



Minnesota Department of Natural Resources

Fisheries Management

STANDARD LAKE SURVEY REPORT DRAFT VERSION - PRELIMINARY DATA



Lake Name: Mule
DOW Number: 11-0200-00

Survey Type: Population Assessment
Survey ID Date: 07/07/2008

Lake Identification

Alternate Lake Name: N/A
Primary Lake Class ID: 23

DNR Sounding Map Number: C0151
Alternate Lake Class ID: 23

Lake Location

Primary County: Cass

Nearest Town: Longville

Legal Descriptions

Lake Center: Township - 140N Range - 28W Section - 30
PLS Section Lake Center: 14002830

All Legal Descriptions:

Cass County: Township - 140N Range - 28W Sections - 19, 20, 29, 30, 31
Township - 140N Range - 29W Sections - 25, 36

Area Office

Area Name: Walker
Region Name: Northwest

ORG Code: F118
Region Number: 1

Lake Access

Station ID	Ownership	Public Use	Type	Location / Comments
AC - 1	DNR	Open to Public use	Asphalt	West side directly off State Hwy 84.

Lake Characteristics

Lake Area (planimetered acres): 456.00	GIS Shoreline Length (miles): 7.31
GIS Lake Area (acres): 524.57	Maximum Fetch (miles): 1.50
DOW Lake Area (acres): 501.00	Fetch Orientation (degrees): 45
Littoral Area (acres): 182.00	USGS Quad Map Number: K12a
Area in MN (acres): 524.57	USGS Quad 24K GIS Index: 2024
Maximum Depth (feet): 47.0	
Mean Depth (feet): N/A	

Watershed Characteristics

Major Watershed

Name: Leech Lake River
Watershed Number: 8
Watershed size (acres): 854,640

Minor Watershed

Name: Wabedo L
Watershed Number: 55
Watershed size (acres): 8,515

Surveys And Investigations

Initial Survey: 07/30/1951.
Re-Survey: 07/16/2001, 07/08/1991, 07/21/1969.

Surveys And Investigations (Continued)

Population Assessment: 07/07/2008, 07/12/2004, 07/16/1996, 07/07/1986, 07/24/1979.
Special Assessment: 07/10/2006, 06/01/2003, 05/23/2002, 10/16/2000, 09/22/1992.
Creel Survey: 05/15/2000.
Natural Reproduction Check: 09/25/2007.

Current Water Level

<u>Station ID</u>	<u>Date</u>	<u>Level</u>	<u>Reading (Feet)</u>
BM - 1	07/07/2008	Normal	-9.18
BM - 4	07/07/2008	Normal	-6.38

Benchmark and Gauge Descriptions / Locations

<u>Station ID</u>	<u>Location Description</u>
BM - 1	Spike in 24-inch red pine- 3ft from ground- 4ft from shore- 40ft West of old public access on north shore
BM - 4	Orange spike in 16-inch bur oak- 2ft form ground- 6ft from shore- 75ft south of public access on west shore

Water Level History

Normal Water Level: N/A
Average Annual Fluctuations: N/A
Source of Fluctuation Data: N/A
Highest Recorded Water Level: N/A
Source of Highest Level Data: N/A
Lowest Recorded Water Level: N/A
Source of Lowest Level Data: N/A

History of Water Level: Reading represents feet above or below benchmark or gauge

<u>Station ID</u>	<u>Date</u>	<u>Level</u>	<u>Reading (Feet)</u>
BM - 1	07/07/2008	Normal	-9.18
BM - 4	07/07/2008	Normal	-6.38

Dissolved Oxygen And Temperature Profile Of Lake Water

<u>Station ID</u>	<u>Sampling Date</u>	<u>Bottom Depth (Feet)</u>	<u>Sample Depth (Feet)</u>	<u>Water Temperature (°F)</u>	<u>Dissolved Oxygen (ppm)</u>
WQ - 1	07/02/2008	49.0	Surface	72.0	9.0
			3.0	72.0	9.0
			6.0	72.0	9.0
			9.0	72.0	9.0
			12.0	72.0	8.9
			15.0	72.0	9.0
			18.0	71.8	8.9
			19.0	67.5	8.1
			20.0	66.2	8.2
			21.0	65.8	8.3
			22.0	63.1	7.7
			23.0	63.0	7.7
			24.0	61.2	6.1
			25.0	61.0	5.9

Dissolved Oxygen And Temperature Profile Of Lake Water (Continued)

<u>Station ID</u>	<u>Sampling Date</u>	<u>Bottom Depth (Feet)</u>	<u>Sample Depth (Feet)</u>	<u>Water Temperature (°F)</u>	<u>Dissolved Oxygen (ppm)</u>
WQ - 1	07/02/2008	49.0	26.0	60.4	4.6
(Continued)			27.0	59.9	4.3
			28.0	59.5	3.6
			29.0	59.4	3.5
			30.0	59.0	3.4
			31.0	58.1	1.4
			32.0	58.1	1.2
			33.0	57.9	1.0
			36.0	56.3	0.5
			39.0	56.3	0.5
			42.0	56.3	0.5
			45.0	56.1	0.5
			48.0	56.1	0.5

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	07/02/2008	Surface	15.5	N/A	N/A	Green	Algae

Net Catch Summary by Numbers for GN**Standard gill net sets**

Number of Sets: 9
First Set Date: 07/07/2008
Last Lift Date: 07/10/2008
Target Species: N/A

Abbr	Species	Total Fish	Number Per Set	Quartiles for Lake Class 23*		
				25%	50%	75%
BLC	Black Crappie	12	1.33	0.33	0.78	1.67
BLG	Bluegill	157	17.44	N/A	N/A	N/A
BRB	Brown Bullhead	43	4.78	0.25	0.67	1.83
LMB	Largemouth Bass	20	2.22	0.50	0.79	1.67
NOP	Northern Pike	155	17.22	2.19	5.00	8.70
PMK	Pumpkinseed	26	2.89	N/A	N/A	N/A
RKB	Rock Bass	87	9.67	0.67	2.00	4.45
SMB	Smallmouth Bass	12	1.33	0.22	0.63	1.60
TLC	Tullibee (Cisco)	33	3.67	1.25	3.79	10.43
WAE	Walleye	20	2.22	1.00	2.37	5.00
WTS	White Sucker	20	2.22	0.48	1.00	2.00
YEP	Yellow Perch	11	1.22	1.48	4.55	13.81
Total Fish/Set:			66.22	* 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 23*		
					25%	50%	75%
BLC	Black Crappie	4.28	0.48	0.36	0.20	0.30	0.50
BLG	Bluegill	23.46	2.61	0.15	N/A	N/A	N/A
BRB	Brown Bullhead	51.76	5.75	1.20	0.50	0.76	1.15
LMB	Largemouth Bass	13.19	1.47	0.66	0.55	0.78	1.15
NOP	Northern Pike	269.49	29.94	1.74	1.55	2.21	3.21
PMK	Pumpkinseed	2.19	0.24	0.08	N/A	N/A	N/A
RKB	Rock Bass	42.72	4.75	0.49	0.23	0.30	0.44
SMB	Smallmouth Bass	24.21	2.69	2.02	0.76	1.50	1.80
TLC	Tullibee (Cisco)	89.85	9.98	2.72	0.34	0.55	1.00
WAE	Walleye	40.85	4.54	2.04	1.23	1.81	2.95
WTS	White Sucker	65.87	7.32	3.29	1.60	2.01	2.60
YEP	Yellow Perch	1.56	0.17	0.14	0.10	0.13	0.20
Total Pounds Fish/Set:			69.94	* Quartiles for Mean Weight			

Net Catch Summary by Numbers for TN

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

Number of Sets: 9
 First Set Date: 07/07/2008
 Last Lift Date: 07/10/2008
 Target Species: N/A

Abbr	Species	Total Fish	Number Per Set	Quartiles for Lake Class 23*		
				25%	50%	75%
BLG	Bluegill	195	21.67	7.74	19.83	43.38
BRB	Brown Bullhead	3	0.33	0.25	0.50	1.00
LMB	Largemouth Bass	4	0.44	0.39	0.83	1.53
NOP	Northern Pike	10	1.11	N/A	N/A	N/A
PMK	Pumpkinseed	21	2.33	1.41	2.71	5.94
RKB	Rock Bass	16	1.78	0.80	1.67	3.69
YEP	Yellow Perch	1	0.11	0.40	0.83	2.25
Total Fish/Set:			27.78	* 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 23*		
					25%	50%	75%
BLG	Bluegill	40.79	4.53	0.21	0.11	0.15	0.21
BRB	Brown Bullhead	2.75	0.31	0.92	0.65	0.85	1.00
LMB	Largemouth Bass	4.72	0.52	1.18	0.22	0.40	0.71
NOP	Northern Pike	17.02	1.89	1.70	N/A	N/A	N/A
PMK	Pumpkinseed	1.75	0.19	0.08	0.12	0.18	0.23
RKB	Rock Bass	7.00	0.78	0.44	0.19	0.27	0.40
YEP	Yellow Perch	0.34	0.04	0.34	0.11	0.16	0.23
Total Pounds Fish/Set:			8.26	* Quartiles for Mean Weight			

Electrofishing Catch Summary for EF

Standard electrofishing

Total run-time for all stations: 01:47:00
 Total on-time for all stations: 01:19:17
 First Sampling Date: 06/09/2008
 Last Sampling Date: 06/10/2008
 Daylight Flag: No
 Target Species: All ages largemouth bass, 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	
LMB	Largemouth Bass	105	58.88	79.46	107.91	60.51	81.67	1.03
SMB	Smallmouth Bass	22	12.34	16.65	42.06	23.59	31.83	1.91

STANDARD LAKE SURVEY REPORT
POPULATION ASSESSMENT DATED 07/07/2008 FOR DOW NUMBER 11-0200-00

DRAFT

Length Frequency Distribution For GN

Standard gill net sets

(Field work conducted between 07/07/2008 and 07/10/2008)

	<u>BLC</u>	<u>BLG</u>	<u>BRB</u>	<u>LMB</u>	<u>NOP</u>	<u>PMK</u>	<u>RKB</u>	<u>SMB</u>	<u>TLC</u>	<u>WAE</u>	<u>WTS</u>	<u>YEP</u>
< 3.00	-	-	-	-	-	-	-	-	-	-	-	-
3.00 - 3.49	-	1	-	-	-	-	-	-	-	-	-	-
3.50 - 3.99	-	26	-	-	-	12	2	-	-	-	-	-
4.00 - 4.49	-	5	-	-	-	2	-	-	-	-	-	-
4.50 - 4.99	2	11	-	-	-	4	-	-	-	-	-	-
5.00 - 5.49	3	23	-	-	-	2	1	-	-	-	-	-
5.50 - 5.99	2	30	-	-	-	3	1	-	-	-	-	-
6.00 - 6.49	-	13	-	1	-	1	-	-	-	-	-	2
6.50 - 6.99	-	29	-	1	-	2	2	-	-	-	-	4
7.00 - 7.49	-	14	-	-	-	-	7	-	-	1	-	2
7.50 - 7.99	-	3	-	2	-	-	13	-	-	-	-	2
8.00 - 8.49	1	1	-	1	-	-	13	-	-	-	-	-
8.50 - 8.99	-	-	-	2	-	-	19	-	-	-	-	-
9.00 - 9.49	-	1	-	1	-	-	15	-	-	-	-	1
9.50 - 9.99	-	-	-	1	1	-	5	-	-	-	-	-
10.00 - 10.49	-	-	3	5	-	-	5	-	-	-	-	-
10.50 - 10.99	-	-	1	1	-	-	3	1	-	1	-	-
11.00 - 11.49	3	-	1	-	-	-	1	-	-	-	-	-
11.50 - 11.99	1	-	2	-	-	-	-	1	-	2	-	-
12.00 - 12.99	-	-	17	2	-	-	-	-	-	1	-	-
13.00 - 13.99	-	-	11	1	3	-	-	-	-	-	-	-
14.00 - 14.99	-	-	8	1	9	-	-	2	-	1	-	-
15.00 - 15.99	-	-	-	1	6	-	-	2	-	2	-	-
16.00 - 16.99	-	-	-	-	9	-	-	3	-	1	-	-
17.00 - 17.99	-	-	-	-	22	-	-	2	18	1	-	-
18.00 - 18.99	-	-	-	-	23	-	-	1	14	1	8	-
19.00 - 19.99	-	-	-	-	12	-	-	-	1	2	7	-
20.00 - 20.99	-	-	-	-	17	-	-	-	-	1	5	-
21.00 - 21.99	-	-	-	-	11	-	-	-	-	2	-	-
22.00 - 22.99	-	-	-	-	8	-	-	-	-	-	-	-
23.00 - 23.99	-	-	-	-	7	-	-	-	-	2	-	-
24.00 - 24.99	-	-	-	-	11	-	-	-	-	2	-	-
25.00 - 25.99	-	-	-	-	5	-	-	-	-	-	-	-
26.00 - 26.99	-	-	-	-	2	-	-	-	-	-	-	-
27.00 - 27.99	-	-	-	-	4	-	-	-	-	-	-	-
28.00 - 28.99	-	-	-	-	2	-	-	-	-	-	-	-
29.00 - 29.99	-	-	-	-	-	-	-	-	-	-	-	-
30.00 - 30.99	-	-	-	-	1	-	-	-	-	-	-	-
31.00 - 31.99	-	-	-	-	1	-	-	-	-	-	-	-
32.00 - 32.99	-	-	-	-	1	-	-	-	-	-	-	-
33.00 - 33.99	-	-	-	-	-	-	-	-	-	-	-	-
34.00 - 34.99	-	-	-	-	-	-	-	-	-	-	-	-
35.00 - 35.99	-	-	-	-	-	-	-	-	-	-	-	-
= > 36.00	-	-	-	-	-	-	-	-	-	-	-	-
Total	12	157	43	20	155	26	87	12	33	20	20	11
Min. Length	4.57	3.46	10.04	6.42	9.53	3.50	3.94	10.94	17.32	7.48	18.07	6.30
Max. Length	11.54	9.17	14.88	15.00	32.20	6.69	11.22	18.31	19.17	24.25	20.83	9.06
Mean Length	7.49	5.65	12.89	10.23	20.06	4.56	8.49	15.56	18.07	17.47	19.31	7.12
# Measured	12	157	43	20	155	26	87	12	33	20	20	11
No Lengths for	0	0	0	0	0	0	0	0	0	0	0	0

Length Frequency Distribution For TN

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

(Field work conducted between 07/07/2008 and 07/10/2008)

	<u>BLG</u>	<u>BRB</u>	<u>LMB</u>	<u>NOP</u>	<u>PMK</u>	<u>RKB</u>	<u>YEP</u>
< 3.00	2	-	-	-	-	-	-
3.00 - 3.49	7	-	-	-	5	-	-
3.50 - 3.99	7	-	-	-	7	-	-
4.00 - 4.49	6	-	-	-	6	-	-
4.50 - 4.99	8	-	-	-	-	-	-
5.00 - 5.49	15	-	-	-	-	1	-
5.50 - 5.99	23	-	1	-	-	1	-
6.00 - 6.49	26	-	-	-	-	-	-
6.50 - 6.99	41	-	-	-	2	-	-
7.00 - 7.49	35	-	-	-	1	4	-
7.50 - 7.99	14	-	1	-	-	1	-
8.00 - 8.49	9	-	-	-	-	3	-
8.50 - 8.99	2	-	-	-	-	2	1
9.00 - 9.49	-	-	-	-	-	1	-
9.50 - 9.99	-	-	-	-	-	2	-
10.00 - 10.49	-	1	-	-	-	1	-
10.50 - 10.99	-	-	-	-	-	-	-
11.00 - 11.49	-	1	-	-	-	-	-
11.50 - 11.99	-	-	1	1	-	-	-
12.00 - 12.99	-	-	-	-	-	-	-
13.00 - 13.99	-	-	-	1	-	-	-
14.00 - 14.99	-	1	-	1	-	-	-
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	-	-	-
21.00 - 21.99	-	-	-	-	-	-	-
22.00 - 22.99	-	-	-	1	-	-	-
23.00 - 23.99	-	-	-	1	-	-	-
24.00 - 24.99	-	-	-	1	-	-	-
25.00 - 25.99	-	-	-	1	-	-	-
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>BLG</u>	<u>BRB</u>	<u>LMB</u>	<u>NOP</u>	<u>PMK</u>	<u>RKB</u>	<u>YEP</u>
Total	195	3	4	10	21	16	1
Min. Length	2.87	10.08	5.87	11.69	3.15	5.16	8.98
Max. Length	8.62	14.25	18.58	25.04	7.48	10.20	8.98
Mean Length	6.28	11.85	10.95	19.17	4.30	8.03	8.98
# Measured	195	3	4	10	21	16	1
No Lengths for	0	0	0	0	0	0	0

Length Frequency Distribution For EF

Standard electrofishing

(Field work conducted between 06/09/2008 and 06/10/2008)

	<u>LMB</u>	<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	2	-
6.00 - 6.49	3	-
6.50 - 6.99	2	-
7.00 - 7.49	6	-
7.50 - 7.99	7	-
8.00 - 8.49	6	-
8.50 - 8.99	5	-
9.00 - 9.49	3	-
9.50 - 9.99	3	-
10.00 - 10.49	5	1
10.50 - 10.99	4	-
11.00 - 11.49	4	-
11.50 - 11.99	8	1
12.00 - 12.99	8	2
13.00 - 13.99	14	3
14.00 - 14.99	12	6
15.00 - 15.99	3	3
16.00 - 16.99	5	2
17.00 - 17.99	3	2
18.00 - 18.99	2	1
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>LMB</u>	<u>SMB</u>
Total	105	22
Min. Length	5.91	10.04
Max. Length	18.50	19.76
Mean Length	11.50	14.92
# Measured	105	22
No Lengths for	0	0

Approval Dates And Notices

Date Approved By Walker Area Fisheries Supervisor: _____

Date Approved By Northwest Region Fisheries Manager: _____

This Draft version of the Standard Lake Survey Report contains preliminary data, 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.

SUBREPORTS WITH NO DATA

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

Lake Name: Mule

Survey Type: Population Assessment

DOW Number: 11-0200-00

Survey ID Date: 07/07/2008

Survey Status: Field Work Complete

The following 16 report components are not included in this report:

1. Lake Inlets
2. Additional Inlet Information
3. Lake Outlets
4. Additional Outlet Information
5. Water Control Structure (Dam)
6. Surrounding Watershed Characteristics And Shoreline Characteristics
7. Resorts And Campgrounds
8. Fish Spawning Conditions
9. Erosion And Pollution
10. Fish Diseases And Parasites
11. Aquatic Vegetation And Shoalwater Substrates
12. Laboratory Analysis Of Water Chemistry
13. Length At Capture With Last Incremental Length*
14. Back-Calculated Lengths
15. Age Class Frequency Distributions
16. Status Of Fishery And Field Notes

* In reference to the 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 on 07/14/2008 may not be reflected in the Distribution tables until 07/15/2008.