

**Lake Name: Little Spirit**  
**DOW Number: 32-0024-00**

**Survey Type: Standard Survey**  
**Survey ID Date: 07/22/2024**

**Lake Identification**

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

DNR Sounding Map Number: C2523  
Alternate Lake Class ID: N/A

**Lake Location**

Primary County: Jackson

Nearest Town: Jackson

**Legal Descriptions**

Lake Center: Township - 101N Range - 36W Section - 35  
PLS Section Lake Center: 10103635

**All Legal Descriptions:**

Jackson County: Township - 101N Range - 36W Sections - 26, 34, 35

**Area Office**

Area Name: Windom  
Region Name: Southern

ORG Code: F418  
Region Number: 4

**Lake Access**

(Information based on Re-Survey dated 07/26/1993)

<u>Station ID</u>	<u>Ownership</u>	<u>Public Use</u>	<u>Type</u>	<u>Location / Comments</u>
AC - 1	Bordering State	Open to Public use	Concrete	N/A
AC - 2	Bordering State	Open to Public use	Gravel	STATE OF IOWA PUBLIC ACCESS ON SOUTH SIDE OF THE LAKE.

**Lake Characteristics**

Lake Area (planimetered acres): 572.00  
GIS Lake Area (acres): 624.28  
DOW Lake Area (acres): 452.00  
Littoral Area (acres): 419.38  
Area in MN (acres): 418.47  
Maximum Depth (feet): 8.0  
Mean Depth (feet): N/A

GIS Shoreline Length (miles): 10.60  
Maximum Fetch (miles): 1.50  
Fetch Orientation (degrees): 22  
USGS Quad Map Number: X09c  
USGS Quad 24K GIS Index: 4717

**Watershed Characteristics**

**Major Watershed**

Name: Little Sioux River  
Watershed Number: 84  
Watershed size (acres): 205,753

**Minor Watershed**

Name: unknown DNR Minor Wshd  
Watershed Number: 28  
Watershed size (acres): 23,506

**Surveys and Investigations**

**Initial Survey:** 07/29/1985.  
**Re-Survey:** 07/23/2001, 07/26/1993, 07/30/1990.  
**Population Assessment:** 06/11/2012, 06/16/2008, 07/26/2004, 07/28/1997.  
**Special Assessment:** 10/10/2004, 06/17/2002, 05/11/1995.  
**Dissolved Oxygen Check:** 02/10/2016, 02/25/2015, 01/02/2014, 02/07/2013, 01/04/2013, 02/17/2012, 01/26/2012/28/2010, 01/04/2010.  
**Natural Reproduction Check:** 09/24/2014, 10/09/2013.  
**External Management Survey:** 07/16/2014.  
**Standard Survey:** 07/27/2020, 06/13/2016.  
**Targeted Survey:** 06/29/2021, 07/28/2020, 02/04/2020, 01/10/2019, 01/19/2018, 09/27/2017, 09/28/2010/13/2015.

**Current Water Level**

<u>Station ID</u>	<u>Date</u>	<u>Level</u>	<u>Reading (feet)</u>	<u>Reading Type</u>
BM - 1	07/25/2024	High	-4.60	Above or below Benchmark

**Benchmark and Gauge Descriptions / Locations**

<u>Station ID</u>	<u>Location Description</u>
BM - 1	top or cement road box culvert

**Water Level History - Readings**

<u>Station ID</u>	<u>Date</u>	<u>Level</u>	<u>Reading (feet)</u>	<u>Reading Type</u>
BM - 1	07/25/2024	High	-4.60	Above or below Benchmark
	07/27/2020	Normal	-5.10	Above or below Benchmark
	06/17/2016	High	-4.60	Above or below Benchmark
	06/14/2012	Normal	-5.30	Above or below Benchmark
	06/17/2008	High	-4.90	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	-5.30	06/14/2012	-4.60	06/17/2016	0.70	-4.90	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	07/22/2024	10.0	Surface	77.5	8.6
			2.0	77.4	8.8
			4.0	77.4	8.7
			6.0	77.4	8.4
			8.0	77.2	6.7
			10.0	76.3	3.3

**Field Measurements of Water Quality**

<b>Station ID</b>	<b>Sampling Date</b>	<b>Sample Depth (Feet)</b>	<b>Secchi Depth (Feet)</b>	<b>Field pH</b>	<b>Alkalinity (ppm)</b>	<b>Water Color</b>	<b>Color Cause</b>
WQ - 1	07/22/2024	Surface	2.8	8.93	240	Green	Algae

**Net Catch Summary by Numbers for GN**

Standard gill net sets

Number of Sets: 3  
 First Set Date: 07/22/2024  
 Last Lift Date: 07/25/2024  
 Target Species: N/A

Abbr	Species	Total Fish	Number Per Set	Quartiles for Lake Class 42 <sup>1</sup>		
				25%	50%	75%
BIB	Bigmouth Buffalo	16	5.33	N/A	6.00	N/A
BLB	Black Bullhead	64	21.33	9.63	39.75	91.42
BLC	Black Crappie	72	24.00	1.50	5.50	14.69
BLG	Bluegill	5	1.67	N/A	N/A	N/A
CCF	Channel Catfish	18	6.00	N/A	N/A	N/A
CAP	Common Carp	2	0.67	0.33	1.25	4.20
FRD	Freshwater Drum	17	5.67	2.63	5.00	5.50
GIS	Gizzard Shad	32	10.67	N/A	N/A	N/A
SNG	Shortnose Gar	59	19.67	N/A	N/A	N/A
WAE	Walleye	17	5.67	1.00	2.50	7.33
WHB	White Bass	3	1.00	N/A	0.25	N/A
WTS	White Sucker	1	0.33	0.50	2.00	7.44
YEP	Yellow Perch	40	13.33	3.00	8.00	26.50
Total Fish/Set:			115.33	<sup>1</sup> 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 <sup>2</sup>	Quartiles for Lake Class 42 <sup>1</sup>		
					25%	50%	75%
BIB	Bigmouth Buffalo	15.80	5.27	0.99	N/A	N/A	N/A
BLB	Black Bullhead	44.10	14.70	0.69	0.18	0.28	0.49
BLC	Black Crappie	15.69	5.23	0.22	0.12	0.18	0.29
BLG	Bluegill	1.52	0.51	0.32	N/A	N/A	N/A
CCF	Channel Catfish	112.58	37.53	6.23	N/A	N/A	N/A
CAP	Common Carp	16.18	5.39	8.09	0.78	2.00	5.00
FRD	Freshwater Drum	11.32	3.77	0.77	0.43	1.05	2.64
GIS	Gizzard Shad	22.99	7.66	0.73	N/A	N/A	N/A
SNG	Shortnose Gar	146.30	48.77	2.48	N/A	N/A	N/A
WAE	Walleye	25.07	8.36	1.47	0.95	1.58	2.80
WHB	White Bass	5.30	1.77	1.77	N/A	-0.51	N/A
WTS	White Sucker	3.75	1.25	3.75	0.99	1.78	2.24
YEP	Yellow Perch	10.90	3.63	0.29	0.14	0.20	0.28
Total Pounds Fish/Set:			143.83	<sup>1</sup> Quartiles for Mean Weight			

<sup>2</sup> 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: 11  
 First Set Date: 07/22/2024  
 Last Lift Date: 07/25/2024  
 Target Species: N/A

Abbr	Species	Total Fish	Number Per Set	Quartiles for Lake Class 42 <sup>1</sup>		
				25%	50%	75%
BIB	Bigmouth Buffalo	3	0.27	N/A	0.30	N/A
BLB	Black Bullhead	5	0.45	2.20	17.30	60.46
BLC	Black Crappie	78	7.09	2.36	5.60	15.10
BLG	Bluegill	4	0.36	1.88	10.80	29.50
CCF	Channel Catfish	1	0.09	N/A	N/A	N/A
CAP	Common Carp	12	1.09	1.00	2.06	3.56
FRD	Freshwater Drum	3	0.27	0.11	1.33	7.00
QBS	Quillback	1	0.09	N/A	N/A	N/A
SNG	Shortnose Gar	19	1.73	N/A	N/A	N/A
WHB	White Bass	3	0.27	0.06	0.13	1.17
Total Fish/Set:			11.73	<sup>1</sup> 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 <sup>2</sup>	Quartiles for Lake Class 42 <sup>1</sup>		
					25%	50%	75%
BIB	Bigmouth Buffalo	2.94	0.27	0.98	N/A	3.83	N/A
BLB	Black Bullhead	6.09	0.55	1.22	0.19	0.30	0.50
BLC	Black Crappie	38.27	3.48	0.45	0.17	0.25	0.36
BLG	Bluegill	0.85	0.08	0.21	0.15	0.20	0.30
CCF	Channel Catfish	6.98	0.63	6.98	N/A	N/A	N/A
CAP	Common Carp	128.38	11.67	10.50	2.10	3.55	5.29
FRD	Freshwater Drum	12.89	1.17	4.30	0.25	1.09	1.25
QBS	Quillback	1.23	0.11	1.23	N/A	N/A	N/A
SNG	Shortnose Gar	46.38	4.22	2.44	N/A	N/A	N/A
WHB	White Bass	5.31	0.48	1.77	1.13	1.55	2.35
Total Pounds Fish/Set:			22.67	<sup>1</sup> Quartiles for Mean Weight			

<sup>2</sup> Mean Weights are based on measured fish counts only.

**Length Frequency Distribution for GN**

**Standard gill net sets**

(Field work conducted between 07/22/2024 and 07/25/2024)

	<u>BIB</u>	<u>BLB</u>	<u>BLC</u>	<u>BLG</u>	<u>CAP</u>	<u>CCF</u>	<u>FRD</u>	<u>GIS</u>	<u>SNG</u>	<u>WAE</u>	<u>WHB</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	9	-	-	-	-	-	-	-	-	-	-
5.50 - 5.99	-	-	20	-	-	-	-	-	-	-	-	-	6
6.00 - 6.49	-	-	14	2	-	-	-	-	-	-	-	-	2
6.50 - 6.99	-	1	7	2	-	-	-	-	-	-	-	-	6
7.00 - 7.49	-	-	1	1	-	-	-	-	-	-	-	-	3
7.50 - 7.99	-	3	4	1	-	-	-	-	-	-	-	-	8
8.00 - 8.49	-	6	6	-	-	-	1	-	-	-	-	-	5
8.50 - 8.99	-	9	6	-	-	-	4	-	-	-	-	-	6
9.00 - 9.49	-	7	-	-	-	-	6	-	-	-	-	-	2
9.50 - 9.99	-	11	-	-	-	-	3	1	-	-	-	-	-
10.00 - 10.49	4	8	-	-	-	-	-	1	-	1	-	-	2
10.50 - 10.99	1	3	-	-	-	-	-	2	-	1	-	-	-
11.00 - 11.49	3	1	-	-	-	-	-	3	-	-	-	-	-
11.50 - 11.99	5	-	1	-	-	-	-	17	-	2	-	-	1
12.00 - 12.99	2	4	2	-	-	-	-	6	-	4	-	-	-
13.00 - 13.99	1	10	-	-	-	-	-	-	-	-	-	-	-
14.00 - 14.99	-	-	-	-	-	-	-	-	-	-	-	-	-
15.00 - 15.99	-	-	-	-	-	-	1	-	-	2	2	-	-
16.00 - 16.99	-	-	-	-	-	1	-	-	-	2	1	-	-
17.00 - 17.99	-	-	-	-	1	-	1	1	-	-	-	-	-
18.00 - 18.99	-	-	-	-	-	-	1	-	-	2	-	-	-
19.00 - 19.99	-	-	-	-	-	-	-	-	1	-	-	1	-
20.00 - 20.99	-	-	-	-	-	2	-	-	1	1	-	-	-
21.00 - 21.99	-	-	-	-	-	1	-	-	5	1	-	-	-
22.00 - 22.99	-	-	-	-	-	-	-	-	3	1	-	-	-
23.00 - 23.99	-	-	-	-	-	-	-	-	4	-	-	-	-
24.00 - 24.99	-	-	-	-	-	5	-	-	6	-	-	-	-
25.00 - 25.99	-	-	-	-	-	-	-	-	11	-	-	-	-
26.00 - 26.99	-	-	-	-	-	3	-	-	3	-	-	-	-
27.00 - 27.99	-	-	-	-	-	2	-	-	10	-	-	-	-
28.00 - 28.99	-	-	-	-	-	2	-	-	10	-	-	-	-
29.00 - 29.99	-	-	-	-	-	1	-	-	4	-	-	-	-
30.00 - 30.99	-	-	-	-	-	-	-	-	1	-	-	-	-
31.00 - 31.99	-	-	-	-	1	-	-	-	-	-	-	-	-
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>FRD</u>	<u>GIS</u>	<u>SNG</u>	<u>WAE</u>	<u>WHB</u>	<u>WTS</u>	<u>YEP</u>
Total	16	64	71	6	2	17	17	31	59	17	3	1	41
Min. Length	10.08	5.20	4.96	6.14	17.64	16.38	8.46	9.92	19.29	10.28	15.35	19.45	5.75
Max. Length	13.86	13.74	12.52	7.91	31.14	29.06	18.11	17.56	30.00	22.80	16.10	19.45	11.85
Mean Length	11.41	10.11	6.72	7.03	24.39	24.82	10.94	11.79	25.75	15.23	15.68	19.45	7.89
# Measured	16	64	60	4	2	17	13	28	59	17	3	1	36
No Lengths for	0	0	12	1	0	1	4	4	0	0	0	0	4

**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 07/22/2024 and 07/25/2024)

	<u>BIB</u>	<u>BLB</u>	<u>BLC</u>	<u>BLG</u>	<u>CAP</u>	<u>CCF</u>	<u>FRD</u>	<u>QBS</u>	<u>SNG</u>	<u>WHB</u>
< 3.00	-	-	-	-	-	-	-	-	-	-
3.00 - 3.49	-	-	-	-	-	-	-	-	-	-
3.50 - 3.99	-	-	-	1	-	-	-	-	-	-
4.00 - 4.49	-	-	-	-	-	-	-	-	-	-
4.50 - 4.99	-	-	-	-	-	-	-	-	-	-
5.00 - 5.49	-	-	1	-	-	-	-	-	-	-
5.50 - 5.99	-	-	5	-	-	-	-	-	-	-
6.00 - 6.49	-	-	4	-	-	-	-	-	-	-
6.50 - 6.99	-	-	3	2	-	-	-	-	-	-
7.00 - 7.49	-	-	1	1	-	-	-	-	-	-
7.50 - 7.99	-	-	6	-	-	-	-	-	-	-
8.00 - 8.49	-	-	12	-	-	-	-	-	-	-
8.50 - 8.99	-	-	17	-	-	-	-	-	-	-
9.00 - 9.49	-	-	2	-	-	-	-	-	-	-
9.50 - 9.99	-	-	-	-	-	-	-	-	-	-
10.00 - 10.49	-	-	4	-	-	-	-	-	-	-
10.50 - 10.99	-	-	4	-	-	-	-	-	-	-
11.00 - 11.49	2	1	6	-	-	-	-	-	-	-
11.50 - 11.99	-	-	7	-	-	-	-	-	-	-
12.00 - 12.99	-	1	-	-	-	-	-	-	-	-
13.00 - 13.99	-	2	2	-	-	-	-	1	-	-
14.00 - 14.99	-	1	-	-	-	-	-	-	-	1
15.00 - 15.99	-	-	-	-	1	-	-	-	-	2
16.00 - 16.99	-	-	-	-	-	-	-	-	-	-
17.00 - 17.99	-	-	-	-	-	-	-	-	-	-
18.00 - 18.99	-	-	-	-	-	-	-	-	-	-
19.00 - 19.99	-	-	-	-	-	-	-	-	-	-
20.00 - 20.99	-	-	-	-	1	-	-	-	-	-
21.00 - 21.99	-	-	-	-	-	-	1	-	1	-
22.00 - 22.99	-	-	-	-	-	-	-	-	1	-
23.00 - 23.99	-	-	-	-	-	-	-	-	1	-
24.00 - 24.99	-	-	-	-	-	-	-	-	2	-
25.00 - 25.99	-	-	-	-	2	-	-	-	-	-
26.00 - 26.99	-	-	-	-	1	1	-	-	-	-
27.00 - 27.99	-	-	-	-	-	-	-	-	-	-
28.00 - 28.99	-	-	-	-	1	-	-	-	1	-
29.00 - 29.99	-	-	-	-	2	-	-	-	-	-
30.00 - 30.99	-	-	-	-	1	-	-	-	1	-
31.00 - 31.99	-	-	-	-	1	-	-	-	-	-
32.00 - 32.99	-	-	-	-	-	-	-	-	-	-
33.00 - 33.99	-	-	-	-	-	-	-	-	-	-
34.00 - 34.99	-	-	-	-	-	-	-	-	-	-
35.00 - 35.99	-	-	-	-	1	-	-	-	-	-
= > 36.00	-	-	-	-	-	-	-	-	-	-

	<u>BIB</u>	<u>BLB</u>	<u>BLC</u>	<u>BLG</u>	<u>CAP</u>	<u>CCF</u>	<u>FRD</u>	<u>QBS</u>	<u>SNG</u>	<u>WHB</u>
Total	2	5	74	4	11	1	1	1	7	3
Min. Length	11.02	11.06	5.35	3.58	15.79	26.42	21.02	13.86	21.89	14.21
Max. Length	11.38	14.25	13.23	7.32	35.08	26.42	21.02	13.86	30.08	15.59
Mean Length	11.20	12.91	8.69	6.05	27.17	26.42	21.02	13.86	24.99	15.00
# Measured	2	5	64	4	11	1	1	1	7	3
No Lengths for	1	0	14	0	1	0	2	0	12	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**

<b>Gear Type (1)</b>	<b>Other Species (Gender) (2)</b>	<b>Total Num</b>	<b>Number Measured</b>	<b>Length (inches) Min - Mean - Max</b>	<b>Number Weighed</b>	<b>Weight (pounds) Min - Mean - Max</b>
TN	Snapping Turtle	1	1	12.80	0	N/A

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**(1) Key to sampling gear abbreviations:**

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

**(2) Gender:** If identified and reported.

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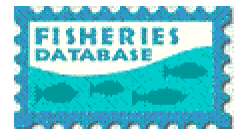


**Approval Dates And Notices**

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 08/16/2024), 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: Little Spirit  
DOW Number: 32-0024-00

Survey Type: Standard Survey  
Survey ID Date: 07/22/2024

Survey Status: Proposed

The following 21 (of 34) report components are not included in this Lake Survey Report:

1. Water Level History<sup>1</sup>
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 Observations<sup>2</sup>
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)

<sup>1</sup> 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.

<sup>2</sup> 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 08/16/2024 may not be reflected in the Distribution tables until after 12:30 pm on 08/16/2024.**

The following survey component was flagged to be specifically excluded from this report: TN - 8

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