



Minnesota Department of Natural Resources
 Fisheries Management
 STANDARD LAKE SURVEY REPORT



Lake Name: Minnetonka
 DOW Number: 27-0133-00

Survey Type: Special Assessment
 Survey ID Date: 05/24/2011

SPECIAL ASSESSMENT
Electrofishing targeting Largemouth Bass All Ages

Lake Identification

Alternate Lake Name: N/A
 Primary Lake Class ID: 22

DNR Sounding Map Number: B0122
 Alternate Lake Class ID: N/A

Lake Location

Primary County: Hennepin

Nearest Town: Mound

All Counties: Carver, Hennepin.

Legal Descriptions

Lake Center: Township - 117N Range - 23W Section - 23
 PLS Section Lake Center: 11702323

All Legal Descriptions:

Carver County: Township - 116N Range - 23W Section - 6
 Township - 116N Range - 24W Section - 1
 Hennepin County: Township - 117N Range - 22W Sections - 5, 6, 7, 8, 17, 18
 Township - 117N Range - 23W (Thirty-Three various sections)
 Township - 117N Range - 24W (Twelve various sections)

Area Office

Area Name: Metro West
 Region Name: Central

ORG Code: F314
 Region Number: 3

Lake Access

(Information based on Population Assessment dated 06/14/2010)

Station ID	Ownership	Public Use	Type	Location / Comments
AC - 1	County	Open to Public use	Concrete	Spring Park Bay Access.
AC - 2	N/A	Open to Public use	Concrete	Three Rivers Park District-Lake Minnetonka Regional Park.
AC - 3	City	Open to Public use	Concrete	Cook's Bay Access.
AC - 4	DNR	Open to Public use	Concrete	Gray's Bay Access.
AC - 5	DNR	Open to Public use	Concrete	North Arm Access.
AC - 6	DNR	Open to Public use	Concrete	Maxwell Bay Access.
AC - 7	City	Fee/Permit needed	Concrete	Carson's Bay Access.

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Lake Characteristics

Lake Area (planimetered acres):	14004.00	GIS Shoreline Length (miles):	139.86
GIS Lake Area (acres):	14729.56	Maximum Fetch (miles):	N/A
DOW Lake Area (acres):	14310.00	Fetch Orientation (degrees):	N/A
Littoral Area (acres):	5849.00	USGS Quad Map Number:	S15a
Area in MN (acres):	14729.56	USGS Quad 24K GIS Index:	3630
Maximum Depth (feet):	113.0		
Mean Depth (feet):	30.0		

Watershed Characteristics

Major Watershed

Name: Mississippi River-TC
Watershed Number: 20
Watershed size (acres): 644,320

Minor Watershed

Name: From L Minnetonka
Watershed Number: 55
Watershed size (acres): 17,890

Surveys And Investigations

Initial Survey: 06/01/1949.

Re-Survey: 06/03/2011, 06/09/1997, 06/15/1987, 06/13/1977.

Population Assessment: 06/13/2011, 06/14/2010, 06/08/2009, 06/11/2007, 06/15/1992, 06/15/1982, 06/26/1970.

Special Assessment: 05/24/2011, 06/09/2008, 05/15/2008, 06/05/2006, 09/19/2003, 09/12/2001, 06/12/2000, 06/14/1999, 06/09/1998, 04/05/1995, 04/13/1992, 04/02/1990, 04/01/1987.

Natural Reproduction Check: 10/24/2007.

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Electrofishing Catch Summary for EF

Standard electrofishing

Total run-time for all stations: 05:22:00
Total on-time for all stations: 05:05:07
First Sampling Date: 05/24/2011
Last Sampling Date: 05/27/2011
Daylight Sampling: No
Target Species: All ages largemouth 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	385	71.74	75.71	400.96	74.71	78.85	1.04

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Length Frequency Distribution For EF

Standard electrofishing

(Field work conducted between 05/24/2011 and 05/27/2011)

	<u>LMB</u>
< 3.00	-
3.00 - 3.49	-
3.50 - 3.99	-
4.00 - 4.49	-
4.50 - 4.99	-
5.00 - 5.49	2
5.50 - 5.99	3
6.00 - 6.49	5
6.50 - 6.99	16
7.00 - 7.49	14
7.50 - 7.99	19
8.00 - 8.49	17
8.50 - 8.99	24
9.00 - 9.49	13
9.50 - 9.99	18
10.00 - 10.49	15
10.50 - 10.99	26
11.00 - 11.49	9
11.50 - 11.99	11
12.00 - 12.99	45
13.00 - 13.99	30
14.00 - 14.99	50
15.00 - 15.99	30
16.00 - 16.99	17
17.00 - 17.99	14
18.00 - 18.99	5
19.00 - 19.99	1
20.00 - 20.99	1
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>
Total	385
Min. Length	5.08
Max. Length	20.91
Mean Length	11.79
# Measured	385
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

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Length At Capture With Last Incremental Length

(Body-Scale constant, all lengths, and all length increments in inches)

Species: Largemouth Bass

Body-Scale Constant: 0.79

Total Sample Size: 212

Length at Capture in 2011 for Each Age Class, with Incremental Lengths for 2011

Year Class	Age	Sample Size	Length At Capture			Standard Error	Length Increments	
			Average Length	Maximum Length	Minimum Length		Increment	Standard Error
2009	2	19	6.55	7.64	5.08	0.153	1.35	0.098
2008	3	54	8.25	10.91	5.24	0.163	0.96	0.059
2007	4	49	9.89	13.98	7.80	0.177	0.72	0.039
2006	5	17	11.14	14.65	9.57	0.284	0.59	0.037
2005	6	20	12.87	14.92	11.10	0.230	0.51	0.034
2004	7	14	14.43	15.91	11.61	0.318	0.46	0.039
2003	8	10	14.72	16.22	13.03	0.339	0.48	0.025
2002	9	15	16.70	20.91	14.17	0.378	0.46	0.030
2001	10	8	17.71	18.82	16.34	0.321	0.37	0.033
2000	11	5	17.88	18.98	16.97	0.449	0.43	0.047
1999	12	1	19.69	19.69	19.69	N/A	0.31	N/A

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Back-Calculated Lengths for Each Age Class and Average Annual Increments of Back-Calculated Lengths

Species: Largemouth Bass

Gear Type: Combined Gear Types (EF)

Class	Age	N	1	2	3	4	5	6	7	8	9	10	11	12
2009	2	19	2.74	5.20	-	-	-	-	-	-	-	-	-	-
			2.74	2.45	-	-	-	-	-	-	-	-	-	-
2008	3	54	2.69	5.06	7.29	-	-	-	-	-	-	-	-	-
			2.69	2.38	2.23	-	-	-	-	-	-	-	-	-
2007	4	49	2.61	5.26	7.44	9.17	-	-	-	-	-	-	-	-
			2.61	2.65	2.18	1.73	-	-	-	-	-	-	-	-
2006	5	17	2.52	4.78	6.82	8.87	10.56	-	-	-	-	-	-	-
			2.52	2.25	2.04	2.04	1.69	-	-	-	-	-	-	-
2005	6	20	2.86	5.27	7.74	9.85	11.30	12.36	-	-	-	-	-	-
			2.86	2.40	2.47	2.12	1.45	1.06	-	-	-	-	-	-
2004	7	14	2.92	5.14	7.81	10.04	11.83	13.11	13.97	-	-	-	-	-
			2.92	2.22	2.67	2.23	1.79	1.28	0.86	-	-	-	-	-
2003	8	10	2.52	4.74	6.91	8.99	10.78	12.31	13.41	14.25	-	-	-	-
			2.52	2.22	2.17	2.08	1.79	1.53	1.10	0.84	-	-	-	-
2002	9	15	2.72	5.07	7.47	9.76	11.58	13.14	14.47	15.48	16.24	-	-	-
			2.72	2.34	2.40	2.29	1.82	1.56	1.33	1.01	0.76	-	-	-
2001	10	8	2.69	5.13	7.66	9.98	12.13	13.52	14.77	15.80	16.66	17.34	-	-
			2.69	2.44	2.53	2.32	2.15	1.40	1.25	1.03	0.86	0.68	-	-
2000	11	5	3.10	5.32	7.13	9.16	11.19	12.97	14.15	15.18	16.04	16.85	17.45	-
			3.10	2.22	1.81	2.03	2.03	1.78	1.18	1.03	0.86	0.81	0.60	-
1999	12	1	2.79	6.83	9.75	12.13	13.93	15.05	16.28	17.11	17.85	18.57	19.09	19.37
			2.79	4.04	2.92	2.38	1.80	1.12	1.23	0.83	0.74	0.72	0.52	0.28
Mean Length			2.70	5.12	7.39	9.44	11.33	12.86	14.19	15.23	16.38	17.25	17.73	19.37
Mean Increment			2.70	2.43	2.27	2.01	1.75	1.36	1.13	0.97	0.80	0.73	0.59	0.28
Total N			212	212	193	139	90	73	53	39	29	14	6	1

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Age Class Frequency Distribution

Species and Gear (1)	Number of Fish (2)			Number of Fish in Year Class ('yy) and Age Class															
	Aged	Keyed	Unaged	'11 0	'10 1	'09 2	'08 3	'07 4	'06 5	'05 6	'04 7	'03 8	'02 9	'01 10	'00 11	'99 12	'98 13	'97 14	<'97 15+
Largemouth Bass																			
EF	212	174	0	0	0	22	75	75	29	62	46	31	28	11	6	1	0	0	0

(1) Key to sampling gear abbreviations:

EF = Standard electrofishing

(2) Notes:

Number of Fish Aged: Fish that were aged from bony parts.

Number of Fish Keyed: Fish assigned an age with an age-length key or by expansion of mesh or station age distributions.

Number of Fish Unaged: Fish that were not aged and were not assigned an age.

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Survey Crew Notes

unable to determine gender of LMB-still pre-spawn

Area Signed by user 'daelliso' on 04/30/2012

Region Signed by user 'damccorm' on 05/09/2012

Field Notes - General Field

Crew leader: BJ Bauer

Crew members: Rob Dodd, volunteer Ben

Report prepared by: BJ Bauer

Discussion

The largemouth bass population in Lake Minnetonka has a reputation for quality fishing. A nighttime boat electrofishing assessment was performed during May 2011 targeting largemouth bass. A total of 385 largemouth bass were sampled in 11 electrofishing transects, equating to 75.4 bass per hour of on time. Catch rates were similar to the 2009 assessment when 73.2 bass per hour were sampled. These catch rates are above average for area lakes. The size structure of the largemouth bass population in Lake Minnetonka is well balanced (PSD=59) and the fish are in good physical condition ($W_r = 95$, Table 1). The larger fish were in the best condition (Table 1). Largemouth bass averaged 11.8 inches and 1.04 lbs, which is lower than in the 2009 electrofishing assessment when fish averaged 13.5 inches and 1.5 lbs. The largest bass sampled was 20.9 inches long and 4.9 lbs. Fish from the 1999 through 2009 year classes were present, indicating consistent reproduction and recruitment. Age-3 bass from the 2008 year class were most abundant (25%), followed by the 2007 (23%) and 2005 (9.4%) year classes. Growth was slower than average compared with other West Metro Area lakes. Largemouth bass reached 14 inches by age 7 and 18 inches by age 11. No smallmouth bass were sampled during the spring electrofishing assessment.

Numerous bass tournaments are held on the lake every year. Bass tournament are held by permit only and fish data must be turned into the DNR. In 2011, 11 bass tournaments were held. A total of 1,136 tournament anglers caught 3,854 largemouth bass and 38 smallmouth bass. Average size was 2.5 lbs and the largest recorded was 6.9 lbs. Since bass anglers target the largest individuals in a population, it is common for angling results to yield larger size fish, on average, than electrofishing. Additionally, individual tournaments may enact their own minimum size limit, thus only measuring larger-sized fish. The electrofishing assessment targeted all sizes of bass.

Table 1. Size structure and Condition Metrics
For Largemouth Bass sampled in Spring, 2011

Size Distribution	Relative Weight	PSD	58
S-Q	92		
RSD-P	21	Q-P	94
RSD-M	0.3	P-M	99
Average	95		

*Stock (S), Quality (Q), Preferred (P), and Memorable (M)
Lengths (in.) are, respectively: 8, 12, 15, and 20.

Status Of The Fishery

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Approval Dates And Notices

Date Approved By Metro West Area Fisheries Supervisor: 04/30/2012

Date Approved By Central Region Fisheries Manager: 05/09/2012



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Standard Lake Survey Report revision: 04/05/2011-RJE. Data Date: 06/08/2012 at 11:14 am .

REPORT OVERVIEW - FOR OFFICE USE ONLY

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

Lake Name: Minnetonka

Survey Type: Special Assessment

DOW Number: 27-0133-00

Survey ID Date: 05/24/2011

Electrofishing targeting Largemouth Bass All Ages

Survey Status: Region Signed

The following 21 (of 31) report components are not included in this report:

1. Current Water Level
2. Benchmark And Gauge Descriptions / Locations
3. Water Level History*
4. Water Level History - Readings*
5. Water Level History - Station Summary*
6. Lake Inlets
7. Additional Inlet Information
8. Lake Outlets
9. Additional Outlet Information
10. Water Control Structure (Dam)
11. Surrounding Watershed Characteristics, Shoreline Characteristics, and Riparian Landscape Observations
12. Resorts And Campgrounds
13. Fish Spawning Conditions
14. Erosion And Pollution
15. Fish Diseases And Parasites
16. Aquatic Vegetation And Shoalwater Substrates
17. Dissolved Oxygen And Temperature Profile Of Lake Water
18. Field Measurements Of Water Quality
19. Laboratory Analysis Of Water Chemistry
20. Other Species (added to revision 03/24/2009)
21. 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.

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 06/08/2012 may not be reflected in the Distribution tables until after 12:30 pm on 06/08/2012.