



Minnesota Department of Natural Resources
 Fisheries Management
LAKE SURVEY REPORT



DRAFT VERSION - PRELIMINARY DATA (AS OF 08/06/2015)

Lake Name: St. James

Survey Type: Standard Survey

DOW Number: 83-0043-00

Survey ID Date: 08/03/2015

Lake Identification

Alternate Lake Name: N/A
 Primary Lake Class ID: 42

DNR Sounding Map Number: C2883
 Alternate Lake Class ID: N/A

Lake Location

Primary County: Watonwan

Nearest Town: Saint James

Legal Descriptions

Lake Center: Township - 106N Range - 32W Section - 23
 PLS Section Lake Center: 10603223

All Legal Descriptions:

Watonwan County: Township - 106N Range - 32W Sections - 14, 23, 24, 26, 27

Area Office

Area Name: Windom
 Region Name: Southern

ORG Code: F418
 Region Number: 4

Lake Access

(Information based on Re-Survey dated 06/12/1995)

Station ID	Ownership	Public Use	Type	Location / Comments
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(Data excludes records where public use is not designated or is designated "No Public Use")

Lake Characteristics

Lake Area (planimetered acres):	252.00	GIS Shoreline Length (miles):	3.74
GIS Lake Area (acres):	202.76	Maximum Fetch (miles):	1.50
DOW Lake Area (acres):	252.00	Fetch Orientation (degrees):	45
Littoral Area (acres):	202.76	USGS Quad Map Number:	W11b
Area in MN (acres):	202.76	USGS Quad 24K GIS Index:	4421
Maximum Depth (feet):	15.4		
Mean Depth (feet):	N/A		

Watershed Characteristics

Major Watershed

Name: Watonwan River
 Watershed Number: 31
 Watershed size (acres): 558,963

Minor Watershed

Name: St James Cr
 Watershed Number: 20
 Watershed size (acres): 17,084

Surveys and Investigations

Initial Survey: 06/09/1986.

Re-Survey: 06/09/2003, 06/12/1995, 06/10/1991.

Population Assessment: 04/11/2011, 07/16/2007, 07/13/2005, 06/14/1999.

Special Assessment: 08/05/2013, 06/10/2013, 08/08/2011, 06/01/2011, 07/26/2010, 07/19/2010, 06/22/2010, 06/07/2010, 05/26/2010, 03/31/2010, 08/11/2009, 07/13/2009, 06/04/2009, 04/07/2009, 08/27/2008, 07/28/2008, 06/17/2008, 06/10/2008, 04/21/2008, 05/09/1994, 08/18/1948.

Dissolved Oxygen Check: 02/24/2015, 01/03/2014, 12/28/2012, 02/14/2012, 12/29/2010, 01/12/2010.

External Management Survey: 06/10/2009, 06/23/2008.

Standard Survey: 08/03/2015.

Current Water Level

Station ID	Date	Level	Reading (feet)	Reading Type
GA - 1	08/03/2015	Normal	4.40	Direct Gauge Reading

Benchmark and Gauge Descriptions / Locations

Station ID	Location Description
GA - 1	On box culvert that goes under Co. Rd. 57. (Tiell Dr.) on south end of lake.

Water Level History - Readings

Station ID	Date	Level	Reading (feet)	Reading Type
BM - 1	08/05/2013	Normal	-5.40	Above or below Benchmark
	08/09/2011	Normal	3.75	Above or below Benchmark
	07/31/2008	N/A	9.65	Direct Gauge Reading
	07/16/2007	Low	-6.20	Above or below Benchmark
GA - 1	08/03/2015	Normal	4.40	Direct Gauge Reading

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	-6.20	07/16/2007	3.75	08/09/2011	9.95	-2.62	Above or below Benchmark (3)
BM - 1	9.65	07/31/2008	9.65	07/31/2008	0.00	9.65	Direct Gauge Reading (1)
GA - 1	4.40	08/03/2015	4.40	08/03/2015	0.00	4.40	Direct Gauge Reading (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	08/03/2015	15.3	Surface	78.8	10.0
			1.0	78.8	10.0
			2.0	78.8	10.0
			3.0	78.8	10.0
			4.0	78.6	9.8
			5.0	78.6	9.5
			6.0	78.4	9.3
			7.0	78.4	8.6
			8.0	78.4	8.5
			9.0	78.3	7.3
			10.0	78.3	7.3
			11.0	77.9	8.0
			12.0	77.5	0.5
			13.0	76.6	0.1
			14.0	76.1	0.1
15.0	74.7	0.1			

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	08/03/2015	Surface	2.0	8.71	153	Brown Grn	Algae

Laboratory Analysis of Water Chemistry

Station ID	Sampling Date	Analysis Date	Sample Depth (ft)	Chemical Parameter	Chemical Value
WQ - 1	08/03/2015	06/12/2015	Surface	Sulphate ion	61.8 ppm
				Total phosphorus	0.067 ppm
				Total alkalinity	182 ppm
				Total dissolved solids	452 ppm
				Chlorophyll-a trichromatic method calculation	32.7 ppb
				Conductivity	584 :S/cm
				pH	8.63 pH
				Chlorophyll-a corrected for pheophytin	29.20 ppb

Net Catch Summary by Numbers for GN

Standard gill net sets

Number of Sets: 2
 First Set Date: 08/03/2015
 Last Lift Date: 08/05/2015
 Target Species: N/A

Abbr	Species	Total Fish	Number Per Set	Quartiles for Lake Class 42*		
				25%	50%	75%
BLB	Black Bullhead	185	92.50	9.63	39.75	91.42
BLC	Black Crappie	5	2.50	1.50	5.50	14.69
BLG	Bluegill	8	4.00	N/A	N/A	N/A
LMB	Largemouth Bass	3	1.50	0.48	0.54	1.00
NOP	Northern Pike	42	21.00	1.54	4.29	7.00
WAE	Walleye	9	4.50	1.00	2.50	7.33
YEP	Yellow Perch	17	8.50	3.00	8.00	26.50
Total Fish/Set:			134.50	* 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 42*		
					25%	50%	75%
BLB	Black Bullhead	32.79	16.39	0.18	0.18	0.28	0.49
BLC	Black Crappie	0.77	0.38	0.15	0.12	0.18	0.29
BLG	Bluegill	1.34	0.67	0.17	N/A	N/A	N/A
LMB	Largemouth Bass	5.42	2.71	1.81	0.20	0.63	1.50
NOP	Northern Pike	78.13	39.07	1.86	1.49	2.17	3.40
WAE	Walleye	14.78	7.39	1.64	0.95	1.58	2.80
YEP	Yellow Perch	2.21	1.11	0.13	0.14	0.20	0.28
Total Pounds Fish/Set:			67.72	* 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: 08/03/2015
 Last Lift Date: 08/06/2015
 Target Species: N/A

Abbr	Species	Total Fish	Number Per Set	Quartiles for Lake Class 42*		
				25%	50%	75%
BLB	Black Bullhead	11	1.22	2.20	17.30	60.46
BLC	Black Crappie	38	4.22	2.36	5.60	15.10
BLG	Bluegill	140	15.56	1.88	10.80	29.50
NOP	Northern Pike	28	3.11	N/A	N/A	N/A
YEP	Yellow Perch	25	2.78	0.48	1.29	3.45
Total Fish/Set:			26.89	* 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 42*		
					25%	50%	75%
BLB	Black Bullhead	3.57	0.40	0.32	0.19	0.30	0.50
BLC	Black Crappie	6.59	0.73	0.17	0.17	0.25	0.36
BLG	Bluegill	17.52	1.95	0.13	0.15	0.20	0.30
NOP	Northern Pike	67.22	7.47	2.40	N/A	N/A	N/A
YEP	Yellow Perch	3.23	0.36	0.13	0.10	0.17	0.27
Total Pounds Fish/Set:			10.90	* Quartiles for Mean Weight			

Electrofishing Catch Summary for EF

Standard electrofishing

Total run-time for all stations: 01:00:00

Total on-time for all stations: 01:00:01

First Sampling Date: 05/21/2015

Last Sampling Date: 05/21/2015

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
LMB	Largemouth Bass	27	27.00	26.99	56.55	56.55	56.53	2.09

Length Frequency Distribution for GN

Standard gill net sets

(Field work conducted between 08/03/2015 and 08/05/2015)

	<u>BLB</u>	<u>BLC</u>	<u>BLG</u>	<u>LMB</u>	<u>NOP</u>	<u>WAE</u>	<u>YEP</u>
< 3.00	-	-	-	-	-	-	-
3.00 - 3.49	-	-	-	-	-	-	-
3.50 - 3.99	-	-	2	-	-	-	-
4.00 - 4.49	-	-	-	-	-	-	-
4.50 - 4.99	2	-	-	-	-	-	-
5.00 - 5.49	4	2	1	-	-	-	-
5.50 - 5.99	59	-	-	-	-	-	1
6.00 - 6.49	54	-	3	-	-	-	4
6.50 - 6.99	19	1	2	-	-	-	6
7.00 - 7.49	4	2	-	-	-	-	4
7.50 - 7.99	7	-	-	-	-	-	2
8.00 - 8.49	14	-	-	-	-	-	-
8.50 - 8.99	12	-	-	-	-	-	-
9.00 - 9.49	5	-	-	-	-	-	-
9.50 - 9.99	3	-	-	1	-	-	-
10.00 - 10.49	1	-	-	-	-	-	-
10.50 - 10.99	1	-	-	-	-	-	-
11.00 - 11.49	-	-	-	-	-	-	-
11.50 - 11.99	-	-	-	-	-	-	-
12.00 - 12.99	-	-	-	1	1	-	-
13.00 - 13.99	-	-	-	-	-	-	-
14.00 - 14.99	-	-	-	-	-	-	-
15.00 - 15.99	-	-	-	-	2	2	-
16.00 - 16.99	-	-	-	-	1	6	-
17.00 - 17.99	-	-	-	1	10	-	-
18.00 - 18.99	-	-	-	-	6	1	-
19.00 - 19.99	-	-	-	-	3	-	-
20.00 - 20.99	-	-	-	-	4	-	-
21.00 - 21.99	-	-	-	-	5	-	-
22.00 - 22.99	-	-	-	-	2	-	-
23.00 - 23.99	-	-	-	-	3	-	-
24.00 - 24.99	-	-	-	-	2	-	-
25.00 - 25.99	-	-	-	-	2	-	-
26.00 - 26.99	-	-	-	-	1	-	-
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>BLB</u>	<u>BLC</u>	<u>BLG</u>	<u>LMB</u>	<u>NOP</u>	<u>WAE</u>	<u>YEP</u>
Total	185	5	8	3	42	9	17
Min. Length	4.76	5.04	3.78	9.69	12.68	15.28	5.98
Max. Length	10.67	7.17	6.54	17.72	26.02	18.43	7.91
Mean Length	6.97	6.28	5.65	13.40	19.83	16.64	6.84
# Measured	134	5	8	3	42	9	14
No Lengths for	51	0	0	0	0	0	3

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 08/03/2015 and 08/06/2015)

	<u>BLB</u>	<u>BLC</u>	<u>BLG</u>	<u>NOP</u>	<u>YEP</u>
< 3.00	-	-	-	-	-
3.00 - 3.49	-	-	9	-	-
3.50 - 3.99	-	-	51	-	-
4.00 - 4.49	-	1	4	-	-
4.50 - 4.99	-	-	1	-	-
5.00 - 5.49	1	1	13	-	2
5.50 - 5.99	5	3	29	-	1
6.00 - 6.49	-	3	22	-	7
6.50 - 6.99	-	16	-	-	4
7.00 - 7.49	-	7	1	-	3
7.50 - 7.99	-	5	-	-	3
8.00 - 8.49	1	1	4	-	3
8.50 - 8.99	-	-	3	-	-
9.00 - 9.49	-	1	-	-	-
9.50 - 9.99	3	-	-	-	-
10.00 - 10.49	-	-	-	-	-
10.50 - 10.99	1	-	-	-	-
11.00 - 11.49	-	-	-	-	-
11.50 - 11.99	-	-	-	-	-
12.00 - 12.99	1	-	-	-	-
13.00 - 13.99	-	-	-	-	-
14.00 - 14.99	-	-	-	1	-
15.00 - 15.99	-	-	-	-	-
16.00 - 16.99	-	-	-	1	-
17.00 - 17.99	-	-	-	1	-
18.00 - 18.99	-	-	-	1	-
19.00 - 19.99	-	-	-	-	-
20.00 - 20.99	-	-	-	3	-
21.00 - 21.99	-	-	-	4	-
22.00 - 22.99	-	-	-	6	-
23.00 - 23.99	-	-	-	-	-
24.00 - 24.99	-	-	-	3	-
25.00 - 25.99	-	-	-	3	-
26.00 - 26.99	-	-	-	1	-
27.00 - 27.99	-	-	-	-	-
28.00 - 28.99	-	-	-	-	-
29.00 - 29.99	-	-	-	1	-
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>BLB</u>	<u>BLC</u>	<u>BLG</u>	<u>NOP</u>	<u>YEP</u>
Total	12	38	137	25	23
Min. Length	5.43	4.37	3.23	14.13	5.24
Max. Length	12.09	9.02	8.62	29.17	8.43
Mean Length	7.91	6.85	4.93	22.15	6.81
# Measured	10	38	131	25	23
No Lengths for	1	0	7	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 EF

Standard electrofishing

(Field work conducted on 05/21/2015)

	<u>LMB</u>
< 3.00	-
3.00 - 3.49	-
3.50 - 3.99	-
4.00 - 4.49	4
4.50 - 4.99	3
5.00 - 5.49	1
5.50 - 5.99	-
6.00 - 6.49	2
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	2
16.00 - 16.99	1
17.00 - 17.99	8
18.00 - 18.99	6
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	-
35.00 - 35.99	-
= > 36.00	-

	<u>LMB</u>
Total	27
Min. Length	4.02
Max. Length	18.54
Mean Length	12.82
# Measured	27
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

Other Species

Gear Type (1)	Other Species (Gender) (2)	Total Num	Number Measured	Length (inches) Min - Mean - Max	Number Weighed	Weight (pounds) Min - Mean - Max
TN	Painted Turtle	43	0	N/A	0	N/A
	Snapping Turtle	6	6	10.16 - 13.48 - 18.46	0	N/A

(1) Key to sampling gear abbreviations:

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

(2) Gender: If identified and reported.

Approval Dates And Notices

Date Approved By Windom Area Fisheries Supervisor: _____

Date Approved By Southern Region Fisheries Manager: _____

This DRAFT VERSION of the Lake Survey Report contains preliminary data (as of 08/06/2015), 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 Lake Survey Report and should be discarded)

Lake Name: St. James
DOW Number: 83-0043-00

Survey Type: Standard Survey
Survey ID Date: 08/03/2015

Survey Status: Field Work Complete

The following 18 (of 32) report components are not included in this Lake Survey Report:

1. Water Level History¹
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 Observations²
8. Resorts And Campgrounds
9. Fish Spawning Conditions
10. Erosion And Pollution
11. Fish Diseases And Parasites
12. Aquatic Vegetation And Shoalwater Substrates
13. Length At Capture With Last Incremental Length*
14. Back-Calculated Lengths
15. Age Class Frequency Distributions
16. Status Of Fishery And Field Notes
17. Water Quality (Winter Observations) (added to revision 01/21/2010)
18. Survey Attachments (added to revision 20150622)

¹ 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.

² Effective 03/25/2014, the Surrounding Watershed Characteristics, Shoreline Characteristics, and Riparian Landscape Observations report component was modified to be included in the 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 after noon on 08/06/2015 may not be reflected in the Distribution tables until 08/07/2015.

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