



Minnesota Department of Natural Resources
 Fisheries Management
LAKE SURVEY REPORT



DRAFT VERSION - PRELIMINARY DATA (AS OF 07/25/2016)

Lake Name: **Stay**
 DOW Number: **41-0034-00**

Survey Type: **Standard Survey**
 Survey ID Date: **07/11/2016**

Lake Identification

Alternate Lake Name: N/A
 Primary Lake Class ID: 42
 DNR Sounding Map Number: N/A
 Alternate Lake Class ID: N/A

Lake Location

Primary County: Lincoln
 Nearest Town: Arco

Legal Descriptions

Lake Center: Township - 111N Range - 44W Section - 29
 PLS Section Lake Center: 11104429

All Legal Descriptions:

Lincoln County: Township - 111N Range - 44W Sections - 29, 32

Area Office

Area Name: Windom
 Region Name: Southern
 ORG Code: F418
 Region Number: 4

Lake Access

(Information based on Re-Survey dated 07/22/1996)

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

Lake Characteristics

Lake Area (planimetered acres):	224.00	GIS Shoreline Length (miles):	2.95
GIS Lake Area (acres):	221.20	Maximum Fetch (miles):	0.88
DOW Lake Area (acres):	220.00	Fetch Orientation (degrees):	360
Littoral Area (acres):	221.20	USGS Quad Map Number:	U05b
Area in MN (acres):	221.20	USGS Quad 24K GIS Index:	4009
Maximum Depth (feet):	6.0		
Mean Depth (feet):	N/A		

Watershed Characteristics

Major Watershed	Minor Watershed
Name: Minn R-Yellow Medicine R.	Name: Co Ditch #4
Watershed Number: 25	Watershed Number: 143
Watershed size (acres): 1,332,769	Watershed size (acres): 7,863

Surveys and Investigations

Re-Survey: 07/22/1996, 07/26/1988.
 Population Assessment: 07/09/2012, 07/14/2008, 07/19/2004, 07/17/2000, 07/27/1992.
 Special Assessment: 08/31/1967.
 Winter Kill Assessment: 05/02/2013, 04/19/2010.
 Dissolved Oxygen Check: 02/17/2016, 02/19/2015, 01/02/2014, 02/06/2013, 01/03/2013, 01/10/2012, 12/29/2010,
 01/04/2010.
 Standard Survey: 07/11/2016.

Current Water Level

Station ID	Date	Level	Reading (feet)	Reading Type
BM - 1	07/20/2016	High	0.50	Above or below Benchmark

Benchmark and Gauge Descriptions / Locations

Station ID	Location Description
BM - 1	N/A

Water Level History - Readings

Station ID	Date	Level	Reading (feet)	Reading Type
BM - 1	07/20/2016	High	0.50	Above or below Benchmark
	07/09/2012	Normal	4.80	Above or below Benchmark
	07/16/2008	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	-4.30	07/16/2008	4.80	07/09/2012	9.10	0.33	Above or below Benchmark (3)

Dissolved Oxygen and Temperature Profile of Lake Water

Station ID	Sampling Date	Bottom Depth (Feet)	Sample Depth (Feet)	Water		Dissolved Oxygen (ppm)
				Temperature (°F)		
WQ - 1	07/20/2016	N/A	Surface	77.7	9.1	
			1.0	77.7	9.1	
			2.0	77.7	8.7	
			3.0	77.7	8.9	
			4.0	77.4	8.7	
			5.0	76.1	8.7	
			6.0	73.0	5.1	
			7.0	71.8	5.0	

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	07/20/2016	Surface	4.9	8.50	171	Clear	N/A

Net Catch Summary by Numbers for GN

Standard gill net sets

Number of Sets: 1
 First Set Date: 07/18/2016
 Last Lift Date: 07/19/2016
 Target Species: N/A

Abbr	Species	Total Fish	Number Per Set	Quartiles for Lake Class 42*		
				25%	50%	75%
BLB	Black Bullhead	49	49.00	9.63	39.75	91.42
WAE	Walleye	43	43.00	1.00	2.50	7.33
YEP	Yellow Perch	95	95.00	3.00	8.00	26.50
Total Fish/Set:			187.00	* 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 42*		
					25%	50%	75%
BLB	Black Bullhead	8.58	8.58	0.18	0.18	0.28	0.49
WAE	Walleye	92.26	92.26	2.15	0.95	1.58	2.80
YEP	Yellow Perch	22.59	22.59	0.24	0.14	0.20	0.28
Total Pounds Fish/Set:			123.43	* 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: 07/18/2016
 Last Lift Date: 07/20/2016
 Target Species: N/A

Abbr	Species	Total Fish	Number Per Set	Quartiles for Lake Class 42*		
				25%	50%	75%
BLB	Black Bullhead	132	16.50	2.20	17.30	60.46
CAP	Common Carp	5	0.63	1.00	2.06	3.56
WAE	Walleye	7	0.88	0.40	0.86	1.94
YEP	Yellow Perch	118	14.75	0.48	1.29	3.45
Total Fish/Set:			32.75	* 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	32.43	4.05	0.25	0.19	0.30	0.50
CAP	Common Carp	24.06	3.01	4.81	2.10	3.55	5.29
WAE	Walleye	11.91	1.49	1.70	0.59	1.53	2.56
YEP	Yellow Perch	13.29	1.66	0.11	0.10	0.17	0.27
Total Pounds Fish/Set:			10.21	* Quartiles for Mean Weight			

Length Frequency Distribution for GN

Standard gill net sets

(Field work conducted between 07/18/2016 and 07/19/2016)

	<u>BLB</u>	<u>WAE</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	3	-	-
5.50 - 5.99	13	-	9
6.00 - 6.49	3	-	39
6.50 - 6.99	8	-	13
7.00 - 7.49	7	-	3
7.50 - 7.99	2	-	-
8.00 - 8.49	1	-	-
8.50 - 8.99	7	-	1
9.00 - 9.49	4	-	6
9.50 - 9.99	-	-	10
10.00 - 10.49	-	-	8
10.50 - 10.99	-	-	1
11.00 - 11.49	-	1	2
11.50 - 11.99	-	-	1
12.00 - 12.99	-	4	1
13.00 - 13.99	-	-	-
14.00 - 14.99	-	-	-
15.00 - 15.99	-	-	-
16.00 - 16.99	-	6	-
17.00 - 17.99	-	3	-
18.00 - 18.99	-	7	-
19.00 - 19.99	-	10	-
20.00 - 20.99	-	11	-
21.00 - 21.99	-	1	-
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>BLB</u>	<u>WAE</u>	<u>YEP</u>
Total	49	43	94
Min. Length	4.96	11.06	5.67
Max. Length	9.33	21.77	12.40
Mean Length	6.95	18.24	7.74
# Measured	49	43	80
No Lengths for	0	0	15

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 07/18/2016 and 07/20/2016)

	<u>BLB</u>	<u>CAP</u>	<u>WAE</u>	<u>YEP</u>
< 3.00	-	1	-	-
3.00 - 3.49	-	-	-	-
3.50 - 3.99	-	-	-	-
4.00 - 4.49	-	-	-	-
4.50 - 4.99	2	-	-	-
5.00 - 5.49	8	-	-	7
5.50 - 5.99	7	-	-	43
6.00 - 6.49	9	-	-	39
6.50 - 6.99	17	-	-	20
7.00 - 7.49	24	-	-	6
7.50 - 7.99	14	-	-	1
8.00 - 8.49	14	-	-	-
8.50 - 8.99	12	-	-	-
9.00 - 9.49	14	-	-	2
9.50 - 9.99	9	-	-	-
10.00 - 10.49	2	-	-	-
10.50 - 10.99	-	-	-	-
11.00 - 11.49	-	-	-	-
11.50 - 11.99	-	-	-	-
12.00 - 12.99	-	-	4	-
13.00 - 13.99	-	-	-	-
14.00 - 14.99	-	-	-	-
15.00 - 15.99	-	-	-	-
16.00 - 16.99	-	1	-	-
17.00 - 17.99	-	-	1	-
18.00 - 18.99	-	-	-	-
19.00 - 19.99	-	-	-	-
20.00 - 20.99	-	-	1	-
21.00 - 21.99	-	-	-	-
22.00 - 22.99	-	-	-	-
23.00 - 23.99	-	-	-	-
24.00 - 24.99	-	2	1	-
25.00 - 25.99	-	1	-	-
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>CAP</u>	<u>WAE</u>	<u>YEP</u>
Total	132	5	7	118
Min. Length	4.53	1.97	12.20	5.12
Max. Length	10.43	25.39	24.02	9.45
Mean Length	7.72	18.62	15.99	6.16
# Measured	67	5	7	104
No Lengths for	65	0	0	14

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	9	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 07/25/2016), and is therefore subject to change at any time.



MNDNR

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: 20160309-RJE. Data Date: 07/25/2016 at 12:36 pm .

REPORT OVERVIEW - FOR OFFICE USE ONLY

(This page is not part of the Lake Survey Report and should be discarded)

Lake Name: Stay

Survey Type: Standard Survey

DOW Number: 41-0034-00

Survey ID Date: 07/11/2016

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 after noon on 07/25/2016 may not be reflected in the Distribution tables until 07/26/2016.

The following survey component was flagged to be specifically excluded from this report: TN - 6

FOR OFFICE USE ONLY: As of revision 20150622, this page is automatically suppressed on signed versions of this report (area supervisor, region manager, research biologist, research supervisor, program staff, or program manager signed).