Original: Fish Division
cc: Education-Game
Inst. for Fish. Res.
O. H. Clark
G. P. Cooper
R. S. Marks

INSTITUTE FOR FISHERIES RESEARCH
DIVISION OF FISHERIES
MICHIGAN DEPARTMENT OF CONSERVATION
COOPERATING WITH THE
UNIVERSITY OF MICHIGAN

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ADDRESS
UNIVERSITY MUSEUMS ANNEX
ANN ARBOR, MICHIGAN

August 6, 1954

Report No. 1429

A SHOCKER FISH SURVEY OF THE HURON RIVER, LIVINGSTON AND WASHTENAW COUNTIES, BETWEEN KENT LAKE AND DELHI MILLS

By

Gerald P. Cooper

Abstract

Fish collections were made on June 8-9, 1954 with a 220-volt D. C. shocker at 4 stations on the Huron River between the Kent Lake dam and Delhi Mills. The 4 collection stations involved 490, 720, 400 and 630 yards of river, in places where the river was comparatively shallow. The total collections at the 4 stations included 503 game and pan fishes (13 species), 57 rough fishes (7 species), and 428 forage fishes (24 species). Most abundant among the game and pan fishes were the smallmouth and largemouth basses, rock bass, black crappie, bluegill, pumpkinseed, yellow perch and yellow bullhead. Suckers and carp included most of the rough fishes. Minnows, darters, and madtoms comprised most of the forage fishes. Average lengths of game and pan fishes in specific age groups were generally about 1/2 inch smaller (i.e., growth rate slower) than corresponding state-wide Michigan averages for these species.

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An intensive stream improvement project for the benefit of fishing is being planned for the Huron River between Kent Lake and Delhi Mills. In view of this proposed improvement work, the present study of the fish fauna in this section of the river was made. Collections of fish by electric shocker were made at four stations between Kent Lake and Delhi Mills on June 8 and 9, 1954. The fish obtained by this collecting are enumerated in the present report, and an analysis is made of age and growth of all game and pan fish collected.

The collecting party from the Institute consisted of Edward E. Schultz, Clarence M. Taube, and Gerald P. Cooper. The party was assisted by, and the results of the shocking were observed by, the following individuals: Professor J. I. Crump, Jr., and A. L. Raygor of the University of Michigan, Messrs. Clarence Clark and Darrell Allison of the Ohio Department of Conservation (on June 8), Messrs. R. S. Marks, J. T. Wilkinson and O. H. Clark of the Michigan Department of Conservation, and Bill Mullendore of the Ann Arbor News. Other representatives of the Press who observed the operation were Don Gillies, Robert Kirkpatrick (from Mort Neff's staff), M. R.

Lamotte (of the University of Michigan News Service), and Bob Harrington (Education Division, Michigan Department of Conservation).

Dr. Reeve M. Bailey, Curator of Fishes in the Museum of Zoology, University of Michigan, generously verified the specific identifications of all darters, Moxostoma, and Schilbeodes, and he recognized the identity of the hybrid darters and madtoms.

Significant data on the four collection stations are listed in the following:

Station 1.

Just below Kent Lake Dam, covering 490 yards of stream immediately below the dam, but not including the large pool at the foot of the dam. The measurement of 490 yards was read by a map tracer on a tracing made from aerial photograph at scale of approximately 8 inches per mile. (The large pool at the base of the dam apparently had an unusually large concentration of fish, and operation of the shocker there would have interferred with the many anglers who were fishing there at the time.) The section of the stream in which the shocker was operated included the first 13 cement-block deflectors immediately below the dam. In other words, the operation started at the 13th deflector downstream from the dam and was continued upstream to the first deflector immediately below the dam. The station is in the NE. 1/4 of Section 1, T. 1 N., R. 6 E., Livingston County. June 8, 1954, 10:00 a.m. to 12:15 p.m. Of this 2-1/4 hour interval, approximately 1-1/4 hours were spent in operating the shocker and 1 hour was spent in sorting and recording fish. Air temperature 79° F., water 68° F. at 12 noon. Fair cover for fish is provided by the 13 cement block deflectors, and some additional cover is provided by underwater brush piles, weed beds, etc. Generally, cover was fair for fish. The water was slightly turbid,

and the flow was estimated at 40 c.f.s. The party worked with the shocker rather carefully back and forth across the stream, in proceeding upstream.

Station 2.

Located in the SE. 1/4 of Section 3, T. 1 N., R. 6 E., Livingston County, just downstream from the Pere Marquette R. R. Bridge. June 8, 1954, 3:05 to 4:10 p.m.; actual shocking time 65 minutes. Covered 720 yards of stream (distance paced off); started at a point about 920 yards downstream from the Pere Marquette R. R. Bridge and proceeded upstream to a point about 200 yards below this bridge. This stream section has many fallen trees, logs, brush, etc., for underwater cover. There was little cover for fish in the river immediately below or above the section which was shocked. Practically all fish taken were from underwater log or brush cover. Bottom, sand, silt and gravel; water very turbid; visibility about 12 inches. Air temperature 80° F., water 73° F., at 4:00 p.m. Water depth up to 4 feet.

Station 3.

At the public fishing site and picnic site in Section 12 of T. 1 S., R. 4 E., Washtenaw County, one-half mile south of Big Portage Lake. June 9, 1954, 1:05 to 2:30 p.m. (actual shocking time 85 minutes). Covered about 400 yards of stream about half above and half below the point where the entrance road to the picnic site touches the river. Here the river is about 100 feet wide, and only a portion of this width was covered effectively by the shocker. Effective shocker coverage about 400 yards x 30 feet. The river is shallow, the bottom is largely boulders and rubble, the current rapid, the water clear, and cover for fish is limited largely to the large boulders. Air temperature 83° F., water 72° F., at 2:00 p.m.

Station 4.

At Delhi Mills Bridge, in Section 2 of T. 2 S., R. 5 E., Washtenaw County. Covered 1600 feet of the river immediately below the bridge plus 300 feet of river above the bridge (total about 630 yards). This 300-foot strip above the bridge extended into the rapids and falls, and the shocker was operated upstream through the falls only in the narrow channel along the north side of the river. Shocking in this section of the falls was very inefficient. June 9, 1954, 9:15 to 11:30 a.m. Actual shocking time 85 minutes. In the 1600-foot section of the river, cover is generally poor and limited to overhanging banks and a few large boulders in the river bed. Water clear and visibility good, current rapid to torrential. Air temperature 77° F., water 69° F., at 11:30 a.m.

At each station the shocker was operated in an upstream direction, and from a plywood boat. Three to four members of the shocking crew operated scap nets for the recovery of fish. All fish collected are enumerated in the present report. The shocker was a 220-volt D.C. machine. The same machine was used at the 4 stations. Subsequent to the present field work on the Huron River, Mr. E. E. Schultz and party operated the same machine on Baldwin Creek and on the Pine River in western Michigan. In their operation on Baldwin Creek, they decided that the shocker was not operating at 100 percent efficiency. They therefore cleaned up the commutator, after which they operated the machine on the Pine River and decided that this cleaning of the commutator considerably improved the efficiency of the machine. It therefore seems probable that this D.C. shocker was not operating at peak efficiency during the collecting which was done on the Huron River.

All fish collected at the 4 stations were held temporarily in live tubs in the boat. As these tubs were filled to capacity, shocking operations were temporarily halted so that the fish could be disposed of. The larger

fish were scale sampled and/or measured and released. The smaller fishes were preserved in formalin and subsequently identified and recorded in the laboratory. The total catch of fish at the 4 stations is given in the following list, in which the number of fish of each species precedes the common name, and the average length in inches of the fish collected follows the scientific name.

List of fish collected in the Huron River

(Number of specimens collected, and their average length in inches, are given)

Game and pan fishes:

7	Largemouth bass, Micropterus salmoides	6.8
13	Smallmouth bass, Micropterus dolomieui	7.1
26	Yellow perch, Perca flavescens	4.1
118	Black crappie, Pomoxis nigromaculatus	5.5
181	Rock bass, Ambloplites rupestris	4.5
41	Bluegill, Lepomis macrochirus	3.7
39	Pumpkinseed, Lepomis gibbosus	3.5
12	Green sunfish, Lepomis cyanellus	3.5
4	Longear sunfish, Lepomis megalotis	3.2
1	Warmouth, Chaenobryttus coronarius	3.6
52	Yellow bullhead, Ameiurus natalis	5.5
1	Brown bullhead, Ameiurus nebulosus	7.0
8	Black bullhead, Ameiurus melas	5.7

Rough fishes:

7	White sucker, Catostomus commersoni	7.8
10	Hog sucker, Hypentelium nigricans	8.1
9	Spotted sucker, Minytrema melanops	9.4
11	Black redhorse, Moxostoma duquesni	11.7
12	Lake chubsucker, Erimyzon sucetta	5.7
7	Carp, Cyprinus carpio	18.8
1	Bowfin, Amia calva	9.1

Forage fishes:

58	Hornyhead chub, Nocomis biguttatus	3.9
49	River chub, Nocomis micropogon	4.1
140	Bluntnose minnow, Hyborhynchus notatus	2.4
6	Golden shiner, Notemigonus crysoleucas	4.1
4	Rosyface shiner, Notropis rubellus	2.7
78	Central common shiner, Notropis cornutus chrysocephalus	4.4
3	Northern common shiner, Notropis cornutus frontalis	4.0
1	Mimic shiner, Notropis volucellus	2.0
1	Sand shiner, Notropis deliciosus	3.0
1	Blackchin shiner, Notropis heterodon	1.9
1	Blackstripe topminnow, Fundulus notatus	2.1
1	Mudminnow, Umbra limi	3.0
13	Stonecat, Noturus flavus	6.7
2	Tadpole madtom, Schilbeodes mollis	3.1
7	Brindled madtom, Schilbeodes miurus	3.2
1	Hybrid madtom, S. mollis X S. miurus	3.3
10	Mountain madtom, Schilbeodes eleutherus	4.0
4	Logperch, Percina caprodes	3.4
12	Blackside darter, Hadropterus maculatus	2.5
2	Hybrid darter, P. caprodes X H. maculatus	3.6
22	Greenside darter, Etheostoma blennioides	2.8
3	Rainbow darter, Poecilichthys caeruleus	1.8
1	Johnny darter, Boleosoma nigrum	2.4
2	Fantail darter, Catonotus flabellaris	2.1
5	Northern muddler, Cottus bairdi	2.9
1	Michigan brook lamprey, Ichthyomyzon fossor, ammocoete	3.2

Altogether, the collections contained 503 game and pan fishes (including bullheads), 57 rough fishes, and 428 forage fishes. This is a favorable species composition from the standpoint of sport fishing. The average size of the game and pan fishes was comparatively small, and there was a scarcity of large-size bass and pan fish in the collections, due to the fact that for effective operation of the shocker relatively shallow sections of the Huron River were selected for the collecting sites.

The length-frequency data on all fish in the collections are given by station and by species in Table 1. This table is organized in three parts, as a matter of convenience for recording length-frequency data. Inclusion of these rather large tables seems justified as a permanent record of the size distribution of the fishes present.

On all game and pan fishes, scales were read for age. The age and growth data are summarized by station and species in Table 2. Noteworthy is the general scarcity of fish in older age groups (above III) except for rock bass. When compared with state-wide growth averages for Michigan (from published data), these Huron River fish may be characterized as to growth rate, as follows: rock bass growth about average; subadult smallmouth bass about 1/2 inch slower than average; adult smallmouth (very few specimens) about 1 inch faster than average; subadult largemouth about 1 inch faster; black crappie, yellow perch, bluegill, and pumpkinseed about 1/2 inch slower; and green sunfish and longear sunfish about 1/4 to 1/2 inch faster than state-wide averages.

INSTITUTE FOR FISHERIES RESEARCH

Gerald P. Cooper

Approved by: A. S. Hazzard

Typed by: P. R. Darling

Table 1.--Length-frequency distribution of fish collected at four stations on the Huron River, June 8-9, 1954
(Part one of 3 parts to table)

Station, Species	Total length in inches																Total Number	Average length[1]
	1.6-2.0	2.1-2.5	2.6-3.0	3.1-3.5	3.6-4.0	4.1-4.5	4.6-5.0	5.1-5.5	5.6-6.0	6.1-6.5	6.6-7.0	7.1-7.5	7.6-8.0	8.1-8.5	8.6-9.0	9.1-9.5		
Station 1																		
Yellow perch	...	...	1	7	1	3	2	1	2	...	...	...	...	...	...	...	17	4.1
Black crappie	...	...	...	...	...	...	4	35	33	11	2	...	...	...	...	...	85	5.6
Rock bass	...	1	2	2	5	11	9	6	...	3	1	...	...	...	...	...	40	4.5
Bluegill	...	9	2	4	3	7	5	1	...	...	...	...	...	...	...	...	31	3.6
Pumpkinseed	...	1	1	11	7	4	1	...	...	...	...	...	...	...	...	...	25	3.6
Green sunfish	1	1	...	5	2	2	1	...	...	...	...	...	...	...	...	...	12	3.5
Yellow bullhead	...	...	...	1	5	8	3	1	1	5	4	3	3	1	...	...	35	5.6
Brown bullhead	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	7.0
Black bullhead	...	...	...	...	...	...	2	2	...	1	1	...	...	1	...	...	7	5.9
Station 2																		
Yellow perch	...	...	2	2	1	...	...	3	1	...	...	...	...	...	...	...	9	4.2
Black crappie	...	...	...	...	...	...	7	4	3	...	1	...	...	...	...	...	15	5.3
Rock bass	...	3	2	6	6	7	3	...	1	1	...	...	1	...	...	1	31	4.2
Bluegill	...	...	...	...	4	2	3	...	...	...	...	...	...	...	...	...	9	4.2
Pumpkinseed	...	1	...	2	1	...	...	...	...	...	...	...	...	...	...	...	4	3.2
Warmouth	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	3.6
Yellow bullhead	...	...	...	3	3	1	1	1	1	1	...	...	...	...	...	...	11	4.3
Station 3																		
Black crappie	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	2	5.8
Rock bass	...	1	1	2	9	5	4	2	2	4	3	2	1	...	...	...	36	4.9
Yellow bullhead	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	2	6.6
Station 4																		
Black crappie	...	...	...	...	...	1	6	8	1	...	...	...	...	...	...	...	16	5.1
Rock bass	4	1	1	3	20	23	8	2	2	4	3	1	2	...	...	...	74	4.4
Bluegill	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	2.7
Pumpkinseed	...	2	1	2	3	2	...	...	...	...	...	...	...	...	...	...	10	3.4
Longear sunfish	...	...	2	1	1	...	...	...	...	...	...	...	...	...	...	...	4	3.2
Yellow bullhead	...	...	...	...	...	...	...	...	...	...	1	...	1	2	...	...	4	7.8
Black bullhead	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	3.7

[1]Average lengths are based on length-interval mid-points, except where only 1 specimen is involved.

Table 1 (Continued).--Length-frequency distribution of fish collected at four stations on the Huron River, June 8-9, 1954
(Part two of 3 parts to table)

Station, Species	Total length in inches																	Total Number	Average length[1]
	2.1-3.0	3.1-4.0	4.1-5.0	5.1-6.0	6.1-7.0	7.1-8.0	8.1-9.0	9.1-10.0	10.1-11.0	11.1-12.0	12.1-13.0	13.1-14.0	14.1-15.0	15.1-16.0	16.1-17.0	17.1-18.0	28.0	29.0		
Station 1																				
Largemouth bass	...	...	...	1	2	1	1	1	...	...	...	...	...	...	...	...	...	...	6	7.4
Smallmouth bass	...	4	1	...	...	1	1	...	...	...	2	...	1	...	...	...	...	...	10	7.5
White sucker	...	...	...	2	2	2	...	...	...	...	...	...	...	1	...	...	...	...	7	7.8
Hog sucker	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	9.2
Spotted sucker	...	...	...	...	...	...	4	4	...	...	1	...	...	...	...	...	...	...	9	9.4
Black redhorse	...	...	1	...	...	...	...	...	...	...	...	...	1	1	...	1	...	...	4	13.1
Lake chubsucker	...	1	...	7	4	...	...	...	...	...	...	...	...	...	...	...	...	...	12	5.7
Carp	...	...	...	...	...	...	...	...	...	...	...	2	1	1	...	1	1	1	7	18.8
Hornyhead chub	6	3	1	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	12	3.6
Golden shiner	1	2	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	4.1
C. common shiner	1	11	21	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	35	4.2
N. common shiner	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	4.1
Stonecat	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	6.2
Station 2																				
Smallmouth bass	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	2	7.1
Hog sucker	...	...	...	...	2	2	...	...	...	...	...	...	...	...	...	...	...	...	4	7.1
Black redhorse	...	1	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	3	7.9
Hornyhead chub	9	1	6	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...	19	3.8
C. common shiner	...	2	6	2	3	...	...	...	...	...	...	...	...	...	...	...	...	...	13	5.0
Stonecat	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	5.6
Station 3																				
Smallmouth bass	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	3.1
Hog sucker	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	10.1
Black redhorse	...	...	...	...	...	1	...	...	...	...	...	1	...	1	1	...	...	...	4	13.3
Hornyhead chub	1	10	10	4	1	...	...	...	...	...	...	...	...	...	...	...	...	...	26	4.3
River chub	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	2	5.1
C. common shiner	...	2	11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	13	4.4
Stonecat	...	...	...	...	5	2	...	...	...	...	...	...	...	...	...	...	...	...	7	6.8
Station 4																				
Largemouth bass	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	3.3
Hog sucker	...	...	...	...	1	1	1	...	1	...	...	...	...	...	...	...	...	...	4	8.3
Bowfin	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	1	9.4
Hornyhead chub	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	2.5
River chub	13	11	13	7	3	...	...	...	...	...	...	...	...	...	...	...	...	...	47	4.0
C. common shiner	1	3	11	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	17	4.4
N. common shiner	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	3.9
Stonecat	...	...	...	2	...	1	1	...	...	...	...	...	...	...	...	...	...	...	4	6.8

[1]Average lengths are based on length-interval mid-points, except where only 1 specimen is involved.

Table 1 (Concluded).--Length-frequency distribution of fish collected at four stations on the Huron River, July 8-9, 1954
(Part three of 3 parts to table)

Station, Species	Total length in inches										Total Number	Average length[1]
	1.5-1.7	1.8-2.0	2.1-2.3	2.4-2.6	2.7-2.9	3.0-3.2	3.3-3.5	3.6-3.8	3.9-4.1	4.2-4.4		
Station 1												
Bluntnose minnow	4	32	33	12	11	9	5	8	...	...	114	2.4
Sand shiner	...	...	...	...	...	1	...	...	...	...	1	3.0
Blackchin shiner	...	1	...	...	...	...	...	...	...	...	1	1.9
Tadpole madtom	...	...	...	...	...	2	...	...	...	...	2	3.1
Brindled madtom	...	...	...	...	...	1	...	...	...	...	1	3.1
Tadpole X Brindled hybrid	...	...	...	...	...	...	1	...	...	...	1	3.3
Logperch	...	...	...	...	...	...	...	1	...	1	2	4.0
Blackside darter	...	1	2	1	...	1	...	...	...	...	5	2.4
Logperch X Blackside hybrid	...	...	...	...	...	...	1	1	...	...	2	3.6
Greenside darter	...	...	1	2	1	1	3	...	...	...	8	2.9
Johnny darter	...	...	...	1	...	...	...	...	...	...	1	2.4
Station 2												
Bluntnose minnow	...	...	9	8	2	3	1	1	...	...	24	2.6
Mudminnow	...	...	...	...	...	1	...	...	...	...	1	3.0
Brindled madtom	...	1	...	...	...	1	2	1	1	...	6	3.3
Logperch	...	...	...	...	1	...	...	...	...	...	1	2.8
Blackside darter	...	1	...	3	...	...	1	...	...	...	5	2.6
Greenside darter	...	...	1	...	1	...	...	...	...	...	2	2.5
Michigan brook lamprey	...	...	...	...	...	1	...	...	...	...	1	3.2
Station 3												
Mimic shiner	...	1	...	...	...	...	...	...	...	...	1	2.0
Mountain madtom	...	...	...	...	...	...	...	2	7	1	10	4.0
Logperch	...	...	...	...	1	...	...	...	...	...	1	2.8
Greenside darter	...	...	1	...	2	1	1	1	...	...	6	3.0
Fantail darter	...	1	1	...	...	...	...	...	...	...	2	2.1
Northern muddler	...	...	...	...	1	1	1	...	...	...	3	3.1
Station 4												
Bluntnose minnow	...	...	...	2	...	...	...	...	...	...	2	2.5
Rosyface shiner	...	...	...	3	...	1	...	...	...	...	4	2.7
Blackside darter	...	...	1	...	...	1	...	...	...	...	2	2.7
Greenside darter	...	...	3	...	2	1	...	...	...	...	6	2.6
Rainbow darter	2	...	1	...	...	...	...	...	...	...	3	1.8
Northern muddler	...	...	...	1	1	...	...	...	...	...	2	2.7
Blackstripe topminnow	...	...	1	...	...	...	...	...	...	...	1	2.1

[1]Average lengths are based on length-interval mid-points, except where only 1 specimen is involved.

Table 2.--Age and length data for game and pan fishes from Huron River collections, June 8-9, 1954. For each age group and station are given the number of specimens (upper figure), range in total length in inches (middle figures) and average length (lower figure)

Species, and Station	Age in completed winters						
	I	II	III	IV	V	VI	VII
Rock bass							
Station 1	4	22	11	1	...	...	...
	2.5-3.1	3.5-5.4	4.1-6.4	6.8	...	...	...
	2.8	4.4	5.2	6.8	...	...	...
Station 2	5	20	3	1	...	1	1
	2.2-2.8	3.1-4.7	4.3-6.3	5.7	...	7.8	9.5
	2.5	3.9	5.2	5.7	...	7.8	9.5
Station 3	2	16	10	5	3	...	...
	2.5-2.6	3.4-4.7	4.4-7.0	6.2-6.7	7.1-7.7	...	...
	2.6	3.9	5.5	6.4	7.4	...	...
Station 4	7	32	24	8	3	...	...
	1.6-3.1	3.5-5.3	3.9-6.6	4.5-7.1	6.4-8.0	...	...
	2.1	4.0	4.6	6.0	7.4	...	...
All stations	18	90	48	15	6	1	1
	1.6-3.1	3.1-5.4	3.9-7.0	4.5-7.1	6.4-8.0	7.8	9.5
	2.4	4.1	5.0	6.2	7.4	7.8	9.5
Black crappie							
Station 1		30					
		5.0-6.8					
		5.7					
Station 2		14	1				
		4.6-6.0	6.8				
		5.2	6.8				
Station 3		1	1				
		5.1	6.3				
		5.1	6.3				

Station 4		16 4.5-5.7 5.1		
All stations		61 4.5-6.8 5.4	2 6.3-6.8 6.6	
Smallmouth bass				
Station 1	5 3.4-4.1 3.7	2 7.3-8.5 7.9	2 12.3-12.4 12.4	1 14.5 14.5
Station 2		2 5.6-8.1 6.9		
Station 3	1 3.1 3.1			
All stations	6 3.1-4.1 3.6	4 5.6-8.5 7.4	2 12.3-12.4 12.4	1 14.5 14.5
Largemouth bass				
Station 1	1 6.4 6.4	5 5.6-9.1 7.5		
Station 3	1 3.3 3.3			
All stations	2 3.3-6.4 4.9	5 5.6-9.1 7.5		
Yellow perch				
Station 1	11 2.9-4.2 3.5	4 4.3-5.4 4.8	2 5.8-6.0 5.9	

Station 2	5 2.6-3.6 3.2	4 5.3-5.7 5.5	
All stations	16 2.6-4.2 3.4	8 4.3-5.7 5.1	2 5.8-6.0 5.9
Bluegill			
Station 1	12 2.1-3.1 2.4	12 3.5-4.8 4.0	7 4.3-5.1 4.6
Station 2		9 3.7-4.8 4.2	
Station 4	1 2.7 2.7		
All stations	13 2.1-3.1 2.4	21 3.5-4.8 4.1	7 4.3-5.1 4.6
Pumpkinseed			
Station 1	2 2.5-2.9 2.7	21 3.2-4.3 3.6	1 4.0 4.0
Station 2	1 2.5 2.5	3 3.3-3.8 3.5	
Station 4	3 2.3-2.7 2.5	7 3.2-4.4 3.8	
All stations	6 2.3-2.9 2.6	31 3.2-4.4 3.7	1 4.0 4.0
Warmouth			
Station 2			1 3.6 3.6

Green sunfish			
Station 1	2	9	1
	1.7-2.3	3.4-4.2	4.8
	2.0	3.7	4.8
Longear sunfish			
Station 4	1	3	
	2.8	3.0-3.7	
	2.8	3.4	