

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

Survey Type: Standard Survey
Survey ID Date: 08/17/2020

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)

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):	140.00	GIS Shoreline Length (miles):	3.47
GIS Lake Area (acres):	154.97	Maximum Fetch (miles):	1.00
DOW Lake Area (acres):	146.00	Fetch Orientation (degrees):	22
Littoral Area (acres):	154.97	USGS Quad Map Number:	W09a
Area in MN (acres):	154.97	USGS Quad 24K GIS Index:	4418
Maximum Depth (feet):	10.0		
Mean Depth (feet):	8.0		

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, 12/29/2010, 01/12/2010.
Standard Survey: 08/17/2020, 07/25/2016.
Targeted Survey: 06/11/2020, 01/10/2019, 01/18/2018.

Current Water Level

Station ID	Date	Level	Reading (feet)	Reading Type
BM - 1	08/17/2020	Low	-5.10	Above or below Benchmark

Benchmark and Gauge Descriptions / Locations

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

Water Level History - Readings

Station ID	Date	Level	Reading (feet)	Reading Type
BM - 1	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

Station ID	Minimum Level		Maximum Level		Range (feet)	Average Level (feet)	Reading Type (and number of readings)
	Feet	Date	Feet	Date			
BM - 1	-5.10	08/17/2020	-3.30	07/25/2016	1.80	-4.25	Above or below Benchmark (4)

Dissolved Oxygen and Temperature Profile of Lake Water

Station ID	Sampling Date	Bottom Depth (Feet)	Sample Depth (Feet)	Water	Dissolved
				Temperature (°F)	Oxygen (ppm)
WQ - 1	08/17/2020	10.8	Surface	77.0	9.9
			1.0	77.0	10.0
			2.0	77.0	10.0
			3.0	76.6	9.7
			4.0	76.6	9.6
			5.0	76.6	9.5
			6.0	76.6	9.4
			7.0	76.6	9.3
			8.0	76.5	8.7
			9.0	76.5	8.8
			10.0	76.5	8.4
10.8	76.3	7.8			

Field Measurements of Water Quality

<u>Station ID</u>	<u>Sampling Date</u>	<u>Sample Depth (Feet)</u>	<u>Secchi Depth (Feet)</u>	<u>Field pH</u>	<u>Alkalinity (ppm)</u>	<u>Water Color</u>	<u>Color Cause</u>
WQ - 1	08/17/2020	Surface	1.6	7.52	200	Brown Grn	Sediment

Net Catch Summary by Numbers for GN

Standard gill net sets

Number of Sets: 3
First Set Date: 08/17/2020
Last Lift Date: 08/20/2020
Target Species: N/A

Abbr	Species	Total Fish	Number Per Set	Quartiles for Lake Class 43*		
				25%	50%	75%
BIB	Bigmouth Buffalo	4	1.33	0.75	2.58	6.96
BLB	Black Bullhead	199	66.33	30.34	75.58	150.62
BLC	Black Crappie	10	3.33	1.41	3.71	13.75
BLG	Bluegill	7	2.33	N/A	N/A	N/A
CCF	Channel Catfish	39	13.00	N/A	N/A	N/A
CAP	Common Carp	10	3.33	1.00	3.33	13.75
PMK	Pumpkinseed	4	1.33	N/A	N/A	N/A
WAE	Walleye	14	4.67	2.28	6.83	18.06
WTS	White Sucker	17	5.67	0.81	2.33	6.50
YEP	Yellow Perch	62	20.67	2.65	8.00	25.00
Total Fish/Set:			122.00	* 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 43*		
					25%	50%	75%
BIB	Bigmouth Buffalo	21.77	7.26	5.44	N/A	N/A	N/A
BLB	Black Bullhead	69.28	23.09	0.35	0.17	0.26	0.39
BLC	Black Crappie	3.34	1.11	0.33	0.16	0.25	0.35
BLG	Bluegill	1.87	0.62	0.27	N/A	N/A	N/A
CCF	Channel Catfish	26.88	8.96	0.69	N/A	N/A	N/A
CAP	Common Carp	51.38	17.13	5.14	0.81	1.98	3.70
PMK	Pumpkinseed	0.66	0.22	0.16	N/A	N/A	N/A
WAE	Walleye	19.62	6.54	1.40	1.01	1.53	2.30
WTS	White Sucker	15.52	5.17	0.91	0.93	1.58	2.02
YEP	Yellow Perch	11.41	3.80	0.18	0.13	0.21	0.31
Total Pounds Fish/Set:			73.91	* Quartiles for Mean Weight			

Net Catch Summary by Numbers for TN

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

Number of Sets: 8
 First Set Date: 08/17/2020
 Last Lift Date: 08/20/2020
 Target Species: N/A

Abbr	Species	Total Fish	Number Per Set	Quartiles for Lake Class 43*		
				25%	50%	75%
BLB	Black Bullhead	175	21.88	11.50	42.00	132.61
BLC	Black Crappie	55	6.88	1.17	4.88	20.50
BLG	Bluegill	208	26.00	1.17	3.89	20.00
CCF	Channel Catfish	21	2.63	N/A	N/A	N/A
CAP	Common Carp	7	0.88	1.00	2.44	5.51
NOP	Northern Pike	4	0.50	N/A	N/A	N/A
PMK	Pumpkinseed	77	9.63	0.26	1.35	4.92
SMB	Smallmouth Bass	2	0.25	N/A	N/A	N/A
WAE	Walleye	10	1.25	0.50	1.33	2.95
WTS	White Sucker	10	1.25	0.34	0.88	2.58
YEB	Yellow Bullhead	1	0.13	0.50	1.13	2.50
YEP	Yellow Perch	9	1.13	0.33	1.37	3.76
Total Fish/Set:			72.38	* 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 43*		
					25%	50%	75%
BLB	Black Bullhead	58.70	7.34	0.34	0.18	0.28	0.40
BLC	Black Crappie	15.40	1.92	0.28	0.22	0.34	0.50
BLG	Bluegill	51.51	6.44	0.25	0.13	0.24	0.39
CCF	Channel Catfish	17.05	2.13	0.81	N/A	N/A	N/A
CAP	Common Carp	33.61	4.20	4.80	1.42	2.92	4.58
NOP	Northern Pike	23.97	3.00	5.99	N/A	N/A	N/A
PMK	Pumpkinseed	10.53	1.32	0.14	0.08	0.12	0.20
SMB	Smallmouth Bass	2.32	0.29	1.16	N/A	N/A	N/A
WAE	Walleye	9.64	1.20	0.96	0.82	1.44	2.28
WTS	White Sucker	11.04	1.38	1.10	1.05	1.47	2.04
YEB	Yellow Bullhead	0.37	0.05	0.37	0.31	0.48	0.67
YEP	Yellow Perch	1.31	0.16	0.15	0.11	0.18	0.30
Total Pounds Fish/Set:			29.43	* Quartiles for Mean Weight			

Length Frequency Distribution for GN

Standard gill net sets

(Field work conducted between 08/17/2020 and 08/20/2020)

	<u>BIB</u>	<u>BLB</u>	<u>BLC</u>	<u>BLG</u>	<u>CAP</u>	<u>CCF</u>	<u>PMK</u>	<u>WAE</u>	<u>WTS</u>	<u>YEP</u>
< 3.00	-	-	-	-	-	-	-	-	-	-
3.00 - 3.49	-	-	-	-	-	-	-	-	-	-
3.50 - 3.99	-	-	-	-	-	-	-	-	-	-
4.00 - 4.49	-	-	-	-	-	-	-	-	-	-
4.50 - 4.99	1	-	-	-	-	-	-	-	-	-
5.00 - 5.49	-	-	-	-	-	-	-	-	-	1
5.50 - 5.99	-	-	-	1	-	-	3	-	-	14
6.00 - 6.49	-	-	1	-	-	-	1	-	-	9
6.50 - 6.99	-	-	-	3	-	-	-	-	-	-
7.00 - 7.49	-	1	-	3	-	-	-	-	-	5
7.50 - 7.99	-	15	1	-	-	-	-	-	-	11
8.00 - 8.49	-	35	4	-	-	1	-	-	-	11
8.50 - 8.99	-	130	3	-	-	3	-	-	-	8
9.00 - 9.49	-	19	-	-	-	2	-	-	-	2
9.50 - 9.99	-	-	-	-	-	1	-	-	-	1
10.00 - 10.49	-	-	-	-	-	-	-	-	-	-
10.50 - 10.99	-	-	1	-	-	-	-	-	1	-
11.00 - 11.49	-	-	-	-	-	-	-	-	1	-
11.50 - 11.99	-	-	-	-	-	-	-	-	1	-
12.00 - 12.99	-	-	-	-	-	10	-	6	6	-
13.00 - 13.99	-	-	-	-	-	18	-	3	4	-
14.00 - 14.99	-	-	-	-	-	1	-	-	2	-
15.00 - 15.99	-	-	-	-	-	-	-	-	-	-
16.00 - 16.99	-	-	-	-	-	1	-	1	1	-
17.00 - 17.99	-	-	-	-	-	1	-	1	-	-
18.00 - 18.99	-	-	-	-	-	-	-	1	-	-
19.00 - 19.99	-	-	-	-	1	1	-	1	-	-
20.00 - 20.99	-	-	-	-	2	-	-	-	-	-
21.00 - 21.99	-	-	-	-	1	-	-	-	-	-
22.00 - 22.99	1	-	-	-	2	-	-	-	-	-
23.00 - 23.99	2	-	-	-	2	-	-	-	-	-
24.00 - 24.99	-	-	-	-	-	-	-	-	-	-
25.00 - 25.99	-	-	-	-	1	-	-	-	-	-
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>BIB</u>	<u>BLB</u>	<u>BLC</u>	<u>BLG</u>	<u>CAP</u>	<u>CCF</u>	<u>PMK</u>	<u>WAE</u>	<u>WTS</u>	<u>YEP</u>
Total	4	200	10	7	9	39	4	14	16	62
Min. Length	4.88	7.01	6.38	5.94	19.13	8.19	5.55	12.05	10.55	5.47
Max. Length	23.66	9.33	10.83	7.44	25.12	19.37	6.22	26.22	16.18	9.61
Mean Length	18.56	8.55	8.39	6.92	22.07	12.78	5.80	15.31	12.92	7.40
# Measured	4	117	10	7	9	39	4	14	16	56
No Lengths for	0	82	0	0	1	0	0	0	1	6

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 08/17/2020 and 08/20/2020)

	<u>BLB</u>	<u>BLC</u>	<u>BLG</u>	<u>CAP</u>	<u>CCF</u>	<u>NOP</u>	<u>PMK</u>	<u>SMB</u>	<u>WAE</u>	<u>WTS</u>	<u>YEB</u>	<u>YEP</u>
< 3.00	-	-	-	-	-	-	-	-	-	-	-	-
3.00 - 3.49	-	1	3	-	-	-	2	-	-	-	-	-
3.50 - 3.99	-	-	1	-	-	-	8	-	-	-	-	-
4.00 - 4.49	-	-	4	-	-	-	14	-	-	-	-	-
4.50 - 4.99	-	-	2	-	-	-	2	-	-	-	-	-
5.00 - 5.49	-	-	1	-	-	-	13	-	-	-	-	-
5.50 - 5.99	-	-	18	-	-	-	19	-	-	-	-	-
6.00 - 6.49	-	3	26	-	-	-	12	-	-	-	-	7
6.50 - 6.99	-	11	46	-	-	-	7	-	-	-	-	-
7.00 - 7.49	-	3	92	-	-	-	-	1	-	-	-	-
7.50 - 7.99	6	7	13	-	-	-	-	-	-	-	-	-
8.00 - 8.49	65	16	-	-	-	-	-	-	-	-	-	-
8.50 - 8.99	99	7	-	-	-	-	-	-	-	-	1	1
9.00 - 9.49	5	6	-	-	-	-	-	-	-	1	-	-
9.50 - 9.99	-	-	-	-	-	-	-	-	1	-	-	1
10.00 - 10.49	-	-	-	-	-	-	-	-	1	-	-	-
10.50 - 10.99	-	-	-	-	-	-	-	-	-	-	-	-
11.00 - 11.49	-	-	-	-	-	-	-	-	-	1	-	-
11.50 - 11.99	-	-	-	-	-	-	-	-	3	-	-	-
12.00 - 12.99	-	-	-	-	4	-	-	-	1	2	-	-
13.00 - 13.99	-	-	-	-	11	-	-	-	1	4	-	-
14.00 - 14.99	-	-	-	-	2	-	-	-	-	-	-	-
15.00 - 15.99	-	-	-	-	1	-	-	1	-	-	-	-
16.00 - 16.99	-	-	-	-	3	-	-	-	-	-	-	-
17.00 - 17.99	-	-	-	-	-	-	-	-	1	2	-	-
18.00 - 18.99	-	-	-	-	-	-	-	-	1	-	-	-
19.00 - 19.99	-	-	-	1	-	-	-	-	1	-	-	-
20.00 - 20.99	-	-	-	1	-	-	-	-	-	-	-	-
21.00 - 21.99	-	-	-	3	-	-	-	-	-	-	-	-
22.00 - 22.99	-	-	-	1	-	-	-	-	-	-	-	-
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	-	-	-	-	-	1	-	-	-	-	-	-
30.00 - 30.99	-	-	-	-	-	1	-	-	-	-	-	-
31.00 - 31.99	-	-	-	-	-	-	-	-	-	-	-	-
32.00 - 32.99	-	-	-	-	-	1	-	-	-	-	-	-
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>NOP</u>	<u>PMK</u>	<u>SMB</u>	<u>WAE</u>	<u>WTS</u>	<u>YEB</u>	<u>YEP</u>
Total	175	54	206	7	21	4	77	2	10	10	1	9
Min. Length	7.83	3.35	3.35	19.33	12.52	24.09	3.23	7.09	9.88	9.17	8.90	6.10
Max. Length	9.21	9.33	7.60	24.76	16.57	32.09	6.73	15.79	19.29	17.80	8.90	9.88
Mean Length	8.53	7.79	6.71	21.66	13.76	29.08	5.32	11.44	13.69	13.40	8.90	6.87
# Measured	113	54	116	7	21	4	73	2	10	10	1	9
No Lengths for	62	1	92	0	0	0	4	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	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 08/21/2020), 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.

Lake Survey Report revision: 20190410-RJE. Data Date: 08/21/2020 at 7:06 am .

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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: 08/17/2020

Survey Status: Field Work Complete

The following 19 (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. Laboratory Analysis Of Water Chemistry
14. Length At Capture With Last Incremental Length*
15. Back-Calculated Lengths
16. Age Class Frequency Distributions
17. Status Of Fishery And Field Notes
18. Water Quality (Winter Observations) (added to revision 01/21/2010)
19. 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 08/21/2020 may not be reflected in the Distribution tables until after 12:30 pm on 08/21/2020.

The following survey component was flagged to be specifically excluded from this report: TN - 1

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