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

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DIRECTOR

November 6, 1952

ADDRESS
UNIVERSITY MUSEUMS ANNEX
ANN ARBOR, MICHIGAN

Report No. 1350

THE FISH FAUNA AND THE FISHING OF THE DETROIT RIVER
IN VICINITY OF SUGAR AND STONY ISLANDS

by
Gerald P. Cooper

Abstract

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The Dunbar and Sullivan Dredging Company of Detroit have filed with the U. S. Army Corps of Engineers for a permit to fill an area of the Detroit River around Sugar Island, located at the south end of Grosse Isle. There is reported to be a similar interest in an area around Stony Island, located 2 miles to the north. A fish survey, by gill nets, trap nets and seines, was made of the two areas, September 3 to 11, 1952, to determine the character of the fish fauna. Presumably the filling of a sizeable area of the river would result in the loss of angling values in proportion to the area involved and the value of the fish which the area contains.

Netting at 17 stations took 12 kinds of game fishes, 12 kinds (plus one hybrid) of coarse or rough fishes, 18 forage species, and 3 "obnoxious" species. Most abundant were (in the above classes, respectively): rock bass, perch, black crappie, pumpkinseed, and pike; carp, goldfish, carp x goldfish hybrids, gizzard shad, and white sucker; brook silversides, golden shiner, and blacknose shiner; and bowfin. Age and growth studies on the

↓ Spelled "Ile" on War Department Lake Survey Chart No. 41.

game fish in the collections showed that these species in the Detroit River have a growth rate above the state-wide averages for these species in inland waters of Michigan. General creel census data show, for the Grosse Isle (and Sugar Island) area, annual average catches per hour by anglers of 1.32 (1945-1951) and 1.69 (1952) which compare favorably with summary data for the Ecorse area of the Detroit River (1.11), with all Michigan connecting waters of the Great Lakes (1.60), and with all non-trout inland waters in Michigan (1.33 for the period 1945-1951). The principal conclusion from this study is that the fish fauna of the Detroit River in the vicinity of Sugar and Stony islands is a valuable asset from the standpoint of angling.

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The Dunbar and Sullivan Dredging Company of Detroit recently filed with the U. S. Army Corps of Engineers an application for a permit to fill an area of the Detroit River around, and especially to the east of, Sugar Island, which is located just east of the south end of Grosse Isle. Reports have also been received of the possibility of a fill area in the vicinity of Stony Island, located about 2 miles north of Sugar Island. The Michigan Department of Conservation is concerned with looking out for the interests of anglers, in connection with the proposed fill. If a sizeable area of the Detroit River is converted from an aquatic habitat to dry land or shallow marsh, it would be expected that certain fishing values would be lost, in proportion to the loss of water area. Thus a study of the fish fauna of the Detroit River, in the vicinity of Sugar and Stony islands, has been made to determine the character of the fish population and its potential value.

Much of the fish collecting effort of this study was concerned with the area around Sugar Island, but a few collections were made around Stony. The results of collections around the two islands are recorded separately

in the accompanying tables, but the conclusions given in the following apply to the two areas generally. The results of collecting in the two areas were quite similar with respect to kinds and general abundance of fish.

The field study consisted of collecting samples of fishes by three types of gear: gill nets, trap nets and seines. The gill nets contained a variety of mesh sizes ($3/4$ " to 2" bar measure) adapted to take most any kind of fish present of lengths above 5 to 6 inches. The trap nets were of a type commonly used as commercial gear, and were of mesh sizes designed to take fish above lengths of 5 or 6 inches. The two seines were of small mesh, and were capable of taking most of the common fishes down to young-of-the-year sizes. It is a well known fact that certain species of fish are more susceptible to capture by gill nets, others more susceptible to capture by trap nets, and still others (because of small mesh size) more susceptible to seining. By using the three types of gear, representative collecting for the fish fauna as a whole was fairly well assured. Gill nets were fished at 5 stations, trap nets at 7 stations, and seining was done at 5 stations. These stations are located in Figure 1; and the gear, locations of stations, and dates of collection are enumerated in Table 1. Photographs of some of the collecting operations are shown in Figures 2 to 5.

All fish collected by gill net and trap net were recorded, and most of them were preserved in formalin, scale sampled for studies of age and growth, and recorded in group photographs. Because of limitations in containers for preservation, a few of the larger game fishes, carp, goldfish, etc. were not preserved. However, the accompanying photographs are generally representative of the gill- and trap-net collections, because a fairly representative number of both game and non-game species were excluded from the photographs. A large and representative series of each species of fish was preserved from the 5 seining collections (it was impractical to preserve all of them), and

all of the fish in these preserved seining collections are shown in accompanying group photographs.

The netting was done during the period of September 3 to 11, 1952. The gill nets and trap nets were fished at individual stations for several days, but were examined and the fish removed each day. Seining at the 5 stations was done on September 8 and 9.

In addition to the data from netting collections, a certain amount of pertinent information on angling in this area of the Detroit River is available from general creel census records collected by Michigan Conservation Officers (especially Officer Isaac Peabody of Grosse Isle). These general creel census records for the Detroit River as a whole, and for the area around Sugar Island in particular, are included in the present report.

Acknowledgments

The field netting operations were done by R. C. Barber, W. C. Latta and R. N. Schafer, with some assistance on certain days by W. R. Crowe, H. D. Tait, K. E. Christensen, J. E. Williams and G. P. Cooper (all of the Institute staff) and by Drs. R. M. Bailey (Curator) and R. R. Miller (Assistant Curator) of the Fish Division, Museum of Zoology, University of Michigan. Laboratory identifications of preserved fishes were made by W. R. Taylor, Fisheries Biologist of the Institute and graduate student in ichthyology in the University. Age determinations from fish scales were made and summarized by Mr. Williams; the creel census data were summarized by K. G. Fukano; and photography was done by W. L. Cristanelli (all of the Institute staff). The Game Division of the Conservation Department generously made available a boat from the Pte. Mouillee station. Conservation Officer Peabody has given special attention to creel census records in the Sugar

Island area during 1952, in view of the problem there. Messrs. H. J. Miller and A. G. Gazlay, of the Game Division, have been helpful in giving advice. Mr. Roy J. Hoover, who operates a boat livery on Hickory Island was cooperative in providing dock facilities.

Results

The netting effort (summarized in Table 1) resulted in the collection of a wide variety of fish species, including 12 kinds of game fishes, 12 kinds plus one type of hybrid of "coarse" or rough fishes, 18 forage species, and 3 "obnoxious" species. The following is a list of the common and scientific names of the species involved:

List of common and scientific names of species of fishes collected by gill net, trap net and seine, in the vicinity of Sugar and Stony islands, Detroit River, September 4 to 11, 1952

<u>Common name</u>	<u>Scientific name</u>
Game fishes	
Largemouth bass	<i>Micropterus salmoides</i>
Smallmouth bass	<i>Micropterus dolomieu</i>
Northern pike	<i>Esox lucius</i>
Great Lakes Muskellunge	<i>Esox m. masquinongy</i>
Walleye	<i>Stizostedion v. vitreum</i>
Yellow perch	<i>Perca flavescens</i>
Rock bass	<i>Ambloplites rupestris</i>
Black crappie	<i>Pomoxis nigromaculatus</i>
White crappie	<i>Pomoxis annularis</i>
Pumpkinseed	<i>Lepomis gibbosus</i>
Bluegill	<i>Lepomis macrochirus</i>
White bass	<i>Morone chrysops</i>
Coarse fishes	
Carp	<i>Cyprinus carpio</i>
Goldfish	<i>Carassius auratus</i>
Carp x goldfish hybrid	<i>C. carpio</i> x <i>C. auratus</i>
White sucker	<i>Catostomus c. commersoni</i>
Spotted sucker	<i>Minytrema melanops</i>

Coarse fishes (continued)

Hog sucker
Northern shorthead redhorse
Gizzard shad
Freshwater drum
Brown Bullhead
Yellow bullhead
Black bullhead
Stonecat

Hypentelium nigricans
Moxostoma a. aureolum
Dorosoma cepedianum
Aplodinotus grunniens
Ameiurus nebulosus
Ameiurus natalis
Ameiurus melas
Noturus flavus

Forage fishes

Spottail shiner
Central common shiner
Sand shiner
Northern mimic shiner
Emerald shiner
Northern blacknose shiner
Golden shiner
Bluntnose minnow
River chub
Hornyhead chub
Western banded killifish
Brook silversides
Troutperch
Blackside darter
Channel darter
Northern log perch
Scaly Johnny darter
Least darter

Notropis hudsonius
Notropis cornutus chrysocephalus
Notropis deliciosus
Notropis v. volucellus
Notropis atherinoides
Notropis h. heterolepis
Notemigonus crysoleucas
Pimephales notatus
Hybopsis micropogon
Hybopsis biguttata
Fundulus diaphanus menona
Labidesthes sicculus
Percopsis omiscomaycus
Hadropterus maculatus
Hadropterus copelandi
Percina caprodes semifasciata
Etheostoma nigrum eulepis
Etheostoma microperca

Obnoxious fishes

Bowfin
Northern longnose gar
Silver lamprey

Amia calva
Lepisosteus osseus oxyurus
Ichthyomyzon unicuspis

Table 1. Data on fish collecting stations, Detroit River, vicinity of Sugar and Stony islands, September 3 to 11, 1952. For locations of netting stations, see Figure 1.

Station Number	Location	Gear	Dates 1952	Netting effort
G.1	Sugar Island, along S.E. shore	Gill net, 375' experimental y	September 3-10	7 days
G.2	1,000' S.E. of Sugar Island	Gill net, 375', 1 1/4", 1 1/2" & 2" bar	September 3-7	4 days
G.3	1,800' E. of Sugar Island	Gill net, 375', 1", 1 1/4" and 1 1/2" bar	September 3-10	7 days
G.4	Sugar Island at N.W. end	Gill net, 250', 1 1/4" & 1 1/2" bar	September 7-10	3 days
G.5	1,800' E. of N. end Sugar Island	Gill net, 125', 2" bar	September 8-10	2 days
T.1	Sugar Island, at N. end	Trap net, 5-ft., 1" & 1 1/2" bar	September 3-10	7 days
T.2	500' E. of Sugar Island	Trap net, 5-ft., 1" & 1 1/2" bar	September 3-8	5 days
T.3	1,800' E.S.E. of Sugar Island	Trap net, 5-ft., 1" & 1 1/2" bar	September 3-7	4 days
T.4	2,000' S.E. of Sugar Island	Trap net, 5-ft., 1" & 1 1/2" bar	September 4-9	5 days
T.5	Sugar Island, at S. end	Trap net, 5-ft., 1" & 1 1/2" bar	September 7-10	3 days
T.6	Stony Island, 500' off S. end	Trap net, 5-ft., 1" & 1 1/2" bar	September 8-11	3 days
T.7	1,500' S.S.E. of Sugar Island	Trap net, 5-ft., 1" & 1 1/2" bar	September 9-11	2 days
S.1	Sugar Island, along E. shore	Bag seines, 30' & 125', 1/4"-1/2" bar	September 8	1 hour
S.2	Sugar Island, W. side	Bag seines, 125', 3/8"-1/2" bar	September 8	1 hour
S.3	Sugar Island, N.E. side	Bag seines, 30' and 125', 1/4"-1/2" bar	September 9	1 1/2 hours
S.4	Stony Island, N.W. side	Bag seine, 30', 1/4"-3/8" bar	September 9	3/4 hour
S.5	Stony Island, W. side	Bag seine, 30', 1/4"-3/8" bar	September 9	1/2 hour

† All gill nets 6 feet deep. Experimental gill net has five mesh sizes: 3/4", 1", 1 1/4", 1 1/2" and 2" bar.

The catches at the gill-net and trap-net stations, along with length range of the fish, are given by station and date in appendix Table 4, and summarized by station and type of net in Table 2. The fish in the preserved seine collections are listed by station in Table 3. The fish collected by the trap nets and gill nets which were in continuous operation for several days were combined into daily collections for the photographs of Figures 6 to 15, and the individual seining collections are shown in the photographs of Figures 16 to 22.

The total catches by gill nets and trap nets amounted to 310 game fishes, mostly rock bass, yellow perch, black crappie and pumpkinseed sunfish, but with significant numbers of pike, walleye and black bass; also 240 coarse fishes, mostly carp, goldfish, carp by goldfish hybrids, bullheads, gizzard shad, and suckers; and 13 "obnoxious" or predatory fishes, mostly bowfin. Collectively, the 5 preserved seining collections contained 204 game fishes, 201 rough fishes, 973 forage fishes (including a considerable variety of minnows and darters), and two predatory fishes.

Age and growth studies were made from scale samples taken from most of the fishes collected by gill net and trap net, and from a few of the larger fishes in seining collections. For the present report, age determinations were made on all scale samples where only a small series for an individual species was available, or on a representative series of fish where a large series of scale samples was available. The age and growth studies (data in appendix Table 5) show quite conclusively that the several species of game fishes in these collections were generally above the growth rate of the same species in inland waters of Michigan (based on state-wide averages determined by prior studies of Institute staff).

Table 2. Numbers of each species of fish caught at five gill-net stations and seven trap-net stations in the vicinity of Sugar and Stony islands, Detroit River, September 4 to 11, 1952. For locations of stations, see Figure 1.

Species	Gill-net stations (G)					Trap-net stations (T)							Totals all stations
	1	2	3	4	5	1	2	3	4	5	6	7	
Game species													
Largemouth bass				1							1		2
Smallmouth bass			2				1			1		1	5
Northern pike	2	4	5	1		2	2			1		1	18
Walleye	5		4			1							10
Yellow perch	18		1			9	1		6	3	17	6	61
Rock bass	3		4	1		37	1	17	6	14	59	9	151
Black crappie	2	3	6	1		4	7		2	4	9		38
White crappie			1				1						2
Pumpkinseed						12		1		2	8		23
Coarse fishes													
Carp	8	1	3	3		8	2			13	18		56
Goldfish	1		1			10					29	1	42
Carp x goldfish hybrid	6	1	5			4	4			10	20		50
White sucker	6	1	1	5	1	1		1	1	1		1	19
Spotted sucker			1										1
Hog sucker	1												1
Gizzard shad	19	3	14				2						38
Freshwater drum						1					1		2
Brown bullhead						3	1	3		3	15		25
Yellow bullhead									1	1			2
Black bullhead		1	1	1									3
Stonecat												1	1
Obnoxious fishes													
Bowfin			1	2		4			1	2	1		11
Longnose gar	1												1
Silver lamprey											1		1

Table 3. Numbers of each species of fish caught at five seining stations in vicinity of Sugar and Stony islands, Detroit River, September 8 to 9, 1952. For locations of stations, see Figure 1.

Species	Seining stations					Totals all stations
	S.1	S.2	S.3	S.4	S.5	
Game species						
Largemouth bass				2		2
Smallmouth bass	6		2			8
Great Lakes muskellunge	1	2				3
Yellow perch	23	23	4	5		55
Rock bass	66	9	2	2	2	81
Black crappie	3					3
White crappie	11					11
Pumpkinseed	9	1			2	12
Bluegill					13	13
White bass	11	5				16
Coarse fishes						
Carp	16	3				19
Goldfish	4	4				8
Carp x goldfish hybrids	7					7
White sucker	87	9	2			98
Northern redhorse		1				1
Gizzard shad	65	1	2			68
Forage fishes						
Spottail shiner		25	3			28
Common shiner	6	8	5		6	25
Sand shiner			3		1	4
Mimic shiner	4	1				5
Emerald shiner	4		7		1	12
Blacknose shiner					147	147
Golden shiner	1			190	70	261
Bluntnose minnow	2		1	1	57	61
River chub		2	1			3
Hornyhead chub			3			3
Banded killifish					1	1
Brook silversides	269		35	8	44	356
Troutperch	2					2
Blackside darter	1					1
Logperch	19		13			32
Johnny darter		1	7			8
Channel darter			11			11
Least darter				7	6	13
Obnoxious fishes						
Longnose gar	2					2

A summary of the general creel census data for the Detroit River is given in appendix Table 6. Data available are limited to the area around Grosse Isle and Sugar Island (the area to the south of Grosse Isle being classed in the census records as Lake Erie, Grosse Isle Township) and the area near Ecorse (Ecorse Township). Data for the Grosse Isle area are based on 1,762 angler trips during 1945 to 1951 and 1,061 angler trips during 1952; and for the Ecorse area, 119 angler trips during 1945 to 1951 (no records for 1952). Total number of fish recorded in anglers creels in the Grosse Isle area during 1952 was 8,466; and this represents only an unknown part of the total catch. Angling quality, expressed as catch of fish per hour of angling for the Grosse Isle area, was 1.32 for 1945 to 1951 and 1.69 for 1952; for the Ecorse area, 1.11 for 1945 to 1951. In comparison to general creel census records for other Michigan waters (data from Institute files), the Grosse Isle area provides angling of quality about equal to the average for all inland non-trout waters in Michigan (average catch per hour of 1.33 for 1945 to 1951, based on 272,095 records), and only a little below the average for all Great Lakes connecting waters in Michigan (average, 1.60 fish per hour for 1945 to 1951, based on 5,704 angler records). The comparison of creel records for the Grosse Isle area versus all connecting waters of the Great Lakes cannot be very precise because the figure for Grosse Isle includes some records (of fishing at the south end of the island) classed in the field as "Lake Erie," whereas the average for all connecting waters does not include similar "lake" records. The data are, however, adequate to show that angling quality in the Grosse Isle area compares favorably with angling quality throughout the state.

The general conclusions to be drawn from the study are that the Detroit River in the general area of Sugar and Stony islands has a valuable fish

fauna, consisting of: a good variety of game species; a good variety and an abundance of the smaller forage species on which the game species feed; not too great a population of carp, goldfish and other rough fishes; and not a very great population of predatory fishes. Thus, the fish fauna in the area is a valuable asset from the standpoint of angling.

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Approved by: A. S. Hazzard

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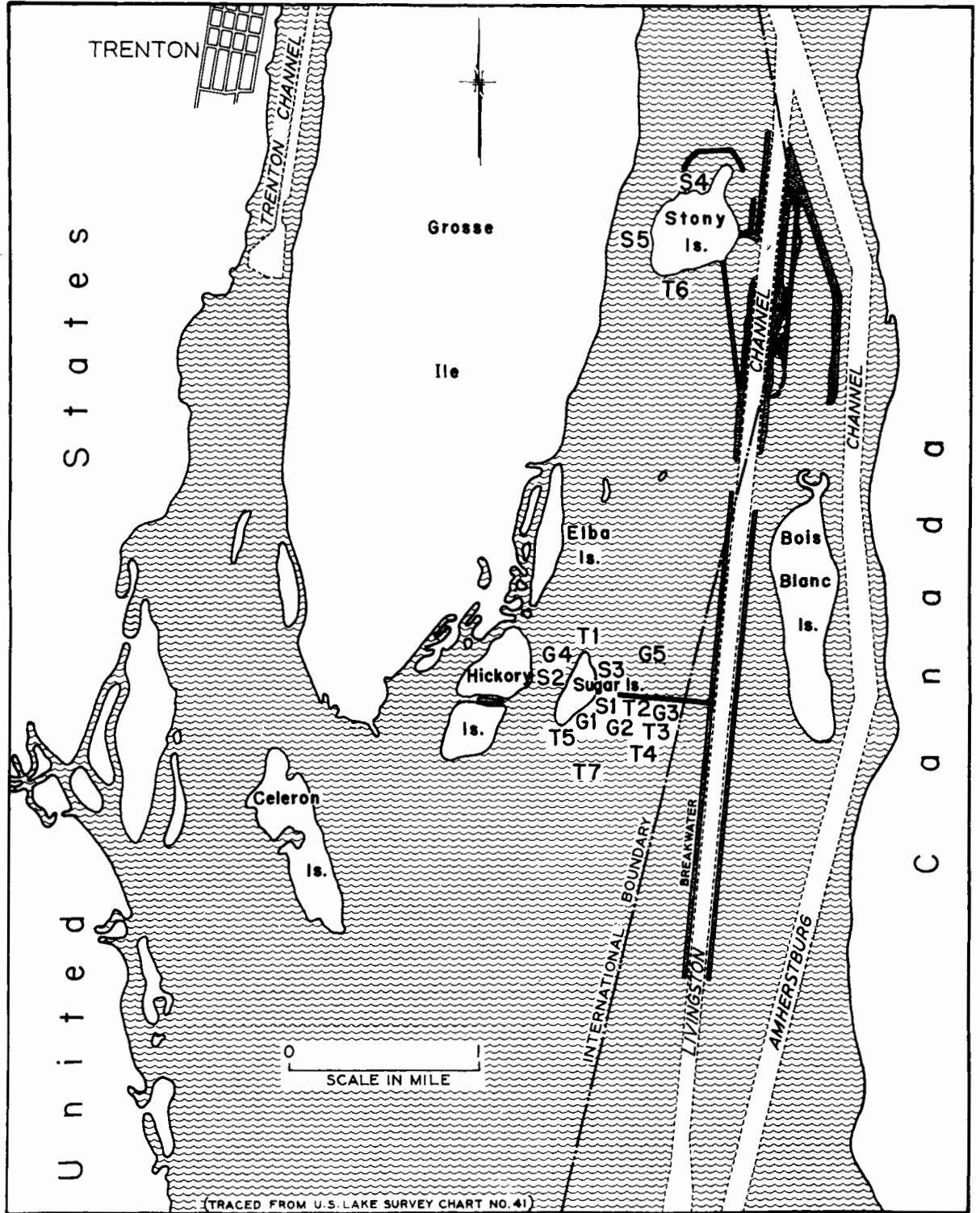


Figure 1. Map of the Detroit River in the vicinity of Sugar and Stony islands showing locations of fish collection stations.

Figure 2. Lifting gill net, Detroit River, south side of breakwater east of Sugar Island, September 8, 1952.



Figure 3. Trap netting, Detroit River, southeast of Sugar Island,
September 8, 1952.



Figure 4. Hauling 35-ft. bag seine, Detroit River, east side of Sugar Island, September 8, 1952.

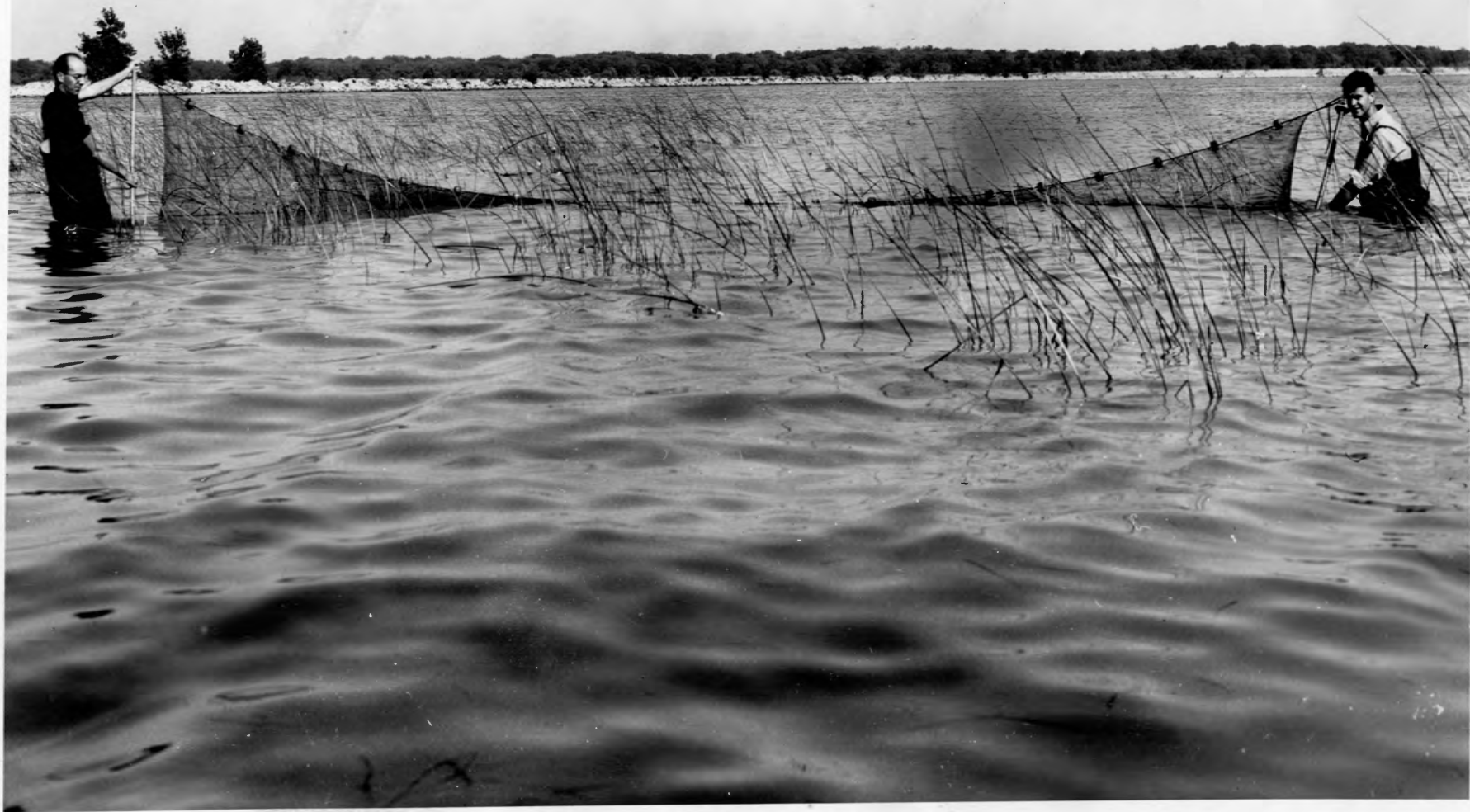


Figure 5. Hauling 125-ft. bag seine, Detroit River, east side of Sugar Island, September 8, 1952.



Figure 6. Gill-net and trap-net collections of September 4. (Two photographs, see also Figure 7)

- 3 Carp (largest, 17.7 inches)
- 5 Goldfish (largest, 9.9 inches)
- 11 Carp x goldfish hybrids (largest, 13.6 inches)
- 1 Bowfin
- 12 Gizzard shad

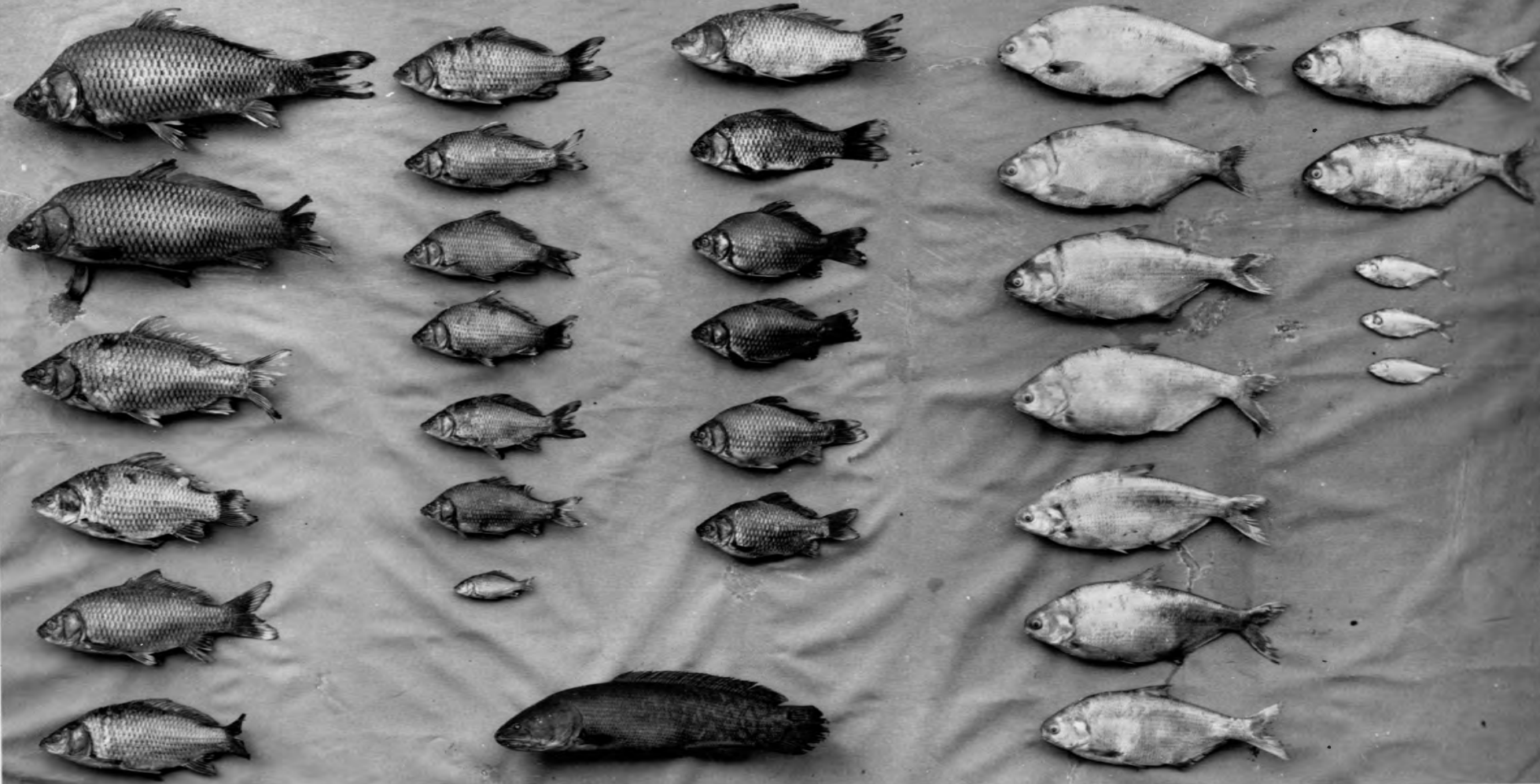


Figure 7. Gill-net and trap-net collections of September 4. (Two photographs, see also Figure 6)

4	Northern pike
1	Walleye
4	Yellow perch
4	Pumpkinseeds
7	Black crappies
1	Brown bullhead
18	Rock bass
3	White suckers
1	Spotted sucker
1	Freshwater drum

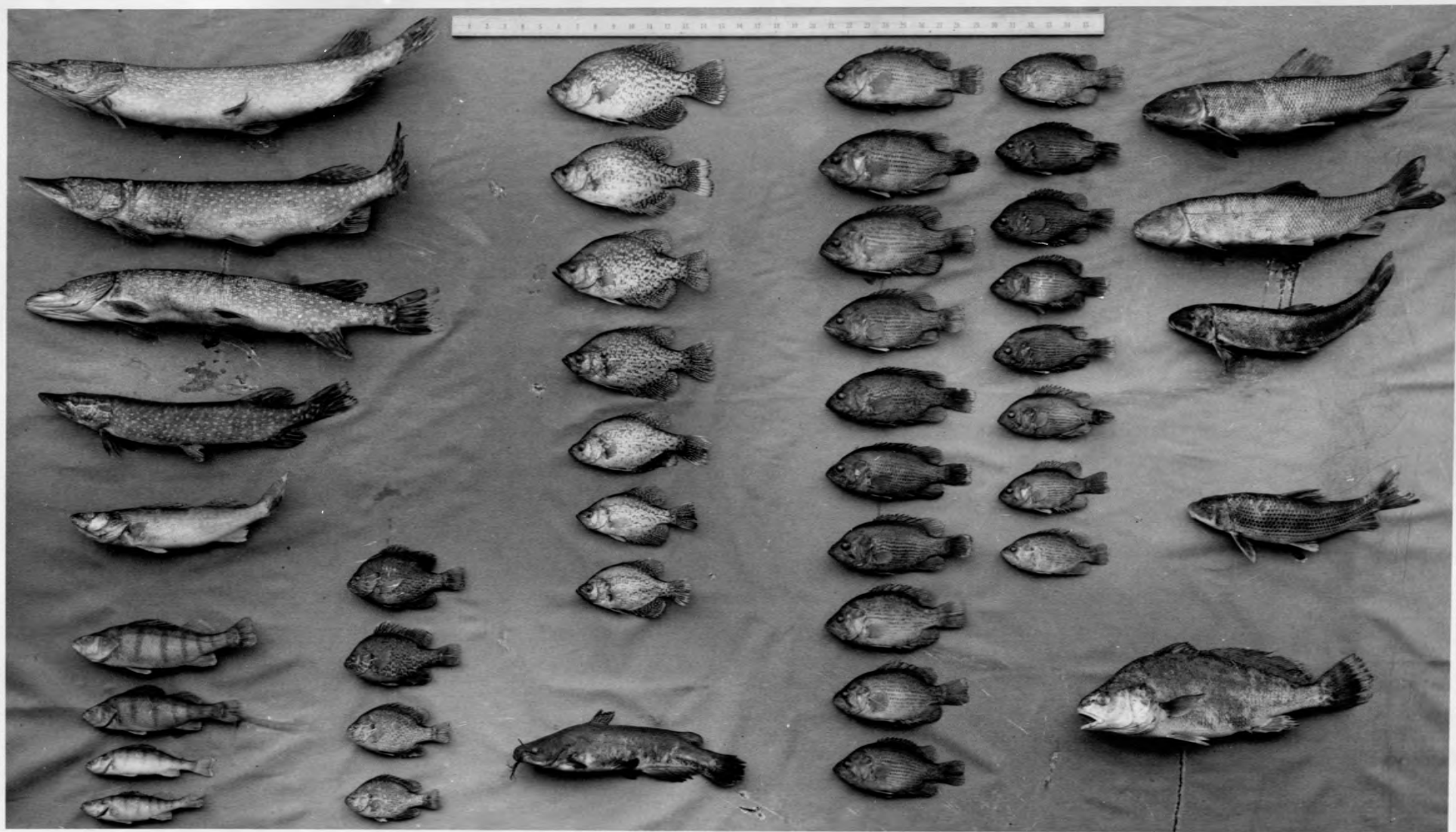


Figure 8. Gill-net and trap-net collections of September 5.

2	Black crappie
3	Gizzard shad
1	Pumpkinseed
1	White sucker
1	Yellow bullhead
1	Brown bullhead
18	Rock bass
5	Yellow perch
3	Walleye
1	Smallmouth bass
2	Northern pike
1	Longnose gar
6	Carp (largest, 14.5 inches)
3	Goldfish (largest 8.4 inches)
5	Carp x goldfish hybrids (largest, 16.5 inches)
2	Bowfin

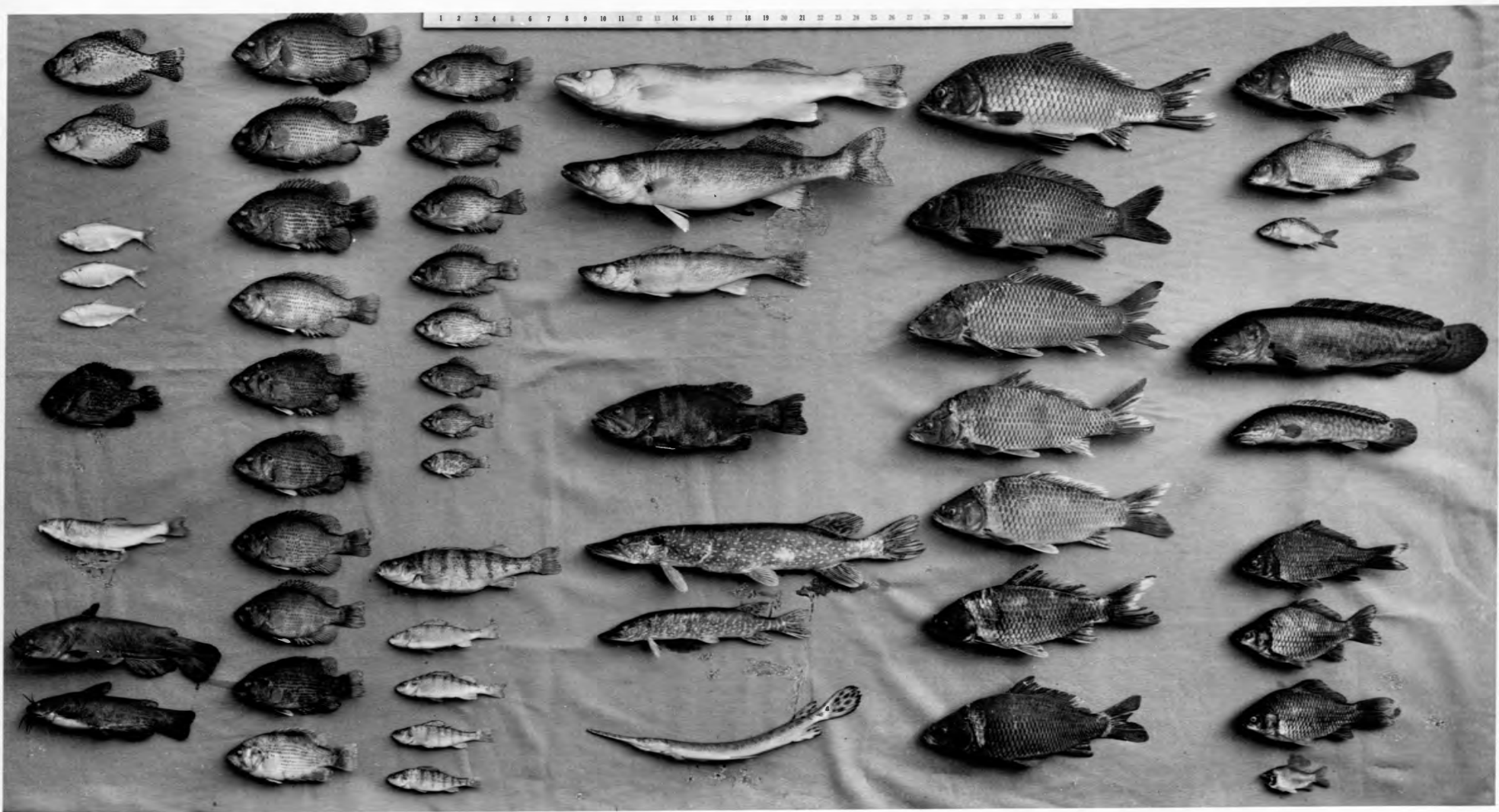


Figure 9. Gill-net and trap-net collections of September 6.

2	Walleye
1	Brown bullhead
1	Bowfin
1	White sucker
2	Black crappie
1	White crappie
4	Yellow perch
7	Rock bass
5	Gizzard shad
2	Goldfish
2	Northern pike
3	Pumpkinseeds

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35

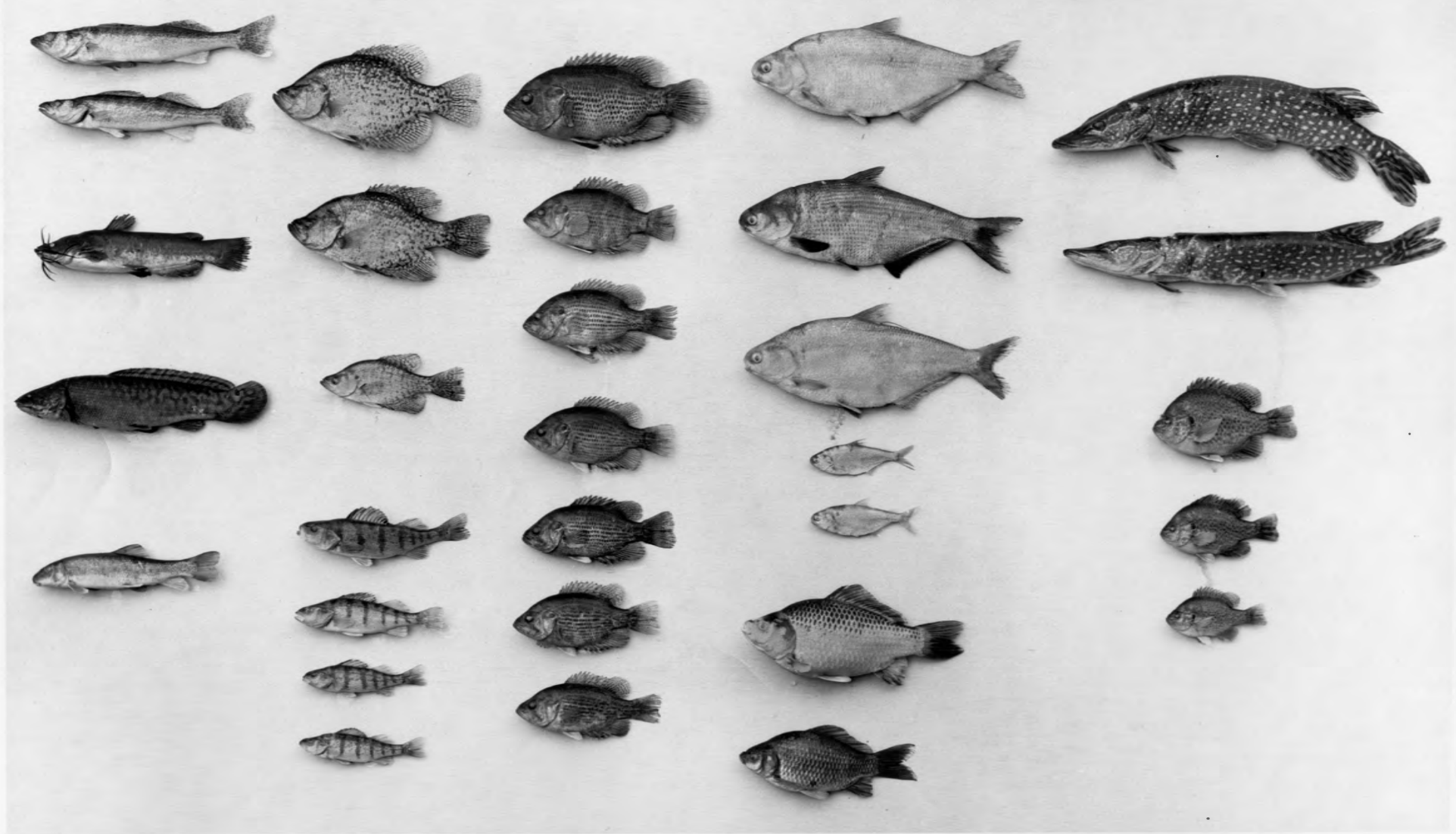


Figure 10. Gill-net and trap-net collections of September 7.

5 Yellow perch
1 White sucker
1 Carp (11.9 inches)
1 Carp x goldfish hybrid (13.3 inches)
1 Goldfish (9.2 inches)
1 Bowfin
3 Brown bullheads
2 Black bullheads
9 Rock bass
3 Black crappie
1 White crappie
3 Gizzard shad
1 Northern pike

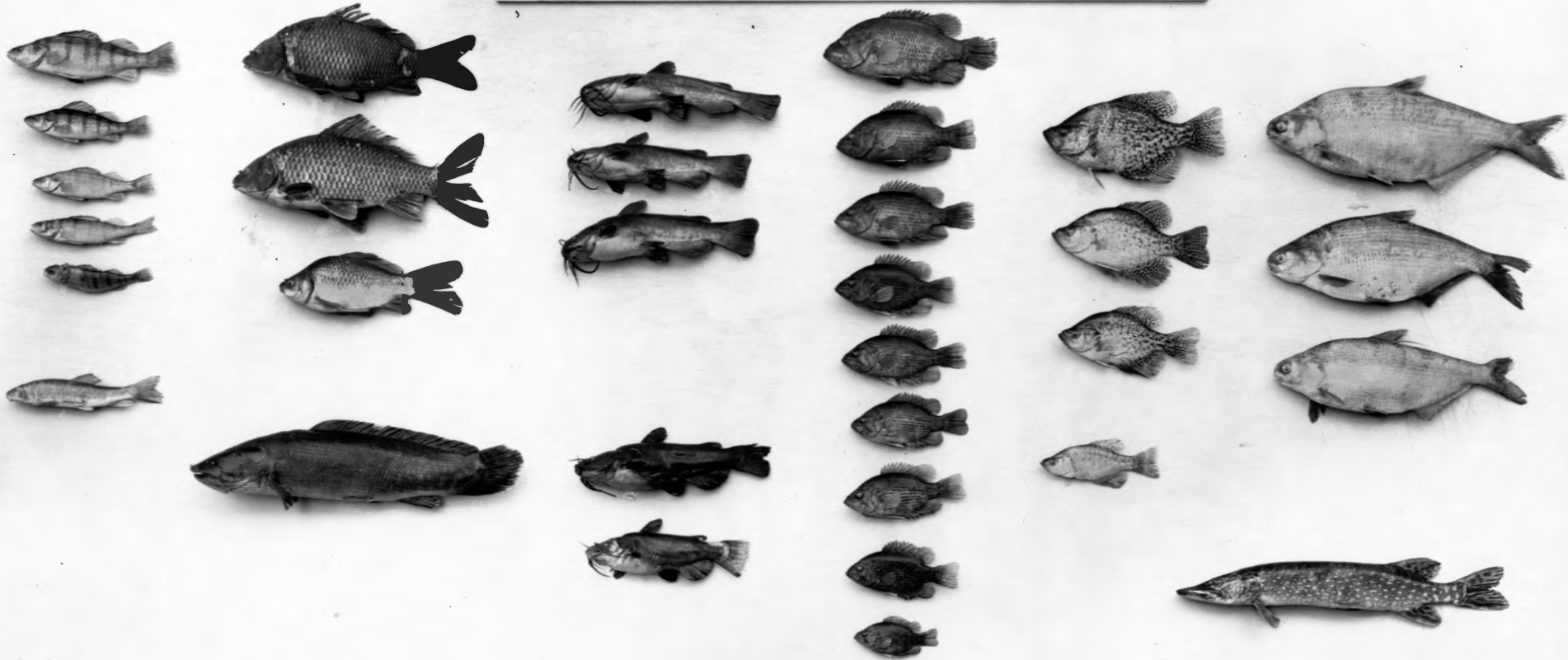
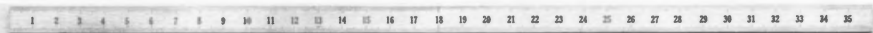


Figure 11. Gill-net and trap-net collections of September 8.

(Collection in 2 photographs, see also Figure 12).

- 8 Yellow perch
- 1 Crayfish
- 2 Pumpkinseeds
- 15 Rock bass
- 3 Northern pike (largest, 28.8 inches)
- 3 Bowfin
- 5 Black crappie
- 4 Gizzard shad
- 7 White suckers

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35

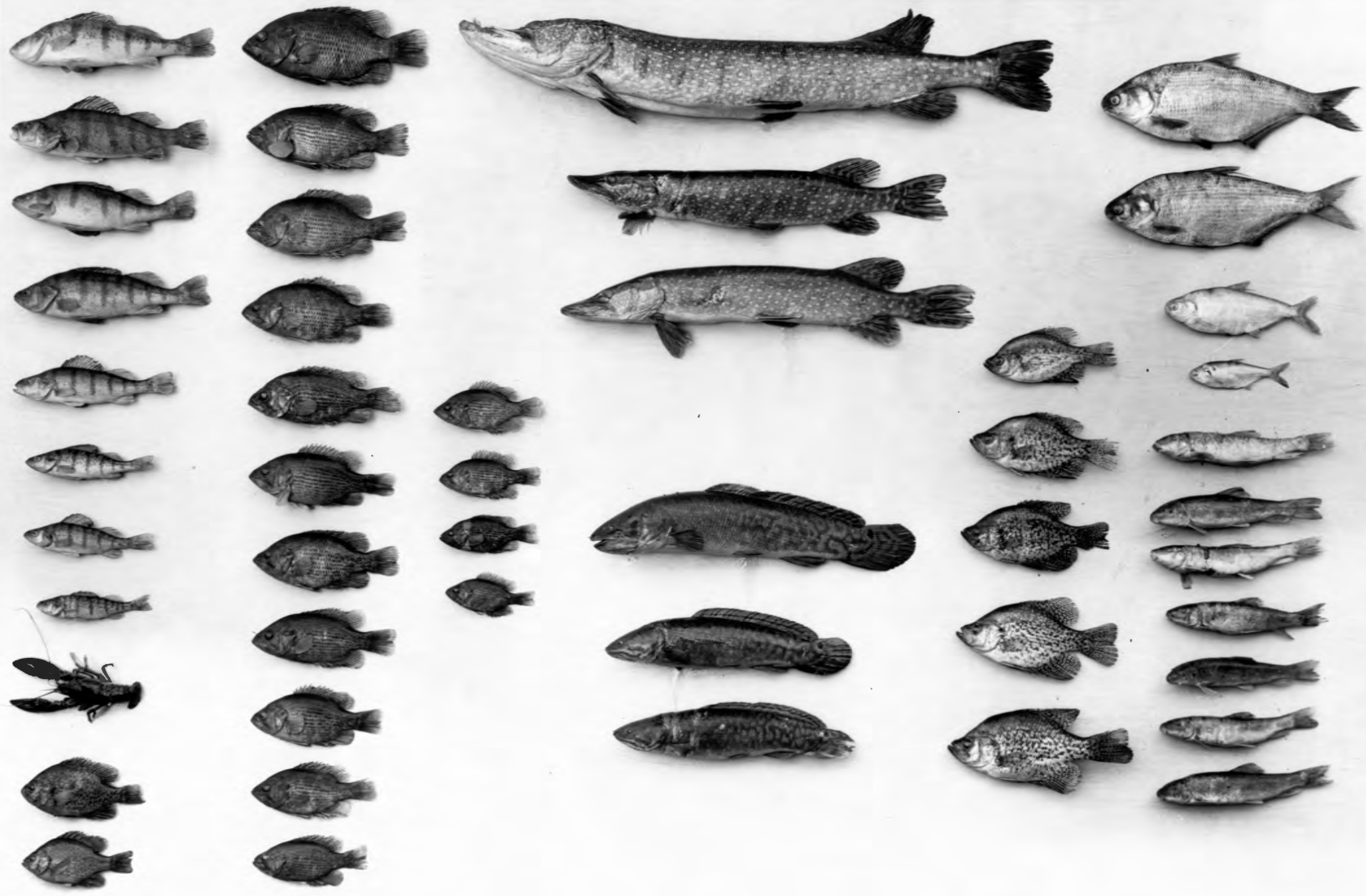


Figure 12. Gill-net and trap-net collections of September 8

(Collection in 2 photographs, see also Figure 11.)

17 Carp (4.0-22.6 inches)

12 Carp x goldfish hybrids (9.0-17.3 inches)

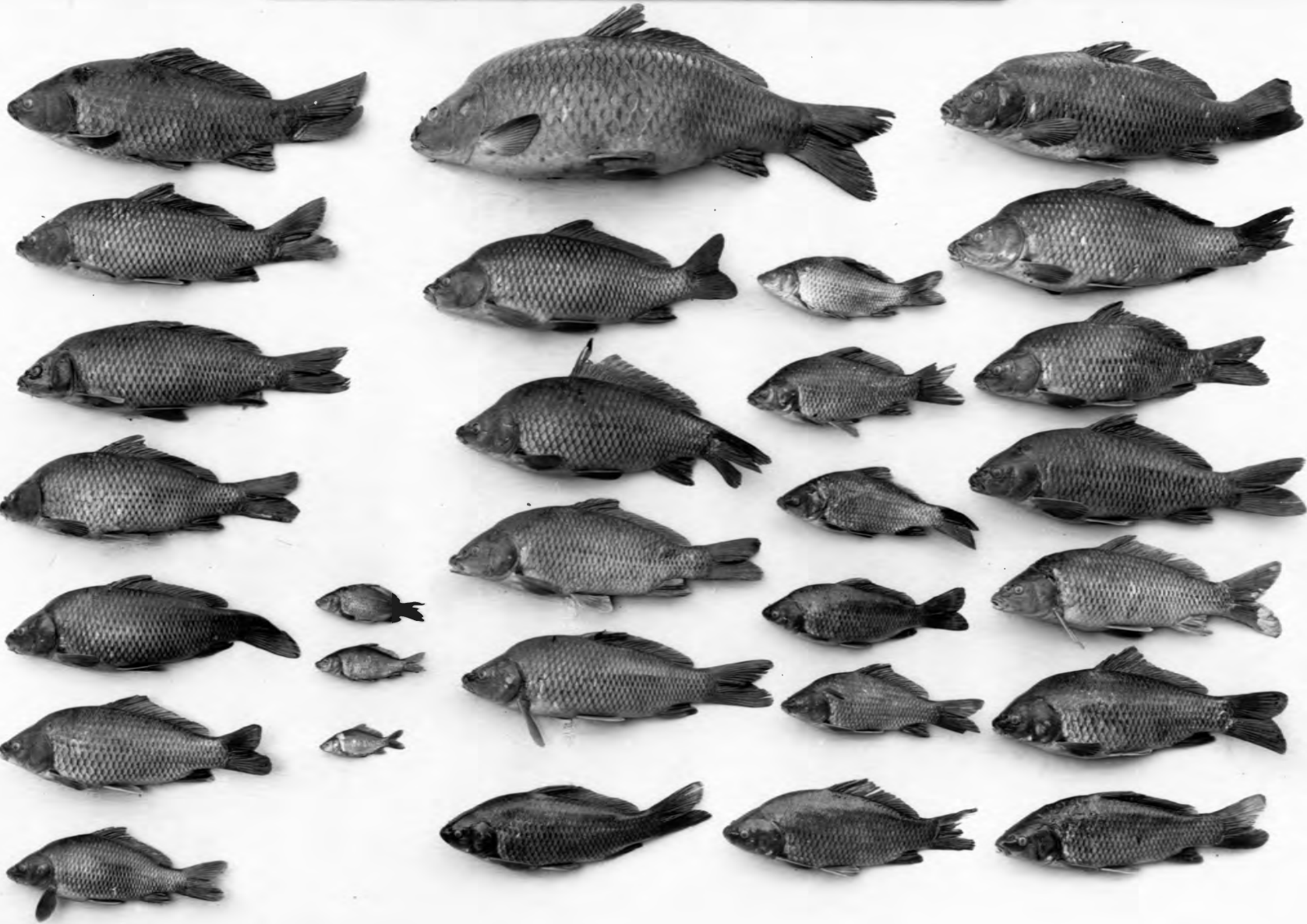


Figure 13. Gill-net and trap-net collections of September 9.

38 Rock bass
2 Northern pike
2 Walleye
1 Smallmouth bass
9 Black crappie
5 Pumpkinseeds
1 Black bullhead (6.3 inches)
1 Yellow bullhead (13.9 inches)
12 Brown bullheads (8.7-11.7 inches)
8 Yellow perch
3 White sucker
1 Hog sucker
1 Carp x goldfish hybrid
1 Goldfish

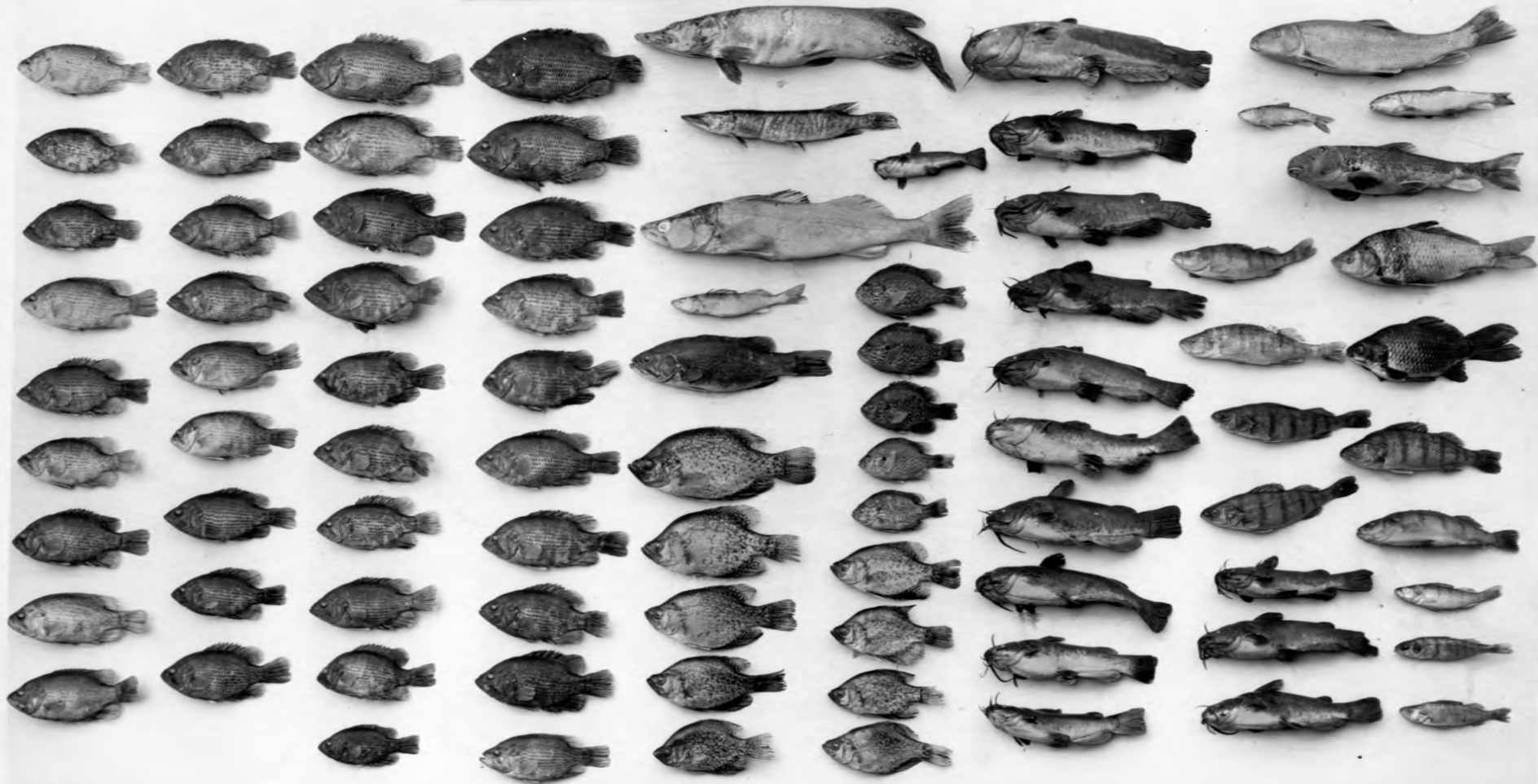


Figure 14. Gill-net and trap-net collections of September 10.

- 7 Pumpkinseeds
- 1 Carp
- 9 Black crappie
- 2 Northern pike (largest, 21.0 inches)
- 2 White suckers
- 2 Largemouth bass
- 2 Smallmouth bass
- 1 Bowfin
- 4 Brown bullhead
- 13 Yellow perch

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35

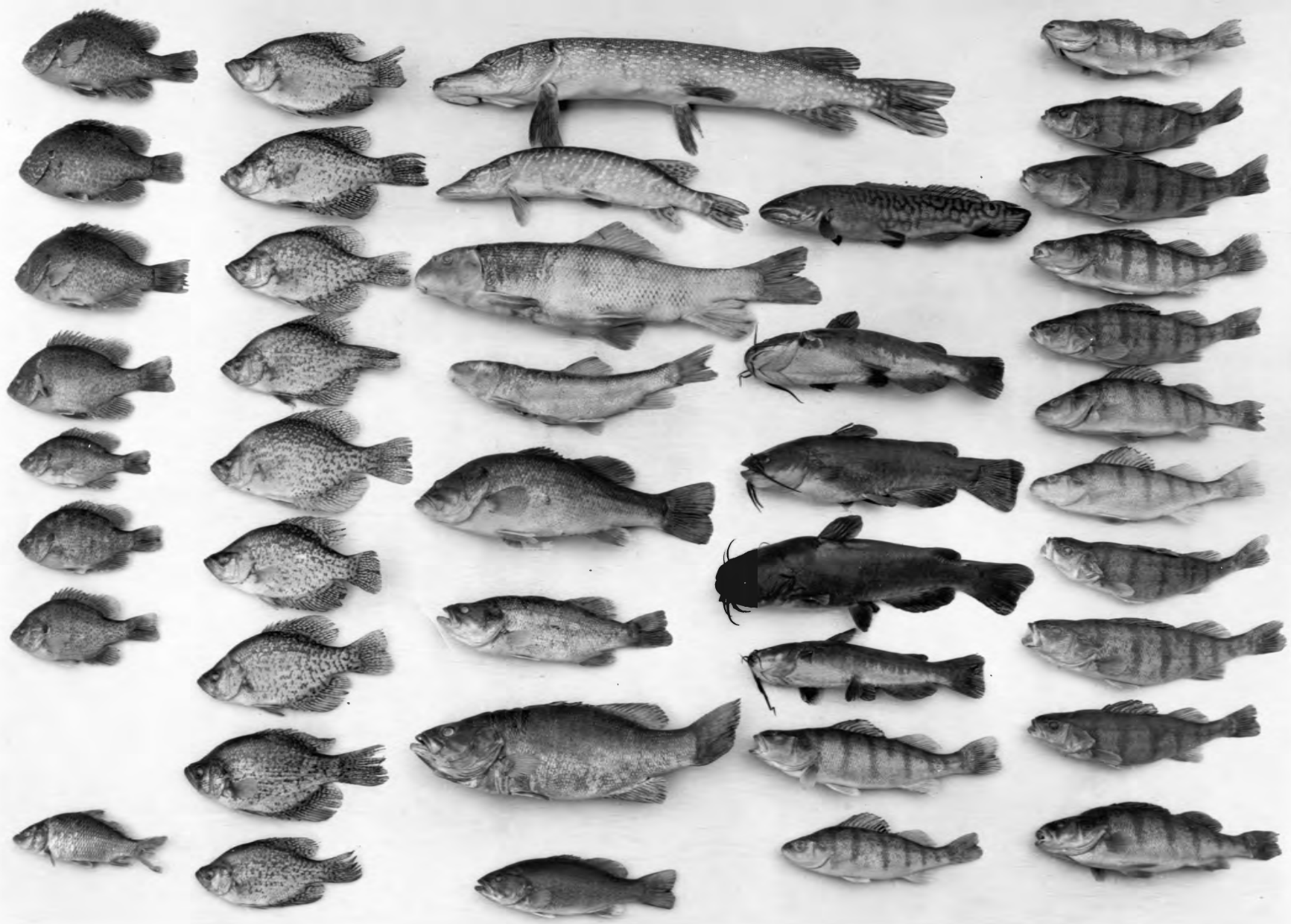


Figure 15. Gill-net and trap-net collections of September 11.

- 3 Brown bullheads
- 1 Black crappie
- 1 Freshwater drum
- 1 White sucker
- 1 Stonecat
- 7 Yellow perch

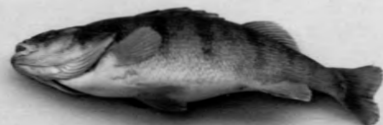
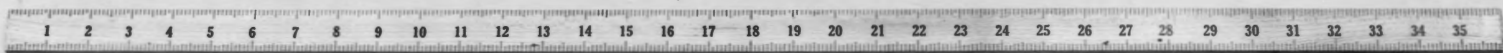


Figure 16. Seining collection S1, east shore Sugar Island, September 8.

(Collection on 3 photographs, see also Figures 17 and 18.)

65 Gizzard shad
2 Longnose gar
1 Carp x goldfish hybrid
15 Carp
4 Goldfish
87 White suckers

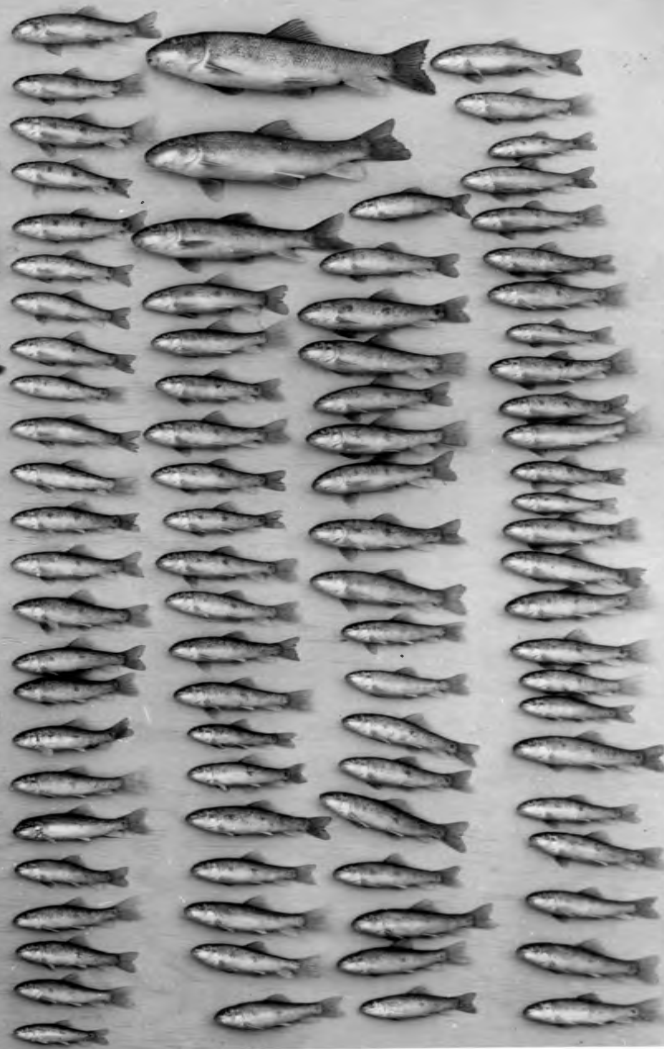
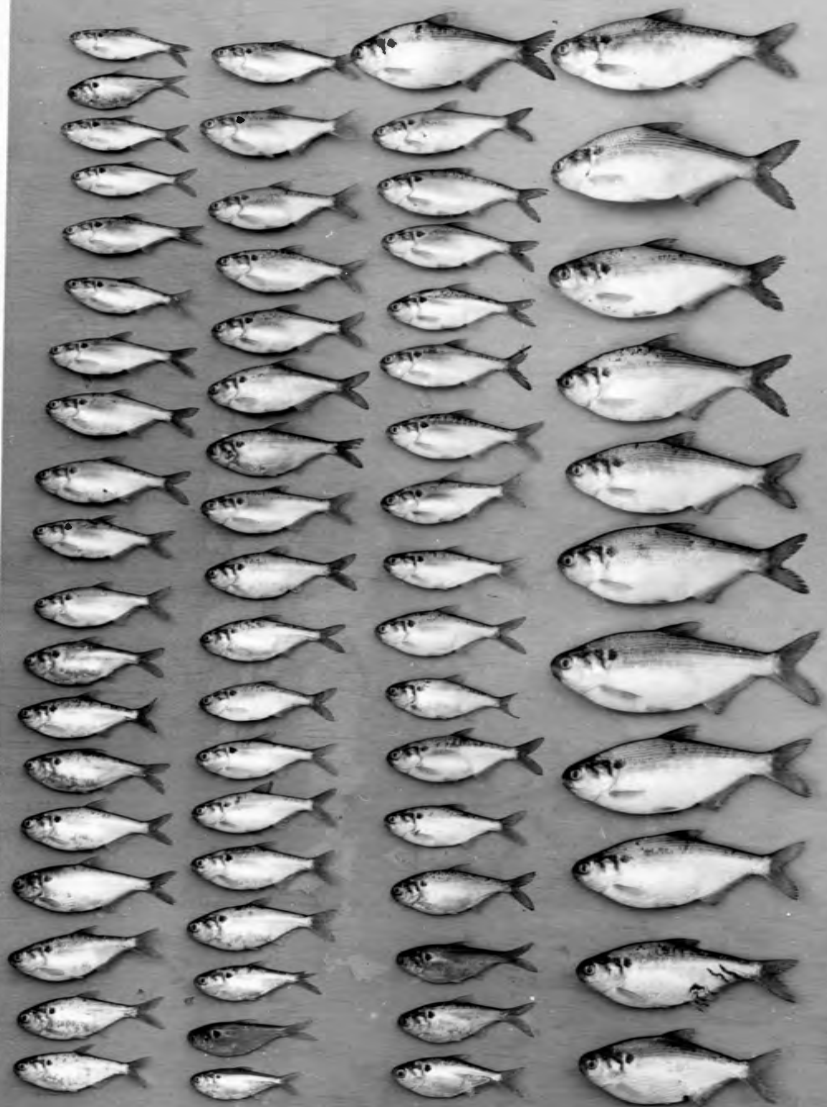
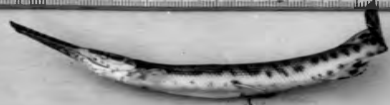


Figure 17. Seining collection S1, east shore Sugar Island, September 8.

(Collection in 3 photographs, see also (Figures 16 and 18.)

66 Rock bass
11 White bass
1 Great Lakes muskellunge
6 Smallmouth bass
9 Pumpkinseeds
23 Yellow perch
3 Black crappies
11 White crappies

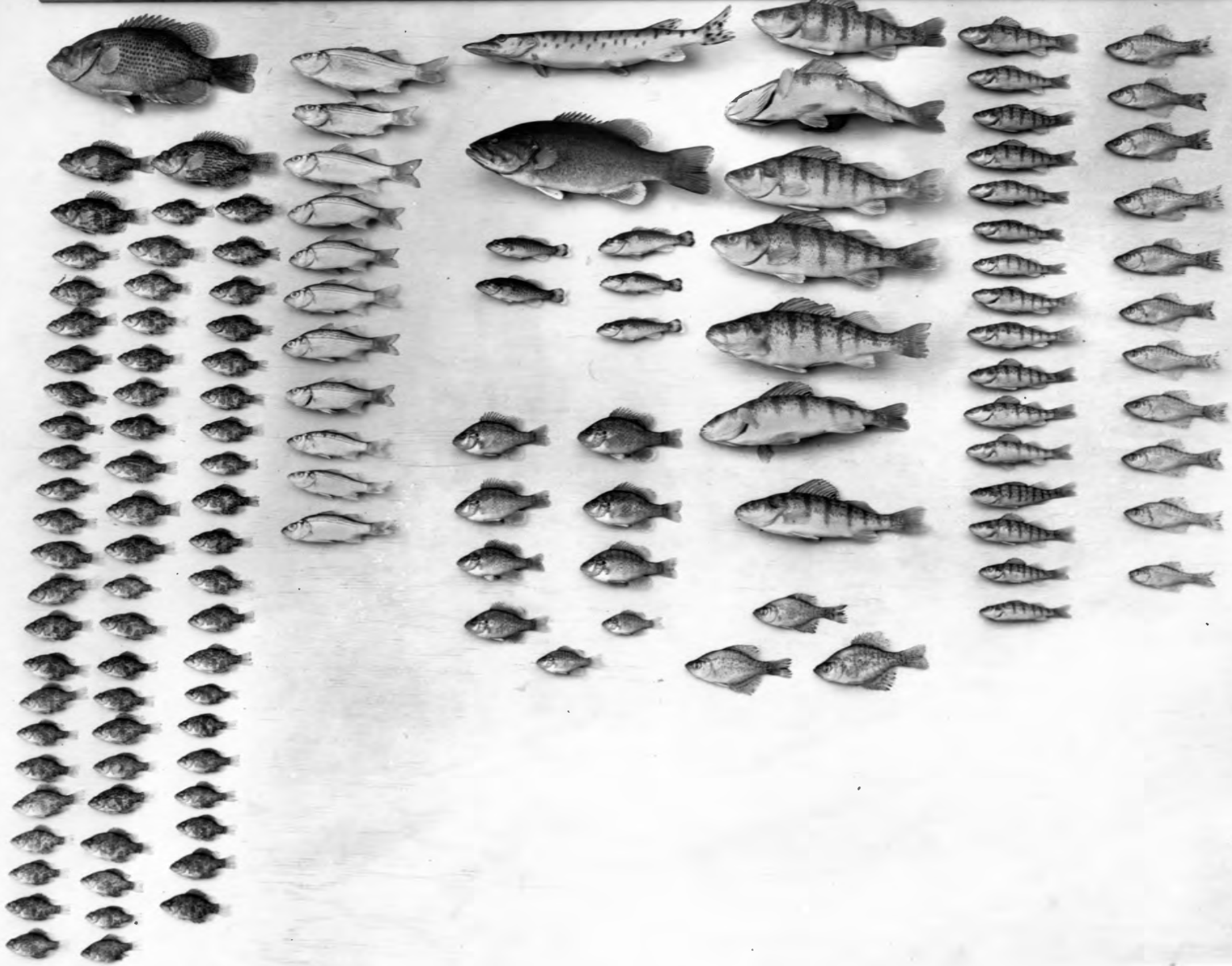
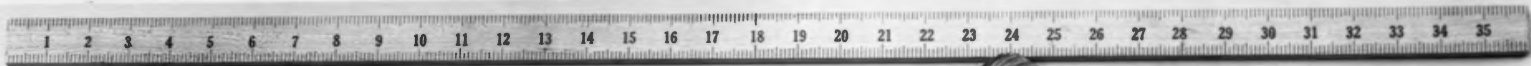


Figure 18. Seining collection S1, east shore Sugar Island, September 8.
(Collection in 3 photographs, see also Figures 16 and 17.)

269 Brook silversides
19 Logperch
1 Blackside darter
4 Crayfish
2 Troutperch
2 Bluntnose minnows
6 Common shiners
4 Emerald shiners
1 Golden shiner
4 Mimic shiners

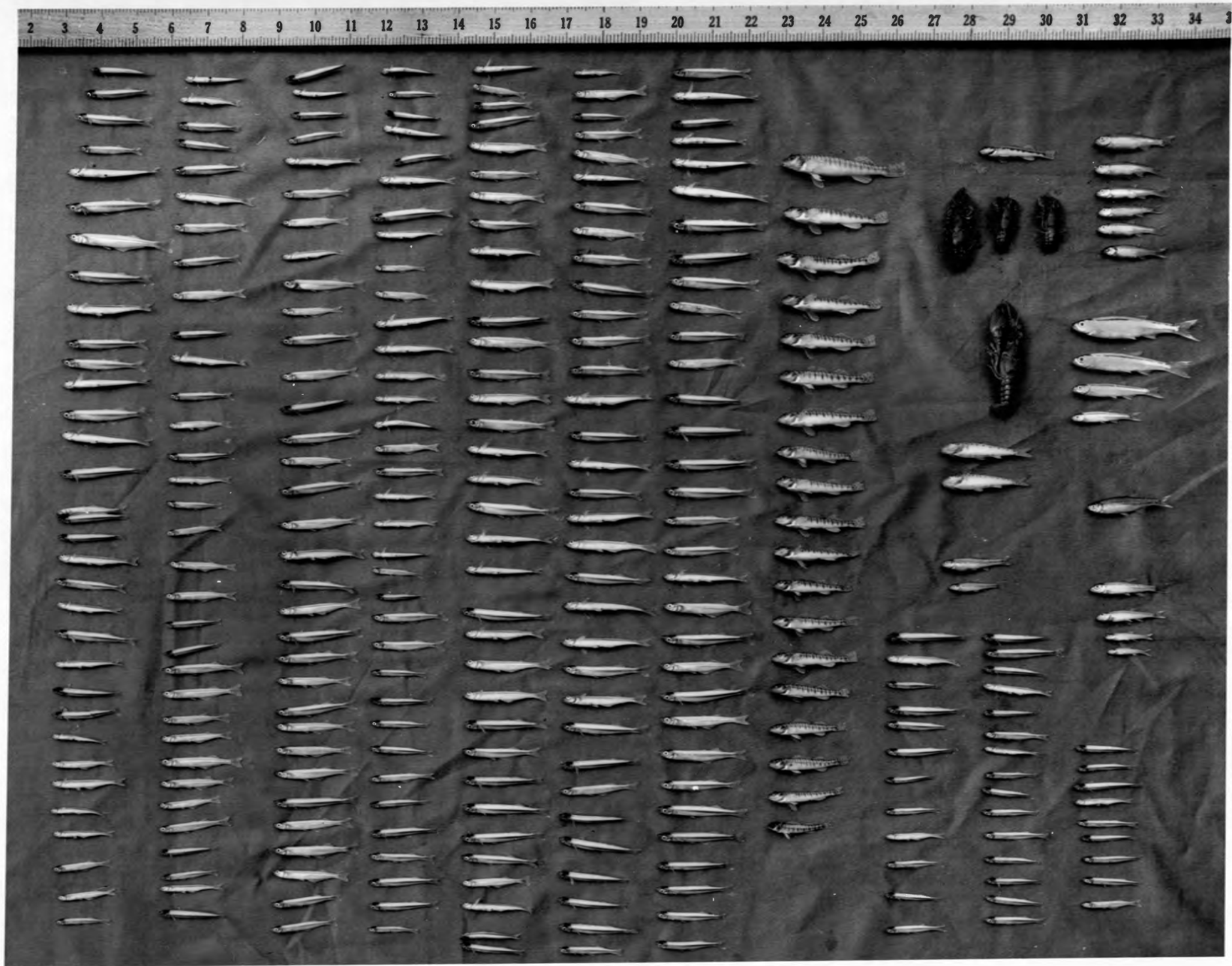


Figure 19. Seining collection S2, west side Sugar Island, September 8.

9 White suckers
1 Northern redhorse
2 River chubs
1 Mimic shiner
1 Johnny darter
25 Spottail shiner
8 Common shiner
2 Great Lakes muskellunge
1 Gizzard shad
3 Carp
4 Goldfish
5 White bass
1 Pumpkinseed
9 Rock bass
23 Yellow perch

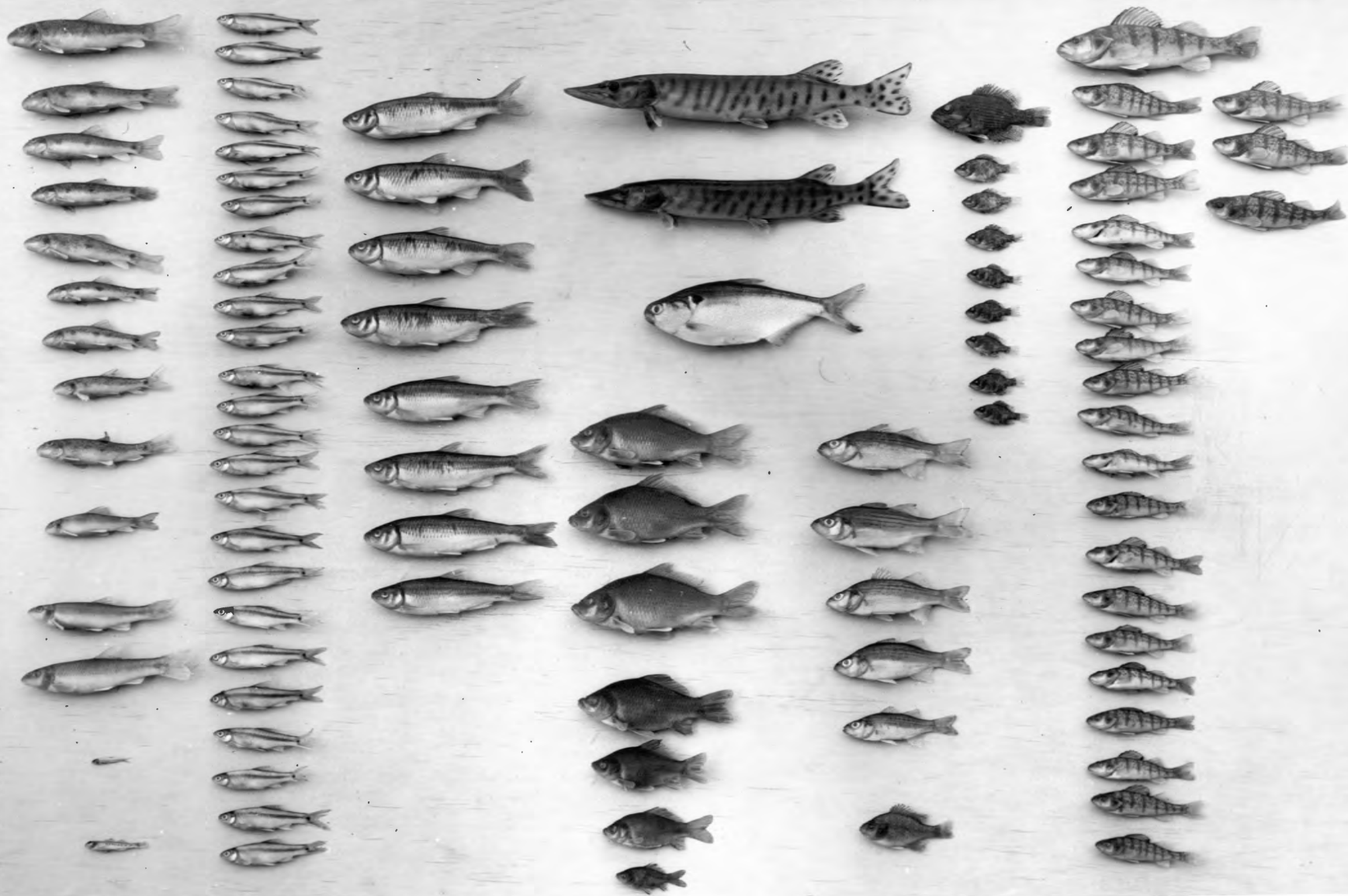
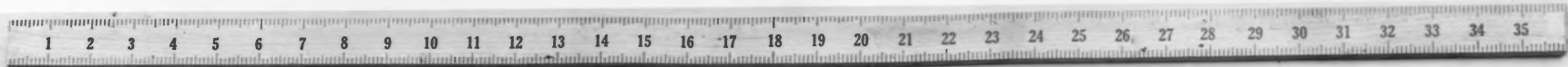


Figure 20. Seining collection S3, northeast side Sugar Island,
September 9.

11	Channel darters
7	Johnny darters
3	Sand shiners
13	Logperch
5	Common shiners
2	Gizzard shad
2	Smallmouth bass
2	Rock bass
2	White suckers
1	River chub
3	Hornyhead chub
4	Yellow perch
1	Crayfish
7	Emerald shiners
3	Spottail shiners
1	Bluntnose minnow
35	Brook silversides

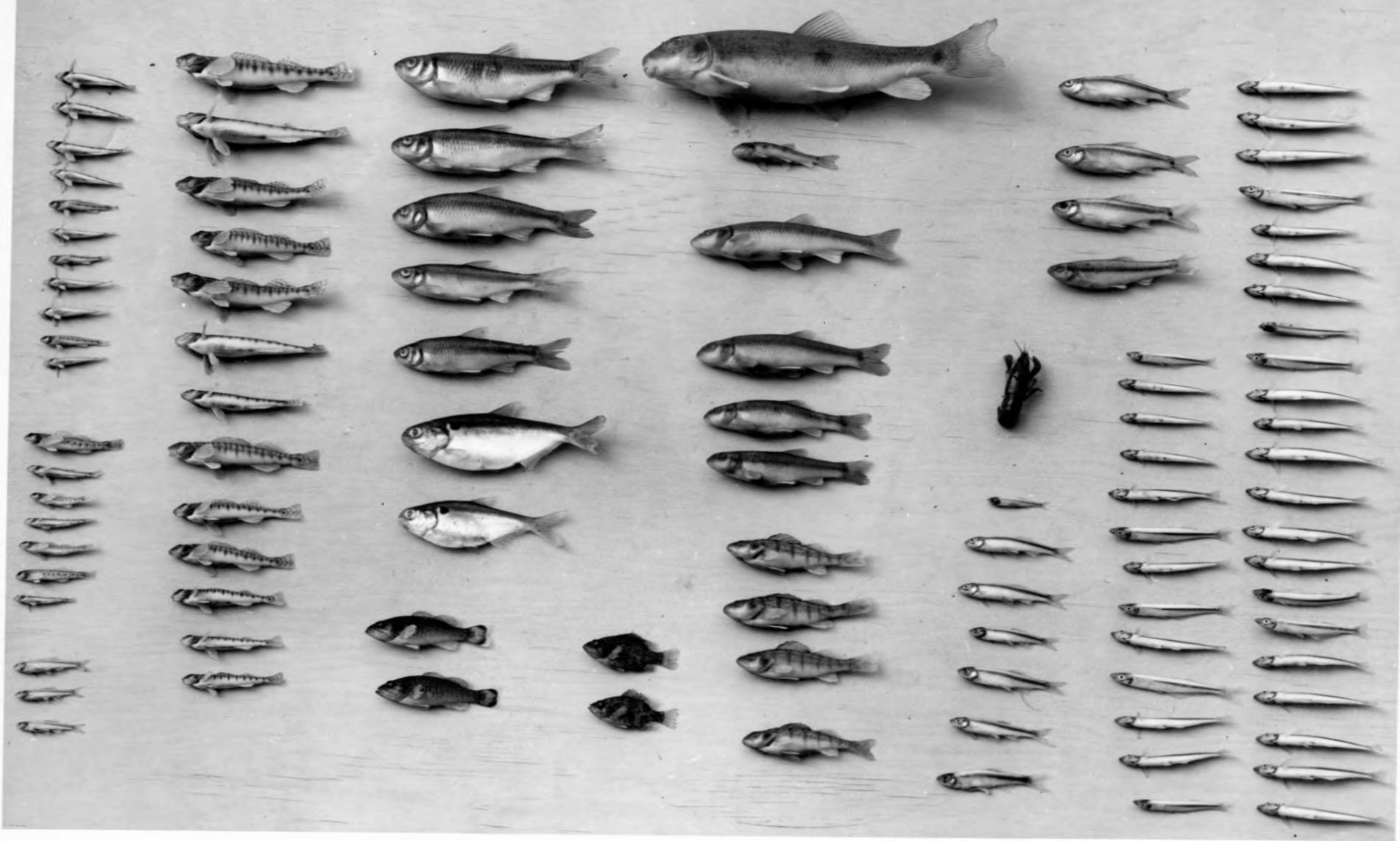


Figure 21. Seining collection S4, northwest shore Stony Island,
September 9.

190	Golden shiner
2	Largemouth bass
2	Rock bass
5	Yellow perch
1	Bluntnose minnow
7	Least darters
8	Brook silversides

2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35



Figure 22. Seining collection S5, west side Stony Island, September 9.

70	Golden shiners
44	Brook silversides
147	Blacknose shiners
1	Banded killifish
1	Emerald shiner
6	Common shiners
1	Sand shiner
6	Least darters
2	Rock bass
13	Bluegills
2	Pumpkinseeds
57	Bluntnose minnows

Handwritten practice row 1, column 1: A series of connected, slanted, cursive-like characters.

Handwritten practice row 2, column 1: A series of connected, slanted, cursive-like characters.

Handwritten practice row 3, column 1: A series of connected, slanted, cursive-like characters.

Handwritten practice row 4, column 1: A series of connected, slanted, cursive-like characters.

Handwritten practice row 5, column 1: A series of connected, slanted, cursive-like characters.

Handwritten practice row 6, column 1: A series of connected, slanted, cursive-like characters.

Handwritten practice row 7, column 1: A series of connected, slanted, cursive-like characters.

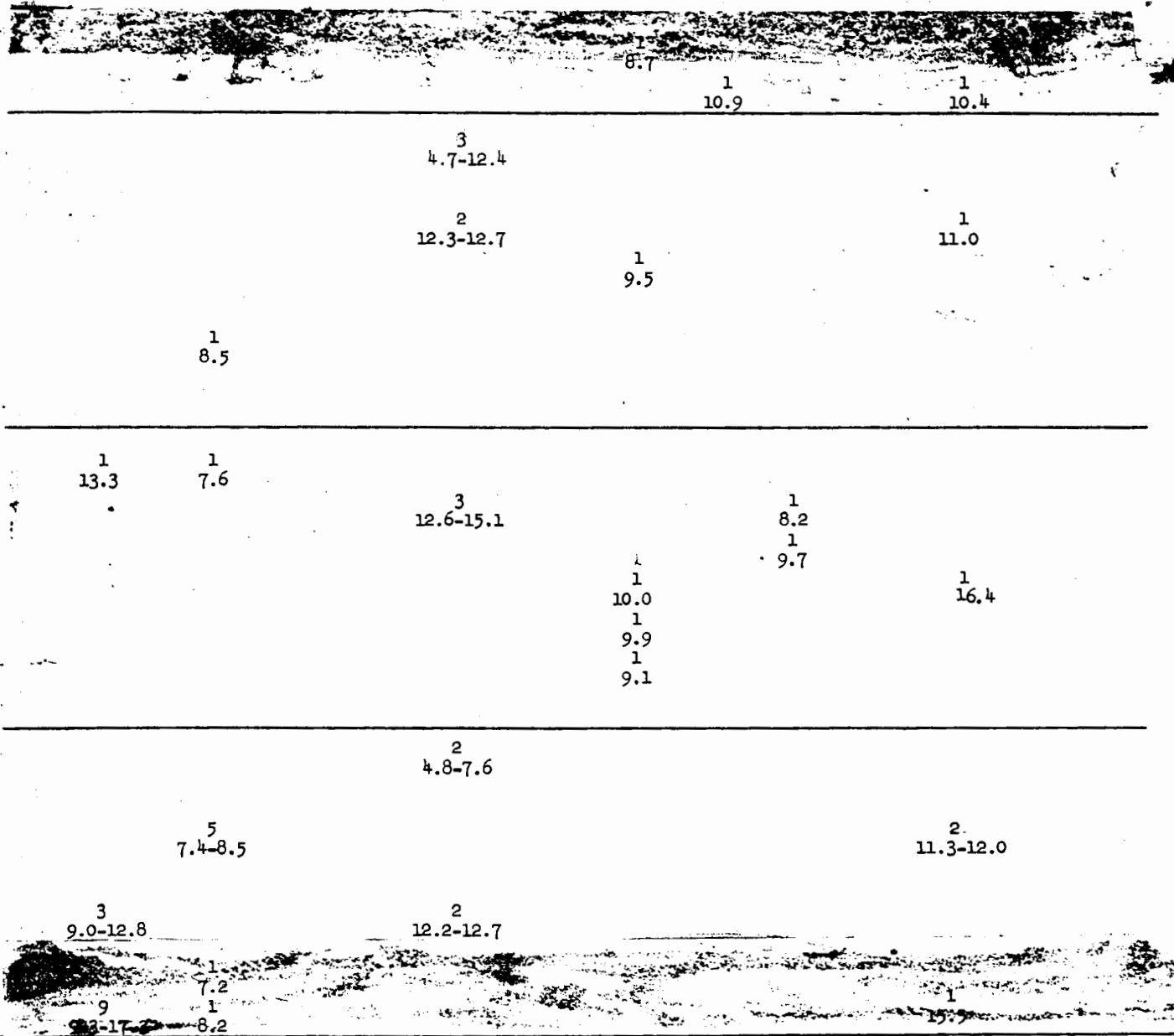
Handwritten practice row 8, column 1: A series of connected, slanted, cursive-like characters.

Handwritten practice row 9, column 1: A series of connected, slanted, cursive-like characters.

Appendix

111-net stations (G.1-G.5) and seven trap-net stations (T.1-T.7), listed by date. For locations of stations, see Figure.1.

Coarse fishes							Obnoxious fishes					Date	
Carp x goldfish hybrid	White sucker	Spotted sucker	Hog sucker	Gizzard shad	Freshwater drum	Brown bullhead	Yellow bullhead	Black bullhead	Stoneroll	Bowfin	Longnose gar	Silver lamprey	
3 11.4-13.6	1 17.0			3 4.5-12.5									September
1 10.7	1 16.8												
4 8.2-11.9	1 13.6	1 12.3		9 5.2-13.9									
2 8.1-8.6					1 16.1					1 16.9			
1 8.6						1 12.5							
2 13.8-16.5	1 8.2			3 4.8-5.4								1 15.5	September
1 12.5													
2 9.1-11.7										1 16.6			
							1 10.9			1 10.4			
				3 4.7-12.4									September



reduced

reduced

reduced

reduced

		18.4-28.8		8.5			17.5								
		6.1-10.0		4.8-6.6		7.6-9.4		6.9-8.9		6.4-7.0		5.7		10.3-16.7	
September 9	G.1		1	5	1	1								2	
	G.3		1	7.7	5.7-8.9	4.0	7.1							7.3-12.0	1
	G.4		19.7	1	18.7										10.9
	T.1		12.2			1	3	1				3	2		
	T.4					6.7	7.3-7.5	10.3				5.3-6.2	12.2-14.3		
	T.5		1			1	7					1	1		
	T.6		11.2			8.0	6.7-9.0					5.3	15.8		
						4	29	5				2	8		16
						8.8-9.0	5.4-9.5	6.0-7.6				5.3-5.4	11.5-20.7		29.9
September 10	G.1														
	G.3		1					3						1	
	G.4		12.8					7.1-7.9						12.6	
	G.5		8.9											1	5.8
	T.1					1	3	1				1	3		
	T.5					10.0	6.2-7.0	8.2				5.4	9.6-16.2		
	T.6		1				2	2					1		
	T.7		11.8		21.0		8.4-8.9	6.2-7.6					18.1		
						8	18	3				6	9		
						8.1-10.3	5.0-9.6	7.2-7.8				4.8-6.9	10.3-21.0	8.7-10.2	
						4	5								
			7.5		12.5		7.7-9.1	6.2-8.5							
September 11	T.6					5	12	1						1	
	T.7					6.5-10.0	5.3-9.9	6.7					20.3	8.7-10.0	
						2	4								
						6.6-7.1	5.6-8.5								

September 12

12.5
1

16.9
1

16.1
1

9.8
1
8.1-8.6
2

1
7.2
9
3-17-8.2

2 5.5-8.1	1 12.4	1 12.9		
		1 12.9		
	1 14.1		1 8.7	1 6.3
1 18.3			2 9.5-11.7	1 13.9
13 8.6-16.9			9 8.8-11.7	

	1 10.8	7 5.9-6.6		
		2 13.1-16.1		
	1 15.8			
			1 10.6	
			1 19.3	
3 8.9-14.7			1 23.8	1 7.3
			1 12.1	
			3 9.1-11.1	

4 8.6-15.5		1 15.5	3 9.9-12.3	
	1 11.9			1 8.2

Blank section

1 6.1-8.3	10	2 3.7-7.0	5 5.3-10.0	1 11.6	1	G.1
1 6.2		2 4.5-14.0				September 5

September

September

September

September 5

Appendix

Table 5. Tentative Growth Rate of Net-Caught Fish from Detroit River, Wayne County, September 4 to 11, 1952

Species	Age					
	0	I	II	III	IV	V VI
Black crappie (Growth above state average)		6.0 6.4 6.7 7.0 7.6 7.8	6.7 6.7 7.1 7.2 7.4 7.9 8.8 9.1	7.5 8.2 8.5 9.0 9.3 10.0	10.3	
Average:		6.9	7.6	8.7	10.3	
State average:			5.9	8.0	9.0	
Largemouth bass (Growth apparently above average)		8.9		11.8		
Average:		8.9		11.8		
State average:		6.1		10.0		
Northern pike (Growth considered above average)	11.6 12.2	16.3 17.1 17.4 18.0 18.4 18.6 19.7 21.0	25.2	23.3 28.8		
Average:	11.9	18.3	25.2	26.0		
State average: (Data not available)						
Pumpkinseeds (Growth considerably above average)		4.8 5.0 5.1 5.3 5.3 5.3 5.4 5.4	4.4 5.3 5.7 5.7 6.0 6.2 6.2 6.3 6.4 6.5	6.4 6.5 6.8 6.9		
Average:		5.2	5.9	6.6		
State average:		2.9	4.1	4.9		
Smallmouth bass (Growth apparently above average)		7.5		11.2 11.8 12.8		

Average:	7.5	11.9
State average:	5.9	11.2

Walleye	7.7	11.2	17.8
(Growth probably average or above)	9.7	12.8	18.7
		13.0	19.2

Average:	8.7	12.3	18.6
State average: (Not available)			

Rock bass	3.7	4.8	6.0	7.4	7.6	9.2
(Growth considerably above average)	3.9	5.2	6.2	8.4	8.0	9.3
	4.2	5.4	6.4		8.2	9.5
	4.6	5.6	6.6		8.6	
		5.8	6.8		8.8	
			7.0		9.0	
			7.2			
			7.8			

Average:	4.1	5.4	6.2	7.9	8.4	9.3
State average	3.2	4.3	5.2	6.2	7.3	7.9

White crappie	6.0
(Growth probably average or above)	6.5

Average:	6.2
State average: (Data not available)	

Yellow perch	5.3	5.5	8.6
(Growth far above average)	5.7	6.3	9.4
	5.9	7.4	9.8
	6.1	7.6	10.0
	6.5	7.7	10.3
	6.7	8.0	
	7.0	8.2	
	7.2	8.8	
		9.0	
		9.1	
		9.6	
		10.2	

Average:	6.3	8.1	9.6
State average:	4.1	5.8	6.4

Appendix

Table 6. Summary of general creel census data for the Detroit River and that portion of Lake Erie around the south end of Grosse Isle, separated according to Grosse Isle area and Ecorse area (no records for upper part of the river)

Years:	Grosse Isle Township		Ecorse Township	
	1945-1951	1952 (to Aug. 24)	1945-1951	1952 (to Aug. 24)
Number of anglers:	1,762	1,061	119	no records
Number of fish:				
Smallmouth bass	...	122	21	...
Largemouth bass	...	3	...	...
Walleye	35	630	237	...
Northern pike	695	88	34	...
Bluegill	...	1	...	...
Pumpkinseed	1	36	...	...
Rock bass	209	1,804	4	...
Crappies	7	40	...	...
Perch	5,098	4,762	55	...
White bass	643	544	213	...
Sheepshead	...	436	...	...
Sauger	...	...	36	...
Bullhead	3	...	...	...
Carp	1	...	...	...
Sucker	1	...	...	...
Total number of fish	6,693	8,466	600	...
Catch/hr. all species	1.32	1.69	1.11	...