

WALLEYE POPULATION ESTIMATE (CHAPMAN'S VERSION OF A PETERSEN POPULATION ESTIMATE)

PRINT DATE: 07/31/14

LAKE: HORSESHOE

YEAR	COUNTY	MWB CODE	ACRES	RECRUITMENT CODE	LENGTH REGULATION	DAILY BAG LIMIT
2014	WASHBURN	2470000	194	ST	15" MINIMUM	5

1. MARKING

DATES: 04/30-05/2/14  
 GEAR(S): FYKE NETS  
 ADULT MARK: RV  
 JUVENILE MARK: TC  
 ADULTS INCLUDE ALL SEXABLE WALLEYES AND ALL UNKNOWN GENDER WALLEYES 15.0"+  
 JUVENILES INCLUDE ALL UNKNOWN GENDER WALLEYES <15.0"

MARKING SUMMARY:

	FEMALES GIVEN MARK	MALES GIVEN MARK	TOTAL SEXABLE MARKED RV	UNKNOWN GIVEN MARK	TOTAL ADULTS MARKED RV	TOTAL JUVENILES MARKED TC
7.0-11.9	0	0	0	0	0	0
12.0-14.9	0	0	0	0	0	0
15.0-19.9	0	0	0	0	0	0
20.0+	5	6	11	0	11	0
TOTALS	5	6	11	0	11	0

2. RECAPTURE

DATE(S): 05/02/14  
 GEAR: BOOMSHOCKER(S)  
 ADULT MARK: RV  
 JUVENILE MARK: TC

RECAPTURE SUMMARY:

	UNMARKED	MARKED	TOTAL CAPTURED	UNMARKED GIVEN RV MARK	RV MARKS AT LARGE	UNMARKED GIVEN TC MARK	TC MARKS AT LARGE	TOTAL MARKS AT LARGE
<b>FEMALES</b>								
7.0-11.9	0	0	0	0	0	0	0	0
12.0-14.9	0	0	0	0	0	0	0	0
15.0-19.9	0	0	0	0	0	0	0	0
20.0+	2	0	2	2	7	0	0	0
TOTALS	2	0	2	2	7	0	0	0
<b>MALES</b>								
7.0-11.9	0	0	0	0	0	0	0	0
12.0-14.9	0	0	0	0	0	0	0	0
15.0-19.9	0	0	0	0	0	0	0	0
20.0+	1	2	3	1	7	0	0	0
TOTALS	1	2	3	1	7	0	0	0
<b>UNKNOWN</b>								
7.0-11.9	0	0	0	0	0	0	0	0
12.0-14.9	0	0	0	0	0	0	0	0
15.0-19.9	0	0	0	0	0	0	0	0
20.0+	0	0	0	0	0	0	0	0
TOTALS	0	0	0	0	0	0	0	0
<b>COMBINED (ALL)</b>								
7.0-11.9	0	0	0	0	0	0	0	0
12.0-14.9	0	0	0	0	0	0	0	0
15.0-19.9	0	0	0	0	0	0	0	0
20.0+	3	2	5	3	14	0	0	0
TOTALS	3	2	5	3	14	0	0	14

3. ADULT POPULATION ESTIMATE

FEMALES	RV MARKED (M)	TOTAL CAPTURED (C)	CAPTURED MARKED (R)	CAPTURED UNMARKED	POPULATION ESTIMATE (N)	VARIANCE		
7.0-11.9	0	0	0	0	1	0		
12.0-14.9	0	0	0	0	1	0		
15.0-19.9	0	0	0	0	1	0		
20.0+	5	2	0	2	18	108		
TOTALS	5	2	0	2	21	108		
POPULATION ESTIMATE		21					95% CONFIDENCE INTERVAL	20
STANDARD DEVIATION		10.4					LOWER 95% CONFIDENCE LIMIT	1
COEFFICIENT OF VARIATION		0.495					UPPER 95% CONFIDENCE LIMIT	41
							NUMBER PER ACRE	0.1

MALES	RV MARKED (M)	TOTAL CAPTURED (C)	CAPTURED MARKED (R)	CAPTURED UNMARKED	POPULATION ESTIMATE (N)	VARIANCE		
7.0-11.9	0	0	0	0	1	0		
12.0-14.9	0	0	0	0	1	0		
15.0-19.9	0	0	0	0	1	0		
20.0+	6	3	2	1	9	5		
TOTALS	6	3	2	1	12	5		
POPULATION ESTIMATE		12					95% CONFIDENCE INTERVAL	5
STANDARD DEVIATION		2.3					LOWER 95% CONFIDENCE LIMIT	8
COEFFICIENT OF VARIATION		0.189					UPPER 95% CONFIDENCE LIMIT	17
							NUMBER PER ACRE	0.1

UNKNOWNNS > 14.9	RV MARKED	TOTAL CAPTURED (C)	CAPTURED MARKED (R)	CAPTURED UNMARKED	POPULATION ESTIMATE (N)	VARIANCE		
7.0-11.9								
12.0-14.9								
15.0-19.9	0	0	0	0	1	0		
20.0+	0	0	0	0	1	0		
TOTALS	0	0	0	0	2	0		
POPULATION ESTIMATE		2					95% CONFIDENCE INTERVAL	0
STANDARD DEVIATION		0.0					LOWER 95% CONFIDENCE LIMIT	2
COEFFICIENT OF VARIATION		0.000					UPPER 95% CONFIDENCE LIMIT	2
							NUMBER PER ACRE	0.0

COMBINED (ALL MALES, ALL FEMALES, AND UNKNOWNNS > 14.9)

	RV MARKED (M)	TOTAL CAPTURED (C)	CAPTURED MARKED (R)	CAPTURED UNMARKED	POPULATION ESTIMATE (N)	VARIANCE		
7.0-11.9	0	0	0	0	1	0		
12.0-14.9	0	0	0	0	1	0		
15.0-19.9	0	0	0	0	1	0		
20.0+	11	5	2	3	24	72		
TOTALS	11	5	2	3	27	72		
POPULATION ESTIMATE		27					95% CONFIDENCE INTERVAL	17
STANDARD DEVIATION		8.5					LOWER 95% CONFIDENCE LIMIT	10
COEFFICIENT OF VARIATION		0.314					UPPER 95% CONFIDENCE LIMIT	44
							NUMBER PER ACRE	0.1

4. ADULT POPULATION DISTRIBUTION

INCH GROUP	SAMPLED NUMBER	SAMPLE PROPORTION	POPULATION ESTIMATE	ESTIMATED NUMBER PER INCH GROUP
7.0 - 7.4	0	0.000		0
7.5 - 7.9	0	0.000		0
8.0 - 8.4	0	0.000		0
8.5 - 8.9	0	0.000		0
9.0 - 9.4	0	0.000		0
9.5 - 9.9	0	0.000		0
10.0 - 10.4	0	0.000		0
10.5 - 10.9	0	0.000		0
11.0 - 11.4	0	0.000		0
11.5 - 11.9	0	0.000		0
SUBTOTALS	0	0.000	1	0
12.0 - 12.4	0	0.000		0
12.5 - 12.9	0	0.000		0
13.0 - 13.4	0	0.000		0
13.5 - 13.9	0	0.000		0
14.0 - 14.4	0	0.000		0
14.5 - 14.9	0	0.000		0
SUBTOTALS	0	0.000	1	0
15.0 - 15.4	0	0.000		0
15.5 - 15.9	0	0.000		0
16.0 - 16.4	0	0.000		0
16.5 - 16.9	0	0.000		0
17.0 - 17.4	0	0.000		0
17.5 - 17.9	0	0.000		0
18.0 - 18.4	0	0.000		0
18.5 - 18.9	0	0.000		0
19.0 - 19.4	0	0.000		0
19.5 - 19.9	0	0.000		0
SUBTOTALS	0	0.000	1	0
20.0 - 20.4	2	0.182		4
20.5 - 20.9	2	0.182		4
21.0 - 21.4	2	0.182		4
21.5 - 21.9	0	0.000		0
22.0 - 22.4	1	0.091		2
22.5 - 22.9	0	0.000		0
23.0 - 23.4	0	0.000		0
23.5 - 23.9	2	0.182		4
24.0 - 24.4	2	0.182		4
24.5 - 24.9	0	0.000		0
25.0 - 25.4	0	0.000		0
25.5 - 25.9	0	0.000		0
26.0 - 26.4	0	0.000		0
26.5 - 26.9	0	0.000		0
27.0 - 27.4	0	0.000		0
27.5 - 27.9	0	0.000		0
28.0 - 28.4	0	0.000		0
28.5 - 28.9	0	0.000		0
29.0 - 29.4	0	0.000		0
29.5 - 29.9	0	0.000		0
30.0+	0	0.000		0
SUBTOTALS	11	1.000	24	24
TOTALS	11		27	24

5. MARKS-AT-LARGE

	TOTAL MARKS
TOTAL JUVENILES (7.0-14.9):	0
TOTAL ADULTS:	14
14.0+ ADULTS:	14
20.0+ ADULTS:	14

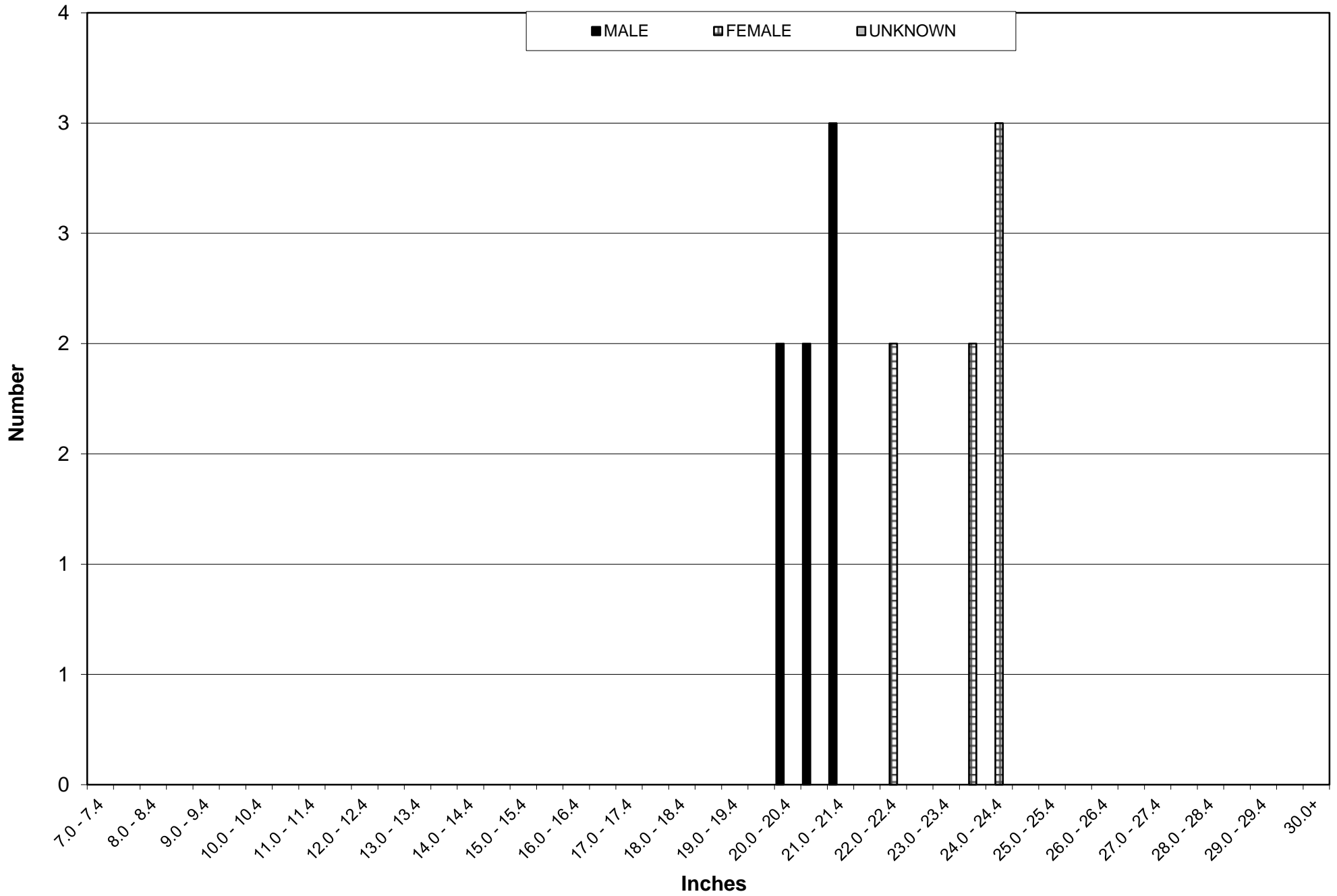
6. COMMENTS

ADULT MEAN LENGTH (COMBINED MARKED AND RECAPTURE UNMARKED)

LAKE: HORSESHOE  
YEAR: 2014

LENGTH GROUP	MIDGROUP LENGTH	MALE		FEMALE		UNKNOWN	
		LENGTH FREQUENCY	LENGTH PRODUCT	LENGTH FREQUENCY	LENGTH PRODUCT	LENGTH FREQUENCY	LENGTH PRODUCT
7.0 - 7.4	7.2	0	0.0	0	0.0	0	0.0
7.5 - 7.9	7.7	0	0.0	0	0.0	0	0.0
8.0 - 8.4	8.2	0	0.0	0	0.0	0	0.0
8.5 - 8.9	8.7	0	0.0	0	0.0	0	0.0
9.0 - 9.4	9.2	0	0.0	0	0.0	0	0.0
9.5 - 9.9	9.7	0	0.0	0	0.0	0	0.0
10.0 - 10.4	10.2	0	0.0	0	0.0	0	0.0
10.5 - 10.9	10.7	0	0.0	0	0.0	0	0.0
11.0 - 11.4	11.2	0	0.0	0	0.0	0	0.0
11.5 - 11.9	11.7	0	0.0	0	0.0	0	0.0
12.0 - 12.4	12.2	0	0.0	0	0.0	0	0.0
12.5 - 12.9	12.7	0	0.0	0	0.0	0	0.0
13.0 - 13.4	13.2	0	0.0	0	0.0	0	0.0
13.5 - 13.9	13.7	0	0.0	0	0.0	0	0.0
14.0 - 14.4	14.2	0	0.0	0	0.0	0	0.0
14.5 - 14.9	14.7	0	0.0	0	0.0	0	0.0
15.0 - 15.4	15.2	0	0.0	0	0.0	0	0.0
15.5 - 15.9	15.7	0	0.0	0	0.0	0	0.0
16.0 - 16.4	16.2	0	0.0	0	0.0	0	0.0
16.5 - 16.9	16.7	0	0.0	0	0.0	0	0.0
17.0 - 17.4	17.2	0	0.0	0	0.0	0	0.0
17.5 - 17.9	17.7	0	0.0	0	0.0	0	0.0
18.0 - 18.4	18.2	0	0.0	0	0.0	0	0.0
18.5 - 18.9	18.7	0	0.0	0	0.0	0	0.0
19.0 - 19.4	19.2	0	0.0	0	0.0	0	0.0
19.5 - 19.9	19.7	0	0.0	0	0.0	0	0.0
20.0 - 20.4	20.2	2	40.4	0	0.0	0	0.0
20.5 - 20.9	20.7	2	41.4	0	0.0	0	0.0
21.0 - 21.4	21.2	3	63.6	0	0.0	0	0.0
21.5 - 21.9	21.7	0	0.0	0	0.0	0	0.0
22.0 - 22.4	22.2	0	0.0	2	44.4	0	0.0
22.5 - 22.9	22.7	0	0.0	0	0.0	0	0.0
23.0 - 23.4	23.2	0	0.0	0	0.0	0	0.0
23.5 - 23.9	23.7	0	0.0	2	47.4	0	0.0
24.0 - 24.4	24.2	0	0.0	3	72.6	0	0.0
24.5 - 24.9	24.7	0	0.0	0	0.0	0	0.0
25.0 - 25.4	25.2	0	0.0	0	0.0	0	0.0
25.5 - 25.9	25.7	0	0.0	0	0.0	0	0.0
26.0 - 26.4	26.2	0	0.0	0	0.0	0	0.0
26.5 - 26.9	26.7	0	0.0	0	0.0	0	0.0
27.0 - 27.4	27.2	0	0.0	0	0.0	0	0.0
27.5 - 27.9	27.7	0	0.0	0	0.0	0	0.0
28.0 - 28.4	28.2	0	0.0	0	0.0	0	0.0
28.5 - 28.9	28.7	0	0.0	0	0.0	0	0.0
29.0 - 29.4	29.2	0	0.0	0	0.0	0	0.0
29.5 - 29.9	29.7	0	0.0	0	0.0	0	0.0
30.0+		0	0.0	0	0.0	0	0.0
TOTALS		7	145.4	7	164.4	0	0.0
MALE / FEMALE RATIO			1.0				
MEAN LENGTH		MALE	FEMALE	UNKNOWN	ADULT	COMBINED	
STANDARD DEVIATION		20.8	23.5	0.0	22.1	22.1	
MINIMUM LENGTH		0.4	0.9	0.0	1.6	1.6	
MAXIMUM LENGTH		20.2	22.2	0.0	20.2	20.2	
		21.2	24.2	0.0	24.2	24.2	

# Walleye Length Distribution



**WALLEYE MARKING DATA**

YEAR: 2014  
 MWBCODE: 2470000  
 LAKE: HORSESHOE  
 COUNTY: WASHBURN  
 ADULT MARK: RV  
 JUVENILE MARK: TC

SUMMARY:

	M	F	U	TOTAL
7.0 - 11.9	0	0	0	0
12.0 - 14.9	0	0	0	0
15.0 - 19.9	0	0	0	0
20.0 +	6	5	0	11
TOTAL	6	5	0	11

MARKING TOTALS			
	M	F	U
< 3.0	0	0	0
3.0 - 3.4	0	0	0
3.5 - 3.9	0	0	0
4.0 - 4.4	0	0	0
4.5 - 4.9	0	0	0
5.0 - 5.4	0	0	0
5.5 - 5.9	0	0	0
6.0 - 6.4	0	0	0
6.5 - 6.9	0	0	0
7.0 - 7.4	0	0	0
7.5 - 7.9	0	0	0
8.0 - 8.4	0	0	0
8.5 - 8.9	0	0	0
9.0 - 9.4	0	0	0
9.5 - 9.9	0	0	0
10.0 - 10.4	0	0	0
10.5 - 10.9	0	0	0
11.0 - 11.4	0	0	0
11.5 - 11.9	0	0	0
12.0 - 12.4	0	0	0
12.5 - 12.9	0	0	0
13.0 - 13.4	0	0	0
13.5 - 13.9	0	0	0
14.0 - 14.4	0	0	0
14.5 - 14.9	0	0	0
15.0 - 15.4	0	0	0
15.5 - 15.9	0	0	0
16.0 - 16.4	0	0	0
16.5 - 16.9	0	0	0
17.0 - 17.4	0	0	0
17.5 - 17.9	0	0	0
18.0 - 18.4	0	0	0
18.5 - 18.9	0	0	0
19.0 - 19.4	0	0	0
19.5 - 19.9	0	0	0
20.0 - 20.4	2	0	0
20.5 - 20.9	2	0	0
21.0 - 21.4	2	0	0
21.5 - 21.9	0	0	0
22.0 - 22.4	0	1	0
22.5 - 22.9	0	0	0
23.0 - 23.4	0	0	0
23.5 - 23.9	0	2	0
24.0 - 24.4	0	2	0
24.5 - 24.9	0	0	0
25.0 - 25.4	0	0	0
25.5 - 25.9	0	0	0
26.0 - 26.4	0	0	0
26.5 - 26.9	0	0	0
27.0 - 27.4	0	0	0
27.5 - 27.9	0	0	0
28.0 - 28.4	0	0	0
28.5 - 28.9	0	0	0
29.0 - 29.4	0	0	0
29.5 - 29.9	0	0	0
30.0 - 30.4	0	0	0
30.5 - 30.9	0	0	0
31.0 - 31.4	0	0	0
31.5 - 31.9	0	0	0
32.0 - 32.4	0	0	0
32.5 - 32.9	0	0	0
33.0 - 33.4	0	0	0
33.5 - 33.9	0	0	0
> 33.9	0	0	0
TOTALS	6	5	0

**WALLEYE ADULT RECAPTURE DATA**

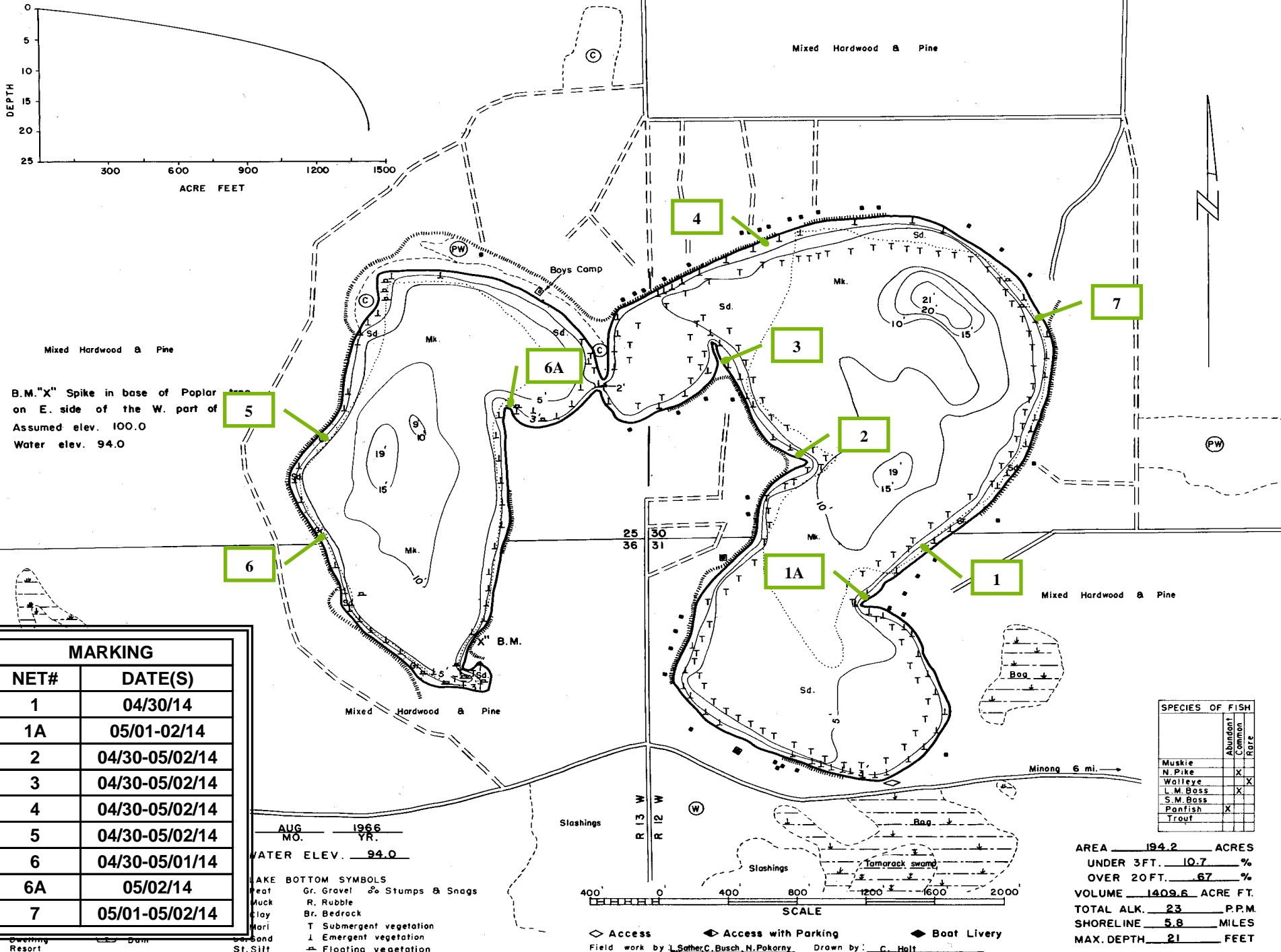
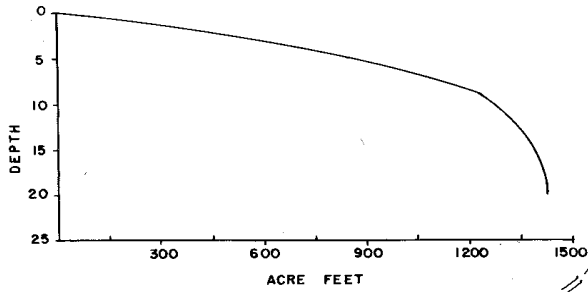
YEAR: 2014  
 MWBCODE: 2470000  
 LAKE: HORSESHOE  
 COUNTY: WASHBURN  
 ADULT MARK: RV  
 JUVENILE MARK: TC

SUMMARY:

	M	MR	F	FR	U	UR	TOTAL
7.0 - 11.9	0	0	0	0	0	0	0
12.0 - 14.9	0	0	0	0	0	0	0
15.0 - 19.9	0	0	0	0	0	0	0
20.0 +	1	2	2	0	0	0	5
TOTAL	1	2	2	0	0	0	5

ADULT RECAPTURE TOTALS

	M	MR	F	FR	U	UR
< 3.0	0	0	0	0	0	0
3.0 - 3.4	0	0	0	0	0	0
3.5 - 3.9	0	0	0	0	0	0
4.0 - 4.4	0	0	0	0	0	0
4.5 - 4.9	0	0	0	0	0	0
5.0 - 5.4	0	0	0	0	0	0
5.5 - 5.9	0	0	0	0	0	0
6.0 - 6.4	0	0	0	0	0	0
6.5 - 6.9	0	0	0	0	0	0
7.0 - 7.4	0	0	0	0	0	0
7.5 - 7.9	0	0	0	0	0	0
8.0 - 8.4	0	0	0	0	0	0
8.5 - 8.9	0	0	0	0	0	0
9.0 - 9.4	0	0	0	0	0	0
9.5 - 9.9	0	0	0	0	0	0
10.0 - 10.4	0	0	0	0	0	0
10.5 - 10.9	0	0	0	0	0	0
11.0 - 11.4	0	0	0	0	0	0
11.5 - 11.9	0	0	0	0	0	0
12.0 - 12.4	0	0	0	0	0	0
12.5 - 12.9	0	0	0	0	0	0
13.0 - 13.4	0	0	0	0	0	0
13.5 - 13.9	0	0	0	0	0	0
14.0 - 14.4	0	0	0	0	0	0
14.5 - 14.9	0	0	0	0	0	0
15.0 - 15.4	0	0	0	0	0	0
15.5 - 15.9	0	0	0	0	0	0
16.0 - 16.4	0	0	0	0	0	0
16.5 - 16.9	0	0	0	0	0	0
17.0 - 17.4	0	0	0	0	0	0
17.5 - 17.9	0	0	0	0	0	0
18.0 - 18.4	0	0	0	0	0	0
18.5 - 18.9	0	0	0	0	0	0
19.0 - 19.4	0	0	0	0	0	0
19.5 - 19.9	0	0	0	0	0	0
20.0 - 20.4	0	0	0	0	0	0
20.5 - 20.9	0	2	0	0	0	0
21.0 - 21.4	1	0	0	0	0	0
21.5 - 21.9	0	0	0	0	0	0
22.0 - 22.4	0	0	1	0	0	0
22.5 - 22.9	0	0	0	0	0	0
23.0 - 23.4	0	0	0	0	0	0
23.5 - 23.9	0	0	0	0	0	0
24.0 - 24.4	0	0	1	0	0	0
24.5 - 24.9	0	0	0	0	0	0
25.0 - 25.4	0	0	0	0	0	0
25.5 - 25.9	0	0	0	0	0	0
26.0 - 26.4	0	0	0	0	0	0
26.5 - 26.9	0	0	0	0	0	0
27.0 - 27.4	0	0	0	0	0	0
27.5 - 27.9	0	0	0	0	0	0
28.0 - 28.4	0	0	0	0	0	0
28.5 - 28.9	0	0	0	0	0	0
29.0 - 29.4	0	0	0	0	0	0
29.5 - 29.9	0	0	0	0	0	0
30.0 - 30.4	0	0	0	0	0	0
30.5 - 30.9	0	0	0	0	0	0
31.0 - 31.4	0	0	0	0	0	0
31.5 - 31.9	0	0	0	0	0	0
32.0 - 32.4	0	0	0	0	0	0
32.5 - 32.9	0	0	0	0	0	0
33.0 - 33.4	0	0	0	0	0	0
33.5 - 33.9	0	0	0	0	0	0
> 33.9	0	0	0	0	0	0
TOTALS	1	2	2	0	0	0



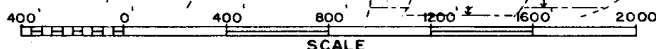
B.M. "X" Spike in base of Poplar  
on E. side of the W. part of  
Assumed elev. 100.0  
Water elev. 94.0

**MARKING**

NET#	DATE(S)
1	04/30/14
1A	05/01-02/14
2	04/30-05/02/14
3	04/30-05/02/14
4	04/30-05/02/14
5	04/30-05/02/14
6	04/30-05/01/14
6A	05/02/14
7	05/01-05/02/14

AUG 1966  
MO. YR.  
WATER ELEV. 94.0

LAKE BOTTOM SYMBOLS  
 Gr. Gravel & Stumps & Snags  
 R. Rubble  
 Br. Bedrock  
 T Submergent vegetation  
 J Emergent vegetation  
 Sand  
 St. Silt  
 Floating vegetation

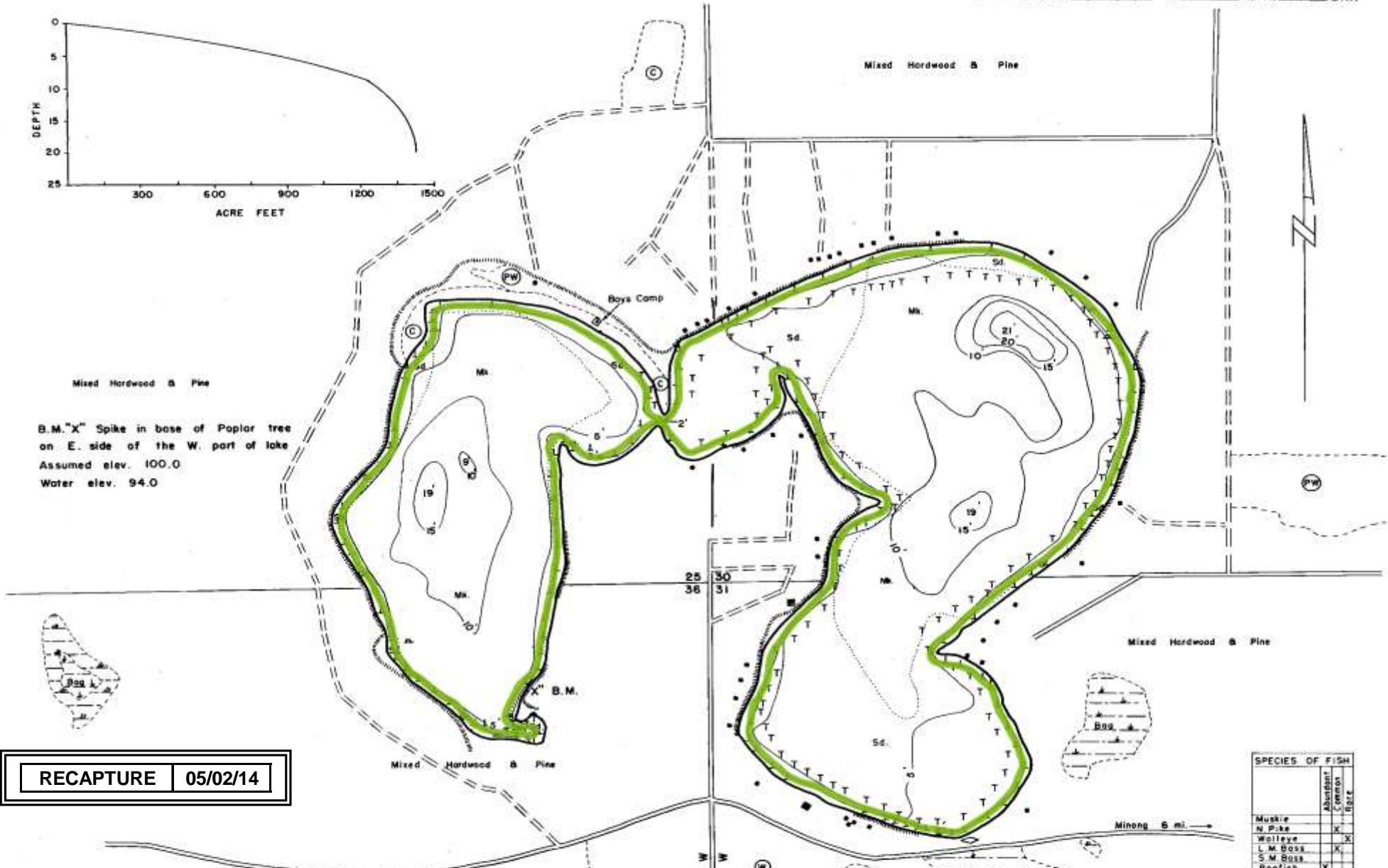
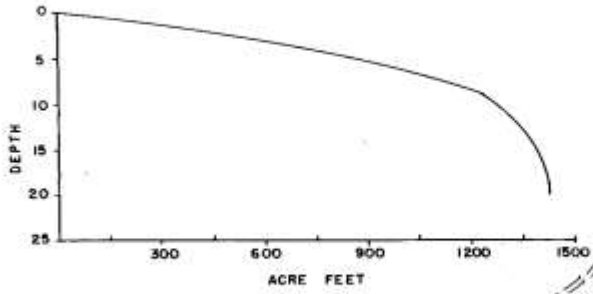


Access Access with Parking Boat Livery  
 Field work by L. Sather, C. Busch, N. Pokorny. Drawn by C. Holt

SPECIES OF FISH	Abundance	
	Common	Rare
Muskie		
N. Pike	X	
Walleye	X	X
L. M. Bass	X	
S. M. Bass		
Panfish	X	
Trotl		

AREA 194.2 ACRES  
 UNDER 3 FT. 10.7 %  
 OVER 20 FT. 67 %  
 VOLUME 1409.6 ACRE FT.  
 TOTAL ALK. 23 P.P.M.  
 SHORELINE 5.8 MILES  
 MAX. DEPTH 21 FEET





B.M. "X" Spike in base of Poplar tree on E. side of the W. part of lake  
 Assumed elev. 100.0  
 Water elev. 94.0

**RECAPTURE** 05/02/14

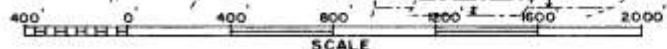
SPECIES OF FISH	
	Abundant Common Rare
Muskie	
N Pike	X
Walleye	X
L.W. Bass	X
S.W. Bass	X
Pontfish	X
Trout	

EQUIPMENT RECORDING SONAR MAPPED AUG 1966  
 MO. YR.

- TOPOGRAPHIC SYMBOLS**
- ⊕ Brush
  - ⊗ Partially wooded
  - ⊙ Wooded
  - ⊘ Cleared
  - ⊙ Pastured
  - ⊙ Agricultural
  - B.M. Bench Mark
  - Dwelling
  - Resort

- LAKE BOTTOM SYMBOLS**
- P. Peat
  - Mk. Muck
  - C. Clay
  - M. Marl
  - Sd. Sand
  - Sf. Silt
  - Gr. Gravel
  - R. Rubble
  - Br. Bedrock
  - T. Submergent vegetation
  - ↓ Emergent vegetation
  - Floating vegetation
  - ⚓ Stumps & Snags

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◊ Access   ◄ Access with Parking   ◄ Boat Livery  
 Field work by L. Sober, C. Russh, N. Pokorny. Drawn by: C. Holt