



Minnesota Department of Natural Resources
Fisheries Management



STANDARD LAKE SURVEY REPORT

DRAFT VERSION - PRELIMINARY DATA (AS OF 08/17/2011)

Lake Name: East Graham

Survey Type: Population Assessment

DOW Number: 53-0020-00

Survey ID Date: 05/31/2011

POPULATION ASSESSMENT
Beach Seine (1/8 inch 15 foot)
Beach Seine (1/8 inch 50 foot)
Backpack Electrofishing

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
------------	-----------	------------	------	---------------------

(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): 511.32
DOW Lake Area (acres): 523.00
Littoral Area (acres): 604.00
Area in MN (acres): 511.32
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: 12/28/2010, 01/11/2010.

Current Water Level

Station ID	Date	Level	Reading (feet)	Reading Type
BM - 1	06/01/2011	Normal	N/A	Above or below Benchmark

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	06/01/2011	Normal	N/A	Above or below Benchmark
	06/04/2007	Normal	-5.50	Above or below Benchmark

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)

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	06/01/2011	6.8	Surface	66.4	8.2
			1.0	66.2	8.1
			2.0	66.0	8.1
			3.0	65.7	8.2
			4.0	65.3	8.2
			5.0	65.1	8.1
			6.0	64.8	8.1
			6.8	64.4	7.8

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	06/01/2011	Surface	4.5	N/A	238	Green	Algae

Net Catch Summary by Numbers for GN

Standard gill net sets

Number of Sets: 3
 First Set Date: 05/31/2011
 Last Lift Date: 06/03/2011
 Target Species: N/A

Abbr	Species	Total Fish	Number Per Set	Quartiles for Lake Class 43*		
				25%	50%	75%
BIB	Bigmouth Buffalo	5	1.67	0.75	2.58	6.96
BLB	Black Bullhead	188	62.67	30.34	75.58	150.62
BLC	Black Crappie	1	0.33	1.41	3.71	13.75
CCF	Channel Catfish	10	3.33	N/A	N/A	N/A
CAP	Common Carp	26	8.67	1.00	3.33	13.75
LMB	Largemouth Bass	1	0.33	0.20	0.50	1.50
NOP	Northern Pike	6	2.00	1.08	3.00	8.00
WAE	Walleye	22	7.33	2.28	6.83	18.06
WTS	White Sucker	14	4.67	0.81	2.33	6.50
YEB	Yellow Bullhead	2	0.67	0.50	1.50	3.50
YEP	Yellow Perch	18	6.00	2.65	8.00	25.00
Total Fish/Set:			97.67	* 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	11.45	3.82	2.29	N/A	N/A	N/A
BLB	Black Bullhead	72.36	24.12	0.38	0.17	0.26	0.39
BLC	Black Crappie	0.12	0.04	0.12	0.16	0.25	0.35
CCF	Channel Catfish	27.72	9.24	2.77	N/A	N/A	N/A
CAP	Common Carp	74.09	24.70	2.85	0.81	1.98	3.70
LMB	Largemouth Bass	1.32	0.44	1.32	0.60	1.18	1.37
NOP	Northern Pike	18.56	6.19	3.09	1.82	2.50	3.35
WAE	Walleye	40.55	13.52	1.84	1.01	1.53	2.30
WTS	White Sucker	21.88	7.29	1.56	0.93	1.58	2.02
YEB	Yellow Bullhead	1.38	0.46	0.69	0.31	0.53	0.73
YEP	Yellow Perch	4.82	1.61	0.27	0.13	0.21	0.31
Total Pounds Fish/Set:			91.41	* Quartiles for Mean Weight			

Net Catch Summary by Numbers for TN

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

Number of Sets: 10
 First Set Date: 05/31/2011
 Last Lift Date: 06/03/2011
 Target Species: N/A

Abbr	Species	Total Fish	Number Per Set	Quartiles for Lake Class 43*		
				25%	50%	75%
BIB	Bigmouth Buffalo	4	0.40	0.17	0.38	1.04
BLB	Black Bullhead	310	31.00	11.50	42.00	132.61
BLC	Black Crappie	26	2.60	1.17	4.88	20.50
CCF	Channel Catfish	1	0.10	N/A	N/A	N/A
CAP	Common Carp	92	9.20	1.00	2.44	5.51
NOP	Northern Pike	1	0.10	N/A	N/A	N/A
WAE	Walleye	5	0.50	0.50	1.33	2.95
WTS	White Sucker	1	0.10	0.34	0.88	2.58
YEB	Yellow Bullhead	6	0.60	0.50	1.13	2.50
Total Fish/Set:			44.60	* 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	20.90	2.09	5.23	2.56	3.75	5.83
BLB	Black Bullhead	170.26	17.03	0.55	0.18	0.28	0.40
BLC	Black Crappie	17.80	1.78	0.68	0.22	0.34	0.50
CCF	Channel Catfish	3.75	0.37	3.75	N/A	N/A	N/A
CAP	Common Carp	443.50	44.35	4.82	1.42	2.92	4.58
NOP	Northern Pike	5.95	0.60	5.95	N/A	N/A	N/A
WAE	Walleye	8.41	0.84	1.68	0.82	1.44	2.28
WTS	White Sucker	1.46	0.15	1.46	1.05	1.47	2.04
YEB	Yellow Bullhead	1.59	0.16	0.26	0.31	0.48	0.67
Total Pounds Fish/Set:			67.36	* Quartiles for Mean Weight			

Electrofishing Catch Summary for EFB

Electrofishing, Backpack

Total run-time for all stations: 01:11:00
Total on-time for all stations: 00:50:10
First Sampling Date: 07/28/2011
Last Sampling Date: 07/29/2011
Daylight Sampling: Yes
Target Species: N/A

Abbr	Species	Summary By Numbers			Summary By Weight (pounds)			
		Total Number	Number per Hour Run-Time	On-Time	Total Weight	Lbs per Hour Run-Time	On-Time	Mean Weight
JND	Johnny Darter	82	69.30	98.07	0.00	0.00	0.00	0.00
BLG	Bluegill	1	0.85	1.20	0.00	0.00	0.00	0.00
CAP	Common Carp	7	5.92	8.37	0.00	0.00	0.00	0.00
EMS	Emerald Shiner	7	5.92	8.37	0.00	0.00	0.00	0.00
FHM	Fathead Minnow	27	22.82	32.29	0.00	0.00	0.00	0.00
GSF	Green Sunfish	24	20.28	28.70	0.00	0.00	0.00	0.00
HSF	Hybrid Sunfish	2	1.69	2.39	0.00	0.00	0.00	0.00
LMB	Largemouth Bass	4	3.38	4.78	0.00	0.00	0.00	0.00
OSS	Orangespotted Sunfish	29	24.51	34.68	0.00	0.00	0.00	0.00
WAE	Walleye	2	1.69	2.39	0.00	0.00	0.00	0.00
YEB	Yellow Bullhead	1	0.85	1.20	0.00	0.00	0.00	0.00
YEP	Yellow Perch	79	66.76	94.49	0.00	0.00	0.00	0.00

Natural Reproduction Catch Summary for S58

Seining, 50 foot 1/8 in Beach Seine for IBI

Number of Hauls: 5
 First Haul Date: 07/28/2011
 Last Haul Date: 07/28/2011
 Target Species: N/A

Abbr	Species	Age	Total Number	Number Measured	Mean Length (inches)	Length Range (inches)	
						Minimum	Maximum
JND	Johnny Darter	All	27	0	N/A	N/A	N/A
BLB	Black Bullhead	All	1	0	N/A	N/A	N/A
BLC	Black Crappie	YOY	3	0	N/A	N/A	N/A
CCF	Channel Catfish	YOY	2	0	N/A	N/A	N/A
CAP	Common Carp	YOY	2	0	N/A	N/A	N/A
EMS	Emerald Shiner	All	11	0	N/A	N/A	N/A
FHM	Fathead Minnow	YOY	1	0	N/A	N/A	N/A
FHM	Fathead Minnow	≥ 1	120	0	N/A	N/A	N/A
OSS	Orangespotted Sunfish	YOY	5	0	N/A	N/A	N/A
OSS	Orangespotted Sunfish	≥ 1	57	0	N/A	N/A	N/A
WAE	Walleye	YOY	8	0	N/A	N/A	N/A
WAE	Walleye	≥ 1	4	0	N/A	N/A	N/A
WTS	White Sucker	YOY	1	0	N/A	N/A	N/A
YEP	Yellow Perch	YOY	440	0	N/A	N/A	N/A
YEP	Yellow Perch	≥ 1	60	0	N/A	N/A	N/A

Natural Reproduction Catch Summary for S18

Seining, 15 foot 1/8 in Beach Seine for IBI

Number of Hauls: 7
 First Haul Date: 07/28/2011
 Last Haul Date: 07/28/2011
 Target Species: N/A

Abbr	Species	Age	Total Number	Number Measured	Mean Length (inches)	Length Range (inches)	
						Minimum	Maximum
JND	Johnny Darter	All	6	0	N/A	N/A	N/A
BLC	Black Crappie	YOY	14	0	N/A	N/A	N/A
BLG	Bluegill	YOY	3	0	N/A	N/A	N/A
BLG	Bluegill	≥ 1	1	0	N/A	N/A	N/A
CAP	Common Carp	YOY	1	0	N/A	N/A	N/A
FHM	Fathead Minnow	All	8	0	N/A	N/A	N/A
OSS	Orangespotted Sunfish	All	3	0	N/A	N/A	N/A
YEP	Yellow Perch	YOY	10	0	N/A	N/A	N/A
YEP	Yellow Perch	≥ 1	14	0	N/A	N/A	N/A

Length Frequency Distribution For GN

Standard gill net sets

(Field work conducted between 05/31/2011 and 06/03/2011)

	<u>BIB</u>	<u>BLB</u>	<u>BLC</u>	<u>CAP</u>	<u>CCF</u>	<u>LMB</u>	<u>NOP</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	-	3	1	-	-	-	-	-	-	-	2
6.00 - 6.49	-	6	-	-	-	-	-	-	-	-	2
6.50 - 6.99	-	15	-	-	-	-	-	-	-	-	-
7.00 - 7.49	-	19	-	-	-	-	-	-	-	-	1
7.50 - 7.99	-	32	-	-	-	-	-	-	-	-	4
8.00 - 8.49	-	28	-	-	-	-	-	-	-	-	3
8.50 - 8.99	-	19	-	-	-	-	-	-	-	-	3
9.00 - 9.49	-	38	-	-	-	-	-	-	-	-	3
9.50 - 9.99	-	21	-	-	-	-	-	-	-	-	-
10.00 - 10.49	-	6	-	-	-	-	-	-	-	2	-
10.50 - 10.99	-	1	-	-	-	-	-	-	-	-	-
11.00 - 11.49	-	1	-	-	-	-	-	-	-	-	-
11.50 - 11.99	-	-	-	-	-	-	-	1	3	-	-
12.00 - 12.99	2	-	-	3	-	-	-	4	-	-	-
13.00 - 13.99	-	-	-	6	-	1	-	1	3	-	-
14.00 - 14.99	-	-	-	5	-	-	1	2	1	-	-
15.00 - 15.99	1	-	-	2	2	-	-	2	2	-	-
16.00 - 16.99	-	-	-	-	-	-	-	5	4	-	-
17.00 - 17.99	-	-	-	-	-	-	-	1	-	-	-
18.00 - 18.99	-	-	-	-	2	-	-	1	-	-	-
19.00 - 19.99	-	-	-	2	3	-	-	1	-	-	-
20.00 - 20.99	-	-	-	-	-	-	1	1	-	-	-
21.00 - 21.99	-	-	-	-	1	-	-	1	-	-	-
22.00 - 22.99	-	-	-	2	1	-	-	-	-	-	-
23.00 - 23.99	1	-	-	4	1	-	-	2	-	-	-
24.00 - 24.99	-	-	-	-	-	-	1	-	-	-	-
25.00 - 25.99	-	-	-	-	-	-	2	-	-	-	-
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	-	-	-	-	-	-	-	-	-	-	-
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>LMB</u>	<u>NOP</u>	<u>WAE</u>	<u>WTS</u>	<u>YEB</u>	<u>YEP</u>
Total	4	189	1	25	10	1	6	22	13	2	18
Min. Length	12.20	5.75	5.91	12.13	15.00	13.19	14.13	11.65	11.54	10.16	5.63
Max. Length	23.11	11.46	5.91	26.06	23.46	13.19	27.83	23.82	16.97	10.39	9.33
Mean Length	15.90	8.33	5.91	16.97	19.38	13.19	22.83	16.53	14.44	10.28	7.83
# Measured	4	160	1	25	10	1	6	22	13	2	18
No Lengths for	1	28	0	1	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 05/31/2011 and 06/03/2011)

	<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>YEB</u>
< 3.00	-	-	-	-	-	-	-	-	-
3.00 - 3.49	-	-	-	-	-	-	-	-	-
3.50 - 3.99	-	-	-	-	-	-	-	-	-
4.00 - 4.49	-	-	-	-	-	-	-	-	-
4.50 - 4.99	-	-	-	-	-	-	-	-	-
5.00 - 5.49	-	1	-	-	-	-	-	-	-
5.50 - 5.99	-	1	-	-	-	-	-	-	-
6.00 - 6.49	-	-	-	-	-	-	-	-	1
6.50 - 6.99	-	2	1	-	-	-	-	-	-
7.00 - 7.49	-	16	-	-	-	-	-	-	1
7.50 - 7.99	-	11	2	-	-	-	-	-	2
8.00 - 8.49	-	27	-	-	-	-	-	-	1
8.50 - 8.99	-	48	3	-	-	-	-	-	-
9.00 - 9.49	-	77	8	-	-	-	-	-	1
9.50 - 9.99	-	49	2	-	-	-	-	-	-
10.00 - 10.49	-	33	-	-	-	-	1	-	-
10.50 - 10.99	-	22	-	-	-	-	-	-	-
11.00 - 11.49	-	17	3	-	-	-	-	-	-
11.50 - 11.99	-	6	2	-	-	-	-	-	-
12.00 - 12.99	1	-	4	2	-	-	-	-	-
13.00 - 13.99	-	-	-	3	-	-	-	-	-
14.00 - 14.99	-	-	-	2	-	-	-	-	-
15.00 - 15.99	-	-	-	3	-	-	1	1	-
16.00 - 16.99	-	-	-	3	-	-	-	-	-
17.00 - 17.99	-	-	-	6	-	-	1	-	-
18.00 - 18.99	-	-	-	6	-	-	1	-	-
19.00 - 19.99	-	-	-	13	-	-	-	-	-
20.00 - 20.99	1	-	-	13	-	-	1	-	-
21.00 - 21.99	-	-	-	12	1	-	-	-	-
22.00 - 22.99	1	-	-	7	-	-	-	-	-
23.00 - 23.99	1	-	-	2	-	-	-	-	-
24.00 - 24.99	-	-	-	2	-	-	-	-	-
25.00 - 25.99	-	-	-	3	-	-	-	-	-
26.00 - 26.99	-	-	-	2	-	-	-	-	-
27.00 - 27.99	-	-	-	3	-	-	-	-	-
28.00 - 28.99	-	-	-	6	-	-	-	-	-
29.00 - 29.99	-	-	-	2	-	-	-	-	-
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>WAE</u>	<u>WTS</u>	<u>YEB</u>
Total	4	310	25	90	1	1	5	1	6
Min. Length	12.44	5.39	6.57	12.20	21.57	32.76	10.08	15.16	6.06
Max. Length	23.62	11.81	12.20	29.53	21.57	32.76	20.59	15.16	9.09
Mean Length	19.65	9.29	9.94	20.88	21.57	32.76	16.43	15.16	7.66
# Measured	4	145	25	90	1	1	5	1	6
No Lengths for	0	165	1	2	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.

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 08/17/2011), 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.

(This page is intentionally blank)

(This page is intentionally blank)

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: Population Assessment

DOW Number: 53-0020-00

Survey ID Date: 05/31/2011

Beach Seine (1/8 inch 15 foot), Beach Seine (1/8 inch 50 foot), Backpack Electrofishing

Survey Status: Active

The following 19 (of 31) report components are not included in this report:

1. Water Level History*
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 Observations
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. Other Species (added to revision 03/24/2009)
19. Water Quality (Winter Observations) (added to revision 01/21/2010)

* 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.

* 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 08/17/2011 may not be reflected in the Distribution tables until 08/18/2011.

The following survey component was flagged to be specifically excluded from this report: TN - 6