

Lake Name: Cottonwood
DOW Number: 17-0022-00

Survey Type: Standard Survey
Survey ID Date: 08/19/2024

Lake Identification

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

DNR Sounding Map Number: C2565
Alternate Lake Class ID: N/A

Lake Location

Primary County: Cottonwood

Nearest Town: Windom

Legal Descriptions

Lake Center: Township - 105N Range - 35W Section - 19
PLS Section Lake Center: 10503519

All Legal Descriptions:

Cottonwood County: Township - 105N Range - 35W Sections - 19, 30
Township - 105N Range - 36W Sections - 24, 25

Area Office

Area Name: Windom
Region Name: Southern

ORG Code: F418
Region Number: 4

Lake Access

(Information based on Population Assessment dated 07/25/1994)

<u>Station ID</u>	<u>Ownership</u>	<u>Public Use</u>	<u>Type</u>	<u>Location / Comments</u>
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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): 140.00
GIS Lake Area (acres): 154.97
DOW Lake Area (acres): 146.00
Littoral Area (acres): 154.97
Area in MN (acres): 154.97
Maximum Depth (feet): 10.0
Mean Depth (feet): 8.0

GIS Shoreline Length (miles): 3.47
Maximum Fetch (miles): 1.00
Fetch Orientation (degrees): 22
USGS Quad Map Number: W09a
USGS Quad 24K GIS Index: 4418

Watershed Characteristics

Major Watershed

Name: Des Moines-Headwaters
Watershed Number: 51
Watershed size (acres): 798,595

Minor Watershed

Name: Warren L Outlet
Watershed Number: 10
Watershed size (acres): 7,531

Surveys and Investigations

Initial Survey: 07/23/1990.
Re-Survey: 07/20/1998.
Population Assessment: 07/23/2012, 07/21/2008, 07/22/2002, 07/25/1994.
Special Assessment: 07/23/2012, 08/29/1955.
Dissolved Oxygen Check: 02/11/2016, 02/24/2015, 01/03/2014, 01/08/2013, 12/28/2012, 01/20/2012, 12/29/2011, 01/12/2010.
Standard Survey: 08/19/2024, 08/17/2020, 07/25/2016.
Targeted Survey: 02/03/2020, 01/10/2019, 01/18/2018.

Current Water Level

<u>Station ID</u>	<u>Date</u>	<u>Level</u>	<u>Reading (feet)</u>	<u>Reading Type</u>
BM - 1	08/27/2024	Normal	-4.70	Above or below Benchmark

Benchmark and Gauge Descriptions / Locations

<u>Station ID</u>	<u>Location Description</u>
BM - 1	Top of northeast corner of concrete slab under aeration house by access.

Water Level History - Readings

<u>Station ID</u>	<u>Date</u>	<u>Level</u>	<u>Reading (feet)</u>	<u>Reading Type</u>
BM - 1	08/27/2024	Normal	-4.70	Above or below Benchmark
	08/17/2020	Low	-5.10	Above or below Benchmark
	07/25/2016	High	-3.30	Above or below Benchmark
	07/23/2012	Low	-4.30	Above or below Benchmark
	07/24/2008	Low	-4.30	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	-5.10	08/17/2020	-3.30	07/25/2016	1.80	-4.34	Above or below Benchmark (5)

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	08/19/2024	11.0	Surface	75.0	8.1
			1.0	75.0	8.1
			2.0	75.0	7.7
			3.0	74.8	7.6
			4.0	73.6	5.1
			5.0	72.9	4.8
			6.0	72.5	4.3
			7.0	72.3	3.5
			8.0	72.1	3.0
			9.0	72.1	2.6
			10.0	72.1	2.6
11.0	72.0	2.4			

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	08/19/2024	Surface	0.8	8.75	200	Green	Algae

Net Catch Summary by Numbers for GN

Standard gill net sets

Number of Sets: 3
First Set Date: 08/19/2024
Last Lift Date: 08/22/2024
Target Species: N/A

Abbr	Species	Total Fish	Number Per Set	Quartiles for Lake Class 43 ¹		
				25%	50%	75%
BLB	Black Bullhead	85	28.33	30.34	75.58	150.62
BLC	Black Crappie	17	5.67	1.41	3.71	13.75
CCF	Channel Catfish	17	5.67	N/A	N/A	N/A
CAP	Common Carp	1	0.33	1.00	3.33	13.75
NOP	Northern Pike	5	1.67	1.08	3.00	8.00
OSS	Orangespotted Sunfish	1	0.33	N/A	N/A	N/A
WAE	Walleye	11	3.67	2.28	6.83	18.06
WTS	White Sucker	4	1.33	0.81	2.33	6.50
YEP	Yellow Perch	29	9.67	2.65	8.00	25.00
Total Fish/Set:			56.67	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%
BLB	Black Bullhead	29.16	9.72	0.34	0.17	0.26	0.39
BLC	Black Crappie	7.21	2.40	0.42	0.16	0.25	0.35
CCF	Channel Catfish	20.77	6.92	1.22	N/A	N/A	N/A
CAP	Common Carp	0.04	0.01	0.04	0.81	1.98	3.70
NOP	Northern Pike	13.32	4.44	2.66	1.82	2.50	3.35
OSS	Orangespotted Sunfish	0.08	0.03	0.08	N/A	N/A	N/A
WAE	Walleye	14.50	4.83	1.32	1.01	1.53	2.30
WTS	White Sucker	8.21	2.74	2.05	0.93	1.58	2.02
YEP	Yellow Perch	9.41	3.14	0.32	0.13	0.21	0.31
Total Pounds Fish/Set:			34.24	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: 08/19/2024
Last Lift Date: 08/22/2024
Target Species: N/A

Abbr	Species	Total Fish	Number Per Set	Quartiles for Lake Class 43 ¹		
				25%	50%	75%
BLB	Black Bullhead	52	5.78	11.50	42.00	132.61
BLC	Black Crappie	346	38.44	1.17	4.88	20.50
BLG	Bluegill	21	2.33	1.17	3.89	20.00
CCF	Channel Catfish	10	1.11	N/A	N/A	N/A
CAP	Common Carp	2	0.22	1.00	2.44	5.51
LMB	Largemouth Bass	1	0.11	0.23	0.38	0.67
NOP	Northern Pike	2	0.22	N/A	N/A	N/A
PMK	Pumpkinseed	7	0.78	0.26	1.35	4.92
SMB	Smallmouth Bass	1	0.11	N/A	N/A	N/A
WAE	Walleye	30	3.33	0.50	1.33	2.95
WTS	White Sucker	40	4.44	0.34	0.88	2.58
YEP	Yellow Perch	9	1.00	0.33	1.37	3.76
Total Fish/Set:			57.89	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	19.74	2.19	0.38	0.18	0.28	0.40
BLC	Black Crappie	135.84	15.09	0.39	0.22	0.34	0.50
BLG	Bluegill	4.57	0.51	0.22	0.13	0.24	0.39
CCF	Channel Catfish	12.01	1.33	1.20	N/A	N/A	N/A
CAP	Common Carp	9.32	1.04	4.66	1.42	2.92	4.58
LMB	Largemouth Bass	3.20	0.36	3.20	0.30	0.85	1.53
NOP	Northern Pike	1.71	0.19	0.85	N/A	N/A	N/A
PMK	Pumpkinseed	0.82	0.09	0.12	0.08	0.12	0.20
SMB	Smallmouth Bass	0.33	0.04	0.33	N/A	N/A	N/A
WAE	Walleye	25.41	2.82	0.85	0.82	1.44	2.28
WTS	White Sucker	74.84	8.32	1.87	1.05	1.47	2.04
YEP	Yellow Perch	3.08	0.34	0.34	0.11	0.18	0.30
Total Pounds Fish/Set:			32.32	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 08/19/2024 and 08/22/2024)

	<u>BLB</u>	<u>BLC</u>	<u>CAP</u>	<u>CCF</u>	<u>NOP</u>	<u>OSS</u>	<u>WAE</u>	<u>WTS</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	-	-	-
5.50 - 5.99	2	-	-	-	-	-	-	-	-
6.00 - 6.49	-	-	-	-	-	-	-	-	1
6.50 - 6.99	13	-	-	-	-	-	-	-	-
7.00 - 7.49	10	-	-	-	-	-	-	-	2
7.50 - 7.99	8	-	-	-	-	-	-	-	6
8.00 - 8.49	5	3	-	-	-	-	-	-	6
8.50 - 8.99	12	12	-	-	-	-	-	-	5
9.00 - 9.49	20	1	-	-	-	-	-	-	5
9.50 - 9.99	13	-	-	-	-	-	-	-	1
10.00 - 10.49	2	1	-	-	-	-	-	-	3
10.50 - 10.99	-	-	-	-	-	-	-	-	-
11.00 - 11.49	-	-	-	-	-	-	-	-	-
11.50 - 11.99	-	-	-	-	-	-	-	-	-
12.00 - 12.99	-	-	-	-	-	-	1	-	-
13.00 - 13.99	-	-	-	-	-	-	7	-	-
14.00 - 14.99	-	-	-	4	-	-	1	-	-
15.00 - 15.99	-	-	-	4	-	-	-	1	-
16.00 - 16.99	-	-	-	4	1	-	-	1	-
17.00 - 17.99	-	-	-	2	-	-	-	2	-
18.00 - 18.99	-	-	-	3	1	-	-	-	-
19.00 - 19.99	-	-	-	-	1	-	-	-	-
20.00 - 20.99	-	-	-	-	1	-	-	-	-
21.00 - 21.99	-	-	-	-	-	-	1	-	-
22.00 - 22.99	-	-	-	-	-	-	1	-	-
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	-	-	-	-	1	-	-	-	-
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>CAP</u>	<u>CCF</u>	<u>NOP</u>	<u>OSS</u>	<u>WAE</u>	<u>WTS</u>	<u>YEP</u>
Total	85	17	1	17	5	1	11	4	29
Min. Length	5.55	8.15	4.41	14.02	16.18	5.08	12.87	15.51	6.22
Max. Length	10.28	10.35	4.41	18.54	31.69	5.08	22.91	17.64	10.47
Mean Length	8.37	8.76	4.41	16.27	21.20	5.08	15.03	16.62	8.52
# Measured	85	17	1	17	5	1	11	4	29
No Lengths for	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.

Length Frequency Distribution for TN

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

(Field work conducted between 08/19/2024 and 08/22/2024)

	<u>BLB</u>	<u>BLC</u>	<u>BLG</u>	<u>CAP</u>	<u>CCF</u>	<u>LMB</u>	<u>NOP</u>	<u>PMK</u>	<u>SMB</u>	<u>WAE</u>	<u>WTS</u>	<u>YEP</u>
< 3.00	-	-	-	-	-	-	-	-	-	-	-	-
3.00 - 3.49	-	-	-	-	-	-	-	-	-	-	-	-
3.50 - 3.99	-	-	2	-	-	-	-	-	-	-	-	-
4.00 - 4.49	-	-	4	-	-	-	-	2	-	-	-	-
4.50 - 4.99	-	-	6	-	-	-	-	2	-	-	-	-
5.00 - 5.49	-	-	1	-	-	-	-	2	-	-	-	-
5.50 - 5.99	-	2	-	-	-	-	-	-	-	-	-	1
6.00 - 6.49	1	-	1	-	-	-	-	-	-	-	-	-
6.50 - 6.99	1	2	-	-	-	-	-	1	-	-	-	-
7.00 - 7.49	1	4	-	-	-	-	-	-	-	-	-	-
7.50 - 7.99	4	6	3	-	-	-	-	-	-	-	-	1
8.00 - 8.49	6	85	4	-	-	-	-	-	-	-	-	3
8.50 - 8.99	15	186	-	-	-	-	-	-	1	-	-	2
9.00 - 9.49	10	54	-	-	-	-	-	-	-	1	-	-
9.50 - 9.99	13	7	-	-	-	-	-	-	-	-	-	1
10.00 - 10.49	-	-	-	-	-	-	-	-	-	2	-	-
10.50 - 10.99	-	-	-	-	1	-	-	-	-	1	-	1
11.00 - 11.49	1	-	-	-	-	-	-	-	-	-	-	-
11.50 - 11.99	-	-	-	-	-	-	-	-	-	-	-	-
12.00 - 12.99	-	-	-	-	-	-	-	-	-	6	-	-
13.00 - 13.99	-	-	-	-	-	-	-	-	-	12	-	-
14.00 - 14.99	-	-	-	-	1	-	1	-	-	7	1	-
15.00 - 15.99	-	-	-	-	5	-	-	-	-	-	12	-
16.00 - 16.99	-	-	-	-	1	1	-	-	-	-	9	-
17.00 - 17.99	-	-	-	-	1	-	-	-	-	-	15	-
18.00 - 18.99	-	-	-	-	1	-	1	-	-	-	3	-
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	-	-	-	1	-	-	-	-	-	1	-	-
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>BLB</u>	<u>BLC</u>	<u>BLG</u>	<u>CAP</u>	<u>CCF</u>	<u>LMB</u>	<u>NOP</u>	<u>PMK</u>	<u>SMB</u>	<u>WAE</u>	<u>WTS</u>	<u>YEP</u>
Total	52	346	21	2	10	1	2	7	1	30	40	9
Min. Length	6.38	5.75	3.78	19.53	10.87	16.77	14.37	4.29	8.98	9.49	14.21	5.59
Max. Length	11.06	9.76	8.35	24.29	18.50	16.77	18.54	6.93	8.98	24.49	18.94	10.67
Mean Length	8.85	8.60	5.75	21.91	15.65	16.77	16.46	5.08	8.98	13.33	16.67	8.52
# Measured	52	200	21	2	10	1	2	7	1	30	40	9
No Lengths for	0	146	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.

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	Smooth Softshell Turtle	1	0	N/A	0	N/A
	Snapping Turtle	1	1	13.50	0	N/A
	Spiney Softshell Turtle	3	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 08/28/2024), 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: Cottonwood

Survey Type: Standard Survey

DOW Number: 17-0022-00

Survey ID Date: 08/19/2024

Survey Status: Field Work Complete

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 after noon on 08/28/2024 may not be reflected in the Distribution tables until 08/29/2024.

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