



**The Hidden Wildlife
Fishes
of the
Shiawassee Basin Preserve**



The data for this booklet was taken from a test survey of Shiawassee Basin Preserve on September 19, 2021. Further data came from a survey done in 2019 by others of fishes we did not sample on our test survey. Also information of species to expect was taken from An Atlas of Michigan Fishes by Reeve M. Bailey, William C. Latta and Gerald R. Smith, Museum of Zoology University of Michigan. Dr. Gerald Smith was contacted on identification of the Blackchin Shiner *Notropis heterodon*.

The 2021 test survey was done with 12 foot long seines and waders. The area sampled was the River between Long and Davis Lakes, and the river east of Davis Lake. The extreme west and east area in Davis lakes adjacent to the river was surveyed as far as waders and the mucky bottom would allow.

The survey was done by my team of talented field workers from Friends of the Rouge. We have been sampling the Rouge River Watersheds fish community for over a decade. We had two reasons for wanting to sample the Shiawassee Basin Preserve. One, the Rouge has been massively impacted by development and we wanted data from a area in southeast Michigan that had little impact from development as a comparison. Two, we are a group that has a strong interest in interpreting to the public these animals hidden beneath the surface.

We would like to thank Springfield Township for allowing us to do this survey and hope to continue our research.

Robert D. Muller

Minnow Family (*Cyprinidae*)

The largest family of freshwater fishes on earth, one third of the fishes in North America and Michigan. Most are small but not all, several of our native minnows can reach 8 inches; Carp, an invasive, can be over three feet long. All minnows have a forked tail allowing them to cruise at speed continuously.



Blackchin Shiners (*Notropis heterodon*)

Found in east end of Davis Lake. A species found in kettle Lakes and in clear streams connected to them. They cannot handle turbid water so as lake degrades from development, this species disappears. Large ones would be smaller than your little finger with a dark black stripe, which when looking close has a zig zag pattern. There are several other Michigan minnows that look similar but the field mark, as the name implies, is that there is black pigment on their lower jaw. Common in Michigan but extirpated from Ohio and threatened in Illinois. Blackchin Shiners are in the intolerant group, which means they are intolerant of poor quality water so finding these in Davis Lake is a good sign.





Common Shiner (*Luxilus cornutus*)

A large silvery minnow (4 -6 inches) with a few scattered dark scales. The males turn very pink with red bands through their fins in the spring breeding season. A good name, as they are found in almost every river and stream in Michigan. A single specimen was found in the 2019 survey, we did not sample any.

Loach Family (*Cobitidae*)

An old world family of fishes from Asia, Europe and Africa



Oriental Weatherfish (*Misgurnus anguillicaudatus*)

The common name for this family is Loaches. It is an invasive fish established in the Shiawassee River. They were imported in 1939 by Sunset Water Garden, a fish raising business near Holly. They found their way into the Shiawassee River and were first sampled by the DNR in 1958. This was the first loach ever established in North America. We sampled three at 4 1/2 inches long. They are a benthic (bottom) fish that prefers a soft bottom which to burrow in.

American Catfish Family (Ictaluridae)

They are referred to as naked, meaning they have no scales. Their barbels (whiskers), as well as their skin and lips, are covered with tastebuds. This helps them find their food.



Yellow Bullhead (*Ameiurus natalis*)

There are three species of bullheads in Michigan, Black, Brown and Yellow. Yellow bullheads are the easiest to identify as the barbels on their lower jaw are white or yellow. The other two species are black. They are tolerant which means they can tolerate very poor water quality but this doesn't mean they cannot live in quality water. This was the densest catfish population of anywhere I have surveyed.



Pike Family (Esocidae)

Four species in North America; Grass Pickerel, Chain Pickerel, Northern Pike and Muskellunge. They tend to remain inactive waiting for prey to approach close then with a burst of speed attack. They all have very similar body shape and hunting method. Basically, the size of the species is matched to the size of their prey. Grass Pickerels average about 12 inches in length, Chain Pickerels 3 feet, Northern Pike 5 feet and Muskellunge 6 feet. Chain Pickerel are the only one not found in Michigan



Grass Pickerel (*Esox americanus*)

An easy field mark for Grass Pickerel is the light line running the length of their body breaking up their pattern. Also the black line under the eye tilts to the back. The two Grass Pickerel we sampled were 4 inches long.



Mudminnow Family (*Umbridae*)

Closely related to pike but rarely over 6 inches. Four species on earth, one in Europe three in North America. Although their prey is small macroinverts, they hunt similar to pikes. They can work their pectoral and pelvic fins holding very still but keeping their head pointed at the prey. When they feel the time is right, a fast strike



Central Mudminnow (*Umbrina limi*)

Although the word minnow is in the name of this family, minnows must have a forked tail and mudminnows have a rounded tail. Rounded tails allow an instant burst of speed but the energy to do this results in only short bursts. Iridescent blue on the anal fin is the breeding color of this male. In most fish species that guard their eggs, it is done by the male. Mudminnow reverses this with the female as the guard. This is another species sampled in 2019 but not 2021. The next time we sample we should work the flooded areas of muck bottom along the rivers edge as this is the habitat of Mudminnows

Sunfish Family (Centrarchidae)

A family of fish found only in North America. The group of fishes referred to as panfish are in this family as well as Largemouth and Smallmouth Bass. Their dorsal and anal fins have spines in the front and are soft in the back. All sunfish males build nests by fanning the bottom clear of plant materials and guard the eggs.



Rock Bass (*Ambloplites rupestris*)

Rock Bass are another of the intolerant species we sampled, and have a good strong population here. Rock Bass also eat fish and are one of the top predators in the preserve. They have a red eye but the number of the anal fin spines separates them from the following *Lepomis* species. They have a very interesting pattern when young that fades away as they grow larger.





Green Sunfish (*Lepomis cyanellus*)

This species is tolerant, the other *Lepomis* species are not falling between tolerant and intolerant. they are also the one we sampled the least, only a single specimen. Identifying the *Lepomis* species can be tricky, as they all hybridize, although this occurs the most in degraded systems, which the preserve is not. Green Sunfish have a much larger mouth than the others; it extends back to under the eye. Also, the spiny dorsal fin is not as high as on the others.





Pumpkinseed (*Lepomis gibbosus*)

Pumpkinseeds tend to have a single red spot on the extension of the gill cover (often referred to as the ear). The belly region of the males turns a bright orange during spring breeding season. Notice the small mouth of this and the following three species.





Warmouth (*Lepomis gulosus*)

Warmouths look similar to Rock Bass which have 6 anal fin spines, the *Lepomis* only have 3. This is another species sampled in 2019 we did not find.



Bluegill (*Lepomis macrochirus*)

Bluegill are the least colorful of the *Lepomis* species. They have small mouths, bars on the body and a black spot in the rear of the dorsal fin.



Northern Sunfish (*Lepomis peltastes*)

Northern Sunfish are the beauties of the *Lepomis* group. Red eye, blue streaks in the face and blue spots over the body, red and black in the fins and the "ear" very large and lined on its edges with white and red. This is a male in full breeding color.



Largemouth Bass (*Microterus salmoides*)

Largemouth bass is the top predator we surveyed in the preserve.

Perch Family (*Perches*)

Most people are familiar with the game fish in this family, Yellow Perch, Walleye and Sauger. These are only a few of our perch-
es. There is a group called Darters that are benthic bottom dwelling
fish found only in North America, east of the Rockies. There are
over 200 species with 15 species found in Michigan. Many are
intolerant as are the two species we have sampled in the pre-
serve. Some are among the most colorful freshwater fishes on earth.



Rainbow Darter (*Etherostoma caeruleum*) Male

This is one of the most colorful fishes in Michigan, common in
the preserve and also an intolerant fish. They must have a clean
gavel bottom without silt to breed. Males color up this way in
the spring but do retain much of the color throughout the year,
female below. They prefer riffles of which there were none in the
area we sampled. As they were the second most common spe-
cies we sampled there must be adequate breeding areas for them
in the preserve. Rainbow Darter are about the size of your
thumb

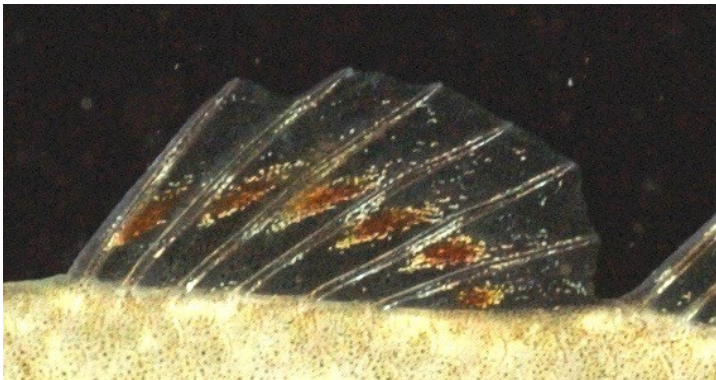
Female





Least darter (*Etheostoma microperca*) Male

This is the smallest vertebrate in Michigan, fully mature and breeding at an inch. Also an intolerant fish, they were the most common species we sample in the preserve both in the river and lakes. They breed in aquatic plants and there was much of the bottom covered with them. The orange on the pelvic and anal fins is the colors the male develop in the breeding season. Generally when we sample Least Darters, we also sample Iowa Darters. The field marks for them is 6 spines in the Least Darter's front dorsal and 9 in Iowa Darters. A very difficult thing to see on a one inch long fish. Both species live in the same habitat but spawn on different areas of the aquatic plants.





Iowa dater (*Etheostoma exile*) Male

Not sampled in the Preserve

We should, in future sampling in the kettle lakes, find Iowa Darters which are recorded from the Shiawassee River in Oakland County.

