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MICHIGAN DEPARTMENT OF CONSERVATION  
COOPERATING WITH THE  
UNIVERSITY OF MICHIGAN

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ANN ARBOR, MICHIGAN

September 21, 1936

REPORT NO. 373

RECORDS AND NOTES CONCERNING A COLLECTION OF  
FISH FROM THE HURON RIVER AT ANN ARBOR

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The Argo dam, which is on the Huron River and within the city limits of Ann Arbor, Michigan, is being repaired, and in order to repair the dam, all of the impounded water had been drained off. During certain portions of the day the stream flow above the Argo dam was also stopped, by closing the gates of the Barton Hills dam, which is slightly more than two miles upstream from the Argo dam. The draining of the impounded waters of the Argo dam and stopping of the stream flow by the Barton Hills dam has resulted in two miles or so of the Huron River between these dams being reduced to a series of shallow pools with a slight trickle connecting them.

With the lowering of the impounded waters, many small fish, particularly fingerling sunfishes and large-mouth bass, were left stranded on the banks or in the small pools that were left by the receding waters. The rest of the fishes have been crowded into the series of pools along the old bed of the river.

The lowering of the water and concentration of the fish created an ideal opportunity to study the fish life of the river at this point. It also made fishing conditions with hook and line very good, and there were many fishermen taking advantages of this situation. Most of the fishermen were taking limit catches of bluegills, and several pike were caught. On the evening of September 10, 1936, I spent 2 hours examining the

fish left stranded and dead by the receding waters or else stranded in the shallow pools, and during that period I also examined the fish caught by several fishermen.

On September 11, 1936 David S. Shetter and I spent the entire afternoon, with a 25' bag seine and 2 smaller seines, seining fish from the pools above and below the Ann Arbor-Whitmore Lake bridge.

Due to the shallowness of the pools, the fish could be readily seined. About 1/4 of a mile of stream was seined and a few of the pools were reseined several times. Reseining of the pools indicated that practically all of the fish species and most of the individuals in the pool were taken in the first seining. It is therefore assumed that a fair indication of the number of species and the comparative number of individuals of each species was obtained; also an indication of the sizes and condition of the various fishes. There appears to be no reason to doubt that this 1/4 mile of river that was seined was not typical of more than 90% of the entire river between the two dams.

A few of the more interesting fish were preserved; the rest were returned to the water. A list of the species of fish taken, and an estimate of their abundance is given below:

<u>Scientific Name</u>	<u>Common Name</u>	<u>Estimated No.</u>	<u>Total Length</u>
<u>Lepisosteus osseus oxyurus</u>	Long-nosed Gar	18	1½' to 2'
<u>Amia calva</u>	Dogfish	4	6" to 14"
<u>Catostomus commersonnii commersonnii</u>	White Sucker	1	8"
<u>Erimyzon sucetta kenerlii</u>	Lake Chubsucker	2	3"
<u>Moxostoma rubreques</u>	Greater Redhorse	2	2'
<u>Cyprinus carpio</u>	Carp	1	1'
<u>Notropis heterodon</u>	Black-chin Shiner	100	1" to 2½"
<u>Notropis heterolepis heterolepis</u>	Blacknose Shiner	100	1" to 2½"
<u>Notropis volucellus volucellus</u>	Mimic Shiner	8	1" to 2½"
<u>Notropis hudsonius hudsonius</u>	Spottail Shiner	6	3" to 4"
<u>Notropis rubellus</u>	Rosy Shiner	12	3" to 4½"

<u>Scientific Name</u>	<u>Common Name</u>	<u>Estimated No.</u>	<u>Total Length</u>
<u>Notropis cornutus chrysocephalus</u>	Common Shiner	20	3" to 8"
<u>Notemigonus crysoleucas auratus</u>	Golden Shiner	18	3" to 8"
<u>Hyborhynchus notatus</u>	Blunt-nosed Minnow	100	2" to 4"
<u>Ameiurus nebulosus nebulosus</u>	Brown Bullhead	50	3" to 9"
<u>Ameiurus natalis natalis</u>	Yellow Bullhead	20	3" to 9"
<u>Schilbeodes miurus</u>	Brindled Madtom	2	3" to 4"
<u>Esox vermiculatus</u>	Mud Pickerel	50	4" to 14"
<u>Esox lucius</u>	Northern Pike	10	6" to 24"
<u>Fundulus diaphanus menona</u>	Menona Killifish	2	3"
<u>Fundulus notatus</u>	Blackstripe Topminnow	200	1½" to 3"
<u>Hadropterus maculatus</u>	Blackside Darter	8	2" to 4"
<u>Percina caprodes semifasciata</u>	Logperch	7	4" to 7"
<u>Boleosoma nigrum nigrum</u>	Johnny Darter	9	2" to 4"
<u>Catnotus flabellaris flabellaris</u>	Fantail Darter	1	2½"
<u>Micropterus dolomieu</u>	Smallmouth Bass	200	2" to 6"
<u>Huro salmoides</u>	Largemouth Bass	500	2" to 12"
<u>Chaenobrythus gulosus</u>	Warmouth Bass	1	4"
<u>Helioperca macrochira</u>	Bluegill	500	1" to 7"
<u>Xenotis megalotis peltastis</u>	Longear Sunfish	10,000	1" to 4½"
<u>Eupomotis gibbosus</u>	Pumpkinseed	1,000	1" to 6½"
<u>Pomoxis sparoides</u>	Black Crappie	15	1½" to 6½"
<u>Labidesthes sicculus sicculus</u>	Brook Silverside	24	2" to 5"

The following facts concerning the fish were noted:

(1) The food and predacious fishes greatly outnumber the forage fishes, a most aberrant condition.

(2) The Longear Sunfish, a runt species, greatly outnumbered all of the other species of fish. Not a single one of the estimated 10,000 Longears appeared to be over 6" in length, so none could be legally caught, and they were therefore automatically

protected. This dwarf species was undoubtedly a close competitor for food, cover, and spawning area to the more wanted though less numerous Bluegills and Pumpkinseeds. The continued protection of the Longear and drainage by overfishing should tend to increase the Longear and further decrease the Bluegills and Pumpkinseeds. These Longears ~~do~~ possibly have one redeeming feature: their young may be food for the predacious fish such as the basses, Pike, Dogfish and Long-nose Gar.

(3) A similar condition exists between the Mud Pickerel and Northern Pike, as is present between the sunfishes. The Mud Pickerel, a dwarf species which seldom or ever grows to a length of 14", and is therefore completely protected by law, outnumbers the more prized Northern Pike. The dwarf species is undoubtedly a competitor for food, cover and spawning area with the larger fish.

(4) The almost total absence of the Carp is rather remarkable. Carl L. Hubbs has suggested that the species may have migrated downstream with the draining of the impounded water. This may have been true of the sub-adults and adults, but it seems highly improbable that the young would all have left. Furthermore, when similar impounded waters in Ohio, which contained Carp, were drained, I always collected a greater proportion of Carp than was possible when the waters were impounded to their normal height. I conclude that the Carp is not a present factor in the apparently unbalanced condition of this impounded water.

(5) The almost total absence of riffles or shallow, moving water between the Argo and Barton Hills dams may be responsible for the almost total lack of suckers of the genus Moxostoma (redhorses) and the apparent, total lack of Hypentelium nigricans (Hog-nose Sucker). It does not explain the almost total absence of the White Sucker and the Lake Chubsucker, two species which thrive in lakes and more quiet waters. It is possible that the great number of predacious fishes (including the Longear) have almost eliminated the suckers.

(6) The scarcity of cyprinids and total absence of several species is indeed interesting. Why such common stream species as Campostoma anomalum pullum (the Stone Roller), Nocomis biguttatus (the Horny-head Chub), Semotilus atromaculatus atromaculatus

(the Creek Chub), and Notropis deliciosus stramineus (the Sand Shiner) are absent, may be explained by the fact that there is lacking some flowing, unimpounded water in which these species may spawn; however, it does not explain why these minnows, such as the Golden and Bluntnose minnows and Black-chin and Black-nose shiners, which normally live and spawn in static conditions or in aquatic vegetation, do not occur in larger numbers. This absence of cyprinids suggests the possibility of too many predators and too unfavorable spawning conditions.

(7) More than 70% of the predator type of fishes appeared to be gorged with food; apparently the concentration of smaller fishes made it possible for predators to obtain an unusual amount of food. However, this condition could only be temporary, for the only fish-food for the predators, where the fingerling sunfishes, and the comparatively few Topminnows and Brook Silversides. When these are gone, and if no more small fishes are brought downstream during the periods when some water is released from the Barton Dam, then the larger fishes are going to lack food, for there certainly is not enough food, other than small fish, to supply the demand of the concentrated, pan and predator type of fishes.

(8) An unusual number of fish appeared to be diseased, especially by the fungus types of disease. Epidemics not infrequently occur when fish are greatly concentrated.

(9) That the adult 3" to 4 $\frac{1}{2}$ " Longear Sunfish is a predator was clearly demonstrated upon several occasions. A few small Topminnows and small Brook Silversides were thrown back into the water in a temporarily weakened condition, due to remaining in the seine and on land too long. These weakened fish were almost immediately seized by the little Longear Sunfishes. As the Topminnows and Silversides were in some instances much greater in total length than were the Longears, the sunfish could only partially swallow them, and they were therefore forced to swim about with the tails of their victims hanging out of their mouths.

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