35	27.01	16.46	21.46	17.60	9.45	7.91
Mean Length	26.47	9.25	10.28	17.13	16.95	22.91	13.37	13.99	16.07	8.74	7.38
# Measured	7	203	4	19	2	13	3	13	25	2	8
No Lengths for	0	956	0	1	0	0	0	0	1	0	2

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	4	0	N/A	0	N/A
	Snapping Turtle	3	3	11.10 - 11.86 - 12.60	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 Standard Lake Survey Report contains preliminary data (as of 06/04/2015), 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.

REPORT OVERVIEW - FOR OFFICE USE ONLY

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

Lake Name: East Graham

Survey Type: Standard Survey

DOW Number: 53-0020-00

Survey ID Date: 06/01/2015

Survey Status: Field Work Complete

The following 18 (of 31) report components are not included in this 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)

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 Standard 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 06/04/2015 may not be reflected in the Distribution tables until 06/05/2015.

The following survey component was flagged to be specifically excluded from this report: TN - 3