

Lake Name: Clearwater  
DOW Number: 04-0343-00

Survey Type: Standard Survey  
Survey ID Date: 07/30/2018

**Lake Identification**

Alternate Lake Name: N/A  
Primary Lake Class ID: 27

DNR Sounding Map Number: B0438  
Alternate Lake Class ID: N/A

**Lake Location**

Primary County: Beltrami

Nearest Town: Leonard

All Counties: Beltrami, Clearwater.

**Legal Descriptions**

Lake Center: Township - 149N Range - 35W Section - 7  
PLS Section Lake Center: 14903507

**All Legal Descriptions:**

Beltrami County: Township - 149N Range - 35W Sections - 6, 7, 17, 18  
Clearwater County: Township - 149N Range - 36W Sections - 1, 12, 13

**Area Office**

Area Name: Bemidji  
Region Name: Northwest

ORG Code: F112  
Region Number: 1

**Lake Access**

(Information based on Population Assessment dated 08/22/1988)

Station ID	Ownership	Public Use	Type	Location / Comments
AC - 1	DNR	Open to Public use	Concrete	STATE OWNED ACCESS ON NORTHWEST CORNER OF LAKE; CONCRETE RAMP; APPROXIMATELY 10 UNIT PARKING.

**Lake Characteristics**

Lake Area (planimetered acres):	1,008.00	GIS Shoreline Length (miles):	8.63
GIS Lake Area (acres):	998.80	Maximum Fetch (miles):	2.42
DOW Lake Area (acres):	1,039.00	Fetch Orientation (degrees):	360
Littoral Area (acres):	339.00	USGS Quad Map Number:	H09b
Area in MN (acres):	998.80	USGS Quad 24K GIS Index:	1417
Maximum Depth (feet):	65.0		
Mean Depth (feet):	N/A		

**Watershed Characteristics**

**Major Watershed**

Name: Clearwater River  
Watershed Number: 66  
Watershed size (acres): 869,460

**Minor Watershed**

Name: Clearwater R  
Watershed Number: 21  
Watershed size (acres): 18,419

**LAKE SURVEY REPORT**  
**STANDARD SURVEY DATED 07/30/2018 FOR DOW NUMBER 04-0343-00**

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**Surveys and Investigations**

**Initial Survey:** 07/29/1953.  
**Re-Survey:** 07/24/1995, 06/23/1975.  
**Population Assessment:** 08/05/2013, 08/06/2007, 08/05/2002, 08/22/1988, 08/30/1984, 08/03/1981.  
**Special Assessment:** 08/13/2013, 07/28/1987, 07/25/1986.  
**Standard Survey:** 07/30/2018.

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**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	07/30/2018	N/A	Surface	76.3	9.2
			3.0	74.3	9.4
			6.0	73.8	9.4
			9.0	73.4	9.1
			12.0	72.1	8.3
			15.0	71.6	7.4
			18.0	71.2	6.6
			21.0	70.5	6.0
			24.0	59.9	0.5
			27.0	52.2	0.2

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**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	07/30/2018	Surface	4.5	N/A	N/A	N/A	N/A

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**LAKE SURVEY REPORT**  
**STANDARD SURVEY DATED 07/30/2018 FOR DOW NUMBER 04-0343-00**

**Net Catch Summary by Numbers for GN**

**Standard gill net sets**

**Number of Sets:** 12  
**First Set Date:** 07/30/2018  
**Last Lift Date:** 08/02/2018  
**Target Species:** N/A

Abbr	Species	Total Fish	Number Per Set	Quartiles for Lake Class 27*		
				25%	50%	75%
BLC	Black Crappie	1	0.08	0.39	1.00	2.69
BLG	Bluegill	36	3.00	N/A	N/A	N/A
LMB	Largemouth Bass	11	0.92	0.25	0.67	1.40
NOP	Northern Pike	100	8.33	2.76	5.06	9.00
PMK	Pumpkinseed	5	0.42	N/A	N/A	N/A
RHS	Redhorse	9	0.75	N/A	N/A	N/A
RKB	Rock Bass	87	7.25	0.60	1.33	3.86
SHR	Shorthead Redhorse	23	1.92	0.17	0.25	0.94
TLC	Tullibee (Cisco)	20	1.67	0.77	2.14	6.18
WAE	Walleye	75	6.25	3.25	5.50	8.81
WTS	White Sucker	59	4.92	0.88	2.00	4.00
YEB	Yellow Bullhead	5	0.42	1.17	3.49	10.92
YEP	Yellow Perch	192	16.00	7.00	18.17	46.33
Total Fish/Set:			51.92	* 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 27*		
					25%	50%	75%
BLC	Black Crappie	0.19	0.02	0.19	0.25	0.38	0.60
BLG	Bluegill	5.62	0.47	0.16	N/A	N/A	N/A
LMB	Largemouth Bass	16.10	1.34	1.46	0.52	0.77	1.17
NOP	Northern Pike	238.27	19.86	2.38	1.57	2.04	2.75
PMK	Pumpkinseed	0.63	0.05	0.13	N/A	N/A	N/A
RHS	Redhorse	21.32	1.78	2.37	N/A	N/A	N/A
RKB	Rock Bass	37.08	3.09	0.43	0.30	0.40	0.51
SHR	Shorthead Redhorse	38.86	3.24	1.69	1.08	1.91	2.19
TLC	Tullibee (Cisco)	13.30	1.11	0.67	0.61	0.94	1.41
WAE	Walleye	119.10	9.93	1.59	1.16	1.56	2.05
WTS	White Sucker	118.66	9.89	2.01	1.60	2.05	2.39
YEB	Yellow Bullhead	5.03	0.42	1.01	0.60	0.72	0.88
YEP	Yellow Perch	27.87	2.32	0.15	0.11	0.14	0.20
Total Pounds Fish/Set:			53.50	* Quartiles for Mean Weight			

**LAKE SURVEY REPORT**  
**STANDARD SURVEY DATED 07/30/2018 FOR DOW NUMBER 04-0343-00**

**Net Catch Summary by Numbers for TN**

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

Number of Sets: 12  
 First Set Date: 07/30/2018  
 Last Lift Date: 08/02/2018  
 Target Species: N/A

Abbr	Species	Total Fish	Number Per Set	Quartiles for Lake Class 27*		
				25%	50%	75%
BLG	Bluegill	171	14.25	4.39	16.21	48.97
LMB	Largemouth Bass	9	0.75	0.33	0.67	1.25
NOP	Northern Pike	6	0.50	N/A	N/A	N/A
PMK	Pumpkinseed	4	0.33	1.76	3.67	7.78
RHS	Redhorse	4	0.33	N/A	N/A	N/A
RKB	Rock Bass	29	2.42	0.55	1.08	2.50
WAE	Walleye	2	0.17	0.20	0.43	0.75
WTS	White Sucker	4	0.33	0.17	0.38	1.08
YEP	Yellow Perch	35	2.92	0.62	1.30	3.46
Total Fish/Set:			22.00	* 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 27*		
					25%	50%	75%
BLG	Bluegill	9.22	0.77	0.05	0.11	0.16	0.25
LMB	Largemouth Bass	0.39	0.03	0.04	0.21	0.40	0.76
NOP	Northern Pike	7.89	0.66	1.31	N/A	N/A	N/A
PMK	Pumpkinseed	0.27	0.02	0.07	0.13	0.18	0.26
RHS	Redhorse	10.39	0.87	2.60	N/A	N/A	N/A
RKB	Rock Bass	6.05	0.50	0.21	0.26	0.36	0.53
WAE	Walleye	0.64	0.05	0.32	0.95	1.58	2.73
WTS	White Sucker	7.25	0.60	1.81	1.75	2.30	3.00
YEP	Yellow Perch	3.58	0.30	0.10	0.11	0.15	0.21
Total Pounds Fish/Set:			3.81	* Quartiles for Mean Weight			

**LAKE SURVEY REPORT**  
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**Electrofishing Catch Summary for EF**

**Standard electrofishing**

**Total run-time for all stations:** 03:00:00  
**Total on-time for all stations:** 02:05:44  
**First Sampling Date:** 06/07/2018  
**Last Sampling Date:** 06/08/2018  
**Daylight Sampling:** No  
**Target Species:** All ages largemouth bass

Abbr	Species	Summary By Numbers			Summary By Weight (pounds)			
		Total Number	Number per Hour		Total Weight	Lbs per Hour		Mean Weight
			Run-Time	On-Time		Run-Time	On-Time	
LMB	Largemouth Bass	9	3.00	4.29	23.23	7.74	11.09	2.58

**LAKE SURVEY REPORT**  
**STANDARD SURVEY DATED 07/30/2018 FOR DOW NUMBER 04-0343-00**

**Length Frequency Distribution for GN**

**Standard gill net sets**

(Field work conducted between 07/30/2018 and 08/02/2018)

	<u>BLC</u>	<u>BLG</u>	<u>LMB</u>	<u>NOP</u>	<u>PMK</u>	<u>RHS</u>	<u>RKB</u>	<u>SHR</u>	<u>TLC</u>	<u>WAE</u>	<u>WTS</u>	<u>YEB</u>	<u>YEP</u>
< 3.00	-	-	-	-	-	-	-	-	-	-	-	-	-
3.00 - 3.49	-	-	-	-	-	-	-	-	-	-	-	-	-
3.50 - 3.99	-	9	-	-	3	-	3	-	-	-	-	-	-
4.00 - 4.49	-	-	-	-	-	-	2	-	-	-	-	-	-
4.50 - 4.99	-	4	-	-	-	-	-	-	-	-	-	-	1
5.00 - 5.49	-	6	-	-	-	-	7	-	-	-	-	-	8
5.50 - 5.99	-	11	-	-	1	-	2	-	-	-	-	-	71
6.00 - 6.49	-	1	-	-	-	-	-	-	-	-	-	-	47
6.50 - 6.99	-	1	-	-	-	-	4	-	-	-	-	-	21
7.00 - 7.49	1	-	-	-	1	-	14	-	-	-	-	-	4
7.50 - 7.99	-	-	-	-	-	-	14	-	-	1	-	1	9
8.00 - 8.49	-	1	-	-	-	-	13	-	-	1	-	-	2
8.50 - 8.99	-	1	-	-	-	-	12	-	-	1	3	-	10
9.00 - 9.49	-	2	1	-	-	-	9	-	-	-	-	-	7
9.50 - 9.99	-	-	1	-	-	-	3	-	-	3	-	-	4
10.00 - 10.49	-	-	1	1	-	-	4	-	1	2	-	2	5
10.50 - 10.99	-	-	1	-	-	-	-	-	2	4	-	-	2
11.00 - 11.49	-	-	-	-	-	-	-	-	4	5	1	-	-
11.50 - 11.99	-	-	-	1	-	-	-	-	6	2	3	-	-
12.00 - 12.99	-	-	3	-	-	-	-	-	5	3	6	-	-
13.00 - 13.99	-	-	2	3	-	-	-	-	1	9	4	2	-
14.00 - 14.99	-	-	-	2	-	-	-	2	-	8	2	-	-
15.00 - 15.99	-	-	-	5	-	-	-	10	-	11	1	-	-
16.00 - 16.99	-	-	-	7	-	2	-	3	-	4	7	-	-
17.00 - 17.99	-	-	2	5	-	3	-	6	-	-	14	-	-
18.00 - 18.99	-	-	-	7	-	2	-	1	1	2	8	-	-
19.00 - 19.99	-	-	-	9	-	2	-	1	-	6	6	-	-
20.00 - 20.99	-	-	-	15	-	-	-	-	-	4	2	-	-
21.00 - 21.99	-	-	-	14	-	-	-	-	-	-	2	-	-
22.00 - 22.99	-	-	-	5	-	-	-	-	-	2	-	-	-
23.00 - 23.99	-	-	-	5	-	-	-	-	-	1	-	-	-
24.00 - 24.99	-	-	-	5	-	-	-	-	-	-	-	-	-
25.00 - 25.99	-	-	-	4	-	-	-	-	-	2	-	-	-
26.00 - 26.99	-	-	-	2	-	-	-	-	-	1	-	-	-
27.00 - 27.99	-	-	-	2	-	-	-	-	-	1	-	-	-
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	-	-	-	1	-	-	-	-	-	-	-	-	-
33.00 - 33.99	-	-	-	1	-	-	-	-	-	-	-	-	-
34.00 - 34.99	-	-	-	1	-	-	-	-	-	-	-	-	-
35.00 - 35.99	-	-	-	-	-	-	-	-	-	-	-	-	-
= > 36.00	-	-	-	-	-	-	-	-	-	-	-	-	-
	<u>BLC</u>	<u>BLG</u>	<u>LMB</u>	<u>NOP</u>	<u>PMK</u>	<u>RHS</u>	<u>RKB</u>	<u>SHR</u>	<u>TLC</u>	<u>WAE</u>	<u>WTS</u>	<u>YEB</u>	<u>YEP</u>
Total	1	36	11	100	5	9	87	23	20	75	59	5	191
Min. Length	7.24	3.54	9.06	10.39	3.82	16.93	3.62	14.37	10.35	7.72	8.62	7.56	4.69
Max. Length	7.24	9.29	17.83	34.06	7.24	19.61	10.24	19.13	18.50	30.04	21.26	13.86	10.87
Mean Length	7.24	5.44	12.74	20.97	4.89	17.94	7.72	16.40	12.03	15.70	16.21	11.14	6.83
# Measured	1	36	11	100	5	9	87	23	20	75	59	5	150
No Lengths for	0	0	0	0	0	0	0	0	0	0	0	0	42

**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

**LAKE SURVEY REPORT**  
**STANDARD SURVEY DATED 07/30/2018 FOR DOW NUMBER 04-0343-00**

**Length Frequency Distribution for TN**

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

(Field work conducted between 07/30/2018 and 08/02/2018)

	<u>BLG</u>	<u>LMB</u>	<u>NOP</u>	<u>PMK</u>	<u>RHS</u>	<u>RKB</u>	<u>WAE</u>	<u>WTS</u>	<u>YEP</u>
< 3.00	1	-	-	-	-	-	-	-	-
3.00 - 3.49	66	-	-	-	-	4	-	-	-
3.50 - 3.99	47	2	-	2	-	6	-	-	-
4.00 - 4.49	9	5	-	-	-	1	-	-	-
4.50 - 4.99	18	2	-	1	-	2	-	-	2
5.00 - 5.49	14	-	-	1	-	3	-	-	11
5.50 - 5.99	9	-	-	-	-	3	-	-	7
6.00 - 6.49	3	-	-	-	-	-	-	-	6
6.50 - 6.99	2	-	-	-	-	2	-	-	4
7.00 - 7.49	-	-	-	-	-	1	-	-	1
7.50 - 7.99	-	-	1	-	-	2	-	-	1
8.00 - 8.49	-	-	-	-	-	2	-	-	1
8.50 - 8.99	-	-	-	-	-	1	-	-	1
9.00 - 9.49	-	-	-	-	-	1	-	-	-
9.50 - 9.99	-	-	-	-	-	1	1	-	-
10.00 - 10.49	-	-	-	-	-	-	-	-	-
10.50 - 10.99	-	-	-	-	-	-	1	-	-
11.00 - 11.49	-	-	-	-	-	-	-	-	-
11.50 - 11.99	-	-	-	-	-	-	-	-	-
12.00 - 12.99	-	-	-	-	-	-	-	1	-
13.00 - 13.99	-	-	-	-	-	-	-	-	-
14.00 - 14.99	-	-	-	-	-	-	-	1	-
15.00 - 15.99	-	-	-	-	-	-	-	-	-
16.00 - 16.99	-	-	1	-	-	-	-	-	-
17.00 - 17.99	-	-	-	-	-	-	-	-	-
18.00 - 18.99	-	-	-	-	2	-	-	-	-
19.00 - 19.99	-	-	-	-	2	-	-	-	-
20.00 - 20.99	-	-	3	-	-	-	-	1	-
21.00 - 21.99	-	-	-	-	-	-	-	-	-
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>BLG</u>	<u>LMB</u>	<u>NOP</u>	<u>PMK</u>	<u>RHS</u>	<u>RKB</u>	<u>WAE</u>	<u>WTS</u>	<u>YEP</u>
Total	169	9	5	4	4	29	2	3	34
Min. Length	2.99	3.74	7.68	3.54	18.31	3.19	9.92	12.60	4.76
Max. Length	6.89	4.65	20.94	5.35	19.09	9.72	10.63	20.12	8.50
Mean Length	3.97	4.21	17.25	4.26	18.78	5.62	10.28	15.83	6.09
# Measured	169	9	5	4	4	29	2	3	29
No Lengths for	2	0	1	0	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

**LAKE SURVEY REPORT**  
**STANDARD SURVEY DATED 07/30/2018 FOR DOW NUMBER 04-0343-00**

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**Length Frequency Distribution for EF**

**Standard electrofishing**

(Field work conducted between 06/07/2018 and 06/08/2018)

	<u>LMB</u>
< 3.00	-
3.00 - 3.49	-
3.50 - 3.99	-
4.00 - 4.49	-
4.50 - 4.99	-
5.00 - 5.49	-
5.50 - 5.99	-
6.00 - 6.49	-
6.50 - 6.99	-
7.00 - 7.49	-
7.50 - 7.99	-
8.00 - 8.49	-
8.50 - 8.99	-
9.00 - 9.49	-
9.50 - 9.99	-
10.00 - 10.49	-
10.50 - 10.99	1
11.00 - 11.49	-
11.50 - 11.99	-
12.00 - 12.99	1
13.00 - 13.99	-
14.00 - 14.99	-
15.00 - 15.99	-
16.00 - 16.99	-
17.00 - 17.99	5
18.00 - 18.99	1
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	-
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>LMB</u>
Total	9
Min. Length	10.83
Max. Length	19.06
Mean Length	16.36
# Measured	9
No Lengths for	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



**LAKE SURVEY REPORT**  
**STANDARD SURVEY DATED 07/30/2018 FOR DOW NUMBER 04-0343-00**

**Length At Capture with Last Incremental Length**

(Body-Scale constant, all lengths, and all length increments in inches)

**Species:** Bluegill  
**Body-Scale Constant:** 0.79  
**Total Sample Size:** 58

**Length at Capture in 2018 for Each Age Class, with Incremental Lengths for 2018**

Year Class	Age	Sample Size	Length At Capture			Standard Error	Length Increments	
			Average Length	Maximum Length	Minimum Length		Increment	Standard Error
2017	1	1	2.99	2.99	2.99	N/A	1.02	N/A
2016	2	30	3.46	4.49	3.03	0.061	1.12	0.033
2015	3	22	5.41	6.89	4.41	0.136	1.49	0.066
2014	4	2	5.14	5.67	4.61	0.531	0.63	0.423
2013	5	3	7.70	9.09	5.98	0.913	0.59	0.124

**Species:** Largemouth Bass  
**Body-Scale Constant:** 0.79  
**Total Sample Size:** 8

**Length at Capture in 2018 for Each Age Class, with Incremental Lengths for 2018**

Year Class	Age	Sample Size	Length At Capture			Standard Error	Length Increments	
			Average Length	Maximum Length	Minimum Length		Increment	Standard Error
2017	1	8	4.17	4.65	3.74	0.110	1.20	0.137

**Species:** Walleye  
**Body-Scale Constant:** 1.10  
**Total Sample Size:** 69

**Length at Capture in 2018 for Each Age Class, with Incremental Lengths for 2018**

Year Class	Age	Sample Size	Length At Capture			Standard Error	Length Increments	
			Average Length	Maximum Length	Minimum Length		Increment	Standard Error
2017	1	7	9.16	10.31	7.72	0.356	2.67	0.250
2016	2	10	10.75	11.46	9.92	0.151	1.95	0.183
2015	3	20	13.47	14.96	11.02	0.263	2.08	0.156
2014	4	13	15.00	16.42	11.89	0.349	1.76	0.138
2013	5	12	18.50	22.80	15.04	0.835	1.48	0.151
2012	6	7	19.09	20.16	15.43	0.621	1.23	0.269

**LAKE SURVEY REPORT**  
**STANDARD SURVEY DATED 07/30/2018 FOR DOW NUMBER 04-0343-00**

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**Back-Calculated Lengths for Each Age Class and Average Annual Increments of Back-Calculated Lengths**

**Species:** Bluegill

**Gear Type:** Combined Gear Types (GN and TN)

Class	Age	N	1	2	3	4	5
2017	1	1	1.97	-	-	-	-
			1.97	-	-	-	-
2016	2	30	1.52	2.34	-	-	-
			1.52	0.82	-	-	-
2015	3	22	1.64	2.57	3.92	-	-
			1.64	0.93	1.35	-	-
2014	4	2	1.76	2.53	3.61	4.51	-
			1.76	0.77	1.09	0.90	-
2013	5	3	1.75	2.87	4.11	5.94	7.11
			1.75	1.12	1.24	1.82	1.18
Mean Length			1.59	2.46	3.92	5.36	7.11
Mean Increment			1.59	0.88	1.32	1.45	1.18
Total N			58	57	27	5	3

**Species:** Largemouth Bass

**Gear Type:** Combined Gear Types (TN)

Class	Age	N	1
2017	1	8	2.97
			2.97
Mean Length			2.97
Mean Increment			2.97
Total N			8

**Species:** Walleye

**Gear Type:** Combined Gear Types (GN and TN)

Class	Age	N	1	2	3	4	5	6
2017	1	7	6.49	-	-	-	-	-
			6.49	-	-	-	-	-
2016	2	10	4.95	8.80	-	-	-	-
			4.95	3.85	-	-	-	-
2015	3	20	4.51	8.30	11.40	-	-	-
			4.51	3.80	3.09	-	-	-
2014	4	13	4.29	7.82	10.51	13.24	-	-
			4.29	3.53	2.69	2.74	-	-
2013	5	12	4.52	8.28	12.03	14.89	17.02	-
			4.52	3.75	3.75	2.87	2.12	-
2012	6	7	4.27	6.92	10.72	13.59	15.94	17.86
			4.27	2.65	3.80	2.87	2.35	1.92
Mean Length			4.71	8.12	11.23	13.94	16.62	17.86
Mean Increment			4.71	3.61	3.24	2.81	2.21	1.92
Total N			69	62	52	32	19	7

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**LAKE SURVEY REPORT**  
**STANDARD SURVEY DATED 07/30/2018 FOR DOW NUMBER 04-0343-00**

**Age Class Frequency Distribution**

Species & SS Type (1)	Number of Fish (2)			Number of Fish in Year Class ('yy) and Age Class															
	Aged	Keyed	Unaged	'18 0	'17 1	'16 2	'15 3	'14 4	'13 5	'12 6	'11 7	'10 8	'09 9	'08 10	'07 11	'06 12	'05 13	'04 14	<'04 15+
<b>Bluegill</b>																			
GN	3	11	22	0	0	0	11	0	3	0	0	0	0	0	0	0	0	0	0
TN	55	116	0	0	1	120	43	5	2	0	0	0	0	0	0	0	0	0	0
<b>Totals:</b>	<b>58</b>	<b>127</b>	<b>22</b>	<b>0</b>	<b>1</b>	<b>120</b>	<b>54</b>	<b>5</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Largemouth Bass</b>																			
EF	2	0	7	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
TN	8	1	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Totals:</b>	<b>10</b>	<b>1</b>	<b>7</b>	<b>0</b>	<b>9</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Northern Pike</b>																			
GN	99	1	0	0	8	37	25	12	7	6	2	2	1	0	0	0	0	0	0
<b>Walleye</b>																			
GN	74	1	0	0	7	8	20	13	13	7	0	1	0	1	1	0	1	1	2
TN	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Totals:</b>	<b>76</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>10</b>	<b>20</b>	<b>13</b>	<b>13</b>	<b>7</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>2</b>

**(1) Key to Sampling Station (SS) Type abbreviations:**

- GN = Standard gill net sets
- TN = Standard 3/4-in mesh, double frame trap net sets
- EF = Standard electrofishing

**(2) Notes:**

- Number of Fish Aged: Fish that were aged from bony parts.
- Number of Fish Keyed: Fish assigned an age with an age-length key or by expansion of mesh or station age distributions.
- Number of Fish Unaged: Fish that were not aged and were not assigned an age.

**LAKE SURVEY REPORT**  
**STANDARD SURVEY DATED 07/30/2018 FOR DOW NUMBER 04-0343-00**

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### Survey Crew Notes

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Area Signed by user 'gabarnar' on 04/11/2019

Region Signed by user 'tesledge' on 05/02/2019

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### Discussion

This report covers a standard lake population assessment for Clearwater Lake (04-0343-00) conducted during the week of 07/30/2018. The 2015 management plan lists Walleye (WAE) as the primary management species, with Northern Pike (NOP), Bluegill (BLG), and Largemouth Bass (LMB) listed as secondary species.

WAE captured in 2018 ranged from 7.7 to 30.0 inches in length, with a mean length of 15.7 inches and mean weight of 1.6 lbs. Mean length and weight increased from the previous assessment in 2013 (12.2 inches and 0.7 lbs/fish). The WAE captured in 2018 were mainly comprised of 3 year classes (2013-15) which were responsible for the increase in mean length and weight from 2013. Natural WAE reproduction, documented in previous assessments, has become difficult to detect due to the mix of fingerling, yearling, and adult WAE that have been stocked in recent years. However, some level of natural reproduction is likely still occurring and contributing to the population. The 2018 catch rate was 6.3 fish/gillnet which was roughly half the 2013 CPUE of 13.6 fish/gillnet and slightly less than the long-range goal of >7 WAE/gillnet as outlined in the management plan.

NOP were captured at a rate of 8.3 fish/gillnet which is similar to the 2013 assessment (8.8 fish/gillnet), satisfies the management plan goal for abundance (<9 fish/gillnet) and is similar to historic assessments. NOP ranged in length from 10.4 to 34.1 inches with a mean length and weight of 21.0 inches and 2.4 lbs/fish. Mean length and weight were similar to the 2013 assessment (20.8 inches and 2.4 lbs/fish) and below the management plan size structure goal for NOP (goal: 30% of sample >24 inches; 21% in 2018). While size structure indices depict a decline in larger NOP since 2007, a comparison of age frequency distribution changes from 2007 to 2013 shows a considerable increase in the proportion of younger NOP which continued through the 2018 assessment. Age-2 and age-3 NOP comprised 63% of fish captured in 2018.

BLG were captured at a rate of 14.3 fish/trap net (n=171), which is near the median value of 16.2 fish/trap net for class 27 lakes and also close to the average CPUE from the previous six assessments from 1984-2013 (16.6 fish/trap net). Trap net caught BLG ranged in length from 3.0 to 6.9 inches, with a mean length and weight of 4.0 inches and 0.05 lbs/fish. Mean length and weight have been slowly declining since the 1995 assessment. The management plan goal for RSD-P(8) of >25 was not met (RSD-P(8) = 0). Age-2 BLG (2016 year class) comprised 65% of the aged sample (n=120, including GN catch) and had a mean length at capture of 3.5 inches.

LMB were targeted specifically via night electrofishing in June. During the 2:05:44 of on-time, 9 LMB were captured with lengths ranging from 10.8 to 19.6 inches with a mean of 16.4 inches. Though captured in low numbers, size structure indicates a quality population (PSD-P(15) = 78).

Yellow Perch (YEP) catch rates increased from 1.0 fish/gillnet in 2013 to 16.0 fish/gillnet in 2018. It is encouraging to see some rebound as there was growing concern about Walleye forage given the aggressive fingerling stocking densities. Mean YEP CPUE from the 4 assessments prior to 2018 (1995-2013) was 36.5 fish/gillnet. YEP trap net catch rates also increased from 1.3 fish/trap net in 2013 to 2.9 fish/trap net in 2018.

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**LAKE SURVEY REPORT**  
**STANDARD SURVEY DATED 07/30/2018 FOR DOW NUMBER 04-0343-00**

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### **Status Of The Fishery**

Clearwater Lake is a 999-acre lake with a maximum depth of 65 feet. The lake is located on the border of Beltrami and Clearwater counties northeast of the town of Leonard. There is a public water access with parking for 10 trucks/trailers located on the northwest corner of the lake off of County Road 4. Most of the shoreline of Clearwater Lake is in private ownership and there is a moderate amount of lakeshore development.

Water quality measurements taken at the end of July 2018 showed good oxygen levels for fish down to approximately 23 feet in depth. Clearwater Lake is managed primarily for Walleye, with Northern Pike, Bluegill, and Largemouth Bass managed as secondary species.

Clearwater Lake has provided consistent Walleye fishing for much of its management history, and is known for producing trophy-sized fish. The lake's Walleye population is maintained by intensive fingerling stocking, although some natural reproduction is usually detected in fish population assessments. The 2018 Walleye catch rate of 6.3 fish per gill net was in the expected range for Lake Class 27 lakes (3.3 to 8.8 fish per net). Walleye up to 30 inches in length were captured; however, the bulk of the catch was made up of walleye ranging from 12 to 15 inches in length (ages 3 and 4). The presence of these year classes in the population should reflect good catch rates for anglers in the near term.

The 2018 Northern Pike catch rate of 8.3 fish/net is near the upper end of the normal range for Lake Class 27 lakes (2.8 to 9 fish per net). Pike up to 34 inches in length were captured, with an average size of 21 inches in length and 2.4 lbs. Twenty-one percent of the pike captured in gill nets were greater than 24 inches in length. Clearwater Lake has the potential to produce large pike because of good forage species present such as Tullibee, White Sucker and redhorse.

Bluegill numbers were fairly typical compared to similar types of lakes, having increased in abundance since the previous assessment (2013). The Bluegill catch consisted mostly of age-2 fish with an average size less than 4 inches in length, although bluegill up to 9.3 inches in length were captured during the assessment.

Catch rates for Largemouth Bass historically have been low but the sizes are typically of good quality. The electrofishing catch consisted mostly of large-sized bass from 17 to 19 inches in length (16.4 inch average length). Generally speaking, Clearwater Lake's bass population is not overly abundant but contains some large fish. Given the size structure it appears that if anglers are targeting bass harvest must be minimal.

Other species of fish documented in the 2018 population assessment were Black Crappie, Pumpkinseed, Rock Bass, Yellow Perch, Yellow Bullhead, Tullibee (Cisco), White Sucker and several species of redhorse.

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**Approval Dates And Notices**

Date Approved By Bemidji Area Fisheries Supervisor: 04/11/2019  
Date Approved By Northwest Region Fisheries Manager: 05/02/2019



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Lake Survey Report revision: 20190410-RJE. Data Date: 05/03/2019 at 12:01 pm .

**FISHERIES MANAGEMENT**
**HISTORIC CATCH SUMMARY (GROUPED BY SURVEY)**
**SURVEYS DATED FROM 01/01/1900 TO 01/01/2019**
**ALL FISH SPECIES**
**ALL SAMPLING STATION TYPES**
**DOW NUMBER: 04-0343-00**
**PRIMARY LAKE CLASS ID: 27**
**REGION: NORTHWEST - BEMIDJI AREA**
**PRIMARY COUNTY: BELTRAMI COUNTY**

Revision: 20190301 (RJE)

DNR Reporting Service folder: Fisheries &gt; Survey &gt; Lake

Data Date: 04/03/2019 at 10:59 am

**Lake Name: Clearwater**
**DOW Number: 04-0343-00**
**Historic Catch Summary for GN (Standard gill net sets)**

Survey/Species	Total Fish	Number per Set	Total Weight (lbs)	Pounds per Set	Mean Weight (lbs)
<b>Survey Date: 07/30/18    DOW: 04-0343-00    Type: SD    Sampling Date(s): 07/30/18 - 08/02/18    # of Sets: 12</b>					
Black Crappie (BLC)	1	0.08	0.19	0.02	0.19
Bluegill (BLG)	36	3.00	5.62	0.47	0.16
Largemouth Bass (LMB)	11	0.92	16.10	1.34	1.46
Northern Pike (NOP)	100	8.33	238.27	19.86	2.38
Pumpkinseed (PMK)	5	0.42	0.63	0.05	0.13
Redhorse (RHS)	9	0.75	21.32	1.78	2.37
Rock Bass (RKB)	87	7.25	37.08	3.09	0.43
Shorthead Redhorse (SHR)	23	1.92	38.86	3.24	1.69
Tullibee (Cisco) (TLC)	20	1.67	13.30	1.11	0.67
Walleye (WAE)	75	6.25	119.10	9.93	1.59
White Sucker (WTS)	59	4.92	118.66	9.89	2.01
Yellow Bullhead (YEB)	5	0.42	5.03	0.42	1.01
Yellow Perch (YEP)	192	16.00	27.87	2.32	0.15

<b>Survey Date: 08/05/13    DOW: 04-0343-00    Type: PA    Sampling Date(s): 08/05/13 - 08/09/13    # of Sets: 12</b>					
Black Crappie (BLC)	7	0.58	6.43	0.54	0.92
Bluegill (BLG)	27	2.25	5.42	0.45	0.20
Brown Bullhead (BRB)	1	0.08	1.61	0.13	1.61
Largemouth Bass (LMB)	17	1.42	29.42	2.45	1.73
Northern Pike (NOP)	105	8.75	221.42	18.45	2.11
Redhorse (RHS)	21	1.75	49.42	4.12	2.35
Rock Bass (RKB)	91	7.58	38.27	3.19	0.42
Shorthead Redhorse (SHR)	71	5.92	94.14	7.85	1.33
Tullibee (Cisco) (TLC)	12	1.00	2.53	0.21	0.21
Walleye (WAE)	163	13.58	113.31	9.44	0.70
White Sucker (WTS)	68	5.67	129.06	10.76	1.90
Yellow Bullhead (YEB)	18	1.50	16.15	1.35	0.90
Yellow Perch (YEP)	12	1.00	1.31	0.11	0.11

<b>Survey Date: 08/06/07    DOW: 04-0343-00    Type: PA    Sampling Date(s): 08/06/07 - 08/09/07    # of Sets: 12</b>					
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**HISTORIC CATCH SUMMARY (GROUPED BY SURVEY) \***

**Historic Catch Summary for GN (Continued)**

Survey/Species	Total Fish	Number per Set	Total Weight (lbs)	Pounds per Set	Mean Weight (lbs)
<b>Survey Date: 08/06/07      DOW: 04-0343-00      Type: PA (Continued)</b>					
Black Crappie (BLC)	8	0.67	7.54	0.63	0.94
Bluegill (BLG)	73	6.08	19.67	1.64	0.27
Brown Bullhead (BRB)	1	0.08	1.17	0.10	1.17
Chestnut Lamprey (CHL)	1	0.08	N/A	N/A	N/A
Golden Redhorse (GLR)	6	0.50	26.01	2.17	4.33
Largemouth Bass (LMB)	10	0.83	6.40	0.53	0.64
Northern Pike (NOP)	113	9.42	350.95	29.25	3.11
Pumpkinseed (PMK)	1	0.08	0.04	0.00	0.04
Redhorse (RHS)	38	3.17	57.63	4.80	1.52
Rock Bass (RKB)	48	4.00	18.19	1.52	0.38
Shorthead Redhorse (SHR)	40	3.33	42.94	3.58	1.07
Tullibee (Cisco) (TLC)	72	6.00	27.84	2.32	0.39
Walleye (WAE)	117	9.75	111.44	9.29	0.95
White Sucker (WTS)	73	6.08	129.21	10.77	1.77
Yellow Bullhead (YEB)	18	1.50	21.28	1.77	1.18
Yellow Perch (YEP)	231	19.25	35.88	2.99	0.16
<b>Survey Date: 08/05/02      DOW: 04-0343-00      Type: PA      Sampling Date(s): 08/05/02 - 08/09/02      # of Sets: 12</b>					
Black Crappie (BLC)	40	3.33	12.18	1.02	0.30
Bluegill (BLG)	41	3.42	10.09	0.84	0.25
Brown Bullhead (BRB)	2	0.17	3.17	0.26	1.59
Largemouth Bass (LMB)	23	1.92	32.56	2.71	1.42
Northern Pike (NOP)	128	10.67	272.49	22.71	2.13
Pumpkinseed (PMK)	7	0.58	1.49	0.12	0.21
Redhorse (RHS)	5	0.42	10.77	0.90	2.15
Rock Bass (RKB)	57	4.75	23.43	1.95	0.41
Shorthead Redhorse (SHR)	115	9.58	187.00	15.58	1.63
Silver Redhorse (SLR)	5	0.42	6.35	0.53	1.27
Tullibee (Cisco) (TLC)	23	1.92	11.65	0.97	0.51
Walleye (WAE)	122	10.17	169.10	14.09	1.39
White Sucker (WTS)	64	5.33	131.04	10.92	2.05
Yellow Perch (YEP)	134	11.17	12.15	1.01	0.09
<b>Survey Date: 07/24/95      DOW: 04-0343-00      Type: RS      Sampling Date(s): 07/24/95 - 07/28/95      # of Sets: 12</b>					
Black Bullhead (BLB)	1	0.08	0.78	0.07	0.78
Black Crappie (BLC)	5	0.42	3.92	0.33	0.78
Bluegill (BLG)	26	2.17	10.60	0.88	0.41
Golden Redhorse (GLR)	7	0.58	10.47	0.87	1.50
Largemouth Bass (LMB)	2	0.17	7.50	0.63	3.75
Northern Pike (NOP)	114	9.50	283.55	23.63	2.49
Rock Bass (RKB)	44	3.67	18.61	1.55	0.42
Shorthead Redhorse (SHR)	16	1.33	30.50	2.54	1.91
Tullibee (Cisco) (TLC)	173	14.42	60.96	5.08	0.35
Walleye (WAE)	104	8.67	160.29	13.36	1.54
White Sucker (WTS)	159	13.25	234.95	19.58	1.48
Yellow Perch (YEP)	1,374	114.50	39.37	3.28	0.03
<b>Survey Date: 08/22/88      DOW: 04-0343-00      Type: 93      Sampling Date(s): N/A      # of Sets: 6</b>					
Black Bullhead (BLB)	5	0.83	4.80	0.80	0.96
Black Crappie (BLC)	10	1.67	6.30	1.05	0.63
Bluegill (BLG)	24	4.00	6.90	1.15	0.29

\* Reference parameter and filter values listed on the first page.



**HISTORIC CATCH SUMMARY (GROUPED BY SURVEY) \***

**Historic Catch Summary for GN (Continued)**

Survey/Species	Total Fish	Number per Set	Total Weight (lbs)	Pounds per Set	Mean Weight (lbs)
<b>Survey Date: 08/22/88      DOW: 04-0343-00      Type: 93 (Continued)</b>					
Brown Bullhead (BRB)	30	5.00	33.70	5.62	1.12
Golden Redhorse (GLR)	3	0.50	7.00	1.17	2.33
Largemouth Bass (LMB)	6	1.00	3.50	0.58	0.58
Northern Pike (NOP)	33	5.50	75.00	12.50	2.27
Pumpkinseed (PMK)	1	0.17	0.20	0.03	0.20
Rock Bass (RKB)	23	3.83	9.50	1.58	0.41
Shorthead Redhorse (SHR)	19	3.17	36.60	6.10	1.93
Tullibee (Cisco) (TLC)	21	3.50	13.00	2.17	0.62
Walleye (WAE)	84	14.00	138.90	23.15	1.65
White Sucker (WTS)	100	16.67	200.50	33.42	2.01
Yellow Perch (YEP)	52	8.67	8.40	1.40	0.16
<b>Survey Date: 08/30/84      DOW: 04-0343-00      Type: 93      Sampling Date(s): N/A      # of Sets: 6</b>					
Black Bullhead (BLB)	21	3.50	12.30	2.05	0.59
Black Crappie (BLC)	7	1.17	1.40	0.23	0.20
Bluegill (BLG)	24	4.00	9.50	1.58	0.40
Brown Bullhead (BRB)	47	7.83	50.75	8.46	1.08
Largemouth Bass (LMB)	2	0.33	1.30	0.22	0.65
Northern Pike (NOP)	43	7.17	97.55	16.26	2.27
Redhorse (RHS)	17	2.83	29.15	4.86	1.71
Rock Bass (RKB)	9	1.50	2.80	0.47	0.31
Tullibee (Cisco) (TLC)	19	3.17	9.25	1.54	0.49
Walleye (WAE)	21	3.50	66.25	11.04	3.15
White Sucker (WTS)	87	14.50	169.60	28.27	1.95
Yellow Perch (YEP)	76	12.67	11.90	1.98	0.16
<b>Survey Date: 08/03/81      DOW: 04-0343-00      Type: 93      Sampling Date(s): N/A      # of Sets: 6</b>					
Black Bullhead (BLB)	13	2.17	4.25	0.71	0.33
Black Crappie (BLC)	2	0.33	0.85	0.14	0.43
Bluegill (BLG)	2	0.33	0.60	0.10	0.30
Brown Bullhead (BRB)	10	1.67	5.70	0.95	0.57
Northern Pike (NOP)	60	10.00	158.80	26.47	2.65
Pumpkinseed (PMK)	3	0.50	0.60	0.10	0.20
Rock Bass (RKB)	26	4.33	12.35	2.06	0.48
Shorthead Redhorse (SHR)	18	3.00	33.00	5.50	1.83
Tullibee (Cisco) (TLC)	98	16.33	22.00	3.67	0.22
Walleye (WAE)	44	7.33	106.50	17.75	2.42
White Sucker (WTS)	34	5.67	42.50	7.08	1.25
Yellow Perch (YEP)	75	12.50	10.15	1.69	0.14
<b>Survey Date: 06/23/75      DOW: 04-0343-00      Type: 93      Sampling Date(s): N/A      # of Sets: 4</b>					
Brown Bullhead (BRB)	4	1.00	2.50	0.63	0.63
Northern Pike (NOP)	19	4.75	56.60	14.15	2.98
Redhorse (RHS)	9	2.25	22.00	5.50	2.44
Rock Bass (RKB)	5	1.25	3.80	0.95	0.76
Tullibee (Cisco) (TLC)	13	3.25	6.00	1.50	0.46
Walleye (WAE)	58	14.50	65.30	16.33	1.13
White Sucker (WTS)	12	3.00	27.70	6.93	2.31
Yellow Perch (YEP)	54	13.50	8.50	2.13	0.16
<b>Survey Date: 07/29/53      DOW: 04-0343-00      Type: 93      Sampling Date(s): N/A      # of Sets: 9</b>					

\* Reference parameter and filter values listed on the first page.

**HISTORIC CATCH SUMMARY (GROUPED BY SURVEY) \***

**Historic Catch Summary for GN (Continued)**

Survey/Species	Total Fish	Number per Set	Total Weight (lbs)	Pounds per Set	Mean Weight (lbs)
<b>Survey Date:</b> 07/29/53 <b>DOW:</b> 04-0343-00 <b>Type:</b> 93 (Continued)					
Northern Pike (NOP)	75	8.33	149.30	16.59	1.99
Redhorse (RHS)	77	8.56	124.40	13.82	1.62
Walleye (WAE)	27	3.00	30.75	3.42	1.14
White Sucker (WTS)	44	4.89	60.67	6.74	1.38
Yellow Perch (YEP)	1,088	120.89	112.93	12.55	0.10

**Historic Catch Summary for TN (Standard 3/4-in mesh, double frame trap net sets)**

Survey/Species	Total Fish	Number per Set	Total Weight (lbs)	Pounds per Set	Mean Weight (lbs)
<b>Survey Date:</b> 07/30/18 <b>DOW:</b> 04-0343-00 <b>Type:</b> SD <b>Sampling Date(s):</b> 07/30/18 - 08/02/18 <b># of Sets:</b> 12					
Bluegill (BLG)	171	14.25	9.22	0.77	0.05
Largemouth Bass (LMB)	9	0.75	0.39	0.03	0.04
Northern Pike (NOP)	6	0.50	7.89	0.66	1.31
Pumpkinseed (PMK)	4	0.33	0.27	0.02	0.07
Redhorse (RHS)	4	0.33	10.39	0.87	2.60
Rock Bass (RKB)	29	2.42	6.05	0.50	0.21
Walleye (WAE)	2	0.17	0.64	0.05	0.32
White Sucker (WTS)	4	0.33	7.25	0.60	1.81
Yellow Perch (YEP)	35	2.92	3.58	0.30	0.10

<b>Survey Date:</b> 08/05/13 <b>DOW:</b> 04-0343-00 <b>Type:</b> PA <b>Sampling Date(s):</b> 08/05/13 - 08/09/13 <b># of Sets:</b> 12					
Bluegill (BLG)	59	4.92	4.40	0.37	0.07
Hybrid Sunfish (HSF)	1	0.08	0.19	0.02	0.19
Largemouth Bass (LMB)	2	0.17	7.44	0.62	3.72
Northern Pike (NOP)	12	1.00	16.28	1.36	1.36
Pumpkinseed (PMK)	3	0.25	0.19	0.02	0.06
Redhorse (RHS)	2	0.17	N/A	N/A	N/A
River Redhorse (RRH)	1	0.08	N/A	N/A	N/A
Rock Bass (RKB)	27	2.25	8.52	0.71	0.32
Shorthead Redhorse (SHR)	16	1.33	39.13	3.26	2.45
Walleye (WAE)	1	0.08	0.55	0.05	0.55
White Sucker (WTS)	5	0.42	7.83	0.65	1.57
Yellow Bullhead (YEB)	9	0.75	7.81	0.65	0.87
Yellow Perch (YEP)	15	1.25	1.30	0.11	0.09

<b>Survey Date:</b> 08/06/07 <b>DOW:</b> 04-0343-00 <b>Type:</b> PA <b>Sampling Date(s):</b> 08/06/07 - 08/09/07 <b># of Sets:</b> 12					
Bluegill (BLG)	286	23.83	24.28	2.02	0.08
Brown Bullhead (BRB)	4	0.33	5.45	0.45	1.36
Largemouth Bass (LMB)	4	0.33	4.48	0.37	1.12
Northern Pike (NOP)	8	0.67	10.95	0.91	1.37
Pumpkinseed (PMK)	8	0.67	0.40	0.03	0.05
Redhorse (RHS)	45	3.75	53.34	4.45	1.19
Rock Bass (RKB)	21	1.75	5.56	0.46	0.26
Tullibee (Cisco) (TLC)	2	0.17	1.08	0.09	0.54
Walleye (WAE)	3	0.25	1.67	0.14	0.56
White Sucker (WTS)	33	2.75	50.83	4.24	1.54
Yellow Bullhead (YEB)	11	0.92	9.42	0.79	0.86
Yellow Perch (YEP)	37	3.08	4.97	0.41	0.13

\* Reference parameter and filter values listed on the first page.

**HISTORIC CATCH SUMMARY (GROUPED BY SURVEY) \***

**Historic Catch Summary for TN (Continued)**

Survey/Species	Total Fish	Number per Set	Total Weight (lbs)	Pounds per Set	Mean Weight (lbs)
<b>Survey Date: 08/05/02      DOW: 04-0343-00      Type: PA      Sampling Date(s): 08/05/02 - 08/09/02      # of Sets: 12</b>					
Black Bullhead (BLB)	1	0.08	0.15	0.01	0.15
Black Crappie (BLC)	27	2.25	5.45	0.45	0.20
Bluegill (BLG)	175	14.58	21.10	1.76	0.12
Brown Bullhead (BRB)	10	0.83	12.74	1.06	1.27
Hybrid Sunfish (HSF)	1	0.08	0.26	0.02	0.26
Largemouth Bass (LMB)	6	0.50	11.38	0.95	1.90
Northern Pike (NOP)	9	0.75	13.49	1.12	1.50
Pumpkinseed (PMK)	17	1.42	2.26	0.19	0.13
Redhorse (RHS)	1	0.08	7.50	0.63	7.50
Rock Bass (RKB)	35	2.92	17.78	1.48	0.51
Tullibee (Cisco) (TLC)	1	0.08	1.00	0.08	1.00
White Sucker (WTS)	12	1.00	23.10	1.93	1.93
Yellow Bullhead (YEB)	3	0.25	2.24	0.19	0.75
Yellow Perch (YEP)	31	2.58	4.39	0.37	0.14
<b>Survey Date: 07/24/95      DOW: 04-0343-00      Type: RS      Sampling Date(s): 07/24/95 - 07/28/95      # of Sets: 12</b>					
Black Crappie (BLC)	2	0.17	0.86	0.07	0.43
Bluegill (BLG)	45	3.75	14.40	1.20	0.32
Brown Bullhead (BRB)	6	0.50	4.53	0.38	0.76
Common Shiner (CSH)	13	1.08	0.70	0.06	0.05
Golden Shiner (GOS)	21	1.75	N/A	N/A	N/A
Largemouth Bass (LMB)	2	0.17	0.73	0.06	0.36
Northern Pike (NOP)	5	0.42	10.98	0.92	2.20
Pumpkinseed (PMK)	7	0.58	0.81	0.07	0.12
Rock Bass (RKB)	120	10.00	32.01	2.67	0.27
Shorthead Redhorse (SHR)	5	0.42	6.65	0.55	1.33
Walleye (WAE)	9	0.75	3.64	0.30	0.40
White Sucker (WTS)	11	0.92	15.00	1.25	1.36
Yellow Perch (YEP)	573	47.75	101.14	8.43	0.18
<b>Survey Date: 08/22/88      DOW: 04-0343-00      Type: 93      Sampling Date(s): N/A      # of Sets: 10</b>					
Black Bullhead (BLB)	1	0.10	0.50	0.05	0.50
Black Crappie (BLC)	16	1.60	16.40	1.64	1.03
Bluegill (BLG)	244	24.40	26.40	2.64	0.11
Brown Bullhead (BRB)	28	2.80	27.30	2.73	0.98
Golden Redhorse (GLR)	1	0.10	7.00	0.70	7.00
Largemouth Bass (LMB)	13	1.30	2.60	0.26	0.20
Northern Pike (NOP)	7	0.70	3.80	0.38	0.54
Pumpkinseed (PMK)	32	3.20	5.90	0.59	0.18
Rock Bass (RKB)	41	4.10	14.70	1.47	0.36
Shorthead Redhorse (SHR)	15	1.50	20.60	2.06	1.37
Walleye (WAE)	7	0.70	12.90	1.29	1.84
White Sucker (WTS)	42	4.20	88.20	8.82	2.10
Yellow Perch (YEP)	205	20.50	37.10	3.71	0.18
<b>Survey Date: 08/30/84      DOW: 04-0343-00      Type: 93      Sampling Date(s): N/A      # of Sets: 8</b>					
Black Bullhead (BLB)	10	1.25	4.85	0.61	0.49
Black Crappie (BLC)	30	3.75	18.85	2.36	0.63
Bluegill (BLG)	223	27.88	28.60	3.58	0.13
Brown Bullhead (BRB)	18	2.25	15.40	1.93	0.86
Burbot (BUB)	1	0.13	3.00	0.38	3.00

\* Reference parameter and filter values listed on the first page.

**HISTORIC CATCH SUMMARY (GROUPED BY SURVEY) \***

**Historic Catch Summary for TN (Continued)**

Survey/Species	Total Fish	Number per Set	Total Weight (lbs)	Pounds per Set	Mean Weight (lbs)
<b>Survey Date:</b> 08/30/84	<b>DOW:</b> 04-0343-00	<b>Type:</b> 93 (Continued)			
Hybrid Sunfish (HSF)	4	0.50	0.20	0.03	0.05
Largemouth Bass (LMB)	18	2.25	3.35	0.42	0.19
Northern Pike (NOP)	5	0.63	6.80	0.85	1.36
Pumpkinseed (PMK)	65	8.13	10.45	1.31	0.16
Redhorse (RHS)	6	0.75	3.70	0.46	0.62
Rock Bass (RKB)	48	6.00	23.65	2.96	0.49
Walleye (WAE)	6	0.75	20.10	2.51	3.35
White Sucker (WTS)	12	1.50	33.80	4.23	2.82
Yellow Perch (YEP)	93	11.63	17.50	2.19	0.19

Survey Date:	DOW:	Type:	Sampling Date(s):	# of Sets:	
08/03/81	04-0343-00	93	N/A	11	
Black Bullhead (BLB)	170	15.45	48.55	4.41	0.29
Black Crappie (BLC)	2	0.18	0.85	0.08	0.43
Bluegill (BLG)	78	7.09	16.95	1.54	0.22
Brown Bullhead (BRB)	72	6.55	42.80	3.89	0.59
Largemouth Bass (LMB)	30	2.73	4.65	0.42	0.16
Northern Pike (NOP)	6	0.55	8.75	0.80	1.46
Pumpkinseed (PMK)	48	4.36	5.55	0.50	0.12
Rock Bass (RKB)	52	4.73	20.15	1.83	0.39
Shorthead Redhorse (SHR)	22	2.00	43.00	3.91	1.95
Walleye (WAE)	2	0.18	1.70	0.15	0.85
White Sucker (WTS)	19	1.73	37.50	3.41	1.97
Yellow Perch (YEP)	56	5.09	11.75	1.07	0.21

Survey Date:	DOW:	Type:	Sampling Date(s):	# of Sets:	
06/23/75	04-0343-00	93	N/A	14	
Black Bullhead (BLB)	83	5.93	14.50	1.04	0.17
Black Crappie (BLC)	2	0.14	1.20	0.09	0.60
Bluegill (BLG)	22	1.57	9.50	0.68	0.43
Brown Bullhead (BRB)	198	14.14	113.50	8.11	0.57
Northern Pike (NOP)	12	0.86	14.70	1.05	1.23
Pumpkinseed (PMK)	44	3.14	7.40	0.53	0.17
Redhorse (RHS)	22	1.57	63.10	4.51	2.87
Rock Bass (RKB)	178	12.71	62.60	4.47	0.35
Walleye (WAE)	14	1.00	41.00	2.93	2.93
White Sucker (WTS)	7	0.50	15.80	1.13	2.26
Yellow Bullhead (YEB)	1	0.07	0.70	0.05	0.70
Yellow Perch (YEP)	101	7.21	16.05	1.15	0.16

Survey Date:	DOW:	Type:	Sampling Date(s):	# of Sets:	
07/29/53	04-0343-00	93	N/A	8	
Black Crappie (BLC)	15	1.88	12.35	1.54	0.82
Bullheads (BLH)	71	8.88	81.40	10.18	1.15
Largemouth Bass (LMB)	2	0.25	0.35	0.04	0.18
Pumpkinseed (PMK)	15	1.88	2.38	0.30	0.16
Rock Bass (RKB)	37	4.63	20.50	2.56	0.55

**Historic Catch Summary for EF (Standard electrofishing)**

Survey/Species	Summary By Numbers			Summary By Weight (Pounds)		
	Total Fish	Number per Hour	Run-Time	Total Weight	Pounds per Hour	Mean Weight
		On-Time			Run-Time	On-Time

\* Reference parameter and filter values listed on the first page.

**HISTORIC CATCH SUMMARY (GROUPED BY SURVEY) \***

**Historic Catch Summary for EF (Continued)**

Survey/Species	Summary By Numbers			Summary By Weight (Pounds)			
	Total Fish	Number per Hour		Total Weight	Pounds per Hour		Mean Weight
		Run-Time	On-Time		Run-Time	On-Time	
<b>Survey Date: 07/30/18</b>		<b>DOW: 04-0343-00</b>		<b>Type: SD</b>		<b>Sampling Date(s): 06/07/18 - 06/08/18</b>	
<b>Total run-time for all stations: 3.00 hours</b>				<b>Total on-time for all stations: 2.10 hours</b>			
Largemouth Bass (LMB)	9	3.00	4.29	23.23	7.74	11.09	2.58

**Historic Catch Summary for EFB (Electrofishing, Backpack)**

Survey/Species	Summary By Numbers			Summary By Weight (Pounds)			
	Total Fish	Number per Hour		Total Weight	Pounds per Hour		Mean Weight
		Run-Time	On-Time		Run-Time	On-Time	
<b>Survey Date: 08/13/13</b>		<b>DOW: 04-0343-00</b>		<b>Type: SA</b>		<b>Sampling Date(s): 08/13/13 - 08/15/13</b>	
<b>Total run-time for all stations: 3888888.89 hours</b>				<b>Total on-time for all stations: 1.81 hours</b>			
Banded Killifish (BKF)	3	0.00	1.66	N/A	0.00	0.00	N/A
Banded Killifish (BKF) YOY	1	0.00	0.55	N/A	0.00	0.00	N/A
Black Crappie (BLC) YOY	2	0.00	1.10	N/A	0.00	0.00	N/A
Blackchin Shiner (BCS)	1	0.00	0.55	N/A	0.00	0.00	N/A
Blackchin Shiner (BCS) YOY	2	0.00	1.10	N/A	0.00	0.00	N/A
Blackside Darter (BSD)	48	0.00	26.49	N/A	0.00	0.00	N/A
Blackside Darter (BSD) YOY	2	0.00	1.10	N/A	0.00	0.00	N/A
Bluegill (BLG)	8	0.00	4.42	N/A	0.00	0.00	N/A
Bluegill (BLG) YOY	49	0.00	27.04	N/A	0.00	0.00	N/A
Bluntnose Minnow (BNM) YOY	9	0.00	4.97	N/A	0.00	0.00	N/A
Central Mudminnow (CNM)	33	0.00	18.21	N/A	0.00	0.00	N/A
Central Mudminnow (CNM) YOY	1	0.00	0.55	N/A	0.00	0.00	N/A
Iowa Darter (IOD)	32	0.00	17.66	N/A	0.00	0.00	N/A
Iowa Darter (IOD) YOY	6	0.00	3.31	N/A	0.00	0.00	N/A
Johnny Darter (JND)	12	0.00	6.62	N/A	0.00	0.00	N/A
Johnny Darter (JND) YOY	49	0.00	27.04	N/A	0.00	0.00	N/A
Largemouth Bass (LMB)	2	0.00	1.10	N/A	0.00	0.00	N/A
Largemouth Bass (LMB) YOY	35	0.00	19.32	N/A	0.00	0.00	N/A
Northern Pike (NOP)	2	0.00	1.10	N/A	0.00	0.00	N/A
Northern Pike (NOP) YOY	2	0.00	1.10	N/A	0.00	0.00	N/A
Rock Bass (RKB)	1	0.00	0.55	N/A	0.00	0.00	N/A
Tadpole Madtom (TPM)	10	0.00	5.52	N/A	0.00	0.00	N/A
Tadpole Madtom (TPM) YOY	3	0.00	1.66	N/A	0.00	0.00	N/A
White Sucker (WTS)	2	0.00	1.10	N/A	0.00	0.00	N/A
White Sucker (WTS) YOY	5	0.00	2.76	N/A	0.00	0.00	N/A
Yellow Perch (YEP)	2	0.00	1.10	N/A	0.00	0.00	N/A
Yellow Perch (YEP) YOY	14	0.00	7.73	N/A	0.00	0.00	N/A

**Historic Catch Summary for SSE (Special sampling, seining)**

Survey/Species	Total Fish	Number per Haul
<b>Survey Date: 07/24/95</b>	<b>DOW: 04-0343-00</b>	<b>Type: RS</b>
<b>Sampling Date(s): 08/10/95</b>		<b># of Hauls: 4</b>
Bluegill (BLG) YOY	2	0.50
Common Shiner (CSH)	8	2.00
Golden Redhorse (GLR)	1	0.25
Golden Shiner (GOS)	4	1.00
Iowa Darter (IOD)	1	0.25
Largemouth Bass (LMB)	8	2.00

\* Reference parameter and filter values listed on the first page.

**HISTORIC CATCH SUMMARY (GROUPED BY SURVEY) \***

**Historic Catch Summary for SSE (Continued)**

Survey/Species	Total Fish	Number per Haul
<b>Survey Date:</b> 07/24/95 <b>DOW:</b> 04-0343-00 <b>Type:</b> RS (Continued)		
Largemouth Bass (LMB) YOY	30	7.50
Logperch (LGP)	13	3.25
Rock Bass (RKB)	11	2.75
Shorthead Redhorse (SHR)	1	0.25
Spottail Shiner (SPO)	46	11.50
White Sucker (WTS)	12	3.00
White Sucker (WTS) YOY	3	0.75
Yellow Perch (YEP)	960	240.00
Yellow Perch (YEP) YOY	290	72.50
<b>Survey Date:</b> 08/22/88 <b>DOW:</b> 04-0343-00 <b>Type:</b> PA <b>Sampling Date(s):</b> 07/12/88 <b># of Hauls:</b> 5		
(No fish were taken during this survey)		
<b>Survey Date:</b> 07/28/87 <b>DOW:</b> 04-0343-00 <b>Type:</b> SA <b>Sampling Date(s):</b> 07/28/87 <b># of Hauls:</b> 4		
(No fish were taken during this survey)		
<b>Survey Date:</b> 07/25/86 <b>DOW:</b> 04-0343-00 <b>Type:</b> SA <b>Sampling Date(s):</b> 07/25/86 <b># of Hauls:</b> 4		
(No fish were taken during this survey)		
<b>Survey Date:</b> 08/30/84 <b>DOW:</b> 04-0343-00 <b>Type:</b> PA <b>Sampling Date(s):</b> 08/30/84 <b># of Hauls:</b> 3		
(No fish were taken during this survey)		

**Historic Catch Summary for S58 (Seining, 50 foot 1/8 in Beach Seine for IBI)**

Survey/Species	Total Fish
<b>Survey Date:</b> 08/13/13 <b>DOW:</b> 04-0343-00 <b>Type:</b> SA <b>Sampling Date(s):</b> 08/13/13 - 08/14/13 <b># of Hauls:</b> 6	
Banded Killifish (BKF)	45
Banded Killifish (BKF) YOY	2
Blackchin Shiner (BCS)	1
Blacknose Shiner (BNS)	1
Blackside Darter (BSD)	82
Bluegill (BLG)	7
Bluegill (BLG) YOY	67
Bluntnose Minnow (BNM) YOY	7
Common Shiner (CSH)	7
Golden Shiner (GOS)	53
Hornyhead Chub (HHC)	1
Iowa Darter (IOD)	51
Johnny Darter (JND)	4
Johnny Darter (JND) YOY	1
Largemouth Bass (LMB)	17
Largemouth Bass (LMB) YOY	81
Logperch (LGP)	31
Logperch (LGP) YOY	8
Northern Pike (NOP) YOY	1
Rock Bass (RKB) YOY	5
Shorthead Redhorse (SHR)	1

\* Reference parameter and filter values listed on the first page.

**HISTORIC CATCH SUMMARY (GROUPED BY SURVEY) \***

**Historic Catch Summary for S58 (Continued)**

Survey/Species	Total Fish
<b>Survey Date:</b> 08/13/13 <b>DOW:</b> 04-0343-00 <b>Type:</b> SA (Continued)	
.....	
Tadpole Madtom (TPM)	2
Tadpole Madtom (TPM) YOY	1
White Sucker (WTS)	7
White Sucker (WTS) YOY	1
Yellow Perch (YEP)	455
Yellow Perch (YEP) YOY	232

**Historic Catch Summary for S18 (Seining, 15 foot 1/8 in Beach Seine for IBI)**

Survey/Species	Total Fish
<b>Survey Date:</b> 08/13/13 <b>DOW:</b> 04-0343-00 <b>Type:</b> SA <b>Sampling Date(s):</b> 08/14/13 - 08/15/13 <b># of Hauls:</b> 2	
.....	
Banded Killifish (BKF)	5
Bluegill (BLG)	5
Bluegill (BLG) YOY	26
Bluntnose Minnow (BNM)	47
Bluntnose Minnow (BNM) YOY	16
Hornyhead Chub (HHC)	1
Iowa Darter (IOD)	3
Largemouth Bass (LMB)	2
Largemouth Bass (LMB) YOY	11
Rock Bass (RKB)	1
Rock Bass (RKB) YOY	1
Yellow Perch (YEP)	3
Yellow Perch (YEP) YOY	7

Survey Type Key: SD = Standard Survey, PA = Population Assessment, RS = Re-Survey, 93 = Pre-1993 Surveys, SA = Special Assessment.

Sampling Station Type Index:    Page 1 - GN = Standard gill net sets  
   Page 4 - TN = Standard 3/4-in mesh, double frame trap net sets  
   Page 6 - EF = Standard electrofishing  
   Page 7 - EFB = Electrofishing, Backpack  
   Page 7 - SSE = Special sampling, seining  
   Page 8 - S58 = Seining, 50 foot 1/8 in Beach Seine for IBI  
   Page 9 - S18 = Seining, 15 foot 1/8 in Beach Seine for IBI

Note: Species where zero fish were caught are not shown in this report. To display all catches and species, choose "Show Zero Catches" as a parameter selection.



# Clearwater Standard Survey

