



# Minnesota Department of Natural Resources

## Fisheries Management



### STANDARD LAKE SURVEY REPORT

**DRAFT VERSION - PRELIMINARY DATA (AS OF 06/16/2015)**

Lake Name: Fox

Survey Type: Targeted Survey

DOW Number: 46-0109-00

Survey ID Date: 04/27/2015

#### Lake Identification

Alternate Lake Name: N/A  
Primary Lake Class ID: 24

DNR Sounding Map Number: D0266  
Alternate Lake Class ID: N/A

#### Lake Location

Primary County: Martin

Nearest Town: Sherburn

#### Legal Descriptions

Lake Center: Township - 103N Range - 32W Section - 32  
PLS Section Lake Center: 10303232

##### All Legal Descriptions:

Martin County: Township - 102N Range - 32W Sections - 4, 5, 6  
Township - 103N Range - 32W Sections - 31, 32, 33, 34

#### Area Office

Area Name: Windom  
Region Name: Southern

ORG Code: F418  
Region Number: 4

#### Lake Access

(Information based on Population Assessment dated 09/07/1993)

Station ID	Ownership	Public Use	Type	Location / Comments
AC - 1	DNR	Open to Public use	Concrete	State access on the NE end of lake. 103N 32W S34. State access on the NE end of lake. 103N; 32W; S34.
AC - 2	Private Property	Client Use Only	Concrete	Fox Lake Club access on east end of lake. 103N 32W S34. Fox Lake Club access on east end of lake. 103N; 32W; S34.

(Data excludes records where public use is not designated or is designated "No Public Use")

#### Lake Characteristics

Lake Area (planimetered acres): 1041.00  
GIS Lake Area (acres): 951.02  
DOW Lake Area (acres): 967.00  
Littoral Area (acres): 780.00  
Area in MN (acres): 951.02  
Maximum Depth (feet): 20.0  
Mean Depth (feet): N/A

GIS Shoreline Length (miles): 11.31  
Maximum Fetch (miles): 3.40  
Fetch Orientation (degrees): 90  
USGS Quad Map Number: X11b  
USGS Quad 24K GIS Index: 4621

**Watershed Characteristics****Major Watershed**

Name: Blue Earth River  
 Watershed Number: 30  
 Watershed size (acres): 777,240

**Minor Watershed**

Name: Fox L  
 Watershed Number: 77  
 Watershed size (acres): 4,023

**Surveys And Investigations**

**Re-Survey:** 09/07/2010, 09/11/2006, 09/11/2000, 09/04/1991, 09/23/1986, 09/16/1985.

**Population Assessment:** 09/02/2014, 09/03/2013, 09/04/2012, 09/06/2011, 09/08/2009, 09/02/2008, 09/10/2007, 09/12/2005, 09/07/2004, 09/08/2003, 09/09/2002, 09/10/2001, 08/30/1999, 08/31/1998, 09/02/1997, 09/03/1996, 09/05/1995, 09/06/1994, 09/07/1993, 09/01/1992, 09/13/1988, 09/08/1987, 10/05/1981.

**Special Assessment:** 04/29/2013, 03/20/2012, 04/25/2011, 07/28/2010, 05/20/2010, 04/21/2009, 05/01/2008, 05/10/2007, 04/16/2007, 09/25/2000, 09/08/1999, 10/21/1997.

**Dissolved Oxygen Check:** 02/24/2015, 01/03/2014, 01/08/2013, 12/28/2012, 02/16/2012, 02/24/2010.

**Targeted Survey:** 04/27/2015.

**Water Level History - Readings**

Station ID	Date	Level	Reading (feet)	Reading Type
BM - 1	09/03/2014	Normal	-2.10	Above or below Benchmark
	09/06/2013	Low	-2.80	Above or below Benchmark
	09/04/2012	Low	-2.70	Above or below Benchmark
	09/07/2011	Low	-2.60	Above or below Benchmark
	09/10/2010	Normal	-1.80	Above or below Benchmark
	09/05/2009	N/A	N/A	Above or below Benchmark
	09/05/2008	N/A	-2.20	Above or below Benchmark
	09/10/2007	Normal	-0.90	Above or below Benchmark
	09/12/2006	Normal	-2.10	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	-2.80	09/06/2013	-0.90	09/10/2007	1.90	-2.15	Above or below Benchmark (8)

**Net Catch Summary by Numbers for LTN**

**Large-frame (5 x 6 ft) trap nets**

Number of Set - Days: 87  
 First Set - Day Date: 04/27/2015  
 Last Set - Day Date: 05/08/2015  
 Target Species: All ages muskellunge

Abbr	Species	Total Fish	Number Per Set - Day	Quartiles for Lake Class 24*		
				25%	50%	75%
MUE	Muskellunge	37	0.43	N/A	N/A	N/A
Total Fish/Set - Day:			0.43	* Quartiles for Number Per Set - Day		

**Net Catch Summary by Weight for LTN**

**Large-frame (5 x 6 ft) trap nets**

Abbr	Species	Total Weight	Pounds	Mean	Quartiles for Lake Class 24*		
		(Pounds)	Per Set - Day	Weight	25%	50%	75%
MUE	Muskellunge	674.27	7.75	18.22	N/A	N/A	N/A
Total Pounds Fish/Set - Day:			7.75	* Quartiles for Mean Weight			

### Length Frequency Distribution For LTN (for fish < 36.00 inches)

#### Large-frame (5 x 6 ft) trap nets

(Field work conducted between 04/27/2015 and 05/08/2015)

	<u>MUE</u>
< 3.00	-
3.00 - 3.49	-
3.50 - 3.99	1
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	-
7.50 - 7.99	-
8.00 - 8.49	-
8.50 - 8.99	-
9.00 - 9.49	-
9.50 - 9.99	-
10.00 - 10.49	-
10.50 - 10.99	-
11.00 - 11.49	-
11.50 - 11.99	-
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	-
19.00 - 19.99	-
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	1
35.00 - 35.99	-
= > 36.00	35

	<u>MUE</u>
Total	37
Min. Length	3.94
Max. Length	49.65
Mean Length	40.48
# Measured	37
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

**Length Frequency Distribution For LTN (for fish  $\geq 36.00$  inches)**

**Large-frame (5 x 6 ft) trap nets**

(Field work conducted between 04/27/2015 and 05/08/2015)

	<u>MUE</u>
< 36.00	2
36.00 - 36.99	2
37.00 - 37.99	5
38.00 - 38.99	1
39.00 - 39.99	6
40.00 - 40.99	-
41.00 - 41.99	8
42.00 - 42.99	4
43.00 - 43.99	1
44.00 - 44.99	-
45.00 - 45.99	1
46.00 - 46.99	2
47.00 - 47.99	1
48.00 - 48.99	1
49.00 - 49.99	3
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>MUE</u>
Total	37
Min. Length	3.94
Max. Length	49.65
Mean Length	40.48
# Measured	37
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

**Survey Crew Notes**

## Muskellunge Sampling

recaps are measured for true total length and thus included in length frequency and catch rate.

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**Field Notes - General Field**

During this survey Muskellunge were either caught already having a PIT tag (found) or a PIT tag was applied to a Muskie without a tag. All Muskie that were caught with a PIT tag and applied a PIT tag in 2015 were considered "tagged" during the 2015 spring assessment for population abundance modeling purposes. Therefore, 36 of the 37 Muskie captured during the 2015 assessment were "tagged" for capture in 2015. One of the 37 Muskie was captured with a PIT tag in 2015 and then captured a second time in 2015, that fish was 1251mm and is thus included twice in the length frequency distribution and catch rate. One fish in the 2015 assessment that was captured with a PIT tag was not able to be measured as it jumped out of the tank in the boat in back into the water after the tag was read with the PIT tag reader. This fish was listed in the survey as "PIT tag found" and was recorded as 100mm. Therefore, this fish that was not measured will show up on the length frequency distribution as 100mm. Since lake temperatures exceeded 63 degrees F by the end of the netting, spring electrofishing as a recapture method will be post poned until the spring of 2016 with no LTN netting. Muskie captured in the spring of 2016 will be viewed as recapture fish if they were part of the fish considered "tagged in 2015" and viewed as "untagged" fish if they were not captured in 2015 LTN netting. This ratio will then be used to calculate a 2015 population abundance estimate.

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**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 06/16/2015), 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.

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## REPORT OVERVIEW - FOR OFFICE USE ONLY

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

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**Lake Name: Fox**

**Survey Type: Targeted Survey**

**DOW Number: 46-0109-00**

**Survey ID Date: 04/27/2015**

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**Survey Status:** Field Work Complete

The following 22 (of 31) report components are not included in this report:

1. Current Water Level
2. Benchmark And Gauge Descriptions / Locations
3. Water Level History<sup>1</sup>
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 Observations<sup>2</sup>
10. Resorts And Campgrounds
11. Fish Spawning Conditions
12. Erosion And Pollution
13. Fish Diseases And Parasites
14. Aquatic Vegetation And Shoalwater Substrates
15. Dissolved Oxygen And Temperature Profile Of Lake Water
16. Field Measurements Of Water Quality
17. Laboratory Analysis Of Water Chemistry
18. Length At Capture With Last Incremental Length\*
19. Back-Calculated Lengths
20. Age Class Frequency Distributions
21. Other Species (added to revision 03/24/2009)
22. Water Quality (Winter Observations) (added to revision 01/21/2010)

<sup>1</sup> 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.

<sup>2</sup> 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 before noon on 06/16/2015 may not be reflected in the Distribution tables until after 12:30 pm on 06/16/2015.**

The following 6 survey components were flagged to be specifically excluded from this report:

1. LTN - 3
2. LTN - 5
3. LTN - 6
4. LTN - 10
5. LTN - 11
6. LTN - 14