

SECTION II

PRAIRIE ISLAND NUCLEAR GENERATING PLANT  
ENVIRONMENTAL MONITORING PROGRAM  
2013 ANNUAL REPORT

SUMMARY OF THE 2013 FISH POPULATION STUDY

Report  
by  
B. D. Giese

Environmental Services  
Water Quality Department



## SUMMARY OF THE 2013 FISH POPULATION STUDY

### INTRODUCTION

To fulfill part of the continuing environmental monitoring requirements of the Prairie Island Nuclear Generating Plant, (PINGP), the Mississippi River fisheries population was sampled near Red Wing, Minnesota, May through October, 2013. The study area extends from 3.6 miles upstream of the plant (River mile 802) to 10.8 miles downstream of the plant (River mile 787.5), (Figure 1). The original objective of the study was to “determine existing ecological characteristics before plant operation and to assess any significant changes to the aquatic environment after operation” (NSP 1972). The objective was changed slightly after the plant became operational in 1973; to “determine environmental effects of the PINGP on the fish community in the Mississippi River and its backwaters” (Hawkinson 1973). Presently, the objective is to monitor and assess the status of the fishery in the vicinity of the PINGP (Mueller 1994). Parameters analyzed include species composition, length-weight regressions, length-frequency distributions, and catch per unit effort (CPUE). Starting in 2012, fish species, length and weights were entered into the Minnesota Department of Natural Resources (MNDNR) fisheries software program. The data was then downloaded into the MNDNR database. This annual report includes the Standard Lake Survey Reports created the MNDNR (Attachment 1 and 2) for Mississippi River Pools 3 and 4. Pool 3 is a combination of sectors 1 and 2, while Pool 4 is a combination of sectors 3 and 4.

### METHODS AND MATERIALS

Fish were collected using a Smith-Root SR-18 Electrofishing boat equipped with a 5.0 GPP electrofishing unit (Figure 6). The power source was a 5.0 GPP generator. The 5000 watt generator has a maximum output of 16 amps, and a range of 0-1000 volts. The generator has the capability to be either pulsed AC or DC with a pulse frequency of 7.5, 15, 30, 60, and 120 Hz. The anode consists of two umbrella arrays, each with six dropper cables. The 18 foot boat and dropper cables hung from the front of the boat serve as the cathode. Collection occurred during daylight hours with a pulsed direct current. Due to the constantly changing river conditions, Electrofisher output was varied to enhance the effectiveness.

Sampling was done monthly, May through October, within four established sectors of the study area (Figures 1-5). The runs within each sector are similar to previous years sampling to ensure a similar set of relative data indices. At the end of each “run”, the elapsed shocking time was recorded from a digital timer, which only tallied the seconds that the electrical field was energized. A run was terminated after approximately 450 seconds shocking time or when the end of the prescribed run was reached.

Stunned fish were captured with one-inch stretch mesh landing nets equipped with eight-foot insulated handles. Fish were placed in live-wells, supplied with river water constantly, until the end of each run. At the end of each run fish were identified, measured to the nearest millimeter (total length), weighed to the nearest 10 grams, and released. Parameters used to describe the fisheries include species composition, length-weight regressions, total numbers of each species collected, length-frequency distributions, and catch per unit effort (CPUE). It is assumed that population dynamics and spatial distribution is represented by CPUE.

Electrofishing CPUE was computed as numbers of fish per hour for each sector. Length frequency distributions are reported for all fish species. Length-weight relationships were calculated using the length-weight formula:

$$\log W = \log a + b \log L,$$

where  $W$  is the weight in grams,  $a$  is the  $y$  axis intercept,  $b$  is the slope of the regression line, and  $L$  is the total length in millimeters.

## RESULTS

Initial PINGP preoperational annual environmental reports simply listed all data collected without discussion or analysis (NSP 1972). Individual species were not discussed, due to the amount of data collected during initial sampling efforts. This report will include, total number of each species, mean length and length range, CPUE comparison between Mississippi River Pools 3 and 4, length frequency distribution, and length weight regressions.

Electrofishing collection methods changed before the 1982 sampling season. The mesh size of the dip nets was increased to one inch stretch mesh. The larger mesh size enabled small adult fish and some young of the year fish of certain species to avoid collection. Currently, individual gizzard shad, freshwater drum, and white bass less than 160 mm are not collected. Also, logperch and cyprinids (other than carp) are no longer collected, due to their small size (Donkers 1987). Therefore, a direct comparison of electrofishing CPUE prior to 1982 is inappropriate to later years.

Species collected in 2013 are compared to previous years in Table 1. A total of 6,015 fish, comprising 39 species, was collected in the 2013 survey (Table 2).

All species collected in 2013 are ranked according to electrofishing CPUE and listed in Table 2. Table 3 lists the length-weight regressions calculated for each species.

All other parameters can be found in Attachments 1 and 2 (MNDNR Standard Lake Survey Report).

The top three abundant species, based on CPUE, was determined for each river pool (Table 2).

Pool 3;	freshwater drum, shorthead redhorse, carp
Pool 4;	freshwater drum, white bass, gizzard shad
Overall CPUE Average;	freshwater drum, white bass, shorthead redhorse

## DISCUSSION

When dealing with a large river environment, a high degree of natural variability exists in habitat conditions and therefore, in fish distribution. Palmquist (1982) proposed the wide range in species abundance between study areas was largely due to habitat preferences of a species rather than PINGP induced. Differences in collection efficiency and year class strengths may also explain this variability.

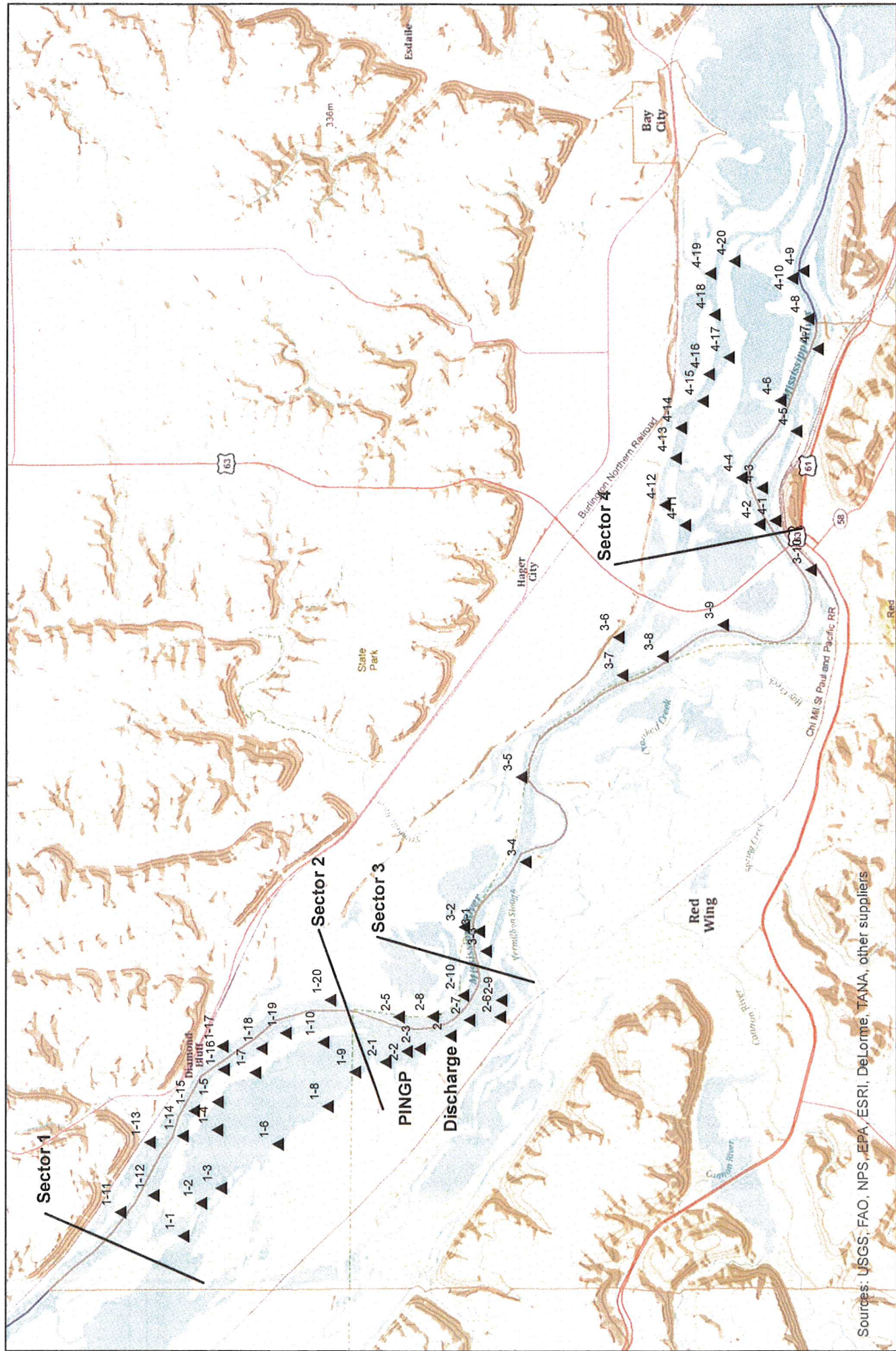
## GENERAL

The ten most abundant species collected during 2013 in descending order, based on average CPUE for both pools combined were: 1) freshwater drum, 2) white bass, 3) shorthead redhorse, 4) carp, 5) gizzard shad, 6) smallmouth bass, 7) walleye, 8) largemouth bass, 9) bluegill, and 10) quillback (Table 2).

Total average CPUE for all species and pools combined for 2013 was 133.66 fish/hour, a slight increase from 2012 (124.89 fish/hr) (Table 2).

## LITERATURE CITED

- Donkers, C. A. 1987. Summary of the 1987 fish population study. IN: Prairie Island Nuclear Generating Plant Environmental Monitoring Program 1987 Annual Report. Northern States Power Company, Minneapolis, MN.
- Hawkinson, B. W. 1973. 1973 Fish Population Study Progress Report of the Mississippi River Near Prairie Island July 1973-February 1974. IN: Environmental Monitoring and Ecological Studies Program, Prairie Island Nuclear Generating Plant, 1973 Annual Report. Northern States Power Company, Minneapolis, MN.
- Mueller, K. N. 1994. Summary of the 1994 fish population study. IN: Prairie Island Nuclear Generating Plant Environmental Monitoring Program 1994 Annual Report. Northern States Power Company, Minneapolis, MN.
- NSP. 1972. Environmental Monitoring and Ecological Studies Program for the Prairie Island Nuclear Generating Plant Near Red Wing, Minnesota. Prepared by: engineering Vice Presidential Staff Department, Northern States Power Company. February 1, 1970, revised May 1, 1972. Northern States Power Company, Minneapolis, MN.
- Palmquist, P. R. 1982. Summary of the 1982 fish population study. IN: Prairie Island Nuclear Generating Plant Environmental Monitoring Program 1982 Annual Report. Northern States Power Company, Minneapolis, MN.



Sources: USGS, FAO, NPS, EPA, ESRI, DeLorme, TANA, other suppliers

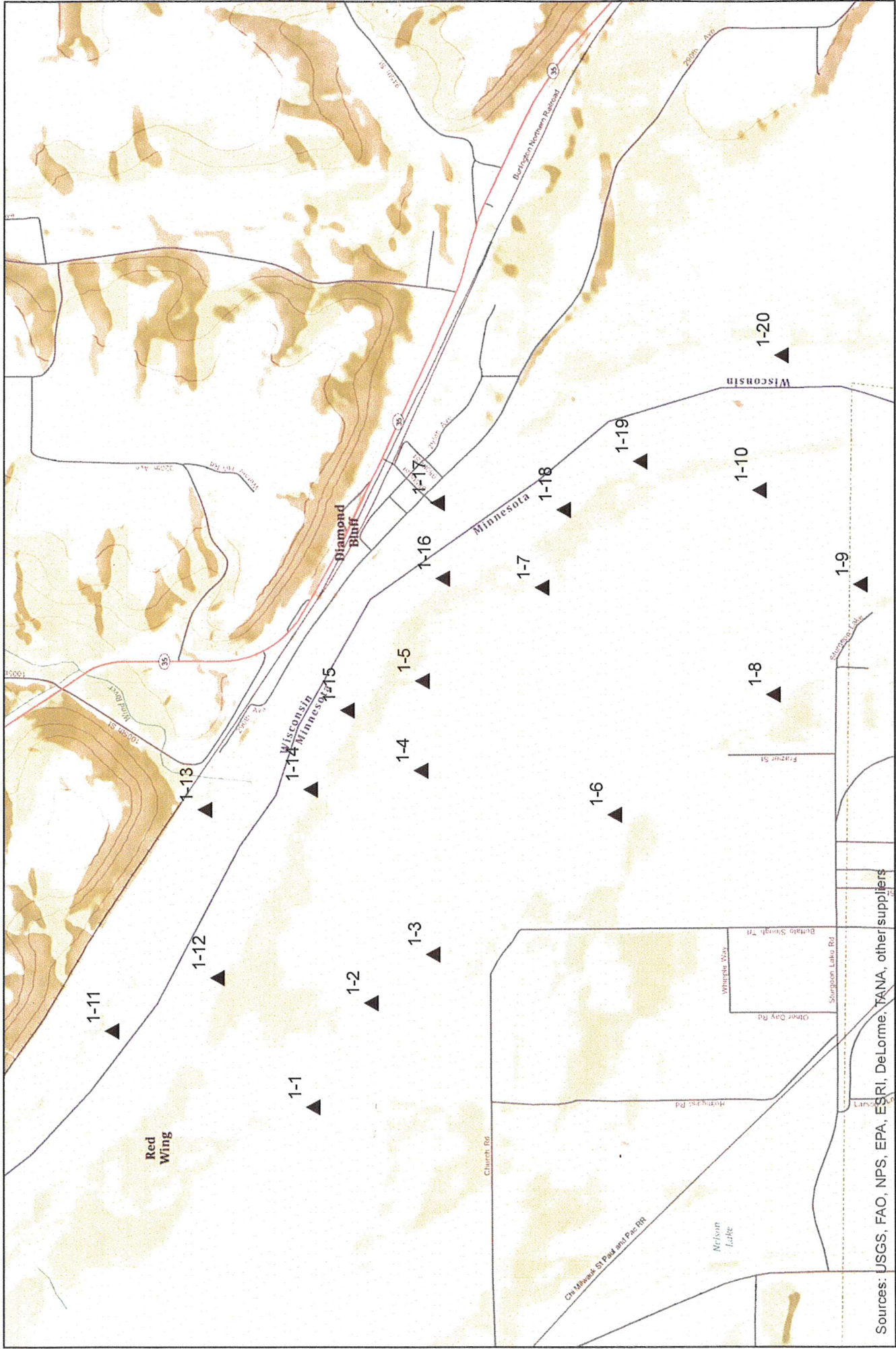
▲ Electrofishing Locations



Figure 1

Prairie Island Fisheries Population Survey – Study area





Sources: USGS, FAO, NPS, EPA, ESRI, DeLorme, TANA, other suppliers



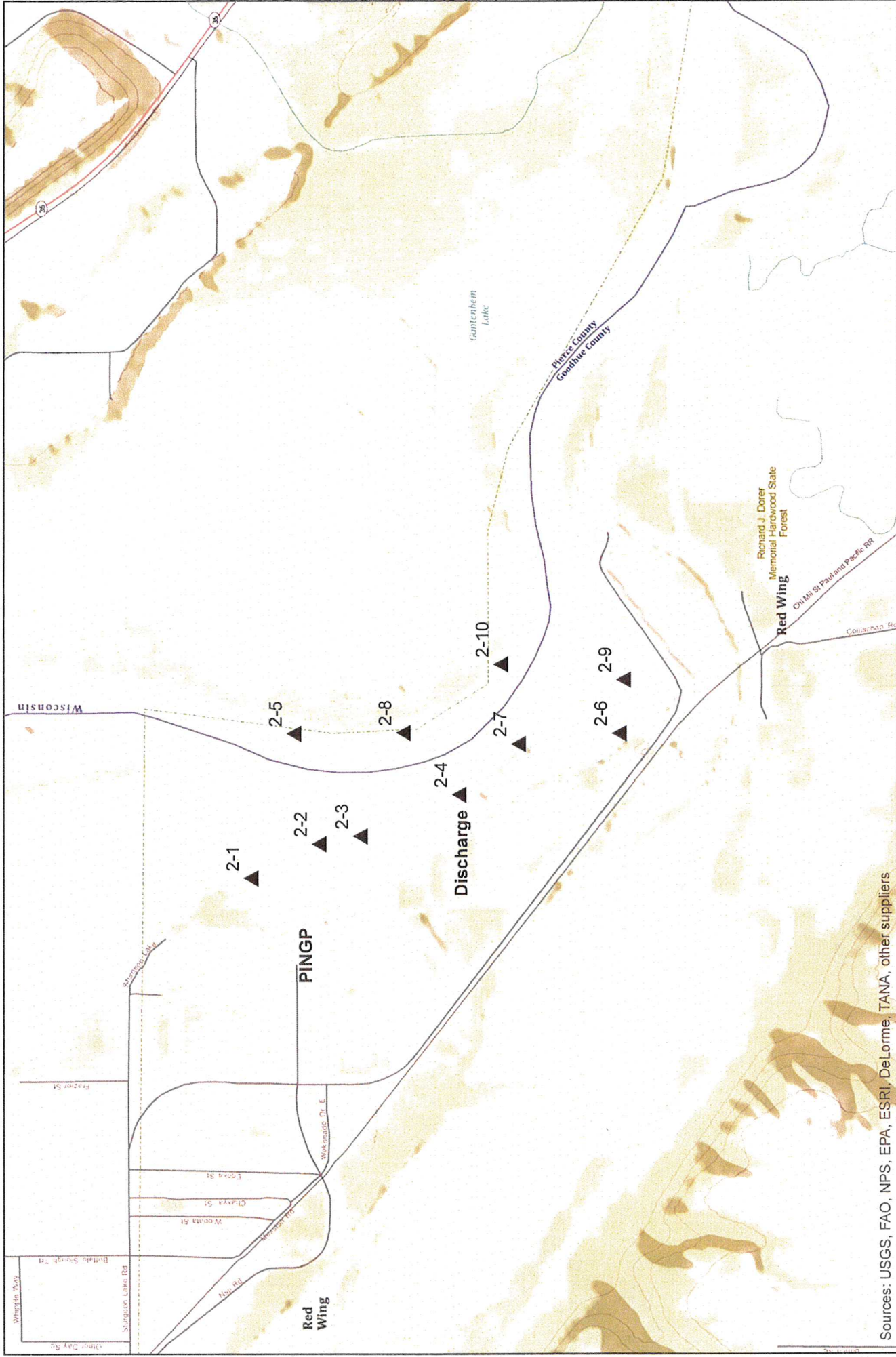
▲ Electrofishing Locations

0 0.25 0.5 Miles

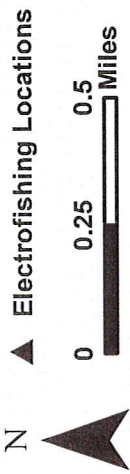
**Figure 2**  
**Prairie Island Fisheries Population Survey – Upstream**







Sources: USGS, FAO, NPS, EPA, ESRI, DeLorme, TANA, other suppliers

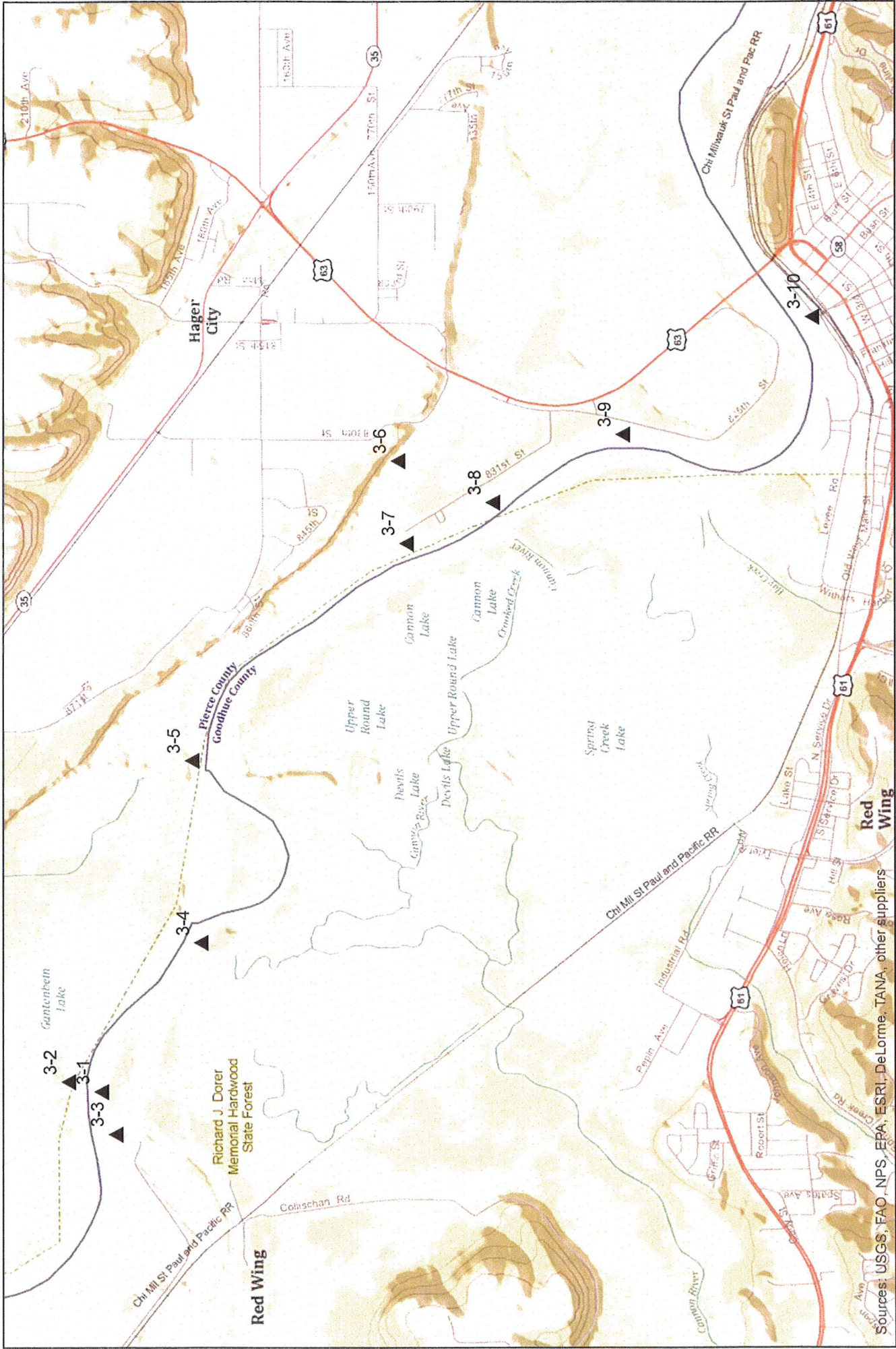


▲ Electrofishing Locations

Figure 3

Prairie Island Fisheries Population Survey – Plant Area





▲ Electrofishing Locations

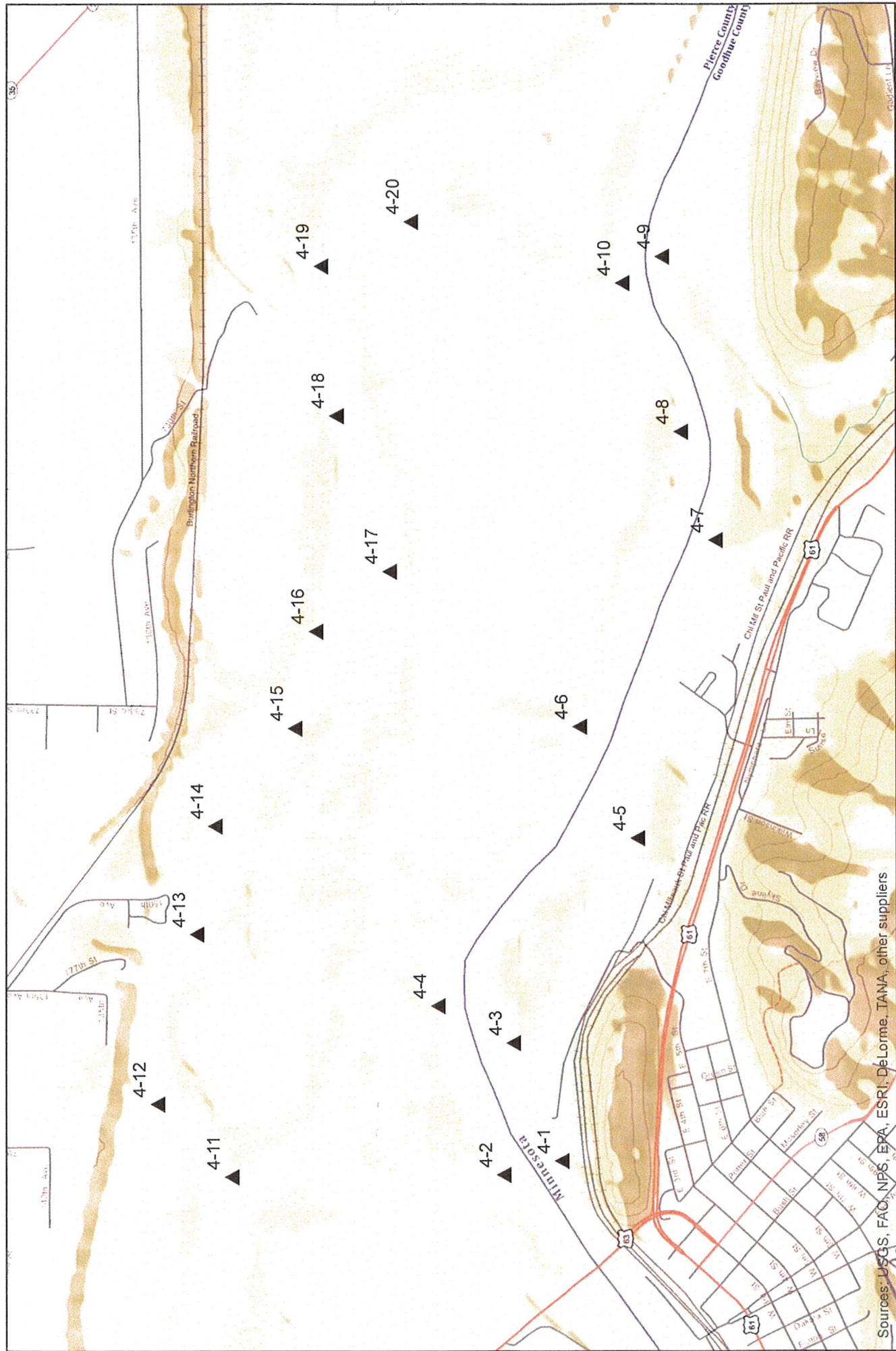


Figure 4

Prairie Island Fisheries Population Survey – Downstream



Sources: USGS, FAO, NPS, EPA, ESRI, DeLorme, TANA, other suppliers



Sources: USGS, FAO, NPS, EPA, ESRI, DeLorme, TANA, other suppliers

▲ Electrofishing Locations



N



Figure 5

Prairie Island Fisheries Population Survey – Downstream





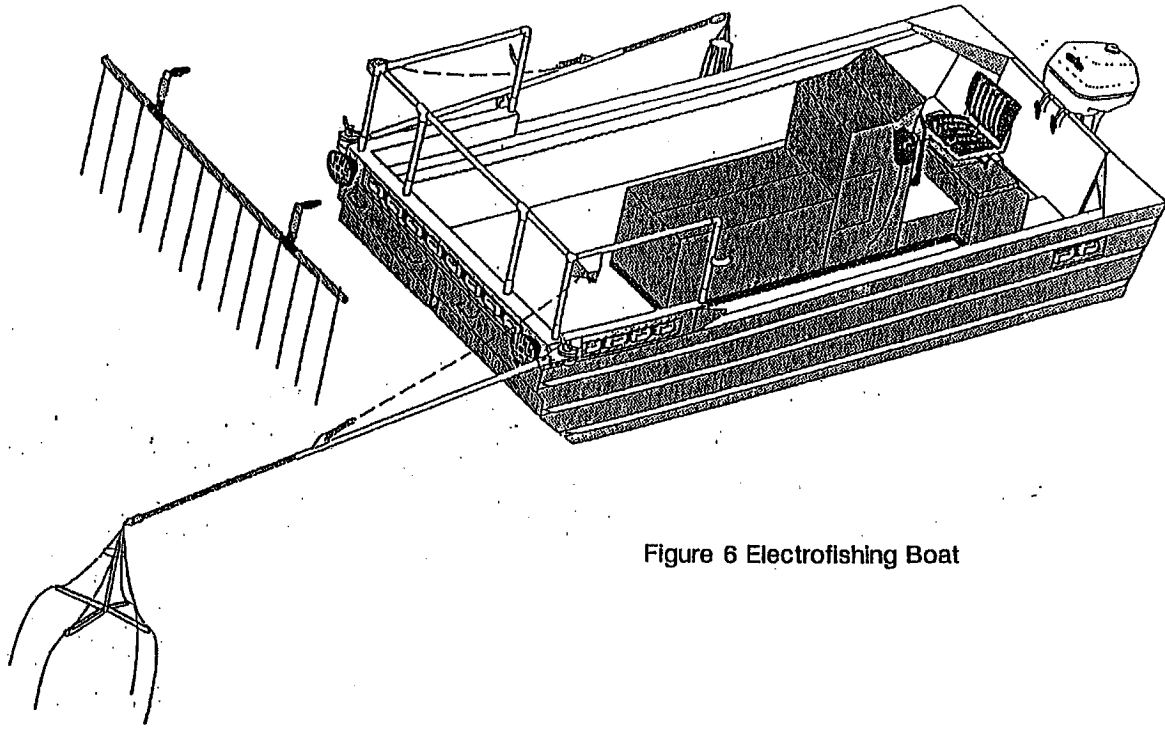


Figure 6 Electrofishing Boat











Table 2. Electrofishing CPUE (fish/hour) for each Mississippi River Pool in the vicinity of PINGP and total number of each species collected during 2013. Species are listed in descending order according to average CPUE.

Rank	Species	CPUE Pool 3	CPUE Pool 4	CPUE Average	Total number collected	Pool 3	Pool 4
1	Freshwater drum	31.74	44.89	38.32	1724	712	1012
2	White bass	5.80	26.62	16.21	730	130	600
3	Shorthead redhorse	20.46	9.27	14.87	668	459	209
4	Carp	11.64	12.91	12.28	552	261	291
5	Gizzard shad	2.23	19.87	11.05	498	50	448
6	Smallmouth bass	5.97	6.74	6.36	286	134	152
7	Walleye	4.15	4.97	4.56	205	93	112
8	Largemouth bass	0.76	8.21	4.49	202	17	185
9	Bluegill	1.60	5.55	3.58	161	36	125
10	Quillback	5.04	2.08	3.56	160	113	47
11	Silver redhorse	4.81	2.31	3.56	160	108	52
12	Sauger	1.83	3.90	2.87	129	41	88
13	Smallmouth buffalo	2.10	0.84	1.47	66	47	19
14	Flathead catfish	1.29	1.55	1.42	64	29	35
15	Channel catfish	1.74	0.75	1.25	56	39	17
16	Black crappie	0.45	1.91	1.18	53	10	43
17	Mooneye	1.07	1.06	1.07	48	24	24
18	Longnose gar	1.03	0.89	0.96	43	23	20
19	Bowfin	0.18	1.73	0.96	43	4	39
20	Northern pike	0.18	1.11	0.65	29	4	25
21	Shortnose gar	0.40	0.44	0.42	19	9	10
22	Green sunfish	0.76	0.00	0.38	17	17	
23	River carpsucker	0.53	0.13	0.33	15	12	3
24	Bigmouth buffalo	0.31	0.35	0.33	15	7	8
25	Rock bass	0.22	0.40	0.31	14	5	9
26	Yellow perch	0.27	0.31	0.29	13	6	7
27	River redhorse	0.40	0.00	0.20	9	9	
28	Blue sucker	0.18	0.18	0.18	8	4	4
29	Silver lamprey	0.13	0.09	0.11	5	3	2
30	White sucker	0.00	0.18	0.09	4		4
31	White crappie	0.04	0.13	0.09	4	1	3
32	Golden redhorse	0.04	0.13	0.09	4	1	3
33	American eel	0.04	0.09	0.07	3	1	2
34	Pumpkinseed	0.09	0.00	0.05	2	2	
35	Hybrid sunfish	0.04	0.04	0.04	2	1	1
36	Highfin carpsucker	0.00	0.04	0.02	1		1
37	Northern hogsucker	0.04	0.00	0.02	1	1	
38	Black buffalo	0.00	0.04	0.02	1		1
39	Chestnut lamprey	0.00	0.04	0.02	1		1
	Totals	107.56	159.75	133.66	6015	2413.00	3602.00

Table 3. Electrofishing Length-Weight regression for each species collected in 2013 in the vicinity of Prairie Island

	Species	Number Sampled	Y-INTERCEPT	Slope	r2
1	American Eel	3	-5.107	2.821	0.989
2	Bigmouth Buffalo	15	-4.240	2.819	0.928
3	Black Buffalo	1	--	--	--
4	Black Crappie	53	-5.309	3.223	0.951
5	Blue Sucker	8	-9.589	4.618	0.697
6	Bluegill	161	-5.737	3.487	0.917
7	Bowfin (Dogfish)	43	-5.065	3.003	0.927
8	Channel Catfish	56	-6.300	3.474	0.958
9	Chestnut Lamprey	1	--	--	--
10	Common Carp	552	-4.982	3.044	0.956
11	Flathead Catfish	64	-4.844	2.960	0.970
12	Freshwater Drum	1724	-5.602	3.267	0.964
13	Gizzard Shad	498	-5.948	3.379	0.935
14	Golden Redhorse	4	-4.519	2.831	0.996
15	Green Sunfish	17	-3.629	2.434	0.722
16	Highfin Carpsucker	1	--	--	--
17	Hybrid Sunfish	2	-33.988	16.044	1.000
18	Largemouth Bass	202	-5.224	3.169	0.990
19	Longnose Gar	43	-7.152	3.511	0.967
20	Mooneye	48	-4.840	2.935	0.942
21	Northern Hog Sucker	1	--	--	--
22	Northern Pike	29	-5.503	3.100	0.989
23	Pumpkinseed	2	-3.377	2.477	1.000
24	Quillback	160	-5.129	3.100	0.983
25	River Carpsucker	15	-5.014	3.091	0.977
26	River Redhorse	9	-4.240	2.740	0.982
27	Rock Bass	14	-5.022	3.148	0.918
28	Sauger	129	-5.514	3.160	0.966
29	Shorthead Redhorse	668	-1.730	1.733	0.763
30	Shortnose Gar	19	-7.453	3.706	0.913
31	Silver Lamprey	5	-4.294	2.443	0.515
32	Silver Redhorse	160	-4.846	2.971	0.977
33	Smallmouth Bass	286	-5.076	3.081	0.977
34	Smallmouth Buffalo	66	-4.966	3.074	0.984
35	Walleye	205	-5.495	3.171	0.984
36	White Bass	730	-4.793	2.948	0.954
37	White Crappie	4	-4.545	2.888	0.996
38	White Sucker	4	-4.977	2.998	0.948
39	Yellow Perch	13	-6.092	3.524	0.978



**Attachment 1: Pool 3**





Minnesota Department of Natural Resources  
Fisheries Management



STANDARD LAKE SURVEY REPORT

DRAFT VERSION - PRELIMINARY DATA (AS OF 03/10/2014)

Lake Name: U.S. Lock & Dam #3

Survey Type: External Management Survey

DOW Number: 25-0017-00

Survey ID Date: 05/01/2013

Lake Identification

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

DNR Sounding Map Number: C2439  
Alternate Lake Class ID: N/A

Lake Location

Primary County: Goodhue

Nearest Town: Etter

All Counties: Dakota, Goodhue, Washington.

Legal Descriptions

Lake Center: Township - 114N Range - 16W Section - 13  
PLS Section Lake Center: 11401613

All Legal Descriptions:

Dakota County:	Township - 114N	Range - 16W	Section - 4
	Township - 115N	Range - 16W	Sections - 29, 30, 31, 32, 33
	Township - 115N	Range - 17W	Sections - 16, 21, 22, 23, 24, 25, 27
Goodhue County:	Township - 113N	Range - 15W	Sections - 4, 9, 10
	Township - 114N	Range - 15W	Sections - 19, 28, 29, 30, 33
	Township - 114N	Range - 16W	Sections - 3, 10, 11, 13, 14, 24
Washington County:	Township - 26N	Range - 20W	Sections - 7, 8, 9
	Township - 26N	Range - 21W	Sections - 1, 12

Area Office

Area Name: Lake City  
Region Name: Central

ORG Code: F317  
Region Number: 3

Lake Characteristics

Lake Area (planimetered acres):	N/A	GIS Shoreline Length (miles):	56.73
GIS Lake Area (acres):	2569.83	Maximum Fetch (miles):	N/A
DOW Lake Area (acres):	7426.00	Fetch Orientation (degrees):	N/A
Littoral Area (acres):	0.00	USGS Quad Map Number:	T19b
Area in MN (acres):	1548.92	USGS Quad 24K GIS Index:	3837
Maximum Depth (feet):	N/A		
Mean Depth (feet):	N/A		

Watershed Characteristics

Major Watershed

Name: Miss R-Lake Pepin  
Watershed Number: 38  
Watershed size (acres): 382,780

Minor Watershed

Name: Mississippi R  
Watershed Number: 14  
Watershed size (acres): 40,075

**Surveys And Investigations**

**Re-Survey:** 11/01/1993, 07/07/1980.

**Population Assessment:** 10/29/2013, 10/28/2013, 06/11/2013, 10/17/2012, 10/15/2012, 10/21/2011, 10/20/2011, 10/22/2010, 08/06/2010, 05/24/2010, 11/05/2009, 10/27/2009, 11/05/2008, 10/31/2008, 11/07/2007, 08/23/2006, 08/14/2006.

**Special Assessment:** 04/30/2013, 03/27/2012, 09/23/2008, 11/14/2006, 10/23/2006.

**Natural Reproduction Check:** 09/03/2013, 08/30/2013, 08/13/2012, 08/06/2012, 09/02/2011, 08/30/2011, 08/18/2010, 08/09/2010, 08/20/2009, 08/14/2009, 08/15/2008, 08/14/2008, 08/15/2007, 08/14/2007.

**Investigational Survey:** 09/01/2006.

**External Management Survey:** 05/01/2012, 05/01/2011.

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**Natural Reproduction Catch Summary for SEF**

**Special sampling, electrofishing**

Total run-time for all stations: 49999999:57:00  
 Total on-time for all stations: 22:25:49  
 First Sampling Date: 05/22/2013  
 Last Sampling Date: 10/11/2013  
 Daylight Sampling: Yes  
 Target Species: N/A

Abbr	Species	Age	Total Number	Number Measured	Mean Length (inches)	Length Range (inches)		Catch Rates (number per hour)	
						Min	Max	Run-Time	On-Time
AME	American Eel	All	1	1	20.67	20.67	20.67	0.00	0.04
BIB	Bigmouth Buffalo	All	7	7	20.40	14.84	24.41	0.00	0.31
BLC	Black Crappie	All	10	10	11.21	10.24	13.15	0.00	0.45
BLS	Blue Sucker	All	4	4	26.32	25.20	27.76	0.00	0.18
BLG	Bluegill	All	36	36	5.91	2.99	7.87	0.00	1.60
BOF	Bowfin (Dogfish)	All	4	4	19.71	16.93	23.66	0.00	0.18
CCF	Channel Catfish	All	39	39	19.93	7.24	26.77	0.00	1.74
CAP	Common Carp	All	261	261	22.02	13.27	30.51	0.00	11.64
FCF	Flathead Catfish	All	29	29	12.51	5.59	41.73	0.00	1.29
FRD	Freshwater Drum	All	712	712	14.56	7.60	32.68	0.00	31.74
GIS	Gizzard Shad	All	50	50	11.30	6.30	19.49	0.00	2.23
GLR	Golden Redhorse	All	1	1	15.83	15.83	15.83	0.00	0.04
GSF	Green Sunfish	All	17	17	4.09	2.68	5.47	0.00	0.76
HSF	Hybrid Sunfish	All	1	1	6.89	6.89	6.89	0.00	0.04
LMB	Largemouth Bass	All	17	17	7.30	3.74	16.14	0.00	0.76
LNG	Longnose Gar	All	23	23	34.20	25.31	51.57	0.00	1.03
MOE	Mooneye	All	24	24	11.97	9.06	13.98	0.00	1.07
NHS	Northern Hog Sucker	All	1	1	8.23	8.23	8.23	0.00	0.04
NOP	Northern Pike	All	4	4	23.86	20.59	25.31	0.00	0.18
PMK	Pumpkinseed	All	2	2	6.57	5.59	7.56	0.00	0.09
QBS	Quillback	All	113	113	17.87	5.98	21.10	0.00	5.04
RCS	River Carpsucker	All	12	12	19.35	8.27	23.27	0.00	0.53
RRH	River Redhorse	All	9	9	23.01	17.56	28.78	0.00	0.40
RKB	Rock Bass	All	5	5	6.94	5.91	8.58	0.00	0.22
SAR	Sauger	All	41	41	12.05	6.38	17.56	0.00	1.83
SHR	Shorthead Redhorse	All	459	459	14.66	5.71	20.08	0.00	20.46
SNG	Shortnose Gar	All	9	9	25.78	22.32	28.54	0.00	0.40
SIL	Silver Lamprey	All	3	3	7.38	6.50	7.95	0.00	0.13
SLR	Silver Redhorse	All	108	108	20.06	11.61	24.41	0.00	4.81
SMB	Smallmouth Bass	All	134	134	11.43	4.06	18.43	0.00	5.97
SAB	Smallmouth Buffalo	All	47	47	22.19	6.97	27.91	0.00	2.10
WAE	Walleye	All	93	93	16.31	6.18	27.56	0.00	4.15
WHB	White Bass	All	130	130	12.38	6.50	16.93	0.00	5.80
WHC	White Crappie	All	1	1	4.13	4.13	4.13	0.00	0.04
YEP	Yellow Perch	All	6	6	4.58	3.94	6.73	0.00	0.27

Length Frequency Distribution For SEF (for fish < 36.00 inches)

Special sampling, electrofishing

(Field work conducted between 05/22/2013 and 10/11/2013)

	<u>AME</u>	<u>BIB</u>	<u>BLC</u>	<u>BLG</u>	<u>BLS</u>	<u>BOF</u>	<u>CAP</u>	<u>CCF</u>	<u>FCF</u>	<u>FRD</u>	<u>GIS</u>	<u>GLR</u>	<u>GSF</u>	<u>HSF</u>	<u>LMB</u>
< 3.00	-	-	-	1	-	-	-	-	-	-	-	-	1	-	-
3.00 - 3.49	-	-	-	3	-	-	-	-	-	-	-	-	1	-	-
3.50 - 3.99	-	-	-	-	-	-	-	-	-	-	-	-	7	-	1
4.00 - 4.49	-	-	-	-	-	-	-	-	-	-	-	-	4	-	2
4.50 - 4.99	-	-	-	5	-	-	-	-	-	-	-	-	1	-	3
5.00 - 5.49	-	-	-	4	-	-	-	-	-	-	-	-	3	-	2
5.50 - 5.99	-	-	-	2	-	-	-	-	1	-	-	-	-	-	2
6.00 - 6.49	-	-	-	6	-	-	-	-	-	-	3	-	-	-	2
6.50 - 6.99	-	-	-	6	-	-	-	-	3	-	8	-	-	1	1
7.00 - 7.49	-	-	-	8	-	-	-	1	1	-	-	-	-	-	-
7.50 - 7.99	-	-	-	1	-	-	-	-	5	1	-	-	-	-	-
8.00 - 8.49	-	-	-	-	-	-	-	-	2	1	1	-	-	-	-
8.50 - 8.99	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-
9.00 - 9.49	-	-	-	-	-	-	-	-	2	1	-	-	-	-	-
9.50 - 9.99	-	-	-	-	-	-	-	-	-	6	-	-	-	-	-
10.00 - 10.49	-	-	3	-	-	-	-	-	1	14	-	-	-	-	-
10.50 - 10.99	-	-	1	-	-	-	-	-	2	42	6	-	-	-	-
11.00 - 11.49	-	-	3	-	-	-	-	-	-	45	7	-	-	-	1
11.50 - 11.99	-	-	1	-	-	-	-	-	-	68	5	-	-	-	-
12.00 - 12.99	-	-	1	-	-	-	-	-	1	106	6	-	-	-	-
13.00 - 13.99	-	-	1	-	-	-	1	-	1	81	4	-	-	-	-
14.00 - 14.99	-	1	-	-	-	-	2	-	-	78	6	-	-	-	2
15.00 - 15.99	-	-	-	-	-	-	5	-	-	58	2	1	-	-	-
16.00 - 16.99	-	-	-	-	-	1	11	3	1	56	1	-	-	-	1
17.00 - 17.99	-	-	-	-	-	-	20	8	-	39	-	-	-	-	-
18.00 - 18.99	-	-	-	-	-	-	26	2	-	43	-	-	-	-	-
19.00 - 19.99	-	2	-	-	-	2	27	6	-	33	1	-	-	-	-
20.00 - 20.99	1	2	-	-	-	-	20	6	-	15	-	-	-	-	-
21.00 - 21.99	-	-	-	-	-	-	16	4	1	10	-	-	-	-	-
22.00 - 22.99	-	-	-	-	-	-	19	3	-	6	-	-	-	-	-
23.00 - 23.99	-	1	-	-	-	1	30	2	-	3	-	-	-	-	-
24.00 - 24.99	-	1	-	-	-	-	24	2	-	-	-	-	-	-	-
25.00 - 25.99	-	-	-	-	2	-	20	-	-	2	-	-	-	-	-
26.00 - 26.99	-	-	-	-	1	-	18	2	-	1	-	-	-	-	-
27.00 - 27.99	-	-	-	-	1	-	10	-	-	2	-	-	-	-	-
28.00 - 28.99	-	-	-	-	-	-	6	-	-	-	-	-	-	-	-
29.00 - 29.99	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-
30.00 - 30.99	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-
31.00 - 31.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32.00 - 32.99	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
33.00 - 33.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34.00 - 34.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35.00 - 35.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
= > 36.00	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-
<b>Total</b>	<b>1</b>	<b>7</b>	<b>10</b>	<b>36</b>	<b>4</b>	<b>4</b>	<b>261</b>	<b>39</b>	<b>29</b>	<b>712</b>	<b>50</b>	<b>1</b>	<b>17</b>	<b>1</b>	<b>17</b>
Min. Length	20.67	14.84	10.24	2.99	25.20	16.93	13.27	7.24	5.59	7.60	6.30	15.83	2.68	6.89	3.74
Max. Length	20.67	24.41	13.15	7.87	27.76	23.66	30.51	26.77	41.73	32.68	19.49	15.83	5.47	6.89	16.14
Mean Length	20.67	20.40	11.21	5.91	26.32	19.71	22.02	19.93	12.51	14.56	11.30	15.83	4.09	6.89	7.30
# Measured	1	7	10	36	4	4	261	39	29	712	50	1	17	1	17
No Lengths for	0	0	0	0	0	0	0	0	0	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

Length Frequency Distribution For SEF (for fish < 36.00 inches) (Continued)

Special sampling, electrofishing

(Field work conducted between 05/22/2013 and 10/11/2013)

	<u>LNG</u>	<u>MOE</u>	<u>NHS</u>	<u>NOP</u>	<u>PMK</u>	<u>QBS</u>	<u>RCS</u>	<u>RKB</u>	<u>RRH</u>	<u>SAB</u>	<u>SAR</u>	<u>SHR</u>	<u>SIL</u>	<u>SLR</u>	<u>SMB</u>
< 3.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.00 - 3.49	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.50 - 3.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4.00 - 4.49	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
4.50 - 4.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
5.00 - 5.49	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
5.50 - 5.99	-	-	-	-	1	1	-	1	-	-	-	1	-	-	1
6.00 - 6.49	-	-	-	-	-	2	-	1	-	-	1	1	-	-	5
6.50 - 6.99	-	-	-	-	-	-	-	-	-	1	1	-	1	-	6
7.00 - 7.49	-	-	-	-	-	1	-	2	-	-	3	-	-	-	3
7.50 - 7.99	-	-	-	-	1	-	-	-	-	-	2	-	2	-	10
8.00 - 8.49	-	-	1	-	-	-	1	-	-	-	1	-	-	-	3
8.50 - 8.99	-	-	-	-	-	-	-	1	-	-	-	5	-	-	2
9.00 - 9.49	-	2	-	-	-	-	-	-	-	-	1	8	-	-	7
9.50 - 9.99	-	1	-	-	-	-	-	-	-	-	1	5	-	-	3
10.00 - 10.49	-	2	-	-	-	-	-	-	-	-	1	6	-	-	7
10.50 - 10.99	-	1	-	-	-	-	-	-	-	-	2	7	-	-	5
11.00 - 11.49	-	1	-	-	-	-	-	-	-	-	4	2	-	-	5
11.50 - 11.99	-	3	-	-	-	-	-	-	-	-	3	10	-	1	6
12.00 - 12.99	-	8	-	-	-	-	-	-	-	1	5	33	-	-	8
13.00 - 13.99	-	6	-	-	-	-	-	-	-	-	6	59	-	4	19
14.00 - 14.99	-	-	-	-	-	2	-	-	-	-	2	95	-	2	14
15.00 - 15.99	-	-	-	-	-	4	-	-	-	-	3	113	-	2	10
16.00 - 16.99	-	-	-	-	-	13	-	-	-	-	2	74	-	11	6
17.00 - 17.99	-	-	-	-	-	24	1	-	2	1	3	32	-	6	4
18.00 - 18.99	-	-	-	-	-	31	1	-	-	2	-	5	-	-	3
19.00 - 19.99	-	-	-	-	-	24	4	-	-	3	-	2	-	15	-
20.00 - 20.99	-	-	-	1	-	9	1	-	1	5	-	1	-	17	-
21.00 - 21.99	-	-	-	-	-	2	2	-	-	7	-	-	-	20	-
22.00 - 22.99	-	-	-	-	-	-	1	-	-	5	-	-	-	15	-
23.00 - 23.99	-	-	-	-	-	-	1	-	1	8	-	-	-	12	-
24.00 - 24.99	-	-	-	1	-	-	-	-	4	5	-	-	-	1	-
25.00 - 25.99	1	-	-	2	-	-	-	-	-	5	-	-	-	-	-
26.00 - 26.99	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-
27.00 - 27.99	1	-	-	-	-	-	-	-	-	2	-	-	-	-	-
28.00 - 28.99	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-
29.00 - 29.99	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30.00 - 30.99	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31.00 - 31.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32.00 - 32.99	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33.00 - 33.99	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
34.00 - 34.99	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35.00 - 35.99	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
= > 36.00	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	<u>LNG</u>	<u>MOE</u>	<u>NHS</u>	<u>NOP</u>	<u>PMK</u>	<u>QBS</u>	<u>RCS</u>	<u>RKB</u>	<u>RRH</u>	<u>SAB</u>	<u>SAR</u>	<u>SHR</u>	<u>SIL</u>	<u>SLR</u>	<u>SMB</u>
Total	23	24	1	4	2	113	12	5	9	47	41	459	3	108	134
Min. Length	25.31	9.06	8.23	20.59	5.59	5.98	8.27	5.91	17.56	6.97	6.38	5.71	6.50	11.61	4.06
Max. Length	51.57	13.98	8.23	25.31	7.56	21.10	23.27	8.58	28.78	27.91	17.56	20.08	7.95	24.41	18.43
Mean Length	34.20	11.97	8.23	23.86	6.57	17.87	19.35	6.94	23.01	22.19	12.05	14.66	7.38	20.06	11.43
# Measured	23	24	1	4	2	113	12	5	9	47	41	459	3	108	134
No Lengths for	0	0	0	0	0	0	0	0	0	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

Length Frequency Distribution For SEE (for fish < 36.00 inches) (Continued)

Special sampling, electrofishing

(Field work conducted between 05/22/2013 and 10/11/2013)

	<u>SNG</u>	<u>WAE</u>	<u>WHB</u>	<u>WHC</u>	<u>YEP</u>
< 3.00	-	-	-	-	-
3.00 - 3.49	-	-	-	-	-
3.50 - 3.99	-	-	-	-	2
4.00 - 4.49	-	-	-	1	2
4.50 - 4.99	-	-	-	-	1
5.00 - 5.49	-	-	-	-	-
5.50 - 5.99	-	-	-	-	-
6.00 - 6.49	-	1	-	-	-
6.50 - 6.99	-	3	4	-	1
7.00 - 7.49	-	7	2	-	-
7.50 - 7.99	-	2	2	-	-
8.00 - 8.49	-	2	5	-	-
8.50 - 8.99	-	2	6	-	-
9.00 - 9.49	-	-	7	-	-
9.50 - 9.99	-	-	-	-	-
10.00 - 10.49	-	-	4	-	-
10.50 - 10.99	-	-	4	-	-
11.00 - 11.49	-	-	5	-	-
11.50 - 11.99	-	-	6	-	-
12.00 - 12.99	-	4	22	-	-
13.00 - 13.99	-	8	23	-	-
14.00 - 14.99	-	5	26	-	-
15.00 - 15.99	-	3	11	-	-
16.00 - 16.99	-	8	3	-	-
17.00 - 17.99	-	6	-	-	-
18.00 - 18.99	-	11	-	-	-
19.00 - 19.99	-	5	-	-	-
20.00 - 20.99	-	11	-	-	-
21.00 - 21.99	-	3	-	-	-
22.00 - 22.99	2	5	-	-	-
23.00 - 23.99	-	3	-	-	-
24.00 - 24.99	1	3	-	-	-
25.00 - 25.99	2	-	-	-	-
26.00 - 26.99	1	-	-	-	-
27.00 - 27.99	2	1	-	-	-
28.00 - 28.99	1	-	-	-	-
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>SNG</u>	<u>WAE</u>	<u>WHB</u>	<u>WHC</u>	<u>YEP</u>
Total	9	93	130	1	6
Min. Length	22.32	6.18	6.50	4.13	3.94
Max. Length	28.54	27.56	16.93	4.13	6.73
Mean Length	25.78	16.31	12.38	4.13	4.58
# Measured	9	93	130	1	6
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

**STANDARD LAKE SURVEY REPORT**  
**EXTERNAL MANAGEMENT SURVEY DATED 05/01/2013 FOR DOW NUMBER 25-0017-00**

**DRAFT**

**Length Frequency Distribution For SEF (for fish ≥ 36.00 inches)**

**Special sampling, electrofishing**

(Field work conducted between 05/22/2013 and 10/11/2013)

	<u>AME</u>	<u>BIB</u>	<u>BLC</u>	<u>BLG</u>	<u>BLS</u>	<u>BOF</u>	<u>CAP</u>	<u>CCF</u>	<u>FCF</u>	<u>FRD</u>	<u>GIS</u>	<u>GLR</u>	<u>GSF</u>	<u>HSF</u>	<u>LMB</u>
< 36.00	1	7	10	36	4	4	261	39	26	712	50	1	17	1	17
36.00 - 36.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
37.00 - 37.99	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
38.00 - 38.99	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
39.00 - 39.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
40.00 - 40.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
41.00 - 41.99	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
42.00 - 42.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
43.00 - 43.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
44.00 - 44.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
45.00 - 45.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
46.00 - 46.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
47.00 - 47.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
48.00 - 48.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
49.00 - 49.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
50.00 - 50.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
51.00 - 51.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
52.00 - 52.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
53.00 - 53.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
54.00 - 54.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
55.00 - 55.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
56.00 - 56.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
57.00 - 57.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
58.00 - 58.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
59.00 - 59.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
60.00 - 60.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
61.00 - 61.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
62.00 - 62.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
63.00 - 63.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
64.00 - 64.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
65.00 - 65.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
66.00 - 66.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
67.00 - 67.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
68.00 - 68.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
69.00 - 69.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
70.00 - 70.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
71.00 - 71.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
72.00 - 72.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
73.00 - 73.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
74.00 - 74.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
75.00 - 75.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
76.00 - 76.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
77.00 - 77.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
= > 78.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

	<u>AME</u>	<u>BIB</u>	<u>BLC</u>	<u>BLG</u>	<u>BLS</u>	<u>BOF</u>	<u>CAP</u>	<u>CCF</u>	<u>FCF</u>	<u>FRD</u>	<u>GIS</u>	<u>GLR</u>	<u>GSF</u>	<u>HSF</u>	<u>LMB</u>
Total	1	7	10	36	4	4	261	39	29	712	50	1	17	1	17
Min. Length	20.67	14.84	10.24	2.99	25.20	16.93	13.27	7.24	5.59	7.60	6.30	15.83	2.68	6.89	3.74
Max. Length	20.67	24.41	13.15	7.87	27.76	23.66	30.51	26.77	41.73	32.68	19.49	15.83	5.47	6.89	16.14
Mean Length	20.67	20.40	11.21	5.91	26.32	19.71	22.02	19.93	12.51	14.56	11.30	15.83	4.09	6.89	7.30
# Measured	1	7	10	36	4	4	261	39	29	712	50	1	17	1	17
No Lengths for	0	0	0	0	0	0	0	0	0	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

Length Frequency Distribution For SEF (for fish  $\geq$  36.00 inches) (Continued)

Special sampling, electrofishing

(Field work conducted between 05/22/2013 and 10/11/2013)

	<u>LNG</u>	<u>MOE</u>	<u>NHS</u>	<u>NOP</u>	<u>PMK</u>	<u>QBS</u>	<u>RCS</u>	<u>RKB</u>	<u>RRH</u>	<u>SAB</u>	<u>SAR</u>	<u>SHR</u>	<u>SIL</u>	<u>SLR</u>	<u>SMB</u>
< 36.00	18	24	1	4	2	113	12	5	9	47	41	459	3	108	134
36.00 - 36.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
37.00 - 37.99	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38.00 - 38.99	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39.00 - 39.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
40.00 - 40.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
41.00 - 41.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
42.00 - 42.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
43.00 - 43.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
44.00 - 44.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
45.00 - 45.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
46.00 - 46.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
47.00 - 47.99	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
48.00 - 48.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
49.00 - 49.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
50.00 - 50.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
51.00 - 51.99	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
52.00 - 52.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
53.00 - 53.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
54.00 - 54.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
55.00 - 55.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
56.00 - 56.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
57.00 - 57.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
58.00 - 58.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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73.00 - 73.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
74.00 - 74.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
75.00 - 75.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
76.00 - 76.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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<b>Total</b>	<b>23</b>	<b>24</b>	<b>1</b>	<b>4</b>	<b>2</b>	<b>113</b>	<b>12</b>	<b>5</b>	<b>9</b>	<b>47</b>	<b>41</b>	<b>459</b>	<b>3</b>	<b>108</b>	<b>134</b>
Min. Length	25.31	9.06	8.23	20.59	5.59	5.98	8.27	5.91	17.56	6.97	6.38	5.71	6.50	11.61	4.06
Max. Length	51.57	13.98	8.23	25.31	7.56	21.10	23.27	8.58	28.78	27.91	17.56	20.08	7.95	24.41	18.43
Mean Length	34.20	11.97	8.23	23.86	6.57	17.87	19.35	6.94	23.01	22.19	12.05	14.66	7.38	20.06	11.43
# Measured	23	24	1	4	2	113	12	5	9	47	41	459	3	108	134
No Lengths for	0	0	0	0	0	0	0	0	0	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

**Length Frequency Distribution For SEF (for fish  $\geq$  36.00 inches) (Continued)**

**Special sampling, electrofishing**

(Field work conducted between 05/22/2013 and 10/11/2013)

	<u>SNG</u>	<u>WAE</u>	<u>WHB</u>	<u>WHC</u>	<u>YEP</u>
< 36.00	9	93	130	1	6
36.00 - 36.99	-	-	-	-	-
37.00 - 37.99	-	-	-	-	-
38.00 - 38.99	-	-	-	-	-
39.00 - 39.99	-	-	-	-	-
40.00 - 40.99	-	-	-	-	-
41.00 - 41.99	-	-	-	-	-
42.00 - 42.99	-	-	-	-	-
43.00 - 43.99	-	-	-	-	-
44.00 - 44.99	-	-	-	-	-
45.00 - 45.99	-	-	-	-	-
46.00 - 46.99	-	-	-	-	-
47.00 - 47.99	-	-	-	-	-
48.00 - 48.99	-	-	-	-	-
49.00 - 49.99	-	-	-	-	-
50.00 - 50.99	-	-	-	-	-
51.00 - 51.99	-	-	-	-	-
52.00 - 52.99	-	-	-	-	-
53.00 - 53.99	-	-	-	-	-
54.00 - 54.99	-	-	-	-	-
55.00 - 55.99	-	-	-	-	-
56.00 - 56.99	-	-	-	-	-
57.00 - 57.99	-	-	-	-	-
58.00 - 58.99	-	-	-	-	-
59.00 - 59.99	-	-	-	-	-
60.00 - 60.99	-	-	-	-	-
61.00 - 61.99	-	-	-	-	-
62.00 - 62.99	-	-	-	-	-
63.00 - 63.99	-	-	-	-	-
64.00 - 64.99	-	-	-	-	-
65.00 - 65.99	-	-	-	-	-
66.00 - 66.99	-	-	-	-	-
67.00 - 67.99	-	-	-	-	-
68.00 - 68.99	-	-	-	-	-
69.00 - 69.99	-	-	-	-	-
70.00 - 70.99	-	-	-	-	-
71.00 - 71.99	-	-	-	-	-
72.00 - 72.99	-	-	-	-	-
73.00 - 73.99	-	-	-	-	-
74.00 - 74.99	-	-	-	-	-
75.00 - 75.99	-	-	-	-	-
76.00 - 76.99	-	-	-	-	-
77.00 - 77.99	-	-	-	-	-
= > 78.00	-	-	-	-	-

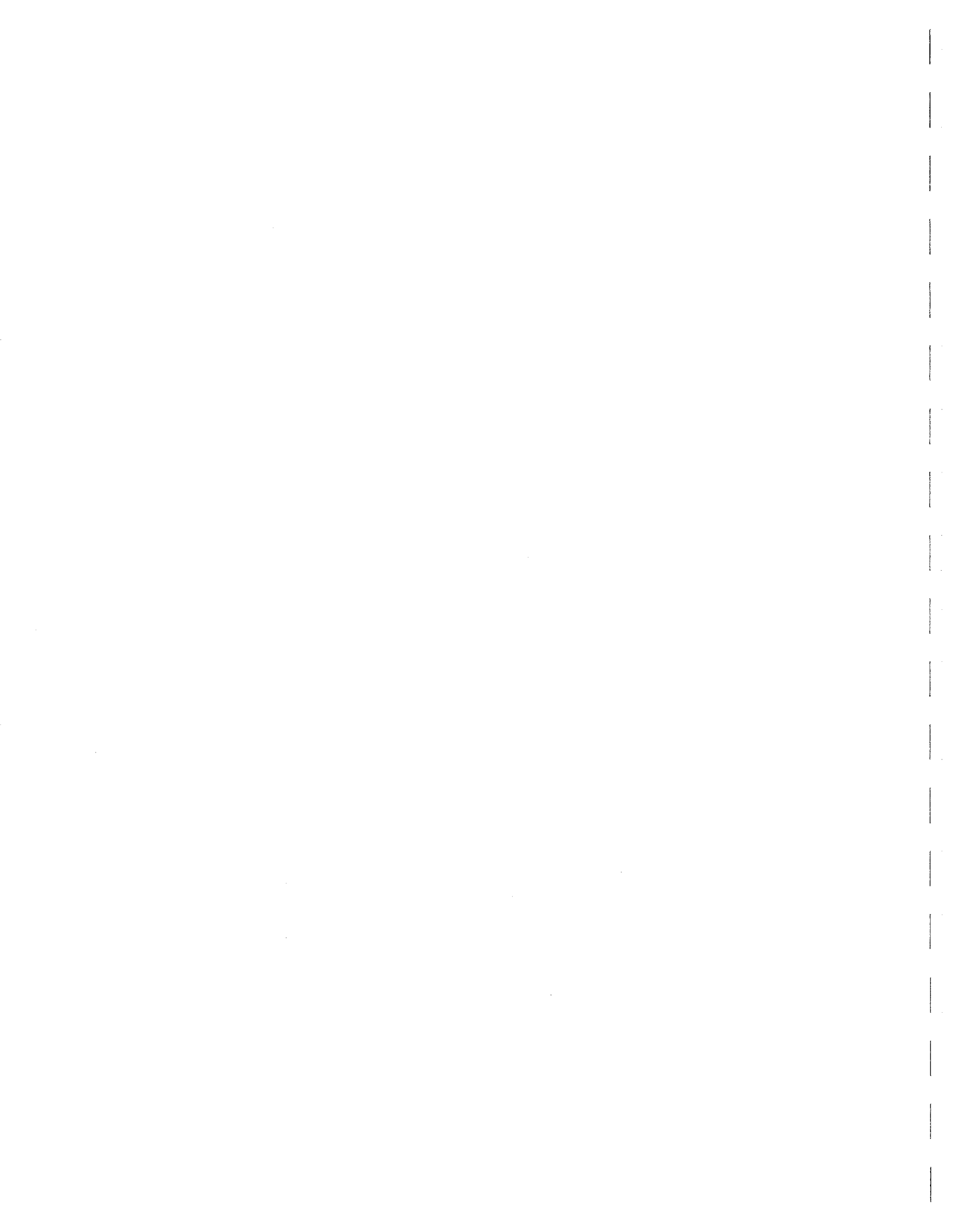
	<u>SNG</u>	<u>WAE</u>	<u>WHB</u>	<u>WHC</u>	<u>YEP</u>
Total	9	93	130	1	6
Min. Length	22.32	6.18	6.50	4.13	3.94
Max. Length	28.54	27.56	16.93	4.13	6.73
Mean Length	25.78	16.31	12.38	4.13	4.58
# Measured	9	93	130	1	6
No Lengths for	0	0	0	0	0

**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

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**Attachment 2: Pool 4**





Minnesota Department of Natural Resources  
Fisheries Management



STANDARD LAKE SURVEY REPORT

DRAFT VERSION - PRELIMINARY DATA (AS OF 03/10/2014)

Lake Name: U.S. Lock & Dam #4 Pool

Survey Type: External Management Survey

DOW Number: 79-0005-00

Survey ID Date: 05/01/2013

**Lake Identification**

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

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

**Lake Location**

Primary County: Wabasha

Nearest Town: Wabasha

**Legal Descriptions**

Lake Center: Township - 111N Range - 10W Section - 35  
PLS Section Lake Center: 11101035

**All Legal Descriptions:**

Wabasha County:	Township - 110N	Range - 10W	Sections - 1, 2, 3, 12
	Township - 110N	Range - 9W	Sections - 7, 17, 18
	Township - 111N	Range - 10W	Sections - 19, 20, 28, 29, 30, 32, 33, 34, 35
	Township - 111N	Range - 11W	Sections - 13, 14, 23, 24

**Area Office**

Area Name: Lake City  
Region Name: Central

ORG Code: F317  
Region Number: 3

**Lake Characteristics**

Lake Area (planimetered acres): N/A  
GIS Lake Area (acres): 4281.63  
DOW Lake Area (acres): 5660.00  
Littoral Area (acres): 0.00  
Area in MN (acres): 2612.34  
Maximum Depth (feet): N/A  
Mean Depth (feet): N/A

GIS Shoreline Length (miles): 49.52  
Maximum Fetch (miles): N/A  
Fetch Orientation (degrees): N/A  
USGS Quad Map Number: U22c  
USGS Quad 24K GIS Index: 4143

**Watershed Characteristics**

Major Watershed

Name: Miss R-Winona  
Watershed Number: 40  
Watershed size (acres): 419,200

Minor Watershed

Name: Mississippi R  
Watershed Number: 1  
Watershed size (acres): 36,523

**Surveys And Investigations**

**Population Assessment:** 06/13/2011.  
**Special Assessment:** 04/30/2013, 05/01/2011, 05/10/2010, 06/03/2009, 08/04/2008, 06/04/2008, 08/08/2007,  
10/05/2006.  
**Dissolved Oxygen Check:** 02/01/2007.  
**Investigational Survey:** 09/06/2006.  
**External Management Survey:** 05/01/2012.

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**Natural Reproduction Catch Summary for SEF**

**Special sampling, electrofishing**

Total run-time for all stations: 49999999:57:00  
 Total on-time for all stations: 22:32:32  
 First Sampling Date: 05/20/2013  
 Last Sampling Date: 10/08/2013  
 Daylight Sampling: Yes  
 Target Species: N/A

Abbr	Species	Age	Total Number	Number Measured	Mean Length (inches)	Length Range (inches)		Catch Rates (number per hour)	
						Min	Max	Run-Time	On-Time
AME	American Eel	All	2	2	26.81	24.49	29.13	0.00	0.09
BIB	Bigmouth Buffalo	All	8	8	24.30	19.80	33.86	0.00	0.35
BKB	Black Buffalo	All	1	1	19.88	19.88	19.88	0.00	0.04
BLC	Black Crappie	All	43	43	9.63	5.39	13.11	0.00	1.91
BLS	Blue Sucker	All	4	4	26.41	24.80	27.72	0.00	0.18
BLG	Bluegill	All	125	125	6.66	3.78	8.94	0.00	5.55
BOF	Bowfin (Dogfish)	All	39	39	21.83	13.98	28.43	0.00	1.73
CCF	Channel Catfish	All	17	17	22.96	15.75	28.35	0.00	0.75
CHL	Chestnut Lamprey	All	1	1	10.63	10.63	10.63	0.00	0.04
CAP	Common Carp	All	291	291	23.09	13.66	36.22	0.00	12.91
FCF	Flathead Catfish	All	35	35	13.52	4.76	32.68	0.00	1.55
FRD	Freshwater Drum	All	1,012	1,012	13.77	7.09	23.62	0.00	44.89
GIS	Gizzard Shad	All	448	448	10.87	6.30	19.41	0.00	19.87
GLR	Golden Redhorse	All	3	3	12.82	11.77	14.61	0.00	0.13
HFS	Highfin Carpsucker	All	1	1	14.65	14.65	14.65	0.00	0.04
HSF	Hybrid Sunfish	All	1	1	6.97	6.97	6.97	0.00	0.04
LMB	Largemouth Bass	All	185	185	11.61	3.74	18.90	0.00	8.21
LNG	Longnose Gar	All	20	20	27.52	18.94	34.33	0.00	0.89
MOE	Mooneye	All	24	24	11.94	8.27	13.78	0.00	1.06
NOP	Northern Pike	All	25	25	21.17	6.30	32.68	0.00	1.11
QBS	Quillback	All	47	47	17.87	5.79	21.34	0.00	2.08
RCS	River Carpsucker	All	3	3	16.96	15.94	18.58	0.00	0.13
RKB	Rock Bass	All	9	9	6.06	5.12	7.48	0.00	0.40
SAR	Sauger	All	88	88	10.45	5.51	16.10	0.00	3.90
SHR	Shorthead Redhorse	All	209	209	14.97	7.05	19.49	0.00	9.27
SNG	Shortnose Gar	All	10	10	24.59	21.89	27.91	0.00	0.44
SIL	Silver Lamprey	All	2	2	9.94	9.25	10.63	0.00	0.09
SLR	Silver Redhorse	All	52	52	19.70	9.09	24.02	0.00	2.31
SMB	Smallmouth Bass	All	152	152	10.84	4.76	19.69	0.00	6.74
SAB	Smallmouth Buffalo	All	19	19	19.75	10.08	28.35	0.00	0.84
WAE	Walleye	All	112	112	16.80	6.50	27.60	0.00	4.97
WHB	White Bass	All	600	600	13.41	6.30	17.64	0.00	26.62
WHC	White Crappie	All	3	3	11.52	10.31	12.28	0.00	0.13
WTS	White Sucker	All	4	4	12.78	11.42	15.28	0.00	0.18
YEP	Yellow Perch	All	7	7	7.20	4.17	9.92	0.00	0.31

Length Frequency Distribution For SEF (for fish < 36.00 inches)

Special sampling, electrofishing

(Field work conducted between 05/20/2013 and 10/08/2013)

	<u>AME</u>	<u>BIB</u>	<u>BKB</u>	<u>BLC</u>	<u>BLG</u>	<u>BLS</u>	<u>BOF</u>	<u>CAP</u>	<u>CCF</u>	<u>CHL</u>	<u>FCF</u>	<u>FRD</u>	<u>GIS</u>	<u>GLR</u>	<u>HFS</u>
< 3.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.00 - 3.49	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.50 - 3.99	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
4.00 - 4.49	-	-	-	-	7	-	-	-	-	-	-	-	-	-	-
4.50 - 4.99	-	-	-	-	7	-	-	-	-	-	1	-	-	-	-
5.00 - 5.49	-	-	-	1	5	-	-	-	-	-	-	-	-	-	-
5.50 - 5.99	-	-	-	-	11	-	-	-	-	-	-	-	-	-	-
6.00 - 6.49	-	-	-	1	15	-	-	-	-	-	1	-	4	-	-
6.50 - 6.99	-	-	-	1	24	-	-	-	-	-	-	-	15	-	-
7.00 - 7.49	-	-	-	-	27	-	-	-	-	-	1	3	2	-	-
7.50 - 7.99	-	-	-	2	20	-	-	-	-	-	3	2	1	-	-
8.00 - 8.49	-	-	-	8	6	-	-	-	-	-	4	2	-	-	-
8.50 - 8.99	-	-	-	4	2	-	-	-	-	-	-	-	-	-	-
9.00 - 9.49	-	-	-	3	-	-	-	-	-	-	2	4	3	-	-
9.50 - 9.99	-	-	-	4	-	-	-	-	-	-	1	11	49	-	-
10.00 - 10.49	-	-	-	2	-	-	-	-	-	-	-	28	113	-	-
10.50 - 10.99	-	-	-	10	-	-	-	-	-	1	-	54	89	-	-
11.00 - 11.49	-	-	-	1	-	-	-	-	-	-	-	83	76	-	-
11.50 - 11.99	-	-	-	2	-	-	-	-	-	-	-	87	42	1	-
12.00 - 12.99	-	-	-	3	-	-	-	-	-	-	4	150	23	1	-
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15.00 - 15.99	-	-	-	-	-	-	-	1	1	-	4	95	5	-	-
16.00 - 16.99	-	-	-	-	-	-	-	2	-	-	-	60	3	-	-
17.00 - 17.99	-	-	-	-	-	-	1	3	1	-	-	44	3	-	-
18.00 - 18.99	-	-	-	-	-	-	5	13	-	-	-	25	1	-	-
19.00 - 19.99	-	1	1	-	-	-	4	25	2	-	1	19	3	-	-
20.00 - 20.99	-	-	-	-	-	-	6	36	1	-	2	10	-	-	-
21.00 - 21.99	-	1	-	-	-	-	3	45	2	-	2	8	-	-	-
22.00 - 22.99	-	1	-	-	-	-	3	24	2	-	-	2	-	-	-
23.00 - 23.99	-	1	-	-	-	-	6	31	-	-	-	2	-	-	-
24.00 - 24.99	1	3	-	-	-	1	6	28	1	-	1	-	-	-	-
25.00 - 25.99	-	-	-	-	-	-	3	31	3	-	-	-	-	-	-
26.00 - 26.99	-	-	-	-	-	2	-	14	2	-	-	-	-	-	-
27.00 - 27.99	-	-	-	-	-	1	-	17	1	-	-	-	-	-	-
28.00 - 28.99	-	-	-	-	-	-	1	7	1	-	-	-	-	-	-
29.00 - 29.99	1	-	-	-	-	-	-	2	-	-	-	-	-	-	-
30.00 - 30.99	-	-	-	-	-	-	-	5	-	-	-	-	-	-	-
31.00 - 31.99	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-
32.00 - 32.99	-	-	-	-	-	-	-	1	-	-	1	-	-	-	-
33.00 - 33.99	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
34.00 - 34.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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	<u>AME</u>	<u>BIB</u>	<u>BKB</u>	<u>BLC</u>	<u>BLG</u>	<u>BLS</u>	<u>BOF</u>	<u>CAP</u>	<u>CCF</u>	<u>CHL</u>	<u>FCF</u>	<u>FRD</u>	<u>GIS</u>	<u>GLR</u>	<u>HFS</u>
Total	2	8	1	43	125	4	39	291	17	1	35	1012	448	3	1
Min. Length	24.49	19.80	19.88	5.39	3.78	24.80	13.98	13.66	15.75	10.63	4.76	7.09	6.30	11.77	14.65
Max. Length	29.13	33.86	19.88	13.11	8.94	27.72	28.43	36.22	28.35	10.63	32.68	23.62	19.41	14.61	14.65
Mean Length	26.81	24.30	19.88	9.63	6.66	26.41	21.83	23.09	22.96	10.63	13.52	13.77	10.87	12.82	14.65
# Measured	2	8	1	43	125	4	39	291	17	1	35	1012	448	3	1
No Lengths for	0	0	0	0	0	0	0	0	0	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

**Length Frequency Distribution For SEF (for fish < 36.00 inches) (Continued)**

**Special sampling, electrofishing**

(Field work conducted between 05/20/2013 and 10/08/2013)

	<u>HSF</u>	<u>LMB</u>	<u>LNG</u>	<u>MOE</u>	<u>NOP</u>	<u>QBS</u>	<u>RCS</u>	<u>RKB</u>	<u>SAB</u>	<u>SAR</u>	<u>SHR</u>	<u>SIL</u>	<u>SLR</u>	<u>SMB</u>	<u>SNG</u>
< 3.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.00 - 3.49	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.50 - 3.99	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
4.00 - 4.49	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-
4.50 - 4.99	-	7	-	-	-	-	-	-	-	-	-	-	-	2	-
5.00 - 5.49	-	7	-	-	-	-	-	2	-	-	-	-	-	1	-
5.50 - 5.99	-	5	-	-	-	1	-	4	-	5	-	-	-	3	-
6.00 - 6.49	-	2	-	-	1	-	-	-	-	7	-	-	-	3	-
6.50 - 6.99	1	2	-	-	-	1	-	1	-	6	-	-	-	8	-
7.00 - 7.49	-	1	-	-	-	-	-	2	-	5	1	-	-	16	-
7.50 - 7.99	-	3	-	-	-	-	-	-	-	2	1	-	-	7	-
8.00 - 8.49	-	4	-	1	-	-	-	-	-	1	2	-	-	7	-
8.50 - 8.99	-	3	-	-	1	-	-	-	-	2	1	-	-	4	-
9.00 - 9.49	-	-	-	1	1	-	-	-	-	3	7	1	2	7	-
9.50 - 9.99	-	3	-	1	-	-	-	-	-	5	4	-	1	14	-
10.00 - 10.49	-	7	-	4	-	-	-	-	1	7	2	-	-	10	-
10.50 - 10.99	-	9	-	-	-	-	-	-	-	1	2	1	-	8	-
11.00 - 11.49	-	17	-	1	-	-	-	-	-	5	3	-	-	2	-
11.50 - 11.99	-	17	-	2	-	-	-	-	-	7	7	-	1	4	-
12.00 - 12.99	-	30	-	7	1	-	-	-	-	11	8	-	-	17	-
13.00 - 13.99	-	19	-	7	-	-	-	-	-	12	12	-	-	6	-
14.00 - 14.99	-	24	-	-	1	-	-	-	-	5	27	-	-	11	-
15.00 - 15.99	-	16	-	-	1	2	1	-	2	3	52	-	3	10	-
16.00 - 16.99	-	4	-	-	-	5	1	-	2	1	45	-	3	2	-
17.00 - 17.99	-	1	-	-	-	12	-	-	1	-	24	-	2	6	-
18.00 - 18.99	-	1	1	-	-	12	1	-	-	-	9	-	-	3	-
19.00 - 19.99	-	-	1	-	-	8	-	-	2	-	2	-	-	1	-
20.00 - 20.99	-	-	-	-	3	4	-	-	4	-	-	-	11	-	-
21.00 - 21.99	-	-	-	-	3	2	-	-	3	-	-	-	10	-	1
22.00 - 22.99	-	-	1	-	3	-	-	-	2	-	-	-	7	-	2
23.00 - 23.99	-	-	1	-	1	-	-	-	1	-	-	-	3	-	1
24.00 - 24.99	-	-	2	-	1	-	-	-	-	-	-	-	2	-	2
25.00 - 25.99	-	-	-	-	2	-	-	-	-	-	-	-	-	-	1
26.00 - 26.99	-	-	3	-	3	-	-	-	-	-	-	-	-	-	1
27.00 - 27.99	-	-	1	-	1	-	-	-	-	-	-	-	-	-	2
28.00 - 28.99	-	-	3	-	1	-	-	-	1	-	-	-	-	-	-
29.00 - 29.99	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-
30.00 - 30.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31.00 - 31.99	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
32.00 - 32.99	-	-	2	-	1	-	-	-	-	-	-	-	-	-	-
33.00 - 33.99	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
34.00 - 34.99	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
35.00 - 35.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
= > 36.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

	<u>HSF</u>	<u>LMB</u>	<u>LNG</u>	<u>MOE</u>	<u>NOP</u>	<u>QBS</u>	<u>RCS</u>	<u>RKB</u>	<u>SAB</u>	<u>SAR</u>	<u>SHR</u>	<u>SIL</u>	<u>SLR</u>	<u>SMB</u>	<u>SNG</u>
Total	1	185	20	24	25	47	3	9	19	88	209	2	52	152	10
Min. Length	6.97	3.74	18.94	8.27	6.30	5.79	15.94	5.12	10.08	5.51	7.05	9.25	9.09	4.76	21.89
Max. Length	6.97	18.90	34.33	13.78	32.68	21.34	18.58	7.48	28.35	16.10	19.49	10.63	24.02	19.69	27.91
Mean Length	6.97	11.61	27.52	11.94	21.17	17.87	16.96	6.06	19.75	10.45	14.97	9.94	19.70	10.84	24.59
# Measured	1	185	20	24	25	47	3	9	19	88	209	2	52	152	10
No Lengths for	0	0	0	0	0	0	0	0	0	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

Length Frequency Distribution For SEF (for fish < 36.00 inches) (Continued)

Special sampling, electrofishing

(Field work conducted between 05/20/2013 and 10/08/2013)

	<u>WAE</u>	<u>WHB</u>	<u>WHC</u>	<u>WTS</u>	<u>YEP</u>
< 3.00	-	-	-	-	-
3.00 - 3.49	-	-	-	-	-
3.50 - 3.99	-	-	-	-	-
4.00 - 4.49	-	-	-	-	2
4.50 - 4.99	-	-	-	-	-
5.00 - 5.49	-	-	-	-	-
5.50 - 5.99	-	-	-	-	-
6.00 - 6.49	-	2	-	-	-
6.50 - 6.99	3	6	-	-	1
7.00 - 7.49	1	1	-	-	-
7.50 - 7.99	3	2	-	-	1
8.00 - 8.49	-	7	-	-	-
8.50 - 8.99	-	7	-	-	1
9.00 - 9.49	-	13	-	-	1
9.50 - 9.99	-	11	-	-	1
10.00 - 10.49	-	13	1	-	-
10.50 - 10.99	-	8	-	-	-
11.00 - 11.49	1	13	-	1	-
11.50 - 11.99	2	15	1	-	-
12.00 - 12.99	6	90	1	2	-
13.00 - 13.99	5	140	-	-	-
14.00 - 14.99	9	171	-	-	-
15.00 - 15.99	14	87	-	1	-
16.00 - 16.99	13	12	-	-	-
17.00 - 17.99	14	2	-	-	-
18.00 - 18.99	13	-	-	-	-
19.00 - 19.99	7	-	-	-	-
20.00 - 20.99	8	-	-	-	-
21.00 - 21.99	6	-	-	-	-
22.00 - 22.99	2	-	-	-	-
23.00 - 23.99	1	-	-	-	-
24.00 - 24.99	1	-	-	-	-
25.00 - 25.99	-	-	-	-	-
26.00 - 26.99	2	-	-	-	-
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>WAE</u>	<u>WHB</u>	<u>WHC</u>	<u>WTS</u>	<u>YEP</u>
Total	112	600	3	4	7
Min. Length	6.50	6.30	10.31	11.42	4.17
Max. Length	27.60	17.64	12.28	15.28	9.92
Mean Length	16.80	13.41	11.52	12.78	7.20
# Measured	112	600	3	4	7
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



**Length Frequency Distribution For SEF (for fish ≥ 36.00 inches)**

**Special sampling, electrofishing**

(Field work conducted between 05/20/2013 and 10/08/2013)

	<u>AME</u>	<u>BIB</u>	<u>BKB</u>	<u>BLC</u>	<u>BLG</u>	<u>BLS</u>	<u>BOF</u>	<u>CAP</u>	<u>CCF</u>	<u>CHL</u>	<u>FCF</u>	<u>FRD</u>	<u>GIS</u>	<u>GLR</u>	<u>HFS</u>
< 36.00	2	8	1	43	125	4	39	290	17	1	35	1012	448	3	1
36.00 - 36.99	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
37.00 - 37.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38.00 - 38.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39.00 - 39.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
40.00 - 40.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
41.00 - 41.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
42.00 - 42.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
43.00 - 43.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
44.00 - 44.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
45.00 - 45.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
46.00 - 46.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
47.00 - 47.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
48.00 - 48.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
49.00 - 49.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
50.00 - 50.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
51.00 - 51.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
52.00 - 52.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
53.00 - 53.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
54.00 - 54.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
55.00 - 55.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
56.00 - 56.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
57.00 - 57.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
58.00 - 58.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
59.00 - 59.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
60.00 - 60.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
61.00 - 61.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
62.00 - 62.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
63.00 - 63.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
64.00 - 64.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
65.00 - 65.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
66.00 - 66.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
67.00 - 67.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
68.00 - 68.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
69.00 - 69.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
70.00 - 70.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
71.00 - 71.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
72.00 - 72.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
73.00 - 73.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
74.00 - 74.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
75.00 - 75.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
76.00 - 76.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
77.00 - 77.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
= > 78.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

	<u>AME</u>	<u>BIB</u>	<u>BKB</u>	<u>BLC</u>	<u>BLG</u>	<u>BLS</u>	<u>BOF</u>	<u>CAP</u>	<u>CCF</u>	<u>CHL</u>	<u>FCF</u>	<u>FRD</u>	<u>GIS</u>	<u>GLR</u>	<u>HFS</u>
Total	2	8	1	43	125	4	39	291	17	1	35	1012	448	3	1
Min. Length	24.49	19.80	19.88	5.39	3.78	24.80	13.98	13.66	15.75	10.63	4.76	7.09	6.30	11.77	14.65
Max. Length	29.13	33.86	19.88	13.11	8.94	27.72	28.43	36.22	28.35	10.63	32.68	23.62	19.41	14.61	14.65
Mean Length	26.81	24.30	19.88	9.63	6.66	26.41	21.83	23.09	22.96	10.63	13.52	13.77	10.87	12.82	14.65
# Measured	2	8	1	43	125	4	39	291	17	1	35	1012	448	3	1
No Lengths for	0	0	0	0	0	0	0	0	0	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

Length Frequency Distribution For SEF (for fish  $\geq$  36.00 inches) (Continued)

Special sampling, electrofishing

(Field work conducted between 05/20/2013 and 10/08/2013)

	<u>HSF</u>	<u>LMB</u>	<u>LNG</u>	<u>MOE</u>	<u>NOP</u>	<u>QBS</u>	<u>RCS</u>	<u>RKB</u>	<u>SAB</u>	<u>SAR</u>	<u>SHR</u>	<u>SIL</u>	<u>SLR</u>	<u>SMB</u>	<u>SNG</u>
< 36.00	1	185	20	24	25	47	3	9	19	88	209	2	52	152	10
36.00 - 36.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
37.00 - 37.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38.00 - 38.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
39.00 - 39.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
40.00 - 40.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
41.00 - 41.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
42.00 - 42.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
43.00 - 43.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
44.00 - 44.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
45.00 - 45.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
46.00 - 46.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
47.00 - 47.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
48.00 - 48.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
49.00 - 49.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
50.00 - 50.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
51.00 - 51.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
52.00 - 52.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
53.00 - 53.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
54.00 - 54.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
55.00 - 55.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
56.00 - 56.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
57.00 - 57.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
58.00 - 58.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
59.00 - 59.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
60.00 - 60.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
61.00 - 61.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
62.00 - 62.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
63.00 - 63.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
64.00 - 64.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
65.00 - 65.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
66.00 - 66.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
67.00 - 67.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
68.00 - 68.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
69.00 - 69.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
70.00 - 70.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
71.00 - 71.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
72.00 - 72.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
73.00 - 73.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
74.00 - 74.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
75.00 - 75.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
76.00 - 76.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
77.00 - 77.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
= > 78.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	<b>1</b>	<b>185</b>	<b>20</b>	<b>24</b>	<b>25</b>	<b>47</b>	<b>3</b>	<b>9</b>	<b>19</b>	<b>88</b>	<b>209</b>	<b>2</b>	<b>52</b>	<b>152</b>	<b>10</b>
Min. Length	6.97	3.74	18.94	8.27	6.30	5.79	15.94	5.12	10.08	5.51	7.05	9.25	9.09	4.76	21.89
Max. Length	6.97	18.90	34.33	13.78	32.68	21.34	18.58	7.48	28.35	16.10	19.49	10.63	24.02	19.69	27.91
Mean Length	6.97	11.61	27.52	11.94	21.17	17.87	16.96	6.06	19.75	10.45	14.97	9.94	19.70	10.84	24.59
# Measured	1	185	20	24	25	47	3	9	19	88	209	2	52	152	10
No Lengths for	0	0	0	0	0	0	0	0	0	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

**Length Frequency Distribution For SEF (for fish  $\geq$  36.00 inches) (Continued)**

**Special sampling, electrofishing**

(Field work conducted between 05/20/2013 and 10/08/2013)

	<u>WAE</u>	<u>WHB</u>	<u>WHC</u>	<u>WTS</u>	<u>YEP</u>
< 36.00	112	600	3	4	7
36.00 - 36.99	-	-	-	-	-
37.00 - 37.99	-	-	-	-	-
38.00 - 38.99	-	-	-	-	-
39.00 - 39.99	-	-	-	-	-
40.00 - 40.99	-	-	-	-	-
41.00 - 41.99	-	-	-	-	-
42.00 - 42.99	-	-	-	-	-
43.00 - 43.99	-	-	-	-	-
44.00 - 44.99	-	-	-	-	-
45.00 - 45.99	-	-	-	-	-
46.00 - 46.99	-	-	-	-	-
47.00 - 47.99	-	-	-	-	-
48.00 - 48.99	-	-	-	-	-
49.00 - 49.99	-	-	-	-	-
50.00 - 50.99	-	-	-	-	-
51.00 - 51.99	-	-	-	-	-
52.00 - 52.99	-	-	-	-	-
53.00 - 53.99	-	-	-	-	-
54.00 - 54.99	-	-	-	-	-
55.00 - 55.99	-	-	-	-	-
56.00 - 56.99	-	-	-	-	-
57.00 - 57.99	-	-	-	-	-
58.00 - 58.99	-	-	-	-	-
59.00 - 59.99	-	-	-	-	-
60.00 - 60.99	-	-	-	-	-
61.00 - 61.99	-	-	-	-	-
62.00 - 62.99	-	-	-	-	-
63.00 - 63.99	-	-	-	-	-
64.00 - 64.99	-	-	-	-	-
65.00 - 65.99	-	-	-	-	-
66.00 - 66.99	-	-	-	-	-
67.00 - 67.99	-	-	-	-	-
68.00 - 68.99	-	-	-	-	-
69.00 - 69.99	-	-	-	-	-
70.00 - 70.99	-	-	-	-	-
71.00 - 71.99	-	-	-	-	-
72.00 - 72.99	-	-	-	-	-
73.00 - 73.99	-	-	-	-	-
74.00 - 74.99	-	-	-	-	-
75.00 - 75.99	-	-	-	-	-
76.00 - 76.99	-	-	-	-	-
77.00 - 77.99	-	-	-	-	-
= > 78.00	-	-	-	-	-

	<u>WAE</u>	<u>WHB</u>	<u>WHC</u>	<u>WTS</u>	<u>YEP</u>
Total	112	600	3	4	7
Min. Length	6.50	6.30	10.31	11.42	4.17
Max. Length	27.60	17.64	12.28	15.28	9.92
Mean Length	16.80	13.41	11.52	12.78	7.20
# Measured	112	600	3	4	7
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

