



Minnesota Department of Natural Resources
 Fisheries Management
 STANDARD LAKE SURVEY REPORT



Lake Name: Whitewater

Survey Type: Population Assessment

DOW Number: 69-0376-00

Survey ID Date: 08/14/2012

Lake Identification

Alternate Lake Name: N/A
 Primary Lake Class ID: 7

DNR Sounding Map Number: B0376
 Alternate Lake Class ID: N/A

Lake Location

Primary County: St. Louis

Nearest Town: Hoyt Lakes

Legal Descriptions

Lake Center: Township - 58N Range - 14W Section - 18
 PLS Section Lake Center: 5801418

All Legal Descriptions:

St. Louis County: Township - 58N Range - 14W Sections - 7, 17, 18, 19, 20
 Township - 58N Range - 15W Sections - 13, 24

Area Office

Area Name: Tower
 Region Name: Northeast

ORG Code: F214
 Region Number: 2

Lake Access

(Information based on Population Assessment dated 08/13/2007)

Station ID	Ownership	Public Use	Type	Location / Comments
AC - 1	City	Open to Public use	Concrete	Three ramps, two fishing piers, picnic area, fish cleaning house & rest rooms available at this facility. Fee charged for camping.

Lake Characteristics

Lake Area (planimetered acres): 1210.00	GIS Shoreline Length (miles): 18.12
GIS Lake Area (acres): 1212.25	Maximum Fetch (miles): 2.00
DOW Lake Area (acres): 599.00	Fetch Orientation (degrees): 22
Littoral Area (acres): 564.00	USGS Quad Map Number: H21c
Area in MN (acres): 1212.25	USGS Quad 24K GIS Index: 1541
Maximum Depth (feet): 73.0	
Mean Depth (feet): N/A	

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Watershed Characteristics

Major Watershed

Name: St. Louis River
 Watershed Number: 3
 Watershed size (acres): 1,831,462

Minor Watershed

Name: Partridge R
 Watershed Number: 149
 Watershed size (acres): 12,151

Surveys And Investigations

Initial Survey: 09/05/1950.

Re-Survey: 06/03/2002, 08/05/1985, 08/20/1968.

Population Assessment: 08/14/2012, 08/13/2007, 06/23/1997, 08/20/1992, 08/08/1988, 08/21/1986, 08/11/1981,
 08/09/1977, 08/06/1968, 07/18/1968, 09/22/1967.

External Management Survey: 07/18/2007.

Fish Diseases And Parasites

Species Examined	Number of Fish Examined			Examination Results	
	Internally	Externally	In Lab	Condition Observed	Number of Fish
black crappie	-	18	-	None observed	18
bluegill	-	60	-	None observed Neascus (Black Spot)	4 56
largemouth bass	4	4	-	None observed Neascus (Black Spot)	7 1
northern pike	52	2	-	None observed Gill parasites Neascus (Black Spot)	32 1 22
walleye	74	-	-	None observed Neascus (Black Spot)	72 2

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	08/14/2012	70.0	Surface	73.0	8.9
			3.0	72.3	8.9
			6.0	72.3	8.8
			9.0	72.1	8.8
			12.0	72.1	8.7
			15.0	72.1	8.6
			18.0	72.0	8.5
			21.0	71.6	7.3
			22.0	70.7	6.1
			23.0	68.7	3.4
			24.0	65.8	0.7
			30.0	60.3	0.5
			40.0	54.1	1.2
			50.0	49.3	2.2
			60.0	46.6	0.3

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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	08/14/2012	Surface	13.0	7.80	51	Clear	N/A

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Net Catch Summary by Numbers for GN

Standard gill net sets

Number of Sets: 9
First Set Date: 08/14/2012
Last Lift Date: 08/17/2012
Target Species: N/A

Abbr	Species	Total Fish	Number Per Set	Quartiles for Lake Class 7*		
				25%	50%	75%
BLB	Black Bullhead	1	0.11	42.08	42.82	130.27
BLC	Black Crappie	24	2.67	0.21	0.50	1.40
BLG	Bluegill	121	13.44	N/A	N/A	N/A
BRB	Brown Bullhead	1	0.11	9.36	13.83	25.82
BUB	Burbot	1	0.11	0.13	0.20	1.30
CCF	Channel Catfish	1	0.11	N/A	N/A	N/A
HSF	Hybrid Sunfish	3	0.33	N/A	N/A	N/A
LMB	Largemouth Bass	7	0.78	0.18	0.40	0.81
NOP	Northern Pike	57	6.33	1.21	2.08	3.59
PMK	Pumpkinseed	12	1.33	N/A	N/A	N/A
RKB	Rock Bass	23	2.56	0.50	1.04	2.20
WAE	Walleye	76	8.44	3.06	6.24	9.80
WTS	White Sucker	26	2.89	2.83	4.06	6.66
YEB	Yellow Bullhead	4	0.44	N/A	0.28	N/A
YEP	Yellow Perch	43	4.78	1.88	4.00	7.13
Total Fish/Set:			44.44	* 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 7*		
					25%	50%	75%
BLB	Black Bullhead	0.26	0.03	0.26	0.46	0.49	0.51
BLC	Black Crappie	2.39	0.27	0.10	0.17	0.27	0.46
BLG	Bluegill	25.37	2.82	0.21	N/A	N/A	N/A
BRB	Brown Bullhead	1.58	0.18	1.58	0.41	0.50	0.53
BUB	Burbot	1.52	0.17	1.52	0.50	1.00	1.50
CCF	Channel Catfish	4.41	0.49	4.41	N/A	N/A	N/A
HSF	Hybrid Sunfish	0.72	0.08	0.24	N/A	N/A	N/A
LMB	Largemouth Bass	8.79	0.98	1.26	0.89	1.07	1.29
NOP	Northern Pike	109.25	12.14	1.92	1.93	2.74	3.61
PMK	Pumpkinseed	1.34	0.15	0.11	N/A	N/A	N/A
RKB	Rock Bass	5.52	0.61	0.24	0.21	0.30	0.38
WAE	Walleye	109.32	12.15	1.44	0.68	0.88	1.25
WTS	White Sucker	42.87	4.76	1.65	1.29	1.69	2.00
YEB	Yellow Bullhead	3.32	0.37	0.83	N/A	1.53	N/A
YEP	Yellow Perch	7.64	0.85	0.18	0.13	0.18	0.25
Total Pounds Fish/Set:			36.03	* Quartiles for Mean Weight			

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POPULATION ASSESSMENT DATED 08/14/2012 FOR DOW NUMBER 69-0376-00

Net Catch Summary by Numbers for TN

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

Number of Sets: 12
 First Set Date: 08/14/2012
 Last Lift Date: 08/17/2012
 Target Species: N/A

Abbr	Species	Total Fish	Number Per Set	Quartiles for Lake Class 7*		
				25%	50%	75%
BLC	Black Crappie	18	1.50	1.65	2.56	3.25
BLG	Bluegill	258	21.50	0.75	3.21	8.69
HSF	Hybrid Sunfish	18	1.50	N/A	N/A	N/A
LMB	Largemouth Bass	4	0.33	0.09	0.13	0.72
NOP	Northern Pike	16	1.33	N/A	N/A	N/A
PMK	Pumpkinseed	3	0.25	0.51	1.60	3.40
RKB	Rock Bass	1	0.08	0.30	0.60	0.95
WAE	Walleye	6	0.50	0.32	0.60	1.25
WTS	White Sucker	10	0.83	0.33	0.90	3.00
YEB	Yellow Bullhead	6	0.50	N/A	N/A	N/A
YEP	Yellow Perch	6	0.50	0.40	0.83	1.94
Total Fish/Set:			28.83	* 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 7*		
					25%	50%	75%
BLC	Black Crappie	5.46	0.46	0.30	0.24	0.41	0.75
BLG	Bluegill	43.52	3.63	0.17	0.15	0.26	0.34
HSF	Hybrid Sunfish	5.27	0.44	0.29	N/A	N/A	N/A
LMB	Largemouth Bass	0.52	0.04	0.13	0.10	0.21	0.95
NOP	Northern Pike	23.04	1.92	1.44	N/A	N/A	N/A
PMK	Pumpkinseed	0.67	0.06	0.22	0.14	0.17	0.29
RKB	Rock Bass	0.34	0.03	0.34	0.19	0.22	0.32
WAE	Walleye	22.90	1.91	3.82	0.47	0.85	1.39
WTS	White Sucker	28.74	2.39	2.87	1.81	2.00	2.83
YEB	Yellow Bullhead	5.61	0.47	0.93	N/A	N/A	N/A
YEP	Yellow Perch	2.34	0.20	0.39	0.14	0.19	0.27
Total Pounds Fish/Set:			11.53	* Quartiles for Mean Weight			

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Length Frequency Distribution For GN

Standard gill net sets

(Field work conducted between 08/14/2012 and 08/17/2012)

	<u>BLB</u>	<u>BLC</u>	<u>BLG</u>	<u>BRB</u>	<u>BUB</u>	<u>CCF</u>	<u>HSF</u>	<u>LMB</u>	<u>NOP</u>	<u>PMK</u>	<u>RKB</u>	<u>WAE</u>	<u>WTS</u>	<u>YEB</u>	<u>YEP</u>
< 3.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.00 - 3.49	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.50 - 3.99	-	-	10	-	-	-	-	-	-	4	-	-	-	-	-
4.00 - 4.49	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-
4.50 - 4.99	-	1	2	-	-	-	-	-	-	-	-	-	-	-	-
5.00 - 5.49	-	1	7	-	-	-	-	-	-	2	1	-	-	-	2
5.50 - 5.99	-	6	16	-	-	-	1	-	-	4	3	-	-	-	7
6.00 - 6.49	-	6	28	-	-	-	1	-	-	2	5	-	-	-	10
6.50 - 6.99	-	3	25	-	-	-	-	1	-	-	5	-	1	-	6
7.00 - 7.49	-	1	22	-	-	-	1	-	-	-	4	1	-	-	4
7.50 - 7.99	1	-	5	-	-	-	-	-	-	-	4	3	-	-	2
8.00 - 8.49	-	-	4	-	-	-	-	-	-	-	1	2	1	-	4
8.50 - 8.99	-	-	2	-	-	-	-	1	-	-	-	-	-	-	2
9.00 - 9.49	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-
9.50 - 9.99	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-
10.00 - 10.49	-	-	-	-	-	-	-	-	-	-	-	3	2	1	3
10.50 - 10.99	-	-	-	-	-	-	-	-	-	-	-	4	1	1	3
11.00 - 11.49	-	-	-	-	-	-	-	-	1	-	-	1	2	1	-
11.50 - 11.99	-	-	-	-	-	-	-	-	-	-	-	2	2	-	-
12.00 - 12.99	-	-	-	-	-	-	-	1	2	-	-	6	-	-	-
13.00 - 13.99	-	-	-	1	-	-	-	-	3	-	-	2	2	1	-
14.00 - 14.99	-	-	-	-	-	-	-	2	3	-	-	4	-	-	-
15.00 - 15.99	-	-	-	-	-	-	-	-	4	-	-	7	-	-	-
16.00 - 16.99	-	-	-	-	-	-	-	-	5	-	-	11	3	-	-
17.00 - 17.99	-	-	-	-	-	-	-	-	2	-	-	3	5	-	-
18.00 - 18.99	-	-	-	-	1	-	-	1	6	-	-	9	4	-	-
19.00 - 19.99	-	-	-	-	-	-	-	-	3	-	-	8	-	-	-
20.00 - 20.99	-	-	-	-	-	1	-	-	8	-	-	2	3	-	-
21.00 - 21.99	-	-	-	-	-	-	-	-	5	-	-	2	-	-	-
22.00 - 22.99	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-
23.00 - 23.99	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-
24.00 - 24.99	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
25.00 - 25.99	-	-	-	-	-	-	-	-	2	-	-	1	-	-	-
26.00 - 26.99	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
27.00 - 27.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28.00 - 28.99	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
29.00 - 29.99	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-
30.00 - 30.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31.00 - 31.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32.00 - 32.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33.00 - 33.99	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
34.00 - 34.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35.00 - 35.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
= > 36.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	<u>BLB</u>	<u>BLC</u>	<u>BLG</u>	<u>BRB</u>	<u>BUB</u>	<u>CCF</u>	<u>HSF</u>	<u>LMB</u>	<u>NOP</u>	<u>PMK</u>	<u>RKB</u>	<u>WAE</u>	<u>WTS</u>	<u>YEB</u>	<u>YEP</u>
Total	1	24	121	1	1	1	3	7	57	12	23	76	26	4	43
Min. Length	7.87	4.13	3.54	13.86	18.58	20.87	5.91	6.69	11.34	3.54	5.39	7.32	6.97	10.04	5.12
Max. Length	7.87	7.32	8.86	13.86	18.58	20.87	7.44	18.31	33.35	6.30	8.35	26.22	20.75	13.19	10.83
Mean Length	7.87	5.64	6.33	13.86	18.58	20.87	6.48	12.01	19.77	4.97	6.77	15.20	15.04	11.24	7.22
# Measured	1	24	121	1	1	1	3	7	57	12	23	76	26	4	43
No Lengths for	0	0	0	0	0	0	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

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Length Frequency Distribution For TN

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

(Field work conducted between 08/14/2012 and 08/17/2012)

	<u>BLC</u>	<u>BLG</u>	<u>HSF</u>	<u>LMB</u>	<u>NOP</u>	<u>PMK</u>	<u>RKB</u>	<u>WAE</u>	<u>WTS</u>	<u>YEB</u>	<u>YEP</u>
< 3.00	-	-	-	-	-	-	-	-	-	-	1
3.00 - 3.49	-	2	-	-	-	-	-	-	-	-	-
3.50 - 3.99	-	24	-	-	-	-	-	-	-	-	-
4.00 - 4.49	-	17	-	-	-	-	-	-	-	-	-
4.50 - 4.99	-	14	-	-	-	-	-	-	-	-	-
5.00 - 5.49	1	19	-	1	-	1	-	-	-	-	-
5.50 - 5.99	2	44	-	2	-	-	-	-	-	-	-
6.00 - 6.49	4	46	2	-	-	-	-	-	-	-	-
6.50 - 6.99	4	47	4	-	-	1	-	-	-	-	1
7.00 - 7.49	2	32	10	-	-	-	-	-	-	-	-
7.50 - 7.99	-	9	2	-	-	1	1	-	-	1	-
8.00 - 8.49	-	3	-	1	-	-	-	-	-	-	1
8.50 - 8.99	-	-	-	-	-	-	-	-	-	-	-
9.00 - 9.49	-	-	-	-	-	-	-	-	-	-	1
9.50 - 9.99	1	-	-	-	-	-	-	-	-	-	-
10.00 - 10.49	2	-	-	-	-	-	-	-	-	-	-
10.50 - 10.99	-	-	-	-	1	-	-	-	-	-	-
11.00 - 11.49	-	-	-	-	-	-	-	-	-	1	-
11.50 - 11.99	1	-	-	-	-	-	-	-	-	1	2
12.00 - 12.99	1	-	-	-	-	-	-	-	-	2	-
13.00 - 13.99	-	-	-	-	3	-	-	1	-	1	-
14.00 - 14.99	-	-	-	-	-	-	-	-	-	-	-
15.00 - 15.99	-	-	-	-	-	-	-	-	1	-	-
16.00 - 16.99	-	-	-	-	3	-	-	-	1	-	-
17.00 - 17.99	-	-	-	-	1	-	-	-	1	-	-
18.00 - 18.99	-	-	-	-	3	-	-	-	2	-	-
19.00 - 19.99	-	-	-	-	1	-	-	-	4	-	-
20.00 - 20.99	-	-	-	-	2	-	-	2	-	-	-
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	-	-	-	-	-	-	-	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>BLC</u>	<u>BLG</u>	<u>HSF</u>	<u>LMB</u>	<u>NOP</u>	<u>PMK</u>	<u>RKB</u>	<u>WAE</u>	<u>WTS</u>	<u>YEB</u>	<u>YEP</u>
Total	18	257	18	4	16	3	1	6	10	6	6
Min. Length	5.12	3.43	6.06	5.35	10.83	5.35	7.56	13.70	15.12	7.68	1.73
Max. Length	12.20	8.27	7.68	8.19	27.56	7.64	7.56	26.38	22.44	13.58	11.73
Mean Length	7.65	5.91	7.03	6.22	18.07	6.55	7.56	21.48	18.76	11.42	7.52
# Measured	18	232	18	4	16	3	1	6	10	6	5
No Lengths for	0	26	0	0	0	0	0	0	0	0	1

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: Black Crappie
Body-Scale Constant: 0.79
Total Sample Size: 18

Length at Capture in 2012 for Each Age Class, with Incremental Lengths for 2012

Year Class	Age	Sample Size	Length At Capture			Standard Error	Length Increments	
			Average Length	Maximum Length	Minimum Length		Increment	Standard Error
2011	1	2	5.67	6.22	5.12	0.551	2.52	0.180
2010	2	11	6.53	7.28	5.79	0.148	2.74	0.098
2009	3	0	-	-	-	-	-	-
2008	4	2	10.30	10.35	10.24	0.059	1.86	0.012
2007	5	0	-	-	-	-	-	-
2006	6	2	10.89	11.97	9.80	1.083	0.84	0.453
2005	7	1	12.20	12.20	12.20	N/A	0.67	N/A

Species: Bluegill
Body-Scale Constant: 0.79
Total Sample Size: 60

Length at Capture in 2012 for Each Age Class, with Incremental Lengths for 2012

Year Class	Age	Sample Size	Length At Capture			Standard Error	Length Increments	
			Average Length	Maximum Length	Minimum Length		Increment	Standard Error
2010	2	10	3.74	4.17	3.43	0.077	1.25	0.049
2009	3	3	4.34	4.49	4.25	0.073	0.92	0.110
2008	4	2	4.45	4.69	4.21	0.236	0.88	0.034
2007	5	12	5.17	5.63	4.69	0.096	0.79	0.063
2006	6	17	6.33	7.56	5.28	0.151	0.70	0.046
2005	7	8	7.01	7.87	6.10	0.237	0.54	0.050
2004	8	6	7.55	8.15	6.97	0.196	0.43	0.024
2003	9	2	7.68	8.27	7.09	0.591	0.36	0.043

Species: Largemouth Bass
Body-Scale Constant: 0.79
Total Sample Size: 9

Length at Capture in 2012 for Each Age Class, with Incremental Lengths for 2012

Year Class	Age	Sample Size	Length At Capture			Standard Error	Length Increments	
			Average Length	Maximum Length	Minimum Length		Increment	Standard Error
2011	1	4	5.85	6.69	5.35	0.292	3.11	0.260
2010	2	2	8.54	8.90	8.19	0.354	2.52	0.272
2009	3	0	-	-	-	-	-	-
2008	4	2	10.96	12.80	9.13	1.831	1.60	0.215
2007	5	0	-	-	-	-	-	-
2006	6	1	14.17	14.17	14.17	N/A	1.24	N/A

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Length At Capture With Last Incremental Length (Continued)

Species: Northern Pike
Body-Scale Constant: 2.09
Total Sample Size: 54

Length at Capture in 2012 for Each Age Class, with Incremental Lengths for 2012

Year Class	Age	Sample Size	Length At Capture			Standard Error	Length Increments	
			Average Length	Maximum Length	Minimum Length		Increment	Standard Error
2011	1	4	12.65	13.54	11.34	0.466	3.57	0.727
2010	2	13	15.71	19.49	13.19	0.479	2.84	0.253
2009	3	9	18.46	21.10	15.79	0.714	2.54	0.342
2008	4	17	21.53	29.29	17.80	0.630	1.78	0.193
2007	5	8	23.72	28.03	20.47	0.833	1.62	0.164
2006	6	1	29.53	29.53	29.53	N/A	1.66	N/A
2005	7	1	29.92	29.92	29.92	N/A	1.00	N/A
2004	8	1	33.35	33.35	33.35	N/A	1.65	N/A

Species: Walleye
Body-Scale Constant: 1.10
Total Sample Size: 73

Length at Capture in 2012 for Each Age Class, with Incremental Lengths for 2012

Year Class	Age	Sample Size	Length At Capture			Standard Error	Length Increments	
			Average Length	Maximum Length	Minimum Length		Increment	Standard Error
2011	1	6	7.80	8.27	7.32	0.140	2.88	0.215
2010	2	15	10.67	12.13	9.37	0.218	2.23	0.115
2009	3	5	12.28	12.80	11.85	0.157	2.11	0.107
2008	4	6	14.64	15.16	13.94	0.189	2.29	0.128
2007	5	6	15.88	18.50	13.62	0.710	1.88	0.163
2006	6	17	16.87	19.29	15.00	0.282	1.42	0.081
2005	7	9	18.44	19.80	16.18	0.367	1.27	0.191
2004	8	3	19.63	20.47	18.54	0.571	0.91	0.227
2003	9	2	19.33	19.45	19.21	0.118	0.84	0.116
2002	10	1	19.29	19.29	19.29	N/A	0.65	N/A
2001	11	2	20.10	21.30	18.90	1.201	0.32	0.072
2000	12	1	20.16	20.16	20.16	N/A	0.29	N/A

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

Species: Black Crappie

Gear Type: Combined Gear Types (TN)

Class	Age	N	1	2	3	4	5	6	7
2011	1	2	3.15	-	-	-	-	-	-
			3.15	-	-	-	-	-	-
2010	2	11	1.72	3.79	-	-	-	-	-
			1.72	2.07	-	-	-	-	-
2008	4	2	1.68	3.61	5.67	8.44	-	-	-
			1.68	1.94	2.06	2.77	-	-	-
2006	6	2	1.67	3.48	5.95	7.59	9.11	10.05	-
			1.67	1.81	2.48	1.64	1.53	0.94	-
2005	7	1	2.13	3.79	6.91	8.90	10.17	10.93	11.54
			2.13	1.66	3.12	1.99	1.27	0.76	0.61
Mean Length			1.89	3.73	6.03	8.19	9.46	10.34	11.54
Mean Increment			1.89	2.00	2.44	2.16	1.44	0.88	0.61
Total N			18	16	5	5	3	3	1

Species: Bluegill

Gear Type: Combined Gear Types (TN)

Class	Age	N	1	2	3	4	5	6	7	8	9
2010	2	10	1.56	2.49	-	-	-	-	-	-	-
			1.56	0.92	-	-	-	-	-	-	
2009	3	3	1.51	2.53	3.42	-	-	-	-	-	-
			1.51	1.03	0.89	-	-	-	-	-	
2008	4	2	1.23	1.83	2.68	3.56	-	-	-	-	-
			1.23	0.60	0.85	0.89	-	-	-	-	
2007	5	12	1.29	1.95	2.65	3.53	4.38	-	-	-	-
			1.29	0.66	0.70	0.88	0.85	-	-	-	
2006	6	17	1.33	2.13	2.97	3.83	4.73	5.63	-	-	-
			1.33	0.80	0.84	0.86	0.90	0.90	-	-	
2005	7	8	1.23	2.07	2.99	3.84	4.80	5.63	6.47	-	-
			1.23	0.84	0.92	0.85	0.96	0.84	0.84	-	
2004	8	6	1.27	2.02	2.90	3.73	4.87	5.83	6.53	7.12	-
			1.27	0.75	0.88	0.84	1.14	0.96	0.70	0.59	
2003	9	2	1.38	2.12	2.98	4.13	5.02	5.75	6.54	6.99	7.32
			1.38	0.74	0.87	1.15	0.89	0.74	0.79	0.45	0.33
Mean Length			1.35	2.15	2.90	3.74	4.68	5.67	6.50	7.09	7.32
Mean Increment			1.35	0.80	0.83	0.87	0.93	0.89	0.78	0.56	0.33
Total N			60	60	50	47	45	33	16	8	2

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

Species: Largemouth Bass

Gear Type: Combined Gear Types (GN and TN)

Class	Age	N	1	2	3	4	5	6
2011	1	4	2.73	-	-	-	-	-
			2.73	-	-	-	-	-
2010	2	2	2.63	6.03	-	-	-	-
			2.63	3.40	-	-	-	-
2008	4	2	2.28	4.25	7.05	9.37	-	-
			2.28	1.98	2.80	2.32	-	-
2006	6	1	2.11	4.77	7.23	9.02	11.06	12.93
			2.11	2.66	2.46	1.79	2.04	1.87
Mean Length			2.54	5.06	7.11	9.25	11.06	12.93
Mean Increment			2.54	2.68	2.69	2.14	2.04	1.87
Total N			9	5	3	3	1	1

Species: Northern Pike

Gear Type: Combined Gear Types (GN)

Class	Age	N	1	2	3	4	5	6	7	8
2011	1	4	9.08	-	-	-	-	-	-	-
			9.08	-	-	-	-	-	-	
2010	2	13	7.29	12.87	-	-	-	-	-	-
			7.29	5.58	-	-	-	-	-	
2009	3	9	7.94	12.98	15.92	-	-	-	-	-
			7.94	5.04	2.94	-	-	-	-	
2008	4	17	7.68	13.45	17.17	19.75	-	-	-	-
			7.68	5.77	3.72	2.57	-	-	-	
2007	5	8	8.29	13.55	17.06	19.81	22.10	-	-	-
			8.29	5.26	3.50	2.75	2.29	-	-	
2006	6	1	7.42	14.02	19.55	24.39	26.15	27.86	-	-
			7.42	6.60	5.53	4.84	1.76	1.71	-	
2005	7	1	7.96	14.94	18.47	21.85	24.49	26.54	28.92	-
			7.96	6.98	3.53	3.38	2.64	2.05	2.38	
2004	8	1	8.70	16.42	19.18	21.94	24.97	27.45	29.93	31.69
			8.70	7.72	2.76	2.76	3.03	2.48	2.48	1.76
Mean Length			7.84	13.33	17.00	20.08	22.94	27.28	29.43	31.69
Mean Increment			7.84	5.59	3.50	2.74	2.34	2.08	2.43	1.76
Total N			54	50	37	28	11	3	2	1

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

Species: Walleye

Gear Type: Combined Gear Types (GN)

Class	Age	N	1	2	3	4	5	6	7	8	9	10	11	12
2011	1	6	4.92	-	-	-	-	-	-	-	-	-	-	-
			4.92	-	-	-	-	-	-	-	-	-	-	-
2010	2	15	5.39	8.44	-	-	-	-	-	-	-	-	-	-
			5.39	3.05	-	-	-	-	-	-	-	-	-	-
2009	3	5	3.78	7.12	10.16	-	-	-	-	-	-	-	-	-
			3.78	3.34	3.05	-	-	-	-	-	-	-	-	-
2008	4	6	4.21	6.50	9.15	12.35	-	-	-	-	-	-	-	-
			4.21	2.29	2.65	3.20	-	-	-	-	-	-	-	-
2007	5	6	4.10	7.11	9.14	11.47	14.00	-	-	-	-	-	-	-
			4.10	3.00	2.03	2.33	2.53	-	-	-	-	-	-	-
2006	6	17	3.74	6.59	9.20	11.04	13.36	15.44	-	-	-	-	-	-
			3.74	2.85	2.61	1.84	2.32	2.09	-	-	-	-	-	-
2005	7	9	3.94	6.51	9.03	11.59	13.38	15.39	17.17	-	-	-	-	-
			3.94	2.57	2.52	2.56	1.79	2.01	1.78	-	-	-	-	-
2004	8	3	3.53	5.88	8.03	10.34	13.01	14.84	16.85	18.73	-	-	-	-
			3.53	2.35	2.15	2.32	2.67	1.82	2.01	1.88	-	-	-	-
2003	9	2	4.14	6.80	8.49	11.33	13.35	14.56	15.98	17.67	18.49	-	-	-
			4.14	2.66	1.70	2.84	2.03	1.21	1.42	1.69	0.83	-	-	-
2002	10	1	3.42	5.88	9.47	10.96	12.26	13.46	14.80	16.54	17.73	18.64	-	-
			3.42	2.46	3.59	1.49	1.30	1.20	1.34	1.74	1.19	0.91	-	-
2001	11	2	3.79	7.27	10.17	12.28	14.22	15.62	16.83	17.94	18.60	19.22	19.78	-
			3.79	3.48	2.90	2.11	1.95	1.40	1.21	1.11	0.67	0.62	0.56	-
2000	12	1	3.44	5.71	7.52	10.18	12.39	14.66	15.85	16.90	18.22	18.94	19.43	19.86
			3.44	2.27	1.81	2.66	2.21	2.27	1.19	1.05	1.32	0.72	0.49	0.43
Mean Length			4.27	7.04	9.17	11.37	13.42	15.26	16.74	17.87	18.36	19.01	19.66	19.86
Mean Increment			4.27	2.83	2.53	2.31	2.20	1.94	1.66	1.56	0.92	0.72	0.54	0.43
Total N			73	67	52	47	41	35	18	9	6	4	3	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	'12 0	'11 1	'10 2	'09 3	'08 4	'07 5	'06 6	'05 7	'04 8	'03 9	'02 10	'01 11	'00 12	'99 13	'98 14	<'98 15+
Black Crappie																			
TN	18	0	0	0	2	11	0	2	0	2	1	0	0	0	0	0	0	0	0
Bluegill																			
TN	60	199	0	0	0	32	9	5	47	96	40	24	6	0	0	0	0	0	0
Largemouth Bass																			
GN	5	1	1	0	1	1	0	2	0	2	0	0	0	0	0	0	0	0	0
TN	4	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals:	9	1	1	0	4	2	0	2	0	2	0	0	0	0	0	0	0	0	0
Northern Pike																			
GN	54	3	0	0	4	15	10	17	8	1	1	1	0	0	0	0	0	0	0
Walleye																			
GN	74	0	2	0	6	15	5	6	6	17	9	3	2	1	2	1	0	0	1

(1) Key to sampling gear abbreviations:

TN = Standard 3/4-in mesh, double frame trap net sets
GN = Standard gill net sets

(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.

Other Species

Gear Type (1)	Other Species (Gender) (2)	Total	Number	Length (inches)	Number	Weight (pounds)
		Num	Measured	Min - Mean - Max	Weighed	Min - Mean - Max
GN	Rusty Crayfish	4	0	N/A	0	N/A

(1) Key to sampling gear abbreviations:

GN = Standard gill net sets

(2) Gender: If identified and reported.

Survey Crew Notes

Gill net sets #10, 11, 12 dropped in 2012 per Fisheries Chief directive for streamlining LS methods.
Net set locations same as 1992.

Region Signed by user 'jomix' on 03/13/2013

Discussion

Whitewater Lake is 599 acres in size and is in Ecological Lake Class 7. Other area lakes in this class include Bear Head, Farm and Shagawa.

Whitewater Lake was impounded in 1955 for use as a water storage reservoir for the Erie Mining taconite operation to the north of adjacent Colby Lake. Formerly known as Partridge Lake, this impoundment increased the size and depth of Whitewater Lake and subjected it to greater annual water level fluctuations. The inlet/outlet control structure is now owned and controlled by Minnesota Power. An overflow outlet to the St. Louis River on the southern dike is not used. Water losses through the dike due to groundwater seepage are substantial. Whitewater Lake receives sewage treatment effluent from Hoyt Lakes.

Various developments are being considered or under construction at the old Erie Mining (LTV) site: Polymet rare metals mining and concentrating, Mesabi Nugget steel production, Excelsior Energy coal-gasification electrical generation plant. These developments all require water and may want to rely on the Whitewater Lake/Colby Lake water supply system developed for Erie Mining.

Riparian development on Whitewater Lake consists of a public access and campground with 70 campsites on a peninsula (Fisherman's Point) on the northeast shore of the lake. Minnesota Power acquired the land around Whitewater Lake when it purchased the land from the defunct LTV taconite plant (formerly Erie taconite) in 2002. The campground and boat access is now owned by the City of Hoyt Lakes.

Twelve fisheries lake surveys or fish population assessments have been conducted on Whitewater Lake. The initial investigation, in 1950, was done before the impoundment of the lake in 1955.

Fish sampling during the 2012 population assessment consisted of 9 gill nets and 12 trap nets. Fish populations in 2012 were dominated by walleye, northern pike and bluegill. Black crappie, largemouth bass and channel catfish were also sampled.

Walleye numbers in 2012 (8.4/gill net) were above the median quartile for this lake class and were identical to the median catch for all investigations on this lake. Walleye mean length was 15.2" which is larger than the mean length of 13.3" for all investigations on this lake. Walleye mean length at age 4 was 11.4" compared to 16.4" for the Area Lake Class 7 growth rate. The largest walleye sampled was 26.2". Walleye were not present in 1950 before the impoundment was created but were stocked periodically 1956 through 1984.

Northern pike numbers in 2012 (6.3/gill net) were above the third quartile for this lake class and were higher than the median catch of 3.9/gill net for all investigations on this lake. Pike mean length was 19.8" which is larger than the mean length of 18.6" for all investigations on this lake. Pike mean length at age 4 was 20.1" compared to 21.9" for the Area Lake Class 7 growth rate. The largest pike sampled was 33.4".

Bluegill numbers in 2012 (21.5/trap net) were above the third quartile for this lake class and were higher than the median catch of 5.3/trap net for all investigations on this lake. Bluegill mean length was 5.9" which is slightly smaller than the mean length of 6.2" for all investigations on this lake. Bluegill mean length at age 4 was 3.7" compared to 5.4" for the Area Lake Class 7 growth rate. The largest bluegill sampled was 8.9".

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Status Of The Fishery

Whitewater Lake is located 1 mile west of Hoyt Lakes. It has a surface area of 599 acres and a maximum depth of 73 ft. Public access is located at the municipal campground on the east side of the lake.

Whitewater Lake was impounded in 1955 for use as a water storage reservoir for the Erie Mining taconite operation to the north of adjacent Colby Lake. Formerly known as Partridge Lake, this impoundment increased the size and depth of Whitewater Lake and subjected it to greater annual water level fluctuations. The inlet/outlet control structure is controlled by Minnesota Power. Water losses through the dike due to groundwater seepage are substantial. Whitewater Lake receives sewage treatment effluent from Hoyt Lakes.

Walleye numbers in 2012 (8.4/gill net) were identical to the long term average for all assessments on this lake. The average walleye sampled was 15.2 inches long and about six years old. The growth rate was slower than average compared to other lakes in this class. The largest walleye sampled was 26.2". Walleye were not present in 1950 before the impoundment was created but were stocked periodically 1956 through 1984.

Northern pike numbers in 2012 (6.3/gill net) were higher than the long term average for all assessments on this lake. The average pike sampled was 19.8 inches long and about four years old. The growth rate was slower than average compared to other lakes in this class. The largest pike sampled was 33.4".

Bluegill numbers in 2012 (21.5/trap net) were higher than the long term average for all assessments on this lake. The average bluegill sampled was 5.9 inches long and about six years old. The growth rate was slower than average compared to other lakes in this class. The largest bluegill sampled was 8.9".

Black crappie (1.5/trap net), largemouth bass and yellow perch (4.8/gill net) were also sampled. One channel catfish was sampled. Channel catfish were previously sampled in 1968.

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Approval Dates And Notices

Date Approved By Tower Area Fisheries Supervisor: 03/01/2013
Date Approved By Northeast Region Fisheries Manager: 03/13/2013



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Standard Lake Survey Report revision: 04/05/2011-RJE. Data Date: 07/11/2013 at 3:54 pm .

Whitewater Lake (69-0376-00)
8/14/2012
Population Assessment

