

**Fisheries Management**
**Lake Name: Bearskin**
**Survey Type: Standard Survey**
**DOW Number: 16-0228-00**
**Survey ID Date: 08/29/2016**
**Lake Identification**

 Alternate Lake Name: West Bearskin  
 Primary Lake Class ID: 1

 DNR Sounding Map Number: B0497  
 Alternate Lake Class ID: N/A

**Lake Location**

Primary County: Cook

Nearest Town: Grand Marais

**Legal Descriptions**

 Lake Center: Township - 65N Range - 1W Section - 34  
 PLS Section Lake Center: 6500134

**All Legal Descriptions:**

Cook County: Township - 65N Range - 1W Sections - 33, 34, 35, 36

**Area Office**

 Area Name: Grand Marais  
 Region Name: Northeast

 ORG Code: F218  
 Region Number: 2

**Lake Access**

Station ID	Ownership	Public Use	Type	Location / Comments
AC - 1	DNR	Open to Public use	Concrete	Launch on east end of lake, off Cook County Road 66 (Clearwater Lake Road), with a dock and parking for six vehicles.
AC - 2	US Forest Service	Open to Public use	Carry-In	Carry-in from parking area on trail between Hungry Jack and West Bearskin Lakes, on Cook County Road 65. Parking for four vehicles.

**Lake Characteristics**

Lake Area (planimetered acres): 494.00	GIS Shoreline Length (miles): 8.27
GIS Lake Area (acres): 509.22	Maximum Fetch (miles): 2.53
DOW Lake Area (acres): 522.00	Fetch Orientation (degrees): 67
Littoral Area (acres): 94.00	USGS Quad Map Number: F28c
Area in MN (acres): 509.22	USGS Quad 24K GIS Index: 1155
Maximum Depth (feet): 78.0	
Mean Depth (feet): 31.0	

**Watershed Characteristics**
**Major Watershed**

 Name: Lake Superior - North  
 Watershed Number: 1  
 Watershed size (acres): 1,015,865

**Minor Watershed**

 Name: From Daniels L  
 Watershed Number: 41  
 Watershed size (acres): 6,589

**LAKE SURVEY REPORT**  
**STANDARD SURVEY DATED 08/29/2016 FOR DOW NUMBER 16-0228-00**

**Surveys and Investigations**

**Initial Survey:** 08/19/1955.  
**Re-Survey:** 08/30/1999, 08/31/1982.  
**Population Assessment:** 08/25/2008, 08/26/2002, 08/26/1996, 08/31/1993, 08/24/1972, 08/19/1969.  
**Special Assessment:** 08/27/1996, 09/01/1993.  
**Standard Survey:** 08/29/2016.

**Current Water Level**

Station ID	Date	Level	Reading (feet)	Reading Type
BM - 2	08/29/2016	N/A	N/A	Not Found
BM - 3	08/29/2016	N/A	N/A	Not Found

**Benchmark and Gauge Descriptions / Locations**

Station ID	Location Description
BM - 2	Top of metal stake at base of 14-in dia. white pine at public access dock at east end of lake. Established in 1955. No trace in 2016.
BM - 3	Red paint on highest point of 6x8x2 ft grey boulder 30 ft from water's edge on west side of public access on SW end of lake. Established in 1976, renumbered BM 3 in 1999. Not found in 2016.

**Water Level History - Readings**

Station ID	Date	Level	Reading (feet)	Reading Type
BM - 1	08/19/1955	N/A	-3.75	Above or below Benchmark
BM - 2	08/29/2016	N/A	N/A	Not Found
	08/26/1999	High	-5.75	Above or below Benchmark
	08/30/1982	Normal	-6.20	Above or below Benchmark
	09/27/1977	High	-4.80	Above or below Benchmark
	10/19/1976	Low	-7.00	Above or below Benchmark
	08/19/1955	N/A	-6.30	Above or below Benchmark
BM - 3	08/29/2016	N/A	N/A	Not Found
	08/26/1999	High	-3.50	Above or below Benchmark
	08/30/1982	Normal	-3.80	Above or below Benchmark
	09/23/1977	High	-2.90	Above or below Benchmark
	10/19/1976	Low	-4.80	Above or below Benchmark
BM - 4	09/28/1977	High	-3.70	Above or below Benchmark
BM - 5	08/26/1999	High	-0.79	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	-3.75	08/19/1955	-3.75	08/19/1955	0.00	-3.75	Above or below Benchmark (1)
BM - 2	-7.00	10/19/1976	-4.80	09/27/1977	2.20	-6.01	Above or below Benchmark (5)
BM - 2	N/A	N/A	N/A	N/A	N/A	N/A	Not Found - 08/29/2016 (0)
BM - 3	-4.80	10/19/1976	-2.90	09/23/1977	1.90	-3.75	Above or below Benchmark (4)
BM - 3	N/A	N/A	N/A	N/A	N/A	N/A	Not Found - 08/29/2016 (0)
BM - 4	-3.70	09/28/1977	-3.70	09/28/1977	0.00	-3.70	Above or below Benchmark (1)
BM - 5	-0.79	08/26/1999	-0.79	08/26/1999	0.00	-0.79	Above or below Benchmark (1)

**LAKE SURVEY REPORT**  
**STANDARD SURVEY DATED 08/29/2016 FOR DOW NUMBER 16-0228-00**

**Fish Diseases and Parasites**

Species Examined	Number of Fish Examined			Examination Results	
	Internally	Externally	In Lab	Condition Observed	Number of Fish
lake trout	8	-	-	None observed	8
northern pike	-	-	-	Neascus (Black Spot)	1
smallmouth bass	-	-	-	None observed	1
yellow perch	-	-	-	Neascus (Black Spot)	1

**Dissolved Oxygen and Temperature Profile of Lake Water**

Station ID	Sampling Date	Bottom Depth (Feet)	Sample Depth (Feet)	Water Temperature (°F)	Dissolved Oxygen (ppm)
WQ - 1	08/29/2016	70.0	Surface	71.6	8.6
			3.0	71.4	8.6
			6.0	70.9	8.6
			9.0	70.7	8.6
			12.0	70.5	8.6
			15.0	70.3	8.5
			18.0	70.2	8.4
			21.0	70.0	8.3
			24.0	69.3	8.1
			27.0	62.4	8.1
			28.0	60.1	8.2
			29.0	58.5	8.2
			30.0	56.8	8.2
			31.0	55.6	8.1
			32.0	54.7	8.0
			33.0	53.6	7.6
			34.0	52.5	7.3
			35.0	51.8	6.7
			36.0	51.3	6.4
			37.0	50.9	6.4
38.0	50.5	6.4			
39.0	50.2	6.3			
40.0	50.0	6.2			
43.0	49.5	5.7			
46.0	49.1	5.5			
49.0	48.6	5.0			
52.0	48.2	4.5			
55.0	48.0	4.1			
58.0	47.8	3.8			
61.0	47.8	3.6			
64.0	47.7	3.4			
67.0	47.7	3.2			
70.0	47.5	2.8			

**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	08/29/2016	Surface	17.5	N/A	N/A	Green	Algae

**LAKE SURVEY REPORT**  
**STANDARD SURVEY DATED 08/29/2016 FOR DOW NUMBER 16-0228-00**

**Net Catch Summary by Numbers for GSH**

Standard gill nets, set shallow in stratified assessment

Number of Sets: 3  
 First Set Date: 08/29/2016  
 Last Lift Date: 09/02/2016  
 Target Species: N/A

Abbr	Species	Total Fish	Number Per Set	Quartiles for Lake Class 1*		
				25%	50%	75%
BLG	Bluegill	20	6.67	N/A	N/A	N/A
GSF	Green Sunfish	10	3.33	N/A	N/A	N/A
NOP	Northern Pike	3	1.00	N/A	N/A	N/A
SMB	Smallmouth Bass	10	3.33	N/A	N/A	N/A
YEP	Yellow Perch	10	3.33	N/A	N/A	N/A
Total Fish/Set:			17.67	* Quartiles for Number Per Set		

**Net Catch Summary by Weight for GSH**

Standard gill nets, set shallow in stratified assessment

Abbr	Species	Total Weight (Pounds)	Pounds Per Set	Mean Weight	Quartiles for Lake Class 1*		
					25%	50%	75%
BLG	Bluegill	2.96	0.99	0.15	N/A	N/A	N/A
GSF	Green Sunfish	0.95	0.32	0.10	N/A	N/A	N/A
NOP	Northern Pike	14.49	4.83	4.83	N/A	N/A	N/A
SMB	Smallmouth Bass	23.09	7.70	2.31	N/A	N/A	N/A
YEP	Yellow Perch	0.93	0.31	0.09	N/A	N/A	N/A
Total Pounds Fish/Set:			14.14	* Quartiles for Mean Weight			

**LAKE SURVEY REPORT**  
**STANDARD SURVEY DATED 08/29/2016 FOR DOW NUMBER 16-0228-00**

**Net Catch Summary by Numbers for GDE**

Standard gill nets, set deep in stratified assessment

Number of Sets: 6  
 First Set Date: 08/29/2016  
 Last Lift Date: 09/02/2016  
 Target Species: N/A

Abbr	Species	Total Fish	Number Per Set	Quartiles for Lake Class 1*		
				25%	50%	75%
LAT	Lake Trout	12	2.00	N/A	N/A	N/A
NOP	Northern Pike	3	0.50	N/A	N/A	N/A
RBS	Rainbow Smelt	42	7.00	N/A	N/A	N/A
SMB	Smallmouth Bass	1	0.17	N/A	N/A	N/A
WAE	Walleye	1	0.17	N/A	N/A	N/A
Total Fish/Set:			9.83	* Quartiles for Number Per Set		

**Net Catch Summary by Weight for GDE**

Standard gill nets, set deep in stratified assessment

Abbr	Species	Total Weight (Pounds)	Pounds Per Set	Mean Weight	Quartiles for Lake Class 1*		
					25%	50%	75%
LAT	Lake Trout	54.95	9.16	4.58	N/A	N/A	N/A
NOP	Northern Pike	18.24	3.04	6.08	N/A	N/A	N/A
RBS	Rainbow Smelt	2.98	0.50	0.07	N/A	N/A	N/A
SMB	Smallmouth Bass	2.29	0.38	2.29	N/A	N/A	N/A
WAE	Walleye	6.88	1.15	6.88	N/A	N/A	N/A
Total Pounds Fish/Set:			14.22	* Quartiles for Mean Weight			

**LAKE SURVEY REPORT**  
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**Net Catch Summary by Numbers for GSM**

Small mesh gill nets, 3/8 and 1/2-in mesh, 200 x 6 ft

Number of Sets: 3  
 First Set Date: 08/30/2016  
 Last Lift Date: 09/02/2016  
 Target Species: N/A

Abbr	Species	Total Fish	Number Per Set	Quartiles for Lake Class 1*		
				25%	50%	75%
LAT	Lake Trout	1	0.33	N/A	N/A	N/A
RBS	Rainbow Smelt	598	199.33	N/A	N/A	N/A
Total Fish/Set:			199.67	* Quartiles for Number Per Set		

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**Net Catch Summary by Weight for GSM**

Small mesh gill nets, 3/8 and 1/2-in mesh, 200 x 6 ft

Abbr	Species	Total Weight (Pounds)	Pounds Per Set	Mean Weight	Quartiles for Lake Class 1*		
					25%	50%	75%
LAT	Lake Trout	0.04	0.01	0.04	N/A	N/A	N/A
RBS	Rainbow Smelt	30.07	10.02	0.05	N/A	N/A	N/A
Total Pounds Fish/Set:			10.04	* Quartiles for Mean Weight			

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**LAKE SURVEY REPORT**  
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**Net Catch Summary by Numbers for TN**

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

Number of Sets: 12  
 First Set Date: 08/29/2016  
 Last Lift Date: 09/02/2016  
 Target Species: N/A

Abbr	Species	Total Fish	Number Per Set	Quartiles for Lake Class 1*		
				25%	50%	75%
BLG	Bluegill	8	0.67	0.40	1.39	2.70
GSF	Green Sunfish	2	0.17	0.10	0.25	0.77
HSF	Hybrid Sunfish	1	0.08	N/A	N/A	N/A
NOP	Northern Pike	6	0.50	N/A	N/A	N/A
SMB	Smallmouth Bass	6	0.50	0.60	1.19	3.53
YEP	Yellow Perch	1	0.08	0.25	0.50	2.33
Total Fish/Set:			2.00	* 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 1*		
					25%	50%	75%
BLG	Bluegill	0.83	0.07	0.10	0.14	0.25	0.36
GSF	Green Sunfish	0.13	0.01	0.07	0.07	0.10	0.11
HSF	Hybrid Sunfish	0.14	0.01	0.14	N/A	N/A	N/A
NOP	Northern Pike	13.34	1.11	2.22	N/A	N/A	N/A
SMB	Smallmouth Bass	4.88	0.41	0.81	0.23	0.35	0.55
YEP	Yellow Perch	0.15	0.01	0.15	0.14	0.21	0.36
Total Pounds Fish/Set:			1.62	* Quartiles for Mean Weight			

**LAKE SURVEY REPORT**  
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**Length Frequency Distribution for GSH**

**Standard gill nets, set shallow in stratified assessment**

(Field work conducted between 08/29/2016 and 09/02/2016)

	<u>BLG</u>	<u>GSF</u>	<u>NOP</u>	<u>SMB</u>	<u>YEP</u>
< 3.00	-	-	-	-	-
3.00 - 3.49	-	-	-	-	-
3.50 - 3.99	-	-	-	-	-
4.00 - 4.49	1	-	-	-	-
4.50 - 4.99	-	8	-	-	-
5.00 - 5.49	1	1	-	-	-
5.50 - 5.99	6	-	-	-	1
6.00 - 6.49	10	-	-	-	4
6.50 - 6.99	2	-	-	-	3
7.00 - 7.49	-	-	-	-	1
7.50 - 7.99	-	-	-	-	-
8.00 - 8.49	-	1	-	-	-
8.50 - 8.99	-	-	-	-	-
9.00 - 9.49	-	-	-	-	-
9.50 - 9.99	-	-	-	-	-
10.00 - 10.49	-	-	-	-	-
10.50 - 10.99	-	-	-	-	-
11.00 - 11.49	-	-	-	-	-
11.50 - 11.99	-	-	-	-	-
12.00 - 12.99	-	-	-	-	-
13.00 - 13.99	-	-	-	-	-
14.00 - 14.99	-	-	-	1	-
15.00 - 15.99	-	-	-	3	-
16.00 - 16.99	-	-	-	1	-
17.00 - 17.99	-	-	-	4	-
18.00 - 18.99	-	-	-	-	-
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	-	-	2	-	-
27.00 - 27.99	-	-	-	-	-
28.00 - 28.99	-	-	-	-	-
29.00 - 29.99	-	-	1	-	-
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>GSF</u>	<u>NOP</u>	<u>SMB</u>	<u>YEP</u>
Total	20	10	3	10	9
Min. Length	4.25	4.53	26.26	14.17	5.98
Max. Length	6.89	8.03	29.13	19.13	7.09
Mean Length	6.00	5.36	27.26	16.65	6.46
# Measured	19	5	3	10	9
No Lengths for	1	5	0	0	1

**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 08/29/2016 FOR DOW NUMBER 16-0228-00**

**Length Frequency Distribution for GDE**

**Standard gill nets, set deep in stratified assessment**

(Field work conducted between 08/29/2016 and 09/02/2016)

	<u>LAT</u>	<u>NOP</u>	<u>RBS</u>	<u>SMB</u>	<u>WAE</u>
< 3.00	-	-	-	-	-
3.00 - 3.49	-	-	-	-	-
3.50 - 3.99	-	-	-	-	-
4.00 - 4.49	-	-	-	-	-
4.50 - 4.99	-	-	2	-	-
5.00 - 5.49	-	-	5	-	-
5.50 - 5.99	-	-	2	-	-
6.00 - 6.49	-	-	4	-	-
6.50 - 6.99	-	-	3	-	-
7.00 - 7.49	-	-	3	-	-
7.50 - 7.99	1	-	7	-	-
8.00 - 8.49	1	-	9	-	-
8.50 - 8.99	-	-	4	-	-
9.00 - 9.49	-	-	2	-	-
9.50 - 9.99	-	-	1	-	-
10.00 - 10.49	-	-	-	-	-
10.50 - 10.99	-	-	-	-	-
11.00 - 11.49	-	-	-	-	-
11.50 - 11.99	-	-	-	-	-
12.00 - 12.99	-	-	-	-	-
13.00 - 13.99	-	-	-	-	-
14.00 - 14.99	2	-	-	-	-
15.00 - 15.99	1	-	-	-	-
16.00 - 16.99	-	-	-	1	-
17.00 - 17.99	-	-	-	-	-
18.00 - 18.99	-	-	-	-	-
19.00 - 19.99	-	-	-	-	-
20.00 - 20.99	-	-	-	-	-
21.00 - 21.99	-	-	-	-	-
22.00 - 22.99	-	-	-	-	-
23.00 - 23.99	1	-	-	-	-
24.00 - 24.99	1	-	-	-	-
25.00 - 25.99	1	1	-	-	-
26.00 - 26.99	-	-	-	-	-
27.00 - 27.99	1	1	-	-	1
28.00 - 28.99	2	-	-	-	-
29.00 - 29.99	-	-	-	-	-
30.00 - 30.99	1	-	-	-	-
31.00 - 31.99	-	-	-	-	-
32.00 - 32.99	-	-	-	-	-
33.00 - 33.99	-	1	-	-	-
34.00 - 34.99	-	-	-	-	-
35.00 - 35.99	-	-	-	-	-
= > 36.00	-	-	-	-	-

	<u>LAT</u>	<u>NOP</u>	<u>RBS</u>	<u>SMB</u>	<u>WAE</u>
Total	12	3	42	1	1
Min. Length	7.76	25.75	4.61	16.54	27.40
Max. Length	30.35	33.66	9.65	16.54	27.40
Mean Length	20.69	28.92	7.27	16.54	27.40
# Measured	12	3	42	1	1
No Lengths for	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

**LAKE SURVEY REPORT**  
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**Length Frequency Distribution for GSM**

**Small mesh gill nets, 3/8 and 1/2-in mesh, 200 x 6 ft**

(Field work conducted between 08/30/2016 and 09/02/2016)

	<u>LAT</u>	<u>RBS</u>
< 3.00	-	-
3.00 - 3.49	-	-
3.50 - 3.99	-	2
4.00 - 4.49	-	54
4.50 - 4.99	-	181
5.00 - 5.49	1	83
5.50 - 5.99	-	42
6.00 - 6.49	-	8
6.50 - 6.99	-	27
7.00 - 7.49	-	32
7.50 - 7.99	-	85
8.00 - 8.49	-	27
8.50 - 8.99	-	17
9.00 - 9.49	-	20
9.50 - 9.99	-	20
10.00 - 10.49	-	-
10.50 - 10.99	-	-
11.00 - 11.49	-	-
11.50 - 11.99	-	-
12.00 - 12.99	-	-
13.00 - 13.99	-	-
14.00 - 14.99	-	-
15.00 - 15.99	-	-
16.00 - 16.99	-	-
17.00 - 17.99	-	-
18.00 - 18.99	-	-
19.00 - 19.99	-	-
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>LAT</u>	<u>RBS</u>
Total	1	598
Min. Length	5.47	3.90
Max. Length	5.47	9.96
Mean Length	5.47	6.53
# Measured	1	139
No Lengths for	0	459

**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 08/29/2016 FOR DOW NUMBER 16-0228-00**

**Length Frequency Distribution for TN**

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

(Field work conducted between 08/29/2016 and 09/02/2016)

	<u>BLG</u>	<u>GSF</u>	<u>HSF</u>	<u>NOP</u>	<u>SMB</u>	<u>YEP</u>
< 3.00	-	-	-	-	-	-
3.00 - 3.49	-	-	-	-	-	-
3.50 - 3.99	-	-	-	-	-	-
4.00 - 4.49	1	1	-	-	-	-
4.50 - 4.99	1	1	-	-	-	-
5.00 - 5.49	3	-	-	-	-	-
5.50 - 5.99	3	-	1	-	-	-
6.00 - 6.49	-	-	-	-	1	-
6.50 - 6.99	-	-	-	-	1	-
7.00 - 7.49	-	-	-	-	-	1
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	-	-	-	-	1	-
12.00 - 12.99	-	-	-	-	1	-
13.00 - 13.99	-	-	-	-	-	-
14.00 - 14.99	-	-	-	-	-	-
15.00 - 15.99	-	-	-	-	1	-
16.00 - 16.99	-	-	-	-	-	-
17.00 - 17.99	-	-	-	1	-	-
18.00 - 18.99	-	-	-	-	-	-
19.00 - 19.99	-	-	-	-	-	-
20.00 - 20.99	-	-	-	2	-	-
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	-	-	-	1	-	-
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>GSF</u>	<u>HSF</u>	<u>NOP</u>	<u>SMB</u>	<u>YEP</u>
Total	8	2	1	6	6	1
Min. Length	4.45	4.13	5.59	17.99	6.42	7.01
Max. Length	5.71	4.76	5.59	27.40	15.71	7.01
Mean Length	5.24	4.45	5.59	21.57	10.62	7.01
# Measured	8	2	1	6	6	1
No Lengths for	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

**LAKE SURVEY REPORT**  
**STANDARD SURVEY DATED 08/29/2016 FOR DOW NUMBER 16-0228-00**

**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:** 24

**Length at Capture in 2016 for Each Age Class, with Incremental Lengths for 2016**

Year Class	Age	Sample Size	Length At Capture			Standard Error	Length Increments	
			Average Length	Maximum Length	Minimum Length		Increment	Standard Error
2013	3	2	4.61	4.76	4.45	0.157	1.17	0.020
2012	4	17	5.66	6.34	4.25	0.129	1.38	0.093
2011	5	2	6.28	6.30	6.26	0.020	0.54	0.058
2010	6	3	6.44	6.89	5.91	0.288	0.62	0.063

**Species:** Lake Trout  
**Body-Scale Constant:** 1.18  
**Total Sample Size:** 13

**Length at Capture in 2016 for Each Age Class, with Incremental Lengths for 2016**

Year Class	Age	Sample Size	Length At Capture			Standard Error	Length Increments	
			Average Length	Maximum Length	Minimum Length		Increment	Standard Error
2015	1	1	5.47	5.47	5.47	N/A	1.75	N/A
2014	2	2	7.99	8.23	7.76	0.236	2.01	0.129
2013	3	0	-	-	-	-	-	-
2012	4	0	-	-	-	-	-	-
2011	5	0	-	-	-	-	-	-
2010	6	2	14.57	14.88	14.25	0.315	1.32	0.065
2009	7	0	-	-	-	-	-	-
2008	8	1	15.04	15.04	15.04	N/A	0.76	N/A
2007	9	0	-	-	-	-	-	-
2006	10	2	24.41	25.00	23.82	0.591	1.07	0.143
2005	11	1	24.80	24.80	24.80	N/A	1.43	N/A
2004	12	1	27.13	27.13	27.13	N/A	0.88	N/A
2003	13	0	-	-	-	-	-	-
2002	14	0	-	-	-	-	-	-
2001	15	2	29.27	30.35	28.19	1.083	0.38	0.046
2000	16	0	-	-	-	-	-	-
1999	17	1	28.82	28.82	28.82	N/A	0.44	N/A

**LAKE SURVEY REPORT**  
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**Length At Capture with Last Incremental Length (Continued)**

**Species:** Northern Pike  
**Body-Scale Constant:** 2.09  
**Total Sample Size:** 12

**Length at Capture in 2016 for Each Age Class, with Incremental Lengths for 2016**

Year Class	Age	Sample Size	Length At Capture			Standard Error	Length Increments	
			Average Length	Maximum Length	Minimum Length		Increment	Standard Error
2015	1	2	19.04	20.08	17.99	1.043	9.04	1.127
2014	2	2	20.94	21.69	20.20	0.748	7.43	0.446
2013	3	1	22.05	22.05	22.05	N/A	5.63	N/A
2012	4	0	-	-	-	-	-	-
2011	5	2	26.00	26.26	25.75	0.256	1.48	0.233
2010	6	1	26.38	26.38	26.38	N/A	0.93	N/A
2009	7	0	-	-	-	-	-	-
2008	8	2	27.38	27.40	27.36	0.020	1.02	0.132
2007	9	1	29.13	29.13	29.13	N/A	0.89	N/A
2006	10	0	-	-	-	-	-	-
2005	11	0	-	-	-	-	-	-
2004	12	0	-	-	-	-	-	-
2003	13	0	-	-	-	-	-	-
2002	14	0	-	-	-	-	-	-
2001	15	0	-	-	-	-	-	-
2000	16	0	-	-	-	-	-	-
1999	17	0	-	-	-	-	-	-
1998	18	0	-	-	-	-	-	-
1997	19	0	-	-	-	-	-	-
1996	20	1	33.66	33.66	33.66	N/A	0.25	N/A

**Species:** Smallmouth Bass  
**Body-Scale Constant:** 1.42  
**Total Sample Size:** 16

**Length at Capture in 2016 for Each Age Class, with Incremental Lengths for 2016**

Year Class	Age	Sample Size	Length At Capture			Standard Error	Length Increments	
			Average Length	Maximum Length	Minimum Length		Increment	Standard Error
2012	4	1	6.42	6.42	6.42	N/A	0.86	N/A
2011	5	0	-	-	-	-	-	-
2010	6	1	10.75	10.75	10.75	N/A	1.33	N/A
2009	7	0	-	-	-	-	-	-
2008	8	1	11.81	11.81	11.81	N/A	0.43	N/A
2007	9	2	13.35	14.17	12.52	0.827	1.04	0.054
2006	10	1	16.54	16.54	16.54	N/A	0.83	N/A
2005	11	1	15.39	15.39	15.39	N/A	0.42	N/A
2004	12	5	16.20	17.40	15.71	0.316	0.53	0.088
2003	13	2	17.32	17.36	17.28	0.039	0.40	0.018
2002	14	0	-	-	-	-	-	-
2001	15	1	17.87	17.87	17.87	N/A	0.45	N/A
2000	16	1	19.13	19.13	19.13	N/A	0.37	N/A

**LAKE SURVEY REPORT**  
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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 (GSH and TN)

Class	Age	N	1	2	3	4	5	6
2013	3	2	1.42	2.32	3.44	-	-	-
			1.42	0.90	1.12	-	-	-
2012	4	17	1.37	2.19	2.93	4.29	-	-
			1.37	0.82	0.74	1.35	-	-
2011	5	2	1.52	2.45	3.87	4.92	5.74	-
			1.52	0.93	1.42	1.06	0.82	-
2010	6	3	1.54	2.43	3.43	4.32	4.92	5.82
			1.54	0.89	1.00	0.89	0.60	0.90
Mean Length			1.41	2.26	3.11	4.35	5.25	5.82
Mean Increment			1.41	0.85	0.86	1.26	0.69	0.90
Total N			24	24	24	22	5	3

**Species:** Lake Trout

**Gear Type:** Combined Gear Types (GDE and GSM)

Class	Age	N	1	2	3	4	5	6	7	8	9	10	11	12
2015	1	1	3.72	-	-	-	-	-	-	-	-	-	-	-
			3.72	-	-	-	-	-	-	-	-	-	-	-
2014	2	2	3.50	5.99	-	-	-	-	-	-	-	-	-	-
			3.50	2.49	-	-	-	-	-	-	-	-	-	-
2010	6	2	4.00	5.89	7.82	9.70	11.44	13.24	-	-	-	-	-	-
			4.00	1.89	1.93	1.88	1.74	1.81	-	-	-	-	-	-
2008	8	1	3.02	5.33	6.97	8.70	10.42	11.68	13.18	14.28	-	-	-	-
			3.02	2.31	1.64	1.73	1.72	1.26	1.50	1.10	-	-	-	-
2006	10	2	3.34	5.50	7.52	10.08	13.53	16.41	18.28	20.52	22.19	23.34	-	-
			3.34	2.16	2.03	2.56	3.45	2.88	1.87	2.24	1.68	1.15	-	-
2005	11	1	3.32	5.03	6.55	8.44	10.18	13.45	16.51	19.09	21.10	22.19	23.37	-
			3.32	1.71	1.52	1.89	1.74	3.27	3.06	2.58	2.01	1.09	1.18	-
2004	12	1	3.45	5.82	7.74	10.46	13.66	17.38	20.11	21.60	22.79	24.13	25.38	26.25
			3.45	2.37	1.92	2.72	3.20	3.72	2.73	1.49	1.19	1.34	1.25	0.87
2001	15	2	3.90	7.02	9.04	11.25	13.84	16.56	19.55	21.64	23.43	25.14	26.01	26.81
			3.90	3.13	2.02	2.21	2.59	2.73	2.99	2.09	1.79	1.72	0.87	0.80
1999	17	1	3.20	5.15	7.18	9.31	11.31	13.66	15.57	17.43	18.79	20.15	22.60	23.80
			3.20	1.95	2.03	2.13	2.00	2.35	1.91	1.86	1.36	1.36	2.45	1.20
Mean Length			3.55	5.84	7.72	9.90	12.32	14.86	17.63	19.59	21.99	23.35	24.67	25.92
Mean Increment			3.55	2.31	1.91	2.18	2.42	2.54	2.36	1.96	1.64	1.36	1.32	0.92
Total N			13	12	10	10	10	10	8	8	7	7	5	4

*(Continued from above table)*

Class	Age	N	13	14	15	16	17
2001	15	2	27.69	28.54	28.89	-	-
			0.89	0.85	0.35	-	-
1999	17	1	25.05	25.98	26.91	27.62	28.38
			1.25	0.93	0.93	0.71	0.76
Mean Length			26.81	27.68	28.23	27.62	28.38
Mean Increment			1.01	0.87	0.54	0.71	0.76
Total N			3	3	3	1	1

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

**Species:** Northern Pike

**Gear Type:** Combined Gear Types (GDE, GSH, TN)

Class	Age	N	1	2	3	4	5	6	7	8	9	10	11	12
2015	1	2	10.00	-	-	-	-	-	-	-	-	-	-	-
			10.00	-	-	-	-	-	-	-	-	-	-	-
2014	2	2	8.67	13.51	-	-	-	-	-	-	-	-	-	-
			8.67	4.85	-	-	-	-	-	-	-	-	-	-
2013	3	1	8.32	13.15	16.42	-	-	-	-	-	-	-	-	-
			8.32	4.83	3.27	-	-	-	-	-	-	-	-	-
2011	5	2	6.59	11.44	18.95	21.87	24.53	-	-	-	-	-	-	-
			6.59	4.86	7.51	2.92	2.67	-	-	-	-	-	-	-
2010	6	1	10.17	14.78	18.89	21.34	23.80	25.45	-	-	-	-	-	-
			10.17	4.61	4.11	2.45	2.46	1.65	-	-	-	-	-	-
2008	8	2	9.46	13.52	17.50	19.83	21.61	23.57	24.97	26.36	-	-	-	-
			9.46	4.06	3.98	2.33	1.79	1.96	1.41	1.39	-	-	-	-
2007	9	1	7.01	11.94	17.16	21.11	22.59	24.59	26.21	27.18	28.24	-	-	-
			7.01	4.93	5.22	3.95	1.48	2.00	1.62	0.97	1.06	-	-	-
1996	20	1	7.47	12.22	16.50	19.12	23.41	25.27	26.84	29.21	29.68	30.15	30.70	31.03
			7.47	4.75	4.28	2.62	4.29	1.86	1.57	2.37	0.47	0.47	0.55	0.33
Mean Length			8.53	12.90	17.73	20.71	23.15	24.49	25.75	27.28	28.96	30.15	30.70	31.03
Mean Increment			8.53	4.66	4.98	2.79	2.45	1.88	1.50	1.53	0.77	0.47	0.55	0.33
Total N			12	10	8	7	7	5	4	4	2	1	1	1

(Continued from above table)

Class	Age	N	13	14	15	16	17	18	19	20
1996	20	1	31.37	31.71	32.09	32.35	32.69	32.94	33.15	33.41
			0.34	0.34	0.38	0.26	0.34	0.25	0.21	0.26
Mean Length			31.37	31.71	32.09	32.35	32.69	32.94	33.15	33.41
Mean Increment			0.34	0.34	0.38	0.26	0.34	0.25	0.21	0.26
Total N			1	1	1	1	1	1	1	1

**LAKE SURVEY REPORT**  
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**Back-Calculated Lengths for Each Age Class and Average Annual Increments of Back-Calculated Lengths (Continued)**

**Species:** Smallmouth Bass

**Gear Type:** Combined Gear Types (GDE, GSH, TN)

Class	Age	N	1	2	3	4	5	6	7	8	9	10	11	12
2012	4	1	3.04	4.20	4.79	5.56	-	-	-	-	-	-	-	-
			3.04	1.16	0.59	0.77	-	-	-	-	-	-	-	-
2010	6	1	2.66	3.87	5.11	6.39	7.66	9.42	-	-	-	-	-	-
			2.66	1.21	1.24	1.28	1.27	1.76	-	-	-	-	-	-
2008	8	1	2.46	3.77	5.27	7.01	8.29	9.58	10.60	11.38	-	-	-	-
			2.46	1.31	1.50	1.74	1.28	1.29	1.02	0.78	-	-	-	-
2007	9	2	2.95	4.17	5.32	6.62	8.03	9.64	10.52	11.52	12.30	-	-	-
			2.95	1.22	1.15	1.31	1.41	1.61	0.88	1.00	0.79	-	-	-
2006	10	1	2.63	3.91	5.45	7.25	9.01	10.80	12.31	13.46	14.58	15.70	-	-
			2.63	1.28	1.54	1.80	1.76	1.79	1.51	1.15	1.12	1.12	-	-
2005	11	1	3.12	4.36	5.26	6.56	8.56	10.02	11.32	12.54	13.51	14.50	14.97	-
			3.12	1.24	0.90	1.30	2.00	1.46	1.30	1.22	0.97	0.99	0.47	-
2004	12	5	2.80	4.15	5.30	6.46	7.74	9.16	10.65	12.03	13.05	14.21	14.97	15.67
			2.80	1.35	1.15	1.17	1.28	1.41	1.50	1.38	1.02	1.16	0.76	0.70
2003	13	2	2.74	3.64	4.58	5.83	7.25	8.95	10.66	12.52	13.87	14.60	15.48	16.18
			2.74	0.90	0.94	1.25	1.43	1.70	1.71	1.86	1.35	0.73	0.89	0.70
2001	15	1	2.86	4.43	5.36	6.24	7.49	8.71	9.93	10.75	11.60	13.00	14.70	15.72
			2.86	1.57	0.93	0.88	1.25	1.22	1.22	0.82	0.85	1.40	1.70	1.02
2000	16	1	2.47	3.50	5.09	6.20	7.23	8.20	9.48	10.48	12.32	14.23	15.69	16.43
			2.47	1.03	1.59	1.11	1.03	0.97	1.28	1.00	1.84	1.91	1.46	0.74
Mean Length			2.79	4.03	5.16	6.40	7.83	9.31	10.66	11.92	13.05	14.33	15.12	15.87
Mean Increment			2.79	1.24	1.14	1.24	1.38	1.48	1.36	1.26	1.09	1.15	0.92	0.74
Total N			16	16	16	16	15	15	14	14	13	11	10	9

*(Continued from above table)*

Class	Age	N	13	14	15	16
2003	13	2	16.92	-	-	-
			0.75	-	-	-
2001	15	1	16.46	16.91	17.42	-
			0.74	0.45	0.51	-
2000	16	1	16.97	17.62	18.28	18.76
			0.54	0.65	0.66	0.48
Mean Length			16.82	17.27	17.85	18.76
Mean Increment			0.69	0.55	0.59	0.48
Total N			4	2	2	1



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**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	'16 0	'15 1	'14 2	'13 3	'12 4	'11 5	'10 6	'09 7	'08 8	'07 9	'06 10	'05 11	'04 12	'03 13	'02 14	<'02 15+
<b>Bluegill</b>																			
GSH	16	4	0	0	0	0	0	14	3	3	0	0	0	0	0	0	0	0	0
TN	8	0	0	0	0	0	2	6	0	0	0	0	0	0	0	0	0	0	0
<b>Totals:</b>	<b>24</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>20</b>	<b>3</b>	<b>3</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>Lake Trout</b>																			
GDE	12	0	0	0	0	2	0	0	0	2	0	1	0	2	1	1	0	0	3
GSM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Totals:</b>	<b>13</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>3</b>
<b>Northern Pike</b>																			
GDE	3	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1
GSH	3	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0	0	0
TN	6	0	0	0	2	2	1	0	0	0	0	1	0	0	0	0	0	0	0
<b>Totals:</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>
<b>Smallmouth Bass</b>																			
GDE	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
GSH	10	0	0	0	0	0	0	0	0	0	0	0	1	0	1	4	2	0	2
TN	5	0	1	0	0	0	0	1	0	1	0	1	1	0	0	1	0	0	0
<b>Totals:</b>	<b>16</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>5</b>	<b>2</b>	<b>0</b>	<b>2</b>
<b>Walleye</b>																			
GDE	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1

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

- GSH = Standard gill nets, set shallow in stratified assessment
- TN = Standard 3/4-in mesh, double frame trap net sets
- GDE = Standard gill nets, set deep in stratified assessment
- GSM = Small mesh gill nets, 3/8 and 1/2-in mesh, 200 x 6 ft

**(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.

**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	Rusty Crayfish	1	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.

**LAKE SURVEY REPORT**  
**STANDARD SURVEY DATED 08/29/2016 FOR DOW NUMBER 16-0228-00**

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**Survey Crew Notes**

null

Region Signed by user 'jomix' on 05/11/2017

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**Field Notes - General Field**

Lake Trout, Northern Pike, Smallmouth Bass, Bluegill, and Rainbow Smelt were collected for contaminant analysis.

All Lake Trout examined internally were checked only for bladderworm.

Recent stocking of West Bearskin Lake:

Year - Species - Strain - Size - Number - Pounds - Fin clip

2009 - LAT - MTN - Yrl - 2,574 - 275.3 - LR  
2009 - LAT - GIL - Yrl - 2,527 - 269.6 - RR  
2008 - no stocking  
2007 - LAT - MTN - Yrl - 2,579 - 256.1 - Ad-LR  
2007 - LAT - GIL - Yrl - 2,550 - 223.0 - Ad-RR  
2006 - no stocking  
2005 - LAT - MTN - Yrl - 2,594 - 225.4 - LR  
2005 - LAT - GIL - Yrl - 2,575 - 258.0 - RR  
2004 - no stocking  
2003 - LAT - GIL - Yrl - 5,055 - 491.3 - LR  
2002 - no stocking  
2001 - LAT - GIL - Yrl - 5,000 - 427.4 - RR  
2000 - no stocking  
1999 - LAT - GIL - Yrl - 5,011 - 407.4 - Ad  
1998 - no stocking  
1997 - LAT - GIL - Yrl - 5,000 - 395.6 - LR  
1996 - no stocking  
1995 - LAT - GIL - Yrl - 5,000 - 472.6 - RR  
1994 - no stocking

West Bearskin Lake was stocked regularly with lake trout (fry or fingerlings) from 1928 through 1970. No stocking was done from 1971 through 1980. It was stocked regularly with lake trout yearlings from 1981 through 2009, and all lake trout stocked after 1970 were fin clipped. No stocking has been done since 2009.

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**Discussion**

West Bearskin is a deep, cold-water Lake Trout lake that has been managed primarily for Lake Trout since at least 1928. It was stocked regularly with Lake Trout (fry or fingerlings) from 1928 through 1970. No stocking was done from 1971 through 1980, but it was again stocked regularly, with Lake Trout yearlings, from 1981 through 2009. All Lake Trout stocked after 1970 were fin clipped so stocked fish could more easily be identified. Lake Trout stocking was discontinued after 2009 due to a combination of poor survival of stocked fish and high levels of natural reproduction. This was to have been the second of three surveys scheduled in the 2009 lake management plan to determine whether a resumption of Lake Trout stocking would be needed, and whether special or experimental regulations on the Lake Trout fishery might be necessary. The first (in 2012) could not be completed due to a shortage of staff and funding.

The 2016 Lake Trout catch (1.33 fish/net in deep and shallow sets combined) fell within the normal range for a Class 1 lake (0.85-4.25 fish/net), but fell short of the long range goal for this lake (1.50 fish/net) established in the 2009 plan. The 2016 catch was the lowest seen in this lake since 1972 (Table 1). Although the catch goal was not met in 2016, the size goal for Lake Trout (a mean weight of at least 1.5 lb/fish) was exceeded. None of the Lake Trout taken in 2016 bore fin clips identifying them as stocked fish. Although no strong year classes were identified, nine year classes contributed to the catch, indicating natural reproduction had been occurring fairly consistently. Lake Trout as old as age 17 were

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**Discussion (Continued)**

collected, and most of the catch consisted of fish older than age 8, and likely to have been mature adults. The presence of so many older fish suggested that low recruitment, rather than excessive harvest, was the reason for the low Lake Trout catch seen in 2016. Lake Trout growth appeared to have been somewhat slower than average. Across all year classes fish reached a mean length of 14.9 inches at age-6 annulus formation, compared to an area mean of 16.2 inches for Class 1 lakes (data through 2014).

West Bearskin Lake appeared to support a fairly high-quality Smallmouth Bass population in 2016, with a gill net catch (deep and shallow combined; 1.22 fish/net) that fell within the normal range (0.25-2.19 fish/net) for a lake of this type. Most of the Smallmouth Bass collected in 2016 were over 14 inches in length, and the presence of some fish over 16 inches met the 2009 plan's goal for the species. The catch consisted mostly of fish over eight years of age (up to 16 years), indicating exploitation had probably been light. Recruitment appeared to have been limited in recent years, with no strong year classes identified. Growth appeared to have been slow; across all year classes, fish reached a mean length of just 7.8 inches at age-5 annulus formation, compared to an area mean of 10.7 inches in Class 1 lakes.

Northern Pike had rarely been seen in this lake in the past, but a few were observed in a 2014 summer creel survey. The gill net catch in 2016 (0.67 fish/net, deep and shallow sets combined) approached the median for the lake class and was the highest ever seen in this lake (Table 1). Several year classes, all naturally produced, contributed to the 2016 catch, although none had been exceptionally strong. The largest fish collected was aged at 20 years based on a cliethrum sample, and several fish age-5 or older were collected. Northern Pike growth appeared to have been somewhat slower than average, at least at younger ages. Across all year classes fish reached a mean length of 17.7 inches at age-3 annulus formation, compared to an area mean of 19.9 inches in Class 1 lakes (data through 2014). Low numbers of Yellow Perch in this lake may have contributed to the slow early growth of Northern Pike observed among fish sampled in 2016.

Bluegill became established in West Bearskin Lake fairly recently. They were present in only modest numbers and small sizes in 2016. The 2016 trap net catch was similar to catches seen in 2002 and 2009, but the average size of fish taken in those nets appeared to have declined (Table 2). The catch consisted mainly of 4-6-inch fish from a strong 2012 year class. Their growth had been slow; age-4 fish reached a mean length of 4.3 inches at last annulus formation, compared to an area mean of 6.1 inches (all lake classes, data through 2014).

The single Walleye taken in 2016 was the first seen in a survey of this lake since 1969. Walleye can reach West Bearskin Lake from Hungry Jack Lake, where they are present in fair numbers. Yellow Perch numbers have typically been low in this lake; the 2016 catch (1.33 fish/net, deep and shallow combined) was the highest seen to date (Table 1). White Sucker numbers have also been low historically. Although none were sampled in any gear in 2016, a few were probably present nonetheless.

Rainbow Smelt apparently remained abundant in West Bearskin Lake in 2016, and fish taken were also fairly large, compared to those typically seen in other area lakes. The Rainbow Smelt catch in small-mesh gill nets (GSM) was well above the third quartile (62.33 fish/net) for that gear when used in the Grand Marais area, and the mean weight for smelt sampled equalled the third quartile (data through 2014). Smelt provide excellent forage for Lake Trout, Walleye, and Northern Pike, but they have also been implicated in Lake Trout and Walleye recruitment failures. Rainbow Smelt have been present in West Bearskin Lake since about 1963.

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### **Status Of The Fishery**

West Bearskin is a deep, cold-water Lake Trout lake that has been managed primarily for Lake Trout since at least 1928. It was stocked regularly with Lake Trout (fry or fingerlings) from 1928 through 1970. No stocking was done from 1971 through 1980, but it was again stocked regularly, with Lake Trout yearlings, from 1981 through 2009. All Lake Trout stocked after 1970 were fin clipped so stocked fish could more easily be identified. Lake Trout stocking was discontinued after 2009 due to poor survival of stocked fish and high levels of natural reproduction. This was to have been the second of three surveys scheduled in the 2009 lake management plan to determine whether a resumption of Lake Trout stocking would be needed, and whether special or experimental regulations on the Lake Trout fishery might be necessary. The first (in 2012) could not be completed due to a shortage of staff and funding.

Lake Trout were present in average numbers and above average sizes in 2016. The Lake Trout catch (1.33 fish/net in deep and shallow sets combined) fell within the normal range for a lake of this type (0.85-4.25 fish/net), but fell short of the long range goal for this lake (1.50 fish/net) established in the 2009 plan. Although the catch goal was not met in 2016, the size goal for Lake Trout (a mean weight of at least 1.5 lb/fish) was exceeded. None of the Lake Trout taken in 2016 bore fin clips identifying them as stocked fish. Although no strong year classes were identified, nine year classes contributed to the catch, indicating natural reproduction had been occurring fairly consistently. Lake Trout as old as 17 years were collected, and most of the catch consisted of fish older than eight years, and likely to have been mature adults. The presence of so many older fish suggested that low recruitment, rather than excessive harvest, was the reason for the low Lake Trout catch seen in 2016. Lake Trout growth appeared to have been somewhat slower than average. Fish reached an average length of 14.9 inches by the end of their sixth year, compared to an area mean of 16.2 inches.

West Bearskin Lake appeared to support good numbers of large Smallmouth Bass in 2016. The gill net catch (deep and shallow combined; 1.22 fish/net) fell within the normal range (0.25-2.19 fish/net) for a lake of this type. Most of the Smallmouth Bass collected in 2016 were over 14 inches in length, and the presence of some fish over 16 inches met the 2009 plan's goal for the species. The catch consisted mostly of fish over eight years of age (up to 16 years), indicating harvest by anglers had probably been light. Reproductive success appeared to have been limited in recent years, with no strong year classes identified. Growth appeared to have been slow; fish reached a mean length of just 7.8 inches at the end of their fifth year, compared to an area average of 10.7 inches.

Northern Pike numbers appear to have increased in West Bearskin Lake, and some larger fish were present in 2016. Northern Pike had been rarely seen in this lake in the past, but a few were observed in a 2014 summer creel survey, and the gill net catch in 2016 (0.67 fish/net, deep and shallow sets combined) was the highest ever seen in this lake. Several year classes, all naturally produced, contributed to the 2016 catch, although none had been exceptionally strong. The largest fish collected was aged at 20 years, and several fish five or more years old were collected. Northern Pike growth appeared to have been somewhat slower than average, at least at younger ages. By the end of their third year fish reached a mean length of 17.7 inches, compared to an area average of 19.9 inches. Low numbers of Yellow Perch in this lake may have contributed to the slow early growth of Northern Pike observed among fish sampled in 2016.

Bluegill became established in West Bearskin Lake fairly recently. They were present in only modest numbers and small sizes in 2016, but offered some angling opportunity for those seeking panfish in this panfish-poor area. The 2016 trap net catch was similar to catches seen in 2002 and 2009, but the average size of fish taken in those nets appeared to have declined. The catch consisted mainly of 4-6-inch fish from a strong 2012 year class. Their growth had been slow.

The single Walleye taken in 2016 was the first seen in a survey of this lake since 1969. Walleye can reach West Bearskin Lake from Hungry Jack Lake, where they are present in fair numbers. Yellow Perch numbers have typically been low in this lake; the 2016 catch (1.33 fish/net, deep and shallow combined) was the highest seen to date. White Sucker numbers have also been low historically. Although none were sampled in any gear in 2016, a few were probably present nonetheless.

Rainbow Smelt apparently remained abundant in West Bearskin Lake in 2016, and fish taken were also fairly large, compared to those typically seen in other area lakes. The Rainbow Smelt catch in small-mesh gill nets was well above the normal range (10.75-62.33 fish/net) for that gear when used in the Grand Marais area, and the mean weight for smelt sampled was well above average. Smelt provide excellent forage for Lake Trout, Walleye, and Northern Pike, but they

**Status Of The Fishery** (*Continued*)

have also been implicated in Lake Trout and Walleye recruitment failures. Rainbow Smelt have been present in West Bearskin Lake since about 1963. Anglers looking for a meal of smelt could probably catch enough for a meal in this lake, particularly in the winter.

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**Approval Dates And Notices**

Date Approved By Grand Marais Area Fisheries Supervisor: 03/15/2017

Date Approved By Northeast Region Fisheries Manager: 05/11/2017



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Lake Survey Report revision: 20170426-RJE. Data Date: 05/22/2017 at 2:02 pm .

Region	Area	240	D.O.W. Number	County	D.O.W. Lake Name	Acreage
II	Grand Marais		16-0228	Cook	West Bearskin	494

Table 1. Number of fish per set, and mean weight (pounds/fish) for Lake Trout, Smallmouth Bass, Northern Pike, Walleye, and Rainbow Smelt taken in graduated-mesh gill net sets (deep and shallow combined) in surveys of West Bearskin Lake, Cook County, Minnesota, 1955-2016.

Survey Date	No. Sets	Lake Trout		Smallmouth Bass		Northern Pike		Walleye		Rainbow Smelt	
		Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight
8/19/55	9	*		4.78	0.59	0.11		3.22	1.34		
8/19/69	10	0.90	ND	1.40	ND			0.10		4.30	ND
8/24/72	8	1.00	2.42	0.50	1.00	0.13				*	
7/27/82	9	4.67	0.74	2.22	ND					4.78	ND
8/31/93	9	3.00	1.43	1.00	0.88					0.78	0.12
8/26/96	9	5.44	1.61	0.78	0.37					0.78	0.12
8/30/99	9	5.33	1.21			0.11				1.56	0.05
8/26/02	9	2.67	3.55	0.22		0.11				3.78	0.08
8/25/08	9	3.44	2.39	0.78	0.87	0.22				7.11	0.10
8/29/16	9	1.33	4.58	1.22	2.31	0.67	5.46	0.11		4.67	0.07
Class 1											
Medians		2.08	1.79	0.71	0.97	0.71	3.83	2.83	1.47		
1 <sup>st</sup> Q		0.85	1.22	0.25	0.65	0.27	2.73	0.58	1.10		
3 <sup>rd</sup> Q		4.25	3.06	2.19	1.35	1.02	5.34	9.67	3.30		

\* Listed as present, but not sampled in graduated-mesh gill nets during the survey.

Yellow Perch gill net catches since 1955 have ranged from zero to 1.11 fish/set.

White Sucker gill net catches since 1955 have ranged from zero to 1.78 fish/set.

Region	Area	240	D.O.W. Number	County	D.O.W. Lake Name	Acreage
II	Grand Marais		16-0228	Cook	West Bearskin	494

Table 2. Number of fish per set, and mean weight (pounds/fish) for Bluegill, Green Sunfish, Smallmouth Bass, Northern Pike, and Walleye taken in 0.75-inch-mesh trap net sets in surveys of West Bearskin Lake, Cook County, Minnesota, 1955-2016.

Survey Date	No. Sets	Bluegill		Green Sunfish		Smallmouth Bass		Northern Pike		Walleye	
		Number	Weight	Number	Weight	Number	Weight	Number	Weight	Number	Weight
8/19/55	6					2.17	0.28	0.17		0.50	1.70
8/31/93	15	0.13	0.10	3.47	0.10	0.93	0.30				
8/26/96	16			2.75	0.10	0.44	0.30				
8/26/02	11	0.82	0.15	1.45	0.08	0.91	0.56	0.09			
8/25/08	12	1.50	0.13	1.33	0.09	0.92	0.81				
8/29/16	12	0.67	0.10	0.17		0.50	0.81	0.50	2.22		
Class 1											
Medians		1.39	0.25	0.25	0.10	1.19	0.35				
1 <sup>st</sup> Q		0.40	0.14	0.10	0.07	0.60	0.23				
3 <sup>rd</sup> Q		2.70	0.36	0.77	0.11	3.53	0.55				