Perry Lakes (North and South)
Oscoda County, T27N, R03E, Sections 08 and 09
Au Sable River watershed, last surveyed 2022

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Environment

Perry Lakes is a 90-acre modified natural lake basin located approximately 3.5 miles northwest of Fairview in Oscoda County, Michigan (Figure 1). Perry Lakes has a catchment area of 6,099 acres or about 9.5 square miles (Figure 2). Though Perry Lakes is assumed to be spring fed there are two inlet streams coming in from the north and west and the outlet, Perry Creek, is on the east side of the lake and flows into the mainstream Au Sable River below Mio Dam. Perry Creek downstream of the lake is a designated Michigan trout stream.

Like many lakes in Michigan, Perry Lakes has been altered from its original form by manmade structures that have artificially raised the lake level. Historic bathymetric maps show that the Perry Lakes was initially comprised of three separate lake basins (North, Middle, and South) connected by small seasonal channels (Figure 3 and Figure 4). However, lake levels were raised when a culvert was placed in Perry Creek (the outlet of Perry Lakes) for the construction of Blamer Road in the 1940's. This started a long contentious debate among lakefront property owners and the state of Michigan about appropriate lake levels. Several years of litigation, culminated in a 2006 court decision to install a control structure capable of maintaining a normal legal lake level of 1091.5 feet and a winter lake level of 1090.5 feet above sea level. Lake levels are controlled by a stop log control structure on Perry Creek at Blamer Road and maintained by the Oscoda County Drain Commission. This contemporary lake level(s) is about 4 to 5 feet above natural conditions resulting in a single continuous body of water with deeper basins in the north and south ends of the lake. The deepest spot in the lake is approximately 48 feet in the north basin (Figure 3 and Figure 4). Connecting the north and south parts is a shallow reach, with extensive submergent and emergent vegetation in the western lobe of the lake. Most of the lake is relatively (0 to 6-feet) shallow (Figure 3 and Figure 4) with a marl and muck bottom. The terrain around the lake varies from flat to hilly and is forested with a mix of hardwoods and conifers (R.S. Scott 2005). Surface geology of the surrounding area is predominantly glacial outwash deposits of sand and gravel typical of spring fed system in the region (R.S. Scott 2005). Much of the watershed is forested (67.3%) with some grasslands (12.6%), urban (6.2%), and wetland (2.8%) (Midwest Glacial Lakes Partnership. 2019). The shoreline is predominately forested (55.8%) with some development (17.5%) (Midwest Glacial Lakes Partnership. 2019). Comins Township maintains a park, on the north end of the lake, offers public lake access and small unimproved boat launch with parking for about 4 vehicles with trailers.

Surface water temperatures were measured throughout the survey and averaged 70°F. Temperature and dissolved oxygen profiles were measured by MDNR personnel on September 15, 2022. Each profile was collected in the deepest portion of the lake to identify the stratification zones established within the water column along with the associated temperatures and dissolved oxygen levels.

The lake showed thermal stratification, within the water column with the metalimnion ranging from 16 feet to 30 feet deep, and the thermocline at a depth of 21 feet. Most fish species found in Michigan

require dissolved oxygen levels of 3.0 ppm or higher for suitable habitat (Schneider 2002). Dissolved oxygen levels in Perry Lakes were suitable well into the hypolimnion (Figure 5).

History

The history of fisheries management at Perry Lakes dates to the 1930s. A cursory aquatic survey of North Perry Lake was completed by the Michigan Department of Conservation (MDOC) in September 1936. Surveyors noted the presence of Largemouth Bass, Smallmouth Bass, Walleye, Northern Pike, Bluegill, Sunfish (likely Pumpkinseed), Yellow Perch, and Bullhead. The survey methods used to determine species present were unclear. Shortly after this initial survey MDOC began stocking a variety of panfish and Walleye as well as Smallmouth and Largemouth Bass in Perry Lakes (Table 1). These stocking events occurred over a handful of years until 1944 and after that there are no other documented stocking events.

A comprehensive survey of the lake was completed by MDOC in August of 1961. This survey was in response to public input of a suspected winter kill in the lake complex in either 1958 or 1959. Sampling occurred August 17 and 18 and consisted of 12 fyke net-nights and 12 trap net-nights. MDOC staff captured a mix of Bluegill, Pumpkinseed, Black Crappie, Rock Bass, Yellow Perch, Largemouth Bass, Northern Pike, Bullhead, and White Sucker (Table 2). Fish that were scale sampled to estimate age exhibited growth above state averages. MDOC staff noted that the good growth was further evidence that the fish population had been thinned in recent years.

Another cursory survey was conducted on Perry Lakes in 1964. On the evening of July 6 MDOC staff surveyed approximately half of the shoreline of North Perry Lake using underwater lights. Observers noted the presence of Largemouth Bass, Northern Pike, Bullhead, and Bluegill. No rational for the survey was given.

A second formal survey by the Michigan Department of Natural Resources (MDNR) was completed in 1985. This survey was in response to public reports of a decline in Bluegill abundance and size. Sampling occurred in mid-July using a combination of 125-foot experimental gill nets and fyke nets. Total survey effort consisted of 3 experimental gill net-nights, 6 small-mesh (3/8-inch) fyke net-nights, and 10 large-mesh (1-inch) fyke net-nights. MDNR staff captured a mix of Bluegill, Pumpkinseed, Rock Bass, Yellow Perch, Largemouth Bass, Northern Pike, Green Sunfish, and Bullheads. Fish scale-sampled exhibited growth indices at or above state averages (Table 3). Specific MDNR comments from the survey noted the presence of trophy size Largemouth Bass in the 4 to 5-pound range, many Snapping and Eastern Painted turtles were captured in the fyke nets, and that Bullheads were quite numerous. In general, the fish population was considered very good with no management recommendations at the time.

Current Status

A fish community survey was done on Perry Lakes in late May and early June 2022 by the Northern Lake Huron Management Unit. The objective of this survey was to evaluate the current status of the fish community and assess future management needs for the fishery. To accomplish this MDNR Fisheries Division Status and Trends survey protocols were used that standardize gear types and survey effort based on lake size (acres). By using a variety of sampling gear and randomly selecting sample sites ensures that the species, sizes structure, and age composition are representative of the fish community in the lake as well as allowing for statewide spatial and temporal comparisons.

Sampling gear used in this survey, included a small-mesh seine, an electrofishing boat, experimental gill nets, small-mesh fyke nets, and large-mesh fyke nets. Survey effort consisted of three seine hauls, three 10-minute boat electrofishing transects, four experimental gill net lifts, four small-mesh fyke net lifts, and nine large-mesh fyke net lifts. All fish collected were identified to species, counted, total length was measured to the nearest tenth of an inch (in), and scales or dorsal spines were collected from a sub-sample of fish to determine age. Weights in pounds (lbs.) were calculated using established MDNR length-weight relationships (Schneider et al. 2000).

A total of 913 fish weighing 221.6 lbs. representing 14 species were collected in the various nets used during the 2022 survey (Table 4). Non-game fish were the most diverse with seven species sampled in the catch whereas, gamefish and panfish were the most abundant making up 56.6% of the catch by number and 62.2% by weight (Table 4). Gamefish, in order of abundance, included Largemouth Bass and Northern Pike. These large predators made up 6.8% and 0.7% of the catch by number and 22.9% and 5.5% of the catch by weight respectively (Table 4).

Panfish

Panfish were the most commonly captured class of fish making up 49.1% of catch by number and 33.9% of the catch by weight (Table 4). Bluegill were the most numerous fish species captured with 349 individuals representing 38.2% of the catch by number and 26.0% of the catch by weight (Table 4). Lengths range from 0.9 to 9.7 in with an average of 4.6 in (Table 5). There were two peaks in the length frequency distribution one at 2 in and the other at 7 in with 31% of the bluegill measured being larger than 7 in (Figure 6). Bluegill size structure was evaluated using Schneider's Index (Schneider 1990) to provide a relative index of the quality of the bluegill population. The index is a composite of growth and length metrics used to describe bluegill size in the lake using a seven-point rating scale, ranging from "very poor" to "superior". The Schneider's Index for Perry Lakes suggested that the fishery is "good". Bluegill were represented by twelve age classes ranging in age from age-1 to age-12, with age-5 being the most common. The mean growth index for Bluegill in Perry Lakes was -0.1, suggesting that their growth is similar to the state average (Table 6).

Catches were much lower for the remaining panfish species (Rock Bass, Yellow Perch, Pumpkinseed, and Black Crappie), combined they made up 10.9% of the catch by number and 7.9% of the catch by weight (Table 4). Rock Bass were the second most abundant panfish in our sample with 43 individuals captured representing just 4.7% of the catch by number and 2.8% of the catch by weight (Table 4). Rock Bass lengths ranged from 2 to 7 in (Rock Bass were measured to the nearest inch) with an average of 5.5. in (Table 5). There was a single peak in the length frequency distribution at 6 in with 7% of the Rock Bass measured over 7 in (Figure 6). No aging structures were collected from Rock Bass to determine age and estimate the mean growth index.

Yellow Perch ranged in size from 3.4 to 10.9 in with an average of 5.9 in (Table 6). There was a single peak in the length frequency distribution at 4 inches with just 3% (1 individual) over 10 inches (Figure 6). Six year classes were represented ranging from age-1 to age-8, with age-2 being the most common. The mean growth index for Yellow Perch in Perry Lakes was -0.1 suggesting that growth is near the state average (Table 6).

The Pumpkinseed catch consisted of individuals ranging in size from 1.9 to 7.9 in with an average of 5.9 in (Table 6). Of the Pumpkinseed measured there was a single peak in the length frequency distribution at 7 in with 47% seven inches and larger (Figure 6). There were six year classes ranging from age-2 to age-8, with age-6 being the most common. The mean growth index for Pumpkinseed was 0.0 (Table 6), suggesting that their growth is right at the state average.

The Black Crappie captured during the survey ranged in length from 6.6 to 13.3 in with an average of 9.9 in (Table 6). There was a single peak in the length frequency distribution at 7 in and 44% of the fish sampled were ten inches and larger (Figure 6). Black Crappie were represented by four year classes ranging in age from age-3 to age-10, with age-3 being the most common. The mean growth index for Black Crappie in Perry Lakes was -0.2, suggesting that their growth is similar to the state average (Table 6).

Gamefish

Large predatory gamefish in Perry Lakes included Largemouth Bass and Northern Pike. These two species made up 3% of the catch by number and 28% by weight (Table 4). Largemouth Bass were the most prevalent game fish in our sampling with 62 individuals. Largemouth Bass varied in size from 4.1 in to 19.0 in with an average length of 10.4 in (Table 6). There was a single peak in the length frequency distribution at 13 inches (Figure 6). There were 12 age-classes ranging from age-1 to age-14, with age-3 being the most common. The mean growth index of Perry Lakes Largemouth Bass was -1.1 suggesting that were growing slower compared to other Largemouth Bass statewide (Table 4).

Northern Pike were relatively rare with nine individuals captured. They varied in size from 16.1 in to 24.2 inches in with an average length of 21.1 (Table 6), with one legal sized fish sampled (Table 5). There was no length mode for Northern Pike (Figure 6). Northern Pike were represented by three year classes ranging in age from age-2 to age-4, with age-2 being the most common. The mean growth index was 0.0 suggesting that Perry Lakes Northern Pike were growing on par compared to other Northern Pike statewide (Table 6).

Other Species

The non-game fish community of Perry Lakes was diverse and included of several prey and larger bodied fish species. Bluntnose Minnow, Iowa darter, Central Mudminnow, and Golden Shiner along with juvenile panfish make up the bulk of the forage base in Perry Lakes (Table 5). Other larger-bodied non-game fish species encountered include Black Bullhead, Brown Bullhead, and Yellow Bullhead (Table 5). Exotic species encountered during the survey was limited to a single Rusty Crayfish.

Analysis and Discussion

The Perry Lakes fish community is a diverse array of gamefish, non-gamefish, panfish, and forage fish composed of species typical of Northern Michigan Lakes. Species available to anglers include Bluegill, Largemouth Bass, Pumpkinseed, Rock Bass, Yellow Perch, and the occasional Black Crappie and Northern Pike. The panfish fishery provides the opportunity to catch 8+ inch bluegill or pumpkinseed and the Largemouth Bass fishery should allow anglers an opportunity to catch a large fish. Black Crappie and Northern Pike were present and can boost the fishery on occasion however, too few were captured to make inferences about their status. The non-game fish community of Perry Lakes is dominated by

Bullheads, a species which can compete with more desirable game fish but does provide an additional fishing opportunity.

In general fish are not growing as they were in previous surveys. Though most gamefish and panfish are currently at or below statewide mean growth indices whereas in previous surveys growth rates tended to be above the state averages. This relative decrease in growth rates among gamefish and panfish may be attributed to various biological reasons namely changes in predator-prey interactions, population structure, or habitat.

Perry Lakes appears to have balanced predator-prey relationships. The Bluegill, Pumpkinseed, Black Crappie and Largemouth Bass populations all appear to have reasonable size structure composition. A good balance of small and large fish suggests that the population level metrics growth, reproduction, and mortality rates are all satisfactory for these species. Whereas Yellow Perch and Rock Bass length were skewed towards smaller fish, yet their proportion of the catch was low suggesting that either angling pressure or predation may be reducing the abundance of larger fish.

The reduced growth rates may indicate that there is an overabundance of fish. When fish populations get too large it can lead to competition for food and habitat, resulting in reduced growth rates. Though Bluegill made up a larger proportion of the catch in this recent survey than in previous surveys their size structure was considered "good" according to the Schneider's Index. This is inconsistent with a typical overabundance of small, stunted fish that would score in the "poor" range of the index. As stated earlier a good size structure indicates good population dynamics (i.e., how growth, reproduction and mortality interact to affect abundance). If overabundance were an issue, one would expect slow growing panfish yet the panfish in Perry Lakes are growing at statewide averages. This suggests that decreases in growth rates among panfish and gamefish species are less likely due to overabundance and more likely due, in part, to a decrease in primary production.

Productivity within Perry Lakes may be reduced because of fixed and modernized septic systems around the lake that are no longer leaching nutrients. This was an issue right up to the 1985 lake survey. In August of 1984, the District Health Department concluded that nutrient loading in Perry Lakes was probably coming from many of the dwellings around the lake with septic systems near the water table. These added nutrients likely increased primary production in the lake leading to the consistent above average growth observed in previous lake surveys. However, the tradeoff might be better water quality in Perry Lakes today.

Management Direction

Management of Perry Lakes should continue to maintain the current diverse community and the fishing opportunities available.

1. Encourage anglers to harvest panfish to decrease the population and potentially increase their size structure in Perry Lakes.

2. Continue to assess the fishery through angler reports. We will continue to gather angler reports from the public. This is a valuable tool that provides good information to managers.

3. Maintain statewide fishing regulations, which are adequate for the protection of this fishery.

References

Midwest Glacial Lakes Partnership. 2019. Midwest Glacial Lakes Partnership Conservation Planner. Available from: midwestglaciallakes.org/conservationplanner.

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Schneider, J.C. 2002. Fish as Indicators of Lake Habitat Quality and a Proposed Application. Michigan Department of Natural Resources, Fisheries Research Report 2061 Ann Arbor, Michigan.

Table 1. Number and life stage or average size (in inches) of fish stocked into Perry Lakes, Oscoda County from 1937 to 1944.

Year	Lake	Species	Number Stocked	Number per acre	Life Stage/ Average Size (in.)
1937	North	Bluegill	6,000	66.7	3 month
1937	South	Bluegill	2,000	22.2	3 month
1937	Middle	Walleye	600,000	6666.7	fry
1938	North	Largemouth Bass	800	8.9	5 month
1938	North	Walleye	600,000	6666.7	fry
1938	North	Bluegill	10,000	111.1	5 month
1938	South	Walleye	600,000	6666.7	fry
1938	South	Bluegill	3,000	33.3	5 month
1939	North	Smallmouth Bass	200	2.2	4 month
1939	South	Walleye	400,000	4444.4	fry
1939	South	Yellow Perch	10,000	111.1	7 month
1939	South	Bluegill	20,000	222.2	4 month
1940	South	Smallmouth Bass	500	5.6	4 month
1940	South	Largemouth Bass	500	5.6	4 month
1940	South	Walleye	400,000	4444.4	fry
1940	South	Yellow Perch	20,000	222.2	7 month
1941	South	Largemouth Bass	500	5.6	4 month
1941	South	Yellow Perch	10,000	111.1	7 month
1941	South	Bluegill	20,000	222.2	4 month
1942	Middle	Walleye	400,000	4444.4	fry
1942	South	Largemouth Bass	1,000	11.1	4 month
1942	South	Bluegill	20,000	222.2	4 month
1944	South	Largemouth Bass	1,000	11.1	2.0
1944	South	Bluegill	6,000	66.7	3.5

Table 2. Number, weights, and lengths for fish species collected during the summer 1961 survey on Perry Lakes, Oscoda County. Fish were captured using trap and fyke nets.

Species	Number	Percent of Catch	Age Range	Mean Length*	Percent Legal Size	Growth Index**
Bluegill	75	5.6%	II - VI	5.7	45.3%	Above average
Pumpkinseed	46	3.4%	II – VI	6.0	63.0%	Above average
Black Crappie	1	-	IV	11.8	100%	Above average
Rock Bass	5	0.4%	III	7.9	100%	Above average
Yellow Perch	8	0.6%	II – VI	8.5	100%	Above average
Largemouth Bass	26	1.9%	I - IX	12.0	80.7%	Above average
Northern Pike	16	1.2%	I -V	18.7	25.0%	Above average
Bullhead sp.	1169	86.8%	NA	8.7	NA	NA
White Sucker	1	-	NA	15.5	NA	NA

* Length measured in inches
** Relative to statewide average

Table 3. Number, weights, and lengths for fish species collected during the summer 1985 survey on Perry Lakes, Oscoda County. Fish were captured using experimental gill nets and fyke nets.

Species	Number	Percent of Catch	Age Range	Mean Length*	Percent Legal Size	Growth Index**
Bluegill	52	12.3%	I -VI	6.1	48.0%	Above average
Pumpkinseed	31	7.3%	II - V	7.0	58.0%	Above average
Rock Bass	97	22.9%	I - VII	5.4	34.0%	Average
Yellow Perch	40	9.5%	I - VII	8.4	95.0%	Average
Largemouth Bass	73	17.3%	I - XI	10.2	23.0%	Average
Northern Pike	8	1.9%	II - IV	25.1	100%	Above average
Bullhead spp.	121	28.6%	NA	10.7	99.0%	NA
Green Sunfish	1	0.2%	II	5.3	-	Average

* Length measured in inches
** Relative to statewide average

Table 4. Catch and weight metric of fish collected during the summer 2022 survey on Perry Lakes, Oscoda County. Fish were captured and sampled using Status and Trends survey protocols.

Species	Catch	Percent of Catch	Total Weight (lbs.)	Percent by Weight
Black Crappie	9	1.0%	4.7	2.1%
Black Bullhead	1	0.1%	1.4	0.6%
Bluegill	349	38.2%	57.7	26.0%
Bluntnose Minnow	230	25.2%	1.1	0.5%
Brown Bullhead	88	9.6%	52.8	23.8%
Golden Shiner	5	0.5%	0.2	0.1%
Iowa darter	10	1.1%	0	0.0%
Largemouth Bass	62	6.8%	50.7	22.9%
Central Mudminnow	6	0.7%	0	0.0%
Northern Pike	6	0/7%	11.9	5.4%
Pumpkinseed	17	1.9%	3.9	1.8%
Rock Bass	43	4.7%	6.1	2.8%
Yellow Perch	30	3.3%	2.6	1.2%
Yellow Bullhead	57	6.2%	28.5	12.9%

Table 5. Catch and length metrics of fish collected during the summer 2022 survey on Perry Lakes, Oscoda County. Fish were captured and sampled using Status and Trends survey protocols.

Species	Catch	Inch Group Range	Average Length (in.)	Percent Legal Size
Black Crappie	9	6 - 13	9.9	89%
Black Bullhead	1	14 - 14	14.5	100%
Bluegill	349	0 - 9	4.6	46%
Bluntnose Minnow	230	1 - 2	2.1	100%
Brown Bullhead	88	6 - 14	10.8	99%
Golden Shiner	5	2 - 8	4.8	100%
Iowa darter	10	1 - 2	1.5	100%
Largemouth Bass	62	4 - 19	10.4	15%
Central Mudminnow	6	1 - 2	2.4	100%
Northern Pike	6	16 - 24	21.1	17%
Pumpkinseed	17	1 - 9	5.9	53%
Rock Bass	43	2 - 7	5.5	44%
Yellow Perch	30	3 - 10	5.9	20%
Yellow Bullhead	57	6 - 12	9.3	96%

Table 6. Weighted mean length at age metrics for select species collected during the summer 2022 survey on Perry Lakes, Oscoda County. Fish were captured and sampled using Status and Trends survey protocols.

Species	Age	Number Aged	Length Range (in.)	State Mean Length (in.)	Weighted Mean Length (in.)	Weighted Age Frequency	Mean Growth Index*
Black Crappie	III	5	6.6 - 7.7	7.5	7.34	55.6%	-0.2
	IV	2	10.1 - 10.3	8.6	10.2	22.2%	
	VII	1	13.3 - 13.3	10.8	13.3	11.1%	
	X	1	13.3 - 13.3		13.3	11.1%	
Bluegill	I	7	0.9 - 2.7	1.8	1.79	9.7%	-0.1
	II	14	2.4 - 3.9	3.8	2.8	22.6%	
	III	9	3.7 - 5.0	5	4.2	8.5%	
	IV	17	3.7 - 7.8	5.9	5.78	18.2%	
	V	18	4.6 - 8.4	6.7	6.91	25.2%	
	VI	6	8.0 - 9.0	7.3	8.28	5.6%	
	VII	2	7.1 - 8.7	7.8	7.65	3.1%	
	VIII	2	9.2 - 9.4	8.2	9.3	0.6%	
	IX	3	8.1 - 9.7	8.6	8.56	1.6%	
	X	3	8.3 - 9.7	8.9	8.77	1.6%	
	XI	2	7.9 - 9.7		8.13	2.3%	
	XII	1	8.6 - 8.6		8.6	1.1%	
Largemouth Bass	I	2	4.1 - 4.2	4.2	4.15	3.2%	-1.1
	II	14	5.1 - 7.5	7.1	6.13	22.6%	
	III	17	5.5 - 10.8	9.4	8.57	27.4%	
	IV	3	11.1 - 12.3	11.6	11.83	4.8%	
	V	6	11.7 - 14.5	13.2	13.37	10.0%	
	VI	6	12.5 - 13.9	14.7	13.13	10.7%	
	VII	5	13.4 - 15.0	16.3	13.87	9.4%	
	VIII	2	13.2 - 15.1	17.4	14.06	3.6%	
	IX	1	13.3 - 13.3	18.3	13.3	1.9%	
	XII	2	15.8 - 17.5		16.65	3.2%	
	XIII	1	19.0 - 19.0		19	1.6%	
	XIV	1	17.0 - 17.0		17	1.6%	
Northern Pike	II	4	16.1 - 21.3	17.7	18.5	66.7%	--
	III	1	24.2 - 24.2	20.8	24.2	16.7%	
	IV	1	23.2 - 23.2	23.4	23.2	16.7%	
Pumpkinseed	II	3	1.9 - 3.1	3.8	2.5	20.0%	--
	III	3	3.7 - 4.2	4.9	4.03	20.0%	
	IV	2	4.5 - 5.0	5.6	4.75	13.3%	
	V	2	7.6 - 7.9	6.2	7.75	13.3%	
	VI	4	7.6 - 7.8	6.6	7.73	26.7%	

	VIII	1	7.0 - 7.0	7.5	7	6.7%	
Yellow Perch	I	5	3.4 - 3.9	3.3	3.6	16.7%	-0.1
	II	13	4.4 - 5.4	5.2	4.85	43.3%	
	III	4	4.7 - 6.2	6.5	5.48	13.3%	
	IV	5	6.4 - 7.9	7.5	7.26	16.7%	
	V	2	6.4 - 7.4	8.5	6.9	6.7%	
	VIII	1	10.9 - 10.9	11.1	10.9	3.3%	

Figure 1. Map of Perry Lakes, Oscoda County Michigan.

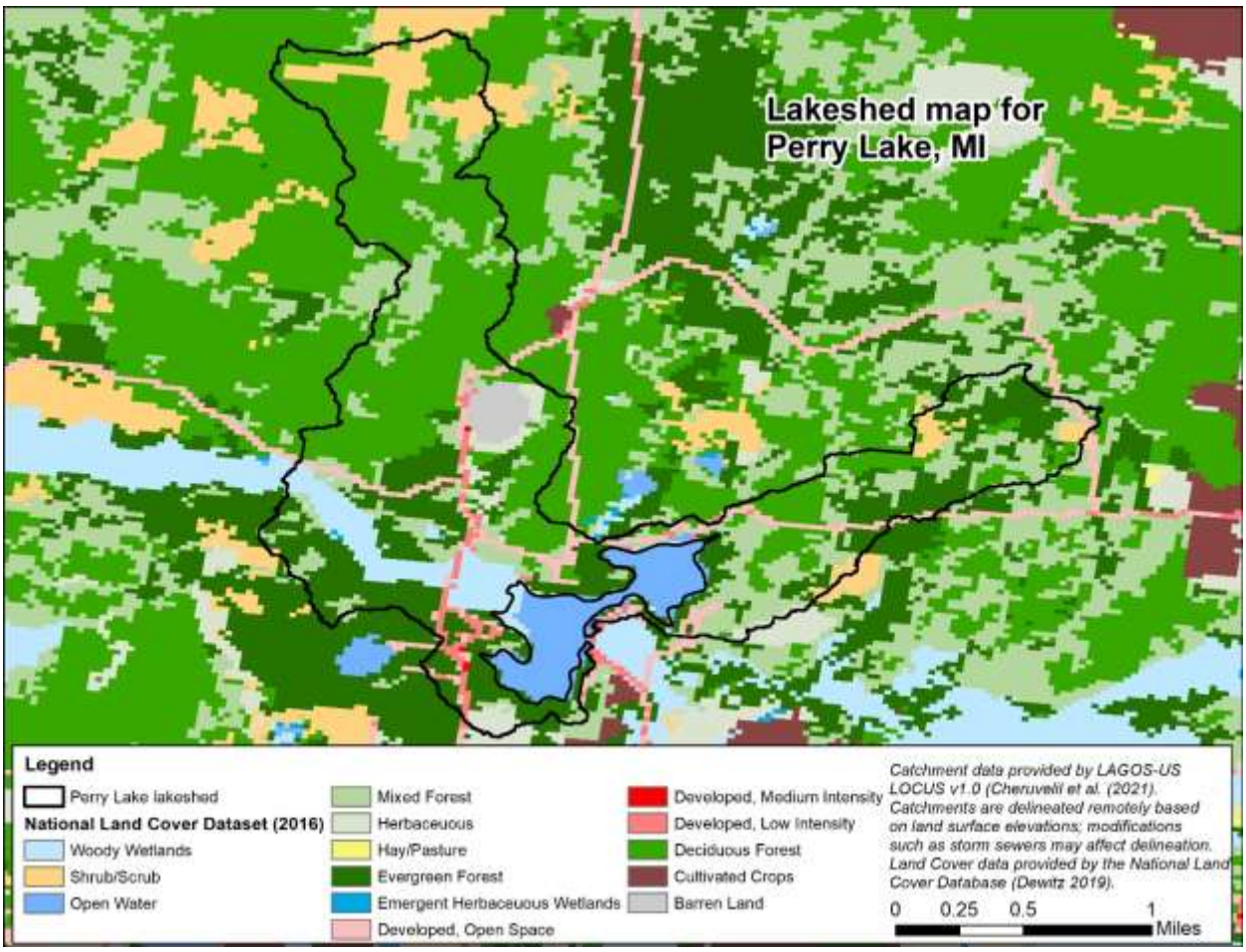

Figure 2. Map of the Perry Lakes, Oscoda County Michigan catchment area.

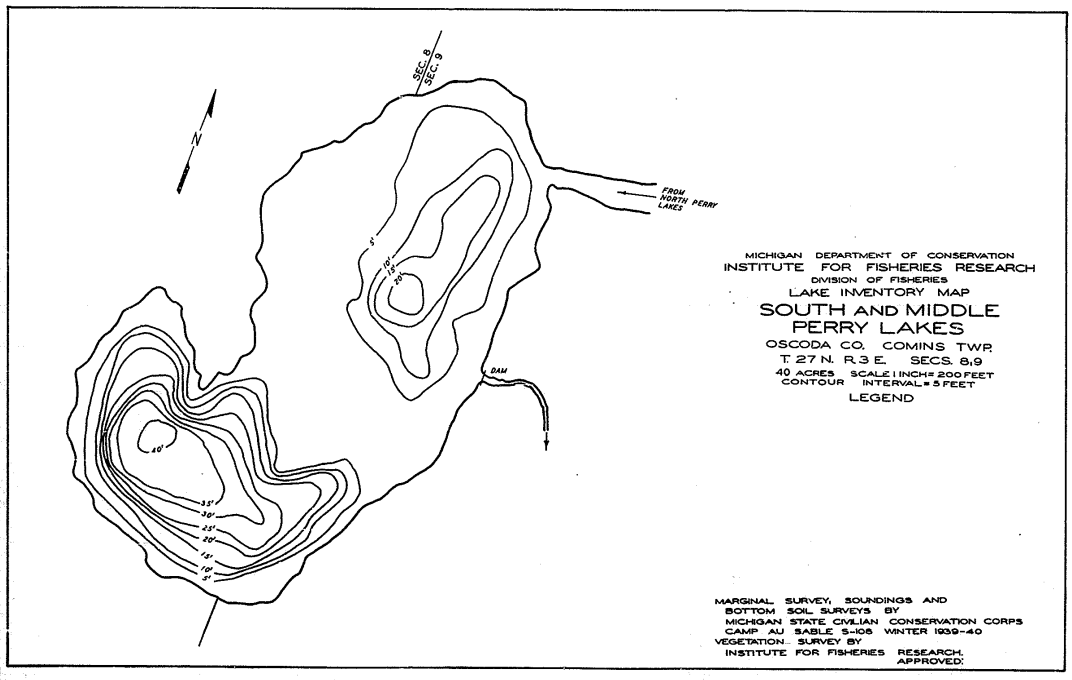

Figure 3. Michigan Department of Conservation (1939) bathymetric map of Middle and South Perry Lakes Oscoda County, Michigan prior to the any lake control structure.

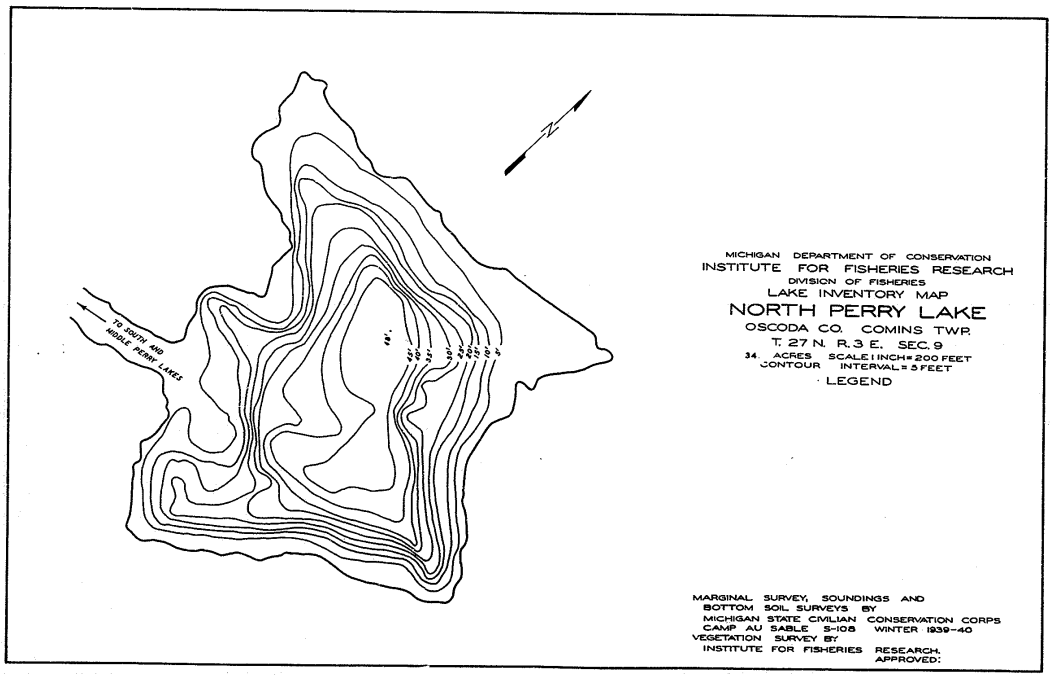

Figure 4. Michigan Department of Conservation (1940) bathymetric map of North Perry Lake Oscoda County, Michigan prior to any lake control structure.

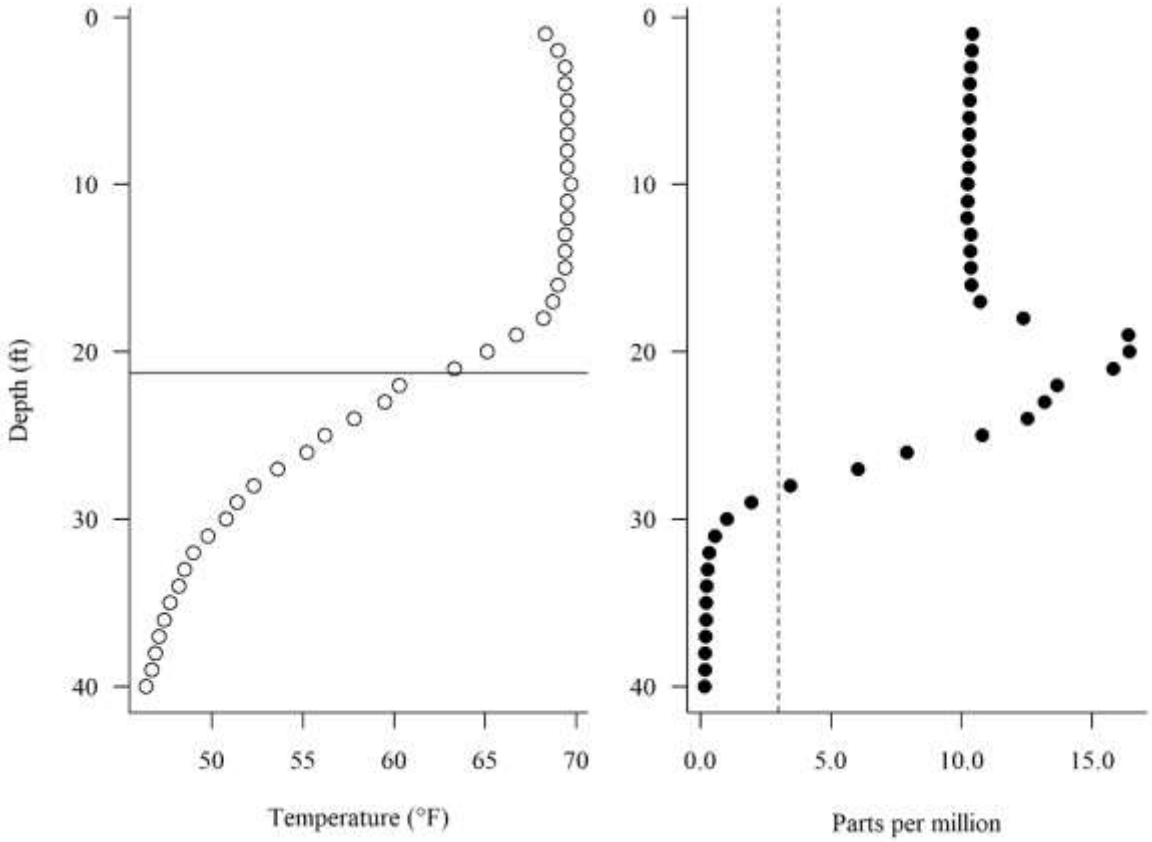

Figure 5. Temperature (open circles) and dissolved oxygen (closed circles) profiles collected from the deepest portion of Perry Lakes, collected on September 15, 2022. The horizontal black line represents the thermocline and vertical dashed line is where dissolved oxygen is at 3.0 ppm.

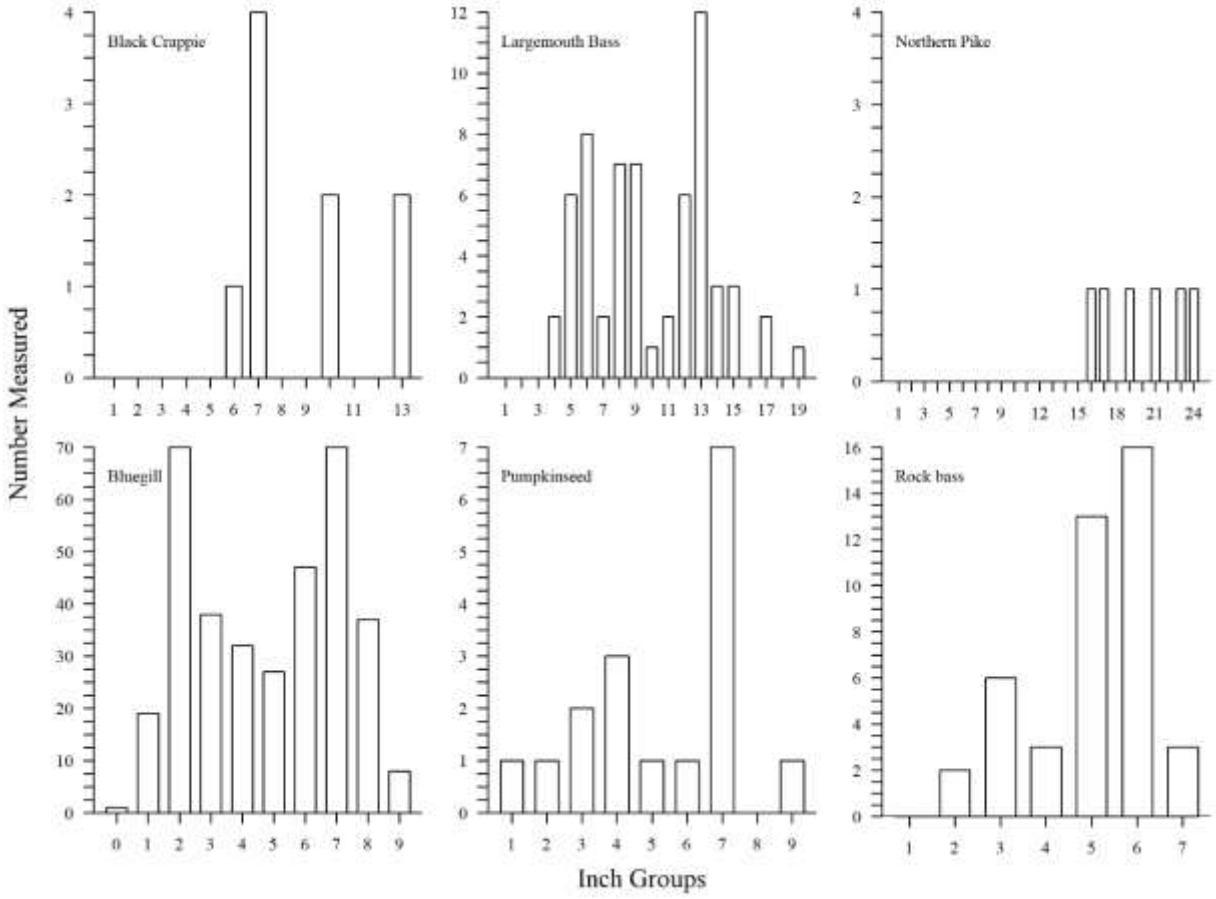

Figure 6. Length frequency distributions of Black Crappie, Largemouth Bass, Northern Pike, Bluegill, Pumpkinseed, and Rock Bass captured in all gear types during the 2022 Status and Trends survey on Perry Lakes.

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