

Lake Name: Double

Survey Type: Standard Survey

DOW Number: 17-0056-00

Survey ID Date: 06/26/2023

Lake Identification

Alternate Lake Name: N/A
Primary Lake Class ID: 43

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

Lake Location

Primary County: Cottonwood

Nearest Town: Storden

Legal Descriptions

Lake Center: Township - 107N Range - 38W Section - 23
PLS Section Lake Center: 10703823

All Legal Descriptions:

Cottonwood County: Township - 107N Range - 38W Sections - 23, 26

Area Office

Area Name: Windom
Region Name: Southern

ORG Code: F418
Region Number: 4

Lake Access

(Information based on Re-Survey dated 06/26/1995)

Station ID	Ownership	Public Use	Type	Location / Comments
AC - 1	DNR	Open to Public use	Concrete	STATE-OWNED ACCESS ON NORTH END OF NORTH LAKE.

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

Lake Characteristics

Lake Area (planimetered acres): 246.00
GIS Lake Area (acres): 239.71
DOW Lake Area (acres): 227.00
Littoral Area (acres): 236.10
Area in MN (acres): 239.71
Maximum Depth (feet): 9.0
Mean Depth (feet): N/A

GIS Shoreline Length (miles): 3.80
Maximum Fetch (miles): 0.60
Fetch Orientation (degrees): 315
USGS Quad Map Number: V08d
USGS Quad 24K GIS Index: 4316

Watershed Characteristics

Major Watershed

Name: Cottonwood River
Watershed Number: 29
Watershed size (acres): 840,782

Minor Watershed

Name: Highwater Cr
Watershed Number: 80
Watershed size (acres): 8,526

Surveys and Investigations

Initial Survey: 06/23/1986.
Re-Survey: 06/16/2003, 06/26/1995.
Population Assessment: 06/20/2011, 06/18/2007, 06/22/1999, 06/24/1991.
Special Assessment: 10/18/2000, 08/18/1993.
Dissolved Oxygen Check: 02/16/2016, 02/18/2015, 12/31/2013, 01/02/2013, 01/11/2012, 12/28/2010, 01/04/201
Standard Survey: 06/10/2019, 06/08/2015.
Targeted Survey: 01/09/2020, 01/31/2019, 01/18/2018, 09/11/2017, 02/08/2017, 06/22/2015.

Current Water Level

<u>Station ID</u>	<u>Date</u>	<u>Level</u>	<u>Reading (feet)</u>	<u>Reading Type</u>
BM - 2	06/27/2023	Normal	-4.70	Above or below Benchmark

Benchmark and Gauge Descriptions / Locations

<u>Station ID</u>	<u>Location Description</u>
BM - 2	N/A

Water Level History - Readings

<u>Station ID</u>	<u>Date</u>	<u>Level</u>	<u>Reading (feet)</u>	<u>Reading Type</u>
BM - 1	06/20/2011	High	N/A	Above or below Benchmark
BM - 2	06/27/2023	Normal	-4.70	Above or below Benchmark
	06/10/2019	High	-4.40	Above or below Benchmark
	06/10/2015	High	-4.20	Above or below Benchmark
	06/21/2007	N/A	-4.40	Above or below Benchmark

Water Level History - Station Summary

<u>Station ID</u>	<u>Minimum Level</u>		<u>Maximum Level</u>		<u>Range (feet)</u>	<u>Average Level (feet)</u>	<u>Reading Type (and number of readings)</u>
	<u>Feet</u>	<u>Date</u>	<u>Feet</u>	<u>Date</u>			
BM - 1	N/A	N/A	N/A	N/A	N/A	N/A	Above or below Benchmark (0)
BM - 2	-4.70	06/27/2023	-4.20	06/10/2015	0.50	-4.43	Above or below Benchmark (4)

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	06/26/2023	8.4	Surface	73.2	5.7
			1.0	73.2	5.5
			2.0	73.2	5.6
			3.0	73.2	5.6
			4.0	73.2	5.6
			5.0	73.2	5.5
			6.0	73.2	5.5
			7.0	73.2	5.5
			8.0	73.2	5.5
			8.4	73.2	4.5

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	06/26/2023	Surface	1.5	8.02	220	Brown Grn	Algae

Net Catch Summary by Numbers for GN

Standard gill net sets

Number of Sets: 3
First Set Date: 06/26/2023
Last Lift Date: 06/29/2023
Target Species: N/A

Abbr	Species	Total Fish	Number Per Set	Quartiles for Lake Class 43 ¹		
				25%	50%	75%
BIB	Bigmouth Buffalo	6	2.00	0.75	2.58	6.96
BLB	Black Bullhead	150	50.00	30.34	75.58	150.62
BLC	Black Crappie	6	2.00	1.41	3.71	13.75
CAP	Common Carp	11	3.67	1.00	3.33	13.75
FRD	Freshwater Drum	3	1.00	0.50	2.56	8.33
NOP	Northern Pike	3	1.00	1.08	3.00	8.00
RRH	River Redhorse	1	0.33	N/A	N/A	N/A
WAE	Walleye	23	7.67	2.28	6.83	18.06
WTS	White Sucker	13	4.33	0.81	2.33	6.50
YEP	Yellow Perch	2	0.67	2.65	8.00	25.00
Total Fish/Set:			72.67	¹ 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 ²	Quartiles for Lake Class 43 ¹		
					25%	50%	75%
BIB	Bigmouth Buffalo	24.64	8.21	4.93	N/A	N/A	N/A
BLB	Black Bullhead	50.85	16.95	0.34	0.17	0.26	0.39
BLC	Black Crappie	1.52	0.51	0.30	0.16	0.25	0.35
CAP	Common Carp	74.17	24.72	6.74	0.81	1.98	3.70
FRD	Freshwater Drum	4.92	1.64	1.64	0.40	0.82	1.67
NOP	Northern Pike	8.71	2.90	2.90	1.82	2.50	3.35
RRH	River Redhorse	3.09	1.03	3.09	N/A	N/A	N/A
WAE	Walleye	60.03	20.01	2.64	1.01	1.53	2.30
WTS	White Sucker	17.64	5.88	1.36	0.93	1.58	2.02
YEP	Yellow Perch	0.84	0.28	0.42	0.13	0.21	0.31
Total Pounds Fish/Set:			82.14	¹ Quartiles for Mean Weight			

² Mean Weights are based on measured fish counts only.

Net Catch Summary by Numbers for TN

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

Number of Sets: 9
First Set Date: 06/26/2023
Last Lift Date: 06/29/2023
Target Species: N/A

Abbr	Species	Total Fish	Number Per Set	Quartiles for Lake Class 43 ¹		
				25%	50%	75%
BLB	Black Bullhead	32	3.56	11.50	42.00	132.61
BLC	Black Crappie	5	0.56	1.17	4.88	20.50
BLG	Bluegill	9	1.00	1.17	3.89	20.00
CAP	Common Carp	10	1.11	1.00	2.44	5.51
FRD	Freshwater Drum	10	1.11	0.23	0.92	3.25
NOP	Northern Pike	3	0.33	N/A	N/A	N/A
RRH	River Redhorse	2	0.22	N/A	N/A	N/A
WTS	White Sucker	4	0.44	0.34	0.88	2.58
YEB	Yellow Bullhead	2	0.22	0.50	1.13	2.50
YEP	Yellow Perch	1	0.11	0.33	1.37	3.76
Total Fish/Set:			8.67	¹ 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 ²	Quartiles for Lake Class 43 ¹		
					25%	50%	75%
BLB	Black Bullhead	14.33	1.59	0.43	0.18	0.28	0.40
BLC	Black Crappie	4.93	0.55	0.99	0.22	0.34	0.50
BLG	Bluegill	3.62	0.40	0.40	0.13	0.24	0.39
CAP	Common Carp	78.41	8.71	7.84	1.42	2.92	4.58
FRD	Freshwater Drum	23.19	2.58	2.32	0.28	0.60	0.95
NOP	Northern Pike	11.15	1.24	3.72	N/A	N/A	N/A
RRH	River Redhorse	5.73	0.64	2.87	N/A	N/A	N/A
WTS	White Sucker	8.87	0.99	2.22	1.05	1.47	2.04
YEB	Yellow Bullhead	1.14	0.13	0.57	0.31	0.48	0.67
YEP	Yellow Perch	0.07	0.01	0.07	0.11	0.18	0.30
Total Pounds Fish/Set:			16.83	¹ Quartiles for Mean Weight			

² Mean Weights are based on measured fish counts only.

Length Frequency Distribution for GN

Standard gill net sets

(Field work conducted between 06/26/2023 and 06/29/2023)

	<u>BIB</u>	<u>BLB</u>	<u>BLC</u>	<u>CAP</u>	<u>FRD</u>	<u>NOP</u>	<u>RRH</u>	<u>WAE</u>	<u>WTS</u>	<u>YEP</u>
< 3.00	-	-	-	-	-	-	-	-	-	-
3.00 - 3.49	-	-	-	-	-	-	-	-	-	-
3.50 - 3.99	-	-	-	-	-	-	-	-	-	-
4.00 - 4.49	-	-	2	-	-	-	-	-	-	-
4.50 - 4.99	-	-	-	-	-	-	-	-	-	-
5.00 - 5.49	-	-	-	-	-	-	-	-	-	-
5.50 - 5.99	-	-	-	-	-	-	-	-	-	-
6.00 - 6.49	-	-	-	-	-	-	-	-	-	-
6.50 - 6.99	-	1	-	-	-	-	-	-	1	-
7.00 - 7.49	-	4	-	-	-	-	-	-	-	-
7.50 - 7.99	-	13	2	-	-	-	-	1	-	-
8.00 - 8.49	-	83	-	-	-	-	-	-	-	-
8.50 - 8.99	-	43	2	-	-	-	-	1	-	-
9.00 - 9.49	-	4	-	-	-	-	-	-	-	2
9.50 - 9.99	-	-	-	-	-	-	-	-	-	-
10.00 - 10.49	-	-	-	-	-	-	-	-	-	-
10.50 - 10.99	-	1	-	-	-	-	-	-	-	-
11.00 - 11.49	-	-	-	-	-	-	-	-	-	-
11.50 - 11.99	-	2	-	-	-	-	-	-	3	-
12.00 - 12.99	-	-	-	-	1	-	-	-	1	-
13.00 - 13.99	1	-	-	-	-	-	-	1	2	-
14.00 - 14.99	2	-	-	-	-	-	-	-	1	-
15.00 - 15.99	-	-	-	-	-	-	-	-	1	-
16.00 - 16.99	-	-	-	-	2	-	-	4	1	-
17.00 - 17.99	1	-	-	-	-	-	-	1	3	-
18.00 - 18.99	-	-	-	-	-	-	-	3	-	-
19.00 - 19.99	-	-	-	1	-	-	1	6	-	-
20.00 - 20.99	-	-	-	-	-	-	-	2	-	-
21.00 - 21.99	-	-	-	2	-	-	-	1	-	-
22.00 - 22.99	-	-	-	-	-	-	-	2	-	-
23.00 - 23.99	-	-	-	2	-	-	-	-	-	-
24.00 - 24.99	-	-	-	-	-	2	-	-	-	-
25.00 - 25.99	-	-	-	1	-	1	-	1	-	-
26.00 - 26.99	-	-	-	3	-	-	-	-	-	-
27.00 - 27.99	-	-	-	1	-	-	-	1	-	-
28.00 - 28.99	1	-	-	1	-	-	-	-	-	-
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>BIB</u>	<u>BLB</u>	<u>BLC</u>	<u>CAP</u>	<u>FRD</u>	<u>NOP</u>	<u>RRH</u>	<u>WAE</u>	<u>WTS</u>	<u>YEP</u>
Total	5	151	6	11	3	3	1	24	13	2
Min. Length	13.86	6.61	4.45	19.84	12.64	24.25	19.53	7.99	6.61	9.49
Max. Length	28.46	11.85	8.74	28.62	16.46	25.59	19.53	27.72	17.76	9.49
Mean Length	17.80	8.38	7.46	24.42	15.09	24.82	19.53	18.64	13.80	9.49
# Measured	5	107	5	11	3	3	1	22	13	1
No Lengths for	1	43	1	0	0	0	0	1	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.

Length Frequency Distribution for TN

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

(Field work conducted between 06/26/2023 and 06/29/2023)

	<u>BLB</u>	<u>BLC</u>	<u>BLG</u>	<u>CAP</u>	<u>FRD</u>	<u>NOP</u>	<u>RRH</u>	<u>WTS</u>	<u>YEB</u>	<u>YEP</u>
< 3.00	-	-	-	-	-	-	-	-	-	-
3.00 - 3.49	-	-	-	-	-	-	-	-	-	-
3.50 - 3.99	-	-	-	-	-	-	-	-	-	-
4.00 - 4.49	-	-	1	-	-	-	-	-	-	-
4.50 - 4.99	-	-	-	-	-	-	-	-	-	-
5.00 - 5.49	-	1	-	-	-	-	-	-	-	1
5.50 - 5.99	-	-	-	-	-	-	-	-	-	-
6.00 - 6.49	-	-	2	-	-	-	-	-	-	-
6.50 - 6.99	-	-	1	-	-	-	-	-	-	-
7.00 - 7.49	-	-	-	-	-	-	-	-	-	-
7.50 - 7.99	7	-	3	-	-	-	-	-	1	-
8.00 - 8.49	10	-	1	-	-	-	-	-	-	-
8.50 - 8.99	7	-	-	-	-	-	-	-	-	-
9.00 - 9.49	2	-	1	-	-	-	-	-	-	-
9.50 - 9.99	-	-	-	-	-	-	-	-	-	-
10.00 - 10.49	-	-	-	-	-	-	-	-	-	-
10.50 - 10.99	-	-	-	-	-	-	-	-	-	-
11.00 - 11.49	-	-	-	-	-	-	-	-	-	-
11.50 - 11.99	3	1	-	-	-	-	-	-	1	-
12.00 - 12.99	3	2	-	-	1	-	-	-	-	-
13.00 - 13.99	-	1	-	-	-	-	-	-	-	-
14.00 - 14.99	-	-	-	-	-	-	-	-	-	-
15.00 - 15.99	-	-	-	-	-	-	-	-	-	-
16.00 - 16.99	-	-	-	-	3	-	-	1	-	-
17.00 - 17.99	-	-	-	-	-	-	1	-	-	-
18.00 - 18.99	-	-	-	-	5	-	-	2	-	-
19.00 - 19.99	-	-	-	-	-	1	1	-	-	-
20.00 - 20.99	-	-	-	-	-	-	-	-	-	-
21.00 - 21.99	-	-	-	-	-	-	-	-	-	-
22.00 - 22.99	-	-	-	1	-	-	-	-	-	-
23.00 - 23.99	-	-	-	2	-	-	-	-	-	-
24.00 - 24.99	-	-	-	-	-	-	-	-	-	-
25.00 - 25.99	-	-	-	2	-	-	-	-	-	-
26.00 - 26.99	-	-	-	2	-	-	-	-	-	-
27.00 - 27.99	-	-	-	3	-	1	-	-	-	-
28.00 - 28.99	-	-	-	-	-	-	-	-	-	-
29.00 - 29.99	-	-	-	-	-	-	-	-	-	-
30.00 - 30.99	-	-	-	-	-	1	-	-	-	-
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>CAP</u>	<u>FRD</u>	<u>NOP</u>	<u>RRH</u>	<u>WTS</u>	<u>YEB</u>	<u>YEP</u>
Total	32	5	9	10	9	3	2	3	2	1
Min. Length	7.56	5.04	4.06	22.44	12.83	19.53	17.80	16.06	7.91	5.35
Max. Length	12.40	13.46	9.29	27.99	18.94	30.31	19.53	18.74	11.54	5.35
Mean Length	8.95	11.06	7.15	25.71	17.22	25.81	18.66	17.85	9.72	5.35
# Measured	31	5	9	10	9	3	2	3	2	1
No Lengths for	1	0	0	0	1	0	0	1	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.

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	5	0	N/A	0	N/A
	Snapping Turtle	2	2	12.20 - 13.03 - 13.86	0	N/A
	Spiney Softshell Turtle	1	0	N/A	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 06/30/2023), and is therefore subject to change at any time.



Minnesota Department of Natural Resources

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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: Double

Survey Type: Standard Survey

DOW Number: 17-0056-00

Survey ID Date: 06/26/2023

Survey Status: Proposed

The following 21 (of 34) 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. Water Quality (Winter Observations) (added to revision 01/21/2010)
14. Laboratory Analysis Of Water Chemistry
15. Zooplankton Sampling (added to revision 20221130)
16. Catch Summary (Pre-1993 Format) (added to revision 20201001)
17. Length At Capture With Last Incremental Length*
18. Back-Calculated Lengths
19. Age Class Frequency Distributions
20. Status Of Fishery And Field Notes
21. 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 before noon on 06/30/2023 may not be reflected in the Distribution tables until after 12:30 pm on 06/30/2023.

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