

Lake Name: East Graham

Survey Type: Standard Survey

DOW Number: 53-0020-00

Survey ID Date: 06/14/2022

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 - 22
PLS Section Lake Center: 10403922

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 Lake Area (acres): 511.33
DOW Lake Area (acres): 523.00
Littoral Area (acres): 511.33
Area in MN (acres): 511.33
Maximum Depth (feet): 8.0
Mean Depth (feet): N/A

GIS Shoreline Length (miles): 6.75
Maximum Fetch (miles): 2.40
Fetch Orientation (degrees): 22
USGS Quad Map Number: W08c
USGS Quad 24K GIS Index: 4515

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: 02/10/2016, 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: 06/14/2022, 06/01/2015.
 Targeted Survey: 02/04/2020, 01/10/2019, 01/19/2018, 09/20/2017.

Current Water Level

Station ID	Date	Level	Reading (feet)	Reading Type
GA - 1	06/15/2022	High	6.26	Direct Gauge Reading

Benchmark and Gauge Descriptions / Locations

Station ID	Location Description
GA - 1	gauge by access

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	06/15/2022	High	6.26	Direct Gauge Reading
	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	6.26	06/15/2022	4.87	3.83	Direct Gauge Reading (2)

Dissolved Oxygen and Temperature Profile of Lake Water

Station ID	Sampling Date	Bottom Depth (Feet)	Sample Depth (Feet)	Water	Dissolved
				Temperature (°F)	Oxygen (ppm)
WQ - 1	06/15/2022	6.5	Surface	74.7	6.6
			1.0	74.7	6.2
			2.0	74.7	6.5
			3.0	74.7	6.5
			4.0	74.7	6.5
			5.0	74.7	6.5
			6.0	74.7	6.5
			6.4	74.7	6.5
			6.4	74.7	641.0

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	06/15/2022	Surface	1.5	8.23	200	Brown Grn	Algae

Net Catch Summary by Numbers for GN

Standard gill net sets

Number of Sets: 3
First Set Date: 06/14/2022
Last Lift Date: 06/17/2022
Target Species: N/A

Abbr	Species	Total Fish	Number Per Set	Quartiles for Lake Class 43 ¹		
				25%	50%	75%
BIB	Bigmouth Buffalo	14	4.67	0.75	2.58	6.96
BLB	Black Bullhead	220	73.33	30.34	75.58	150.62
BLC	Black Crappie	48	16.00	1.41	3.71	13.75
CCF	Channel Catfish	8	2.67	N/A	N/A	N/A
CAP	Common Carp	19	6.33	1.00	3.33	13.75
FRD	Freshwater Drum	8	2.67	0.50	2.56	8.33
GSF	Green Sunfish	1	0.33	0.38	0.71	6.50
NOP	Northern Pike	4	1.33	1.08	3.00	8.00
QBS	Quillback	3	1.00	N/A	N/A	N/A
WAE	Walleye	14	4.67	2.28	6.83	18.06
WTS	White Sucker	1	0.33	0.81	2.33	6.50
YEP	Yellow Perch	5	1.67	2.65	8.00	25.00
Total Fish/Set:			115.00	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 43 ¹		
					25%	50%	75%
BIB	Bigmouth Buffalo	50.80	16.93	3.67	N/A	N/A	N/A
BLB	Black Bullhead	79.22	26.41	0.36	0.17	0.26	0.39
BLC	Black Crappie	8.93	2.98	0.19	0.16	0.25	0.35
CCF	Channel Catfish	12.23	4.08	1.53	N/A	N/A	N/A
CAP	Common Carp	101.39	33.80	5.34	0.81	1.98	3.70
FRD	Freshwater Drum	4.75	1.58	0.59	0.40	0.82	1.67
GSF	Green Sunfish	0.11	0.04	0.11	N/A	N/A	N/A
NOP	Northern Pike	12.13	4.04	3.03	1.82	2.50	3.35
QBS	Quillback	2.84	0.95	0.95	N/A	N/A	N/A
WAE	Walleye	37.61	12.54	2.69	1.01	1.53	2.30
WTS	White Sucker	0.13	0.04	0.13	0.93	1.58	2.02
YEP	Yellow Perch	1.87	0.62	0.37	0.13	0.21	0.31
Total Pounds Fish/Set:			104.00	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: 8
 First Set Date: 06/14/2022
 Last Lift Date: 06/17/2022
 Target Species: N/A

Abbr	Species	Total Fish	Number Per Set	Quartiles for Lake Class 43 ¹		
				25%	50%	75%
BIB	Bigmouth Buffalo	6	0.75	0.17	0.38	1.04
BLB	Black Bullhead	523	65.38	11.50	42.00	132.61
BLC	Black Crappie	210	26.25	1.17	4.88	20.50
CCF	Channel Catfish	2	0.25	N/A	N/A	N/A
CAP	Common Carp	17	2.13	1.00	2.44	5.51
FRD	Freshwater Drum	1	0.13	0.23	0.92	3.25
NOP	Northern Pike	7	0.88	N/A	N/A	N/A
OSS	Orangespotted Sunfish	1	0.13	N/A	N/A	N/A
WAE	Walleye	1	0.13	0.50	1.33	2.95
WHC	White Crappie	2	0.25	0.25	1.83	5.96
WTS	White Sucker	1	0.13	0.34	0.88	2.58
YEB	Yellow Bullhead	3	0.38	0.50	1.13	2.50
Total Fish/Set:			96.75	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 43 ¹		
					25%	50%	75%
BIB	Bigmouth Buffalo	44.83	5.60	7.47	2.56	3.75	5.83
BLB	Black Bullhead	209.58	26.20	0.40	0.18	0.28	0.40
BLC	Black Crappie	67.44	8.43	0.37	0.22	0.34	0.50
CCF	Channel Catfish	4.35	0.54	2.18	N/A	N/A	N/A
CAP	Common Carp	118.38	14.80	6.96	1.42	2.92	4.58
FRD	Freshwater Drum	0.51	0.06	0.51	0.28	0.60	0.95
NOP	Northern Pike	28.73	3.59	4.10	N/A	N/A	N/A
OSS	Orangespotted Sunfish	0.03	0.00	0.03	N/A	N/A	N/A
WAE	Walleye	4.41	0.55	4.41	0.82	1.44	2.28
WHC	White Crappie	1.70	0.21	0.85	0.27	0.40	0.63
WTS	White Sucker	1.44	0.18	1.44	1.05	1.47	2.04
YEB	Yellow Bullhead	1.93	0.24	0.64	0.31	0.48	0.67
Total Pounds Fish/Set:			60.41	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 06/14/2022 and 06/17/2022)

	<u>BIB</u>	<u>BLB</u>	<u>BLC</u>	<u>CAP</u>	<u>CCF</u>	<u>FRD</u>	<u>GSF</u>	<u>NOP</u>	<u>QBS</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	-	9	-	-	-	-	1	-	-	-	-	-
5.50 - 5.99	-	1	-	-	-	-	-	-	-	-	-	1
6.00 - 6.49	-	2	19	-	-	-	-	-	-	-	-	-
6.50 - 6.99	-	1	23	-	-	-	-	-	-	-	1	-
7.00 - 7.49	-	2	4	-	1	-	-	-	-	-	-	1
7.50 - 7.99	-	9	-	-	-	-	-	-	-	-	-	-
8.00 - 8.49	-	34	-	-	1	-	-	-	-	-	-	-
8.50 - 8.99	-	104	-	-	1	-	-	-	-	-	-	-
9.00 - 9.49	-	42	-	-	-	-	-	-	-	-	-	1
9.50 - 9.99	-	10	-	-	-	-	-	-	-	-	-	1
10.00 - 10.49	-	1	-	-	1	3	-	-	-	-	-	-
10.50 - 10.99	-	2	1	-	-	2	-	-	-	-	-	1
11.00 - 11.49	-	2	1	-	-	1	-	-	-	-	-	-
11.50 - 11.99	2	-	-	-	-	-	-	-	-	-	-	-
12.00 - 12.99	5	-	-	-	-	2	-	-	3	-	-	-
13.00 - 13.99	-	-	-	1	-	-	-	-	-	3	-	-
14.00 - 14.99	-	-	-	-	1	-	-	-	-	1	-	-
15.00 - 15.99	-	-	-	1	-	-	-	-	-	1	-	-
16.00 - 16.99	-	-	-	-	-	-	-	-	-	-	-	-
17.00 - 17.99	-	-	-	1	-	-	-	1	-	1	-	-
18.00 - 18.99	-	-	-	-	1	-	-	-	-	2	-	-
19.00 - 19.99	1	-	-	-	-	-	-	-	-	-	-	-
20.00 - 20.99	1	-	-	2	-	-	-	-	-	-	-	-
21.00 - 21.99	-	-	-	2	-	-	-	-	-	-	-	-
22.00 - 22.99	-	-	-	5	-	-	-	1	-	1	-	-
23.00 - 23.99	3	-	-	1	-	-	-	1	-	2	-	-
24.00 - 24.99	1	-	-	1	2	-	-	-	-	-	-	-
25.00 - 25.99	-	-	-	4	-	-	-	-	-	2	-	-
26.00 - 26.99	-	-	-	-	-	-	-	-	-	-	-	-
27.00 - 27.99	-	-	-	1	-	-	-	-	-	-	-	-
28.00 - 28.99	-	-	-	-	-	-	-	-	-	-	-	-
29.00 - 29.99	-	-	-	-	-	-	-	-	-	-	-	-
30.00 - 30.99	-	-	-	-	-	-	-	1	-	-	-	-
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>FRD</u>	<u>GSF</u>	<u>NOP</u>	<u>QBS</u>	<u>WAE</u>	<u>WTS</u>	<u>YEP</u>
Total	13	219	48	19	8	8	1	4	3	13	1	5
Min. Length	11.69	5.00	6.02	13.03	7.17	10.43	5.35	17.72	12.52	13.43	6.93	5.94
Max. Length	24.45	11.34	11.46	27.76	24.84	12.64	5.35	30.59	12.72	25.63	6.93	10.67
Mean Length	16.92	8.57	6.77	22.05	14.61	11.04	5.35	23.76	12.64	18.90	6.93	8.60
# Measured	13	146	46	19	8	8	1	4	3	13	1	5
No Lengths for	1	74	2	0	0	0	0	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

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

(Field work conducted between 06/14/2022 and 06/17/2022)

	<u>BIB</u>	<u>BLB</u>	<u>BLC</u>	<u>CAP</u>	<u>CCF</u>	<u>FRD</u>	<u>NOP</u>	<u>OSS</u>	<u>WAE</u>	<u>WHC</u>	<u>WTS</u>	<u>YEB</u>
< 3.00	-	-	-	-	-	-	-	-	-	-	-	-
3.00 - 3.49	-	-	-	-	-	-	-	1	-	-	-	-
3.50 - 3.99	-	-	-	-	-	-	-	-	-	-	-	-
4.00 - 4.49	-	-	-	-	-	-	-	-	-	-	-	-
4.50 - 4.99	-	-	-	-	-	-	-	-	-	-	-	-
5.00 - 5.49	-	-	-	-	-	-	-	-	-	-	-	-
5.50 - 5.99	-	4	-	-	-	-	-	-	-	-	-	-
6.00 - 6.49	-	-	57	-	-	-	-	-	-	-	-	-
6.50 - 6.99	-	-	92	-	-	-	-	-	-	-	-	-
7.00 - 7.49	-	-	17	-	-	-	-	-	-	-	-	-
7.50 - 7.99	-	-	-	-	-	-	-	-	-	-	-	1
8.00 - 8.49	-	21	-	-	-	-	-	-	-	-	-	-
8.50 - 8.99	-	84	-	-	-	-	-	-	-	1	-	-
9.00 - 9.49	-	85	3	-	-	-	-	-	-	-	-	-
9.50 - 9.99	-	17	1	-	-	-	-	-	-	-	-	-
10.00 - 10.49	-	4	-	-	-	-	-	-	-	-	-	-
10.50 - 10.99	-	-	1	-	-	1	-	-	-	-	-	-
11.00 - 11.49	-	-	7	-	-	-	-	-	-	-	-	1
11.50 - 11.99	-	1	22	-	-	-	-	-	-	-	-	1
12.00 - 12.99	-	-	10	-	-	-	-	-	-	1	-	-
13.00 - 13.99	-	-	1	-	1	-	-	-	-	-	-	-
14.00 - 14.99	-	-	-	-	-	-	-	-	-	-	-	-
15.00 - 15.99	-	-	-	-	-	-	-	-	-	-	1	-
16.00 - 16.99	-	-	-	1	-	-	-	-	-	-	-	-
17.00 - 17.99	1	-	-	-	-	-	-	-	-	-	-	-
18.00 - 18.99	-	-	-	2	-	-	-	-	-	-	-	-
19.00 - 19.99	-	-	-	-	-	-	-	-	-	-	-	-
20.00 - 20.99	-	-	-	-	-	-	-	-	-	-	-	-
21.00 - 21.99	2	-	-	1	-	-	2	-	-	-	-	-
22.00 - 22.99	-	-	-	2	-	-	-	-	1	-	-	-
23.00 - 23.99	1	-	-	3	-	-	1	-	-	-	-	-
24.00 - 24.99	-	-	-	-	-	-	-	-	-	-	-	-
25.00 - 25.99	-	-	-	3	1	-	-	-	-	-	-	-
26.00 - 26.99	2	-	-	1	-	-	1	-	-	-	-	-
27.00 - 27.99	-	-	-	2	-	-	-	-	-	-	-	-
28.00 - 28.99	-	-	-	1	-	-	1	-	-	-	-	-
29.00 - 29.99	-	-	-	-	-	-	-	-	-	-	-	-
30.00 - 30.99	-	-	-	-	-	-	-	-	-	-	-	-
31.00 - 31.99	-	-	-	-	-	-	-	-	-	-	-	-
32.00 - 32.99	-	-	-	1	-	-	1	-	-	-	-	-
33.00 - 33.99	-	-	-	-	-	-	-	-	-	-	-	-
34.00 - 34.99	-	-	-	-	-	-	1	-	-	-	-	-
35.00 - 35.99	-	-	-	-	-	-	-	-	-	-	-	-
= > 36.00	-	-	-	-	-	-	-	-	-	-	-	-

	<u>BIB</u>	<u>BLB</u>	<u>BLC</u>	<u>CAP</u>	<u>CCF</u>	<u>FRD</u>	<u>NOP</u>	<u>OSS</u>	<u>WAE</u>	<u>WHC</u>	<u>WTS</u>	<u>YEB</u>
Total	6	216	211	17	2	1	7	1	1	2	1	3
Min. Length	17.09	5.51	6.06	16.97	13.86	10.79	21.26	3.23	22.48	8.78	15.12	7.52
Max. Length	26.69	11.85	13.43	32.87	25.04	10.79	34.61	3.23	22.48	12.80	15.12	11.85
Mean Length	22.93	8.98	7.98	24.15	19.45	10.79	26.73	3.23	22.48	10.79	15.12	10.24
# Measured	6	52	119	17	2	1	7	1	1	2	1	3
No Lengths for	0	471	91	0	0	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

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	1	0	N/A	0	N/A
	Snapping Turtle	2	2	10.83 - 11.82 - 12.80	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 06/20/2022), 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.

Lake Survey Report revision: 20210824-RJE. Data Date: 06/20/2022 at 10:25 am .

REPORT OVERVIEW - FOR OFFICE USE ONLY

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

Lake Name: East Graham

Survey Type: Standard Survey

DOW Number: 53-0020-00

Survey ID Date: 06/14/2022

Survey Status: Field Work Complete

The following 20 (of 33) 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. Catch Summary (Pre-1993 Format) (added to revision 20201001)
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. 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 06/20/2022 may not be reflected in the Distribution tables until after 12:30 pm on 06/20/2022.

The following survey component was flagged to be specifically excluded from this report: TN - 1

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