Eight Point Lake
T17N, R06W, Many
Chippewa River watershed, 2010

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Environment

Eight Point Lake is located in Clare County, about 1.5 miles south of US10, approximately 2 miles west of Lake Station and 15 miles west of Clare (Figure 1). The lake has no real inlets and outlets, except for a small drainage that drains to wetland areas. Records indicate a lake level control structure to be present. Eight Point Lake is located in the western North Branch of the Chippewa River watershed. The Chippewa River flows to the Tittabawassee River in Midland, which flows to the Saginaw River, which discharges to Saginaw Bay of Lake Huron.

The surrounding countryside is rolling, agricultural land, and partly wooded. The immediate shoreline has sandy soils, and the dominant forest type in the area is oak and jack pine. The surrounding watershed is dominated by sandy soils. The dominant soils are the Graycalm, Rubicon, and Chelsea sands and Lupton muck. These soils are characteristic of moraine areas and are generally somewhat drained to well drained. The slope in the area ranges from 0 to 6%. The dominant land use around the lake is a mix of forested, agricultural, and rural residential. The immediate shoreline and area is dominated by residences and rural development. The shoreline-habitat survey in 2010 counted 287 dwellings, in twenty-three 1,000-ft transects or ~64 dwellings per mile. Shoreline development was extensive, with an estimated 69% of the shoreline displaying some sort of armoring, mostly in the form of steel, wood, or concrete seawalls.

Eight Point Lake is 387 acres. Approximately 75% of the lake is shallow, with a maximum depth of 25 ft (Figure 2). Vegetation is common in the shallower areas. The bottom in the shoals is mostly sand; in the depths it is pulpy peat. Aquatic vegetation is common in the shallower areas. Vegetation includes bulrushes, pondweeds, and Chara. The lake association's lake improvement board has had permits to do aquatic nuisance plant control annually since 2000 with the exception of 2001. Additional fish habitat is also provided by docks. The 2010 habitat survey enumerated 279 small docks, 17 large docks, and no submerged logs around the lake.

In general, Eight Point Lake is classified as a warmwater, medium size, unstratified, shallow lake of oligotrophic characteristics. Chemical water characteristics can be calculated and compared with other lakes in the region. August 2010 measurements of Secchi disk depth (11 ft.), total phosphorus (12.2 ug/l), and chlorophyll-a (1.48 ug/l) yielded a Trophic Status Index (TSI) of 33.37 on a scale of 0-80. This TSI is in the range of an oligotrophic lake classification. Oligotrophic lakes are generally defined as those with lower levels of productivity, low to medium levels of nutrients, clear water, and generally supporting a less productive aquatic community.

Temperature, oxygen, and pH profiles were conducted on Eight Point Lake in August, 2010 (Table 1). These profiles show no thermocline development, indicating no thermal stratification, well oxygenated waters top to bottom, and uniform pH. No dissolved oxygen concentrations in the water column appear to be a problem for fish (<3 mg/l). pH values ranged from 8.23 in the lower water column to

8.27 at the surface and fall within an acceptable range to support aquatic life. Alkalinity was measured in 2010 at 78 ppm, indicating somewhat less buffered water. It should be noted that there were suspect readings for dissolved oxygen possibly suggesting that the membrane was bad or calibration was needed.

Public access to Eight Point Lake was developed by the DNR and opened in September 2009 and is located on the southwest end of the lake. The site includes parking for 22 vehicles/trailers, a vault toilet, and a single concrete ramp.

History

Eight Point Lake has management records dating back to 1937. Records indicate that a variety of fish were stocked from 1937 to 1945 including smallmouth bass, largemouth bass, bluegills and perch. Since the lake was considered private in the past, little active fishery management has been conducted by the state. Records indicate some fish were picked up dead, from a winterkill, in 1938. A small gill net survey was conducted in 1948. Species captured included northern pike, yellow perch, largemouth bass, bluegill, pumpkinseed sunfish, rock bass, black crappie, white suckers, yellow bullhead, bowfin, blacknose shiner, mimic shiner, golden shiner, bluntnose minnow, logperch, and Iowa darter. A seining survey was conducted in 1959. Additional species recorded include hogsuckers and walleye. Management records also indicate that the lake was to be managed for walleyes and prescribed 10,000 walleye fingerlings to be stocked at 4-year intervals initiating in 1960. According to records, 1500 fingerlings were stocked in 1964. There were additional winterkill events recorded in 1969 and 1971. A fishery netting survey was conducted in 1995 at the request of a riparian owner. Species already listed above were captured, and additionally smallmouth bass, yellow bullhead, logperch and a lake chubsucker were captured. Rusty crayfish were also noted as present.

The State did not own lake frontage on Eight Point Lake historically, and public access was only available via two boat liveries operating on the lake. The State acquired property on Eight Point Lake in 2008 and developed and opened the public boating access site in September 2009. An active Lake Association was established in 1946 and has taken a role in managing the lake. Over the years, issues that the association has tackled included landfill location and maintenance, fire protection, water safety, fish stocking and violations, road and signage improvements, aquatic nuisance control, and swimmer's itch.

The Lake Association has stocked fish since 1997 and has a lake improvement board. They have also initiated aquatic nuisance control permits from 2000 through the present, excluding 2001 (Lisa Huberty, MDEQ, Personal Communication). Eight Point Lake has been treated for Eurasian milfoil from 2005 through 2010. The Lake Association's improvement board also reported the first zebra mussel sightings in 2008, and in 2010 the number of sightings of zebra mussels increased dramatically all around the lake on docks, boat hoists, and a few boats.

Current Status

In June, 2010, Fisheries Division conducted a fisheries assessment on Eight Point Lake as part of the Fisheries Division's Status and Trends Monitoring Program. The Status and Trends Monitoring Program seeks to randomly sample various sized lakes, using similar protocol, to determine trends

among lakes at the regional and statewide levels. In early May additional netting was conducted to supplement the data for the Status and Trends.

Status and Trends protocol incorporates a variety of gear to sample the fish community during the time of year when water temperature is within a recommended range (55º-80º F). Large mesh trap and fyke nets are used to capture larger (>3 inches) species that inhabit the littoral zone or that move inshore at night. Gill nets are used to sample fishes that occupy offshore waters and are particularly effective at capturing perch, salmonids, and northern pike. Night electrofishing is used to capture all size ranges of species and life stages that inhabit the littoral zone or that move inshore at night. Seining is used to capture representative samples of small-bodied nongame species and smaller size classes (<3 inches) of sport fishes that inhabit the littoral zone. Collectively, the catch from these gears presents a general picture of the overall fish community.

Besides the Status and Trends protocol, fyke nets were also set immediately after ice out to provide additional information on northern pike and walleye as these species are particularly vulnerable to netting at this time. These data were collected to supplement samples for aging and assessing growth for northern pike and walleye, which would not otherwise be captured by Status and Trends sampling alone. This additional data will be discussed in this and the discussion sections.

A total of 955 fish representing 16 species and one hybrid were collected in the 2010 assessment (Table 7). Electrofishing accounted for 30% of the total catch, while trap nets, fyke nets, gill nets, and seine accounted for 17%, 25%, 4%, and 24%, respectively. Bluegill were the most abundant species collected, comprising 35% of the total catch. Rock bass, pumpkinseed sunfish and largemouth bass were also very abundant. Other species collected in relatively low abundance included black crappie, bowfin, yellow and brown bullhead, white sucker, walleye, smallmouth bass, northern pike, pumpkinseed, spottail shiner, yellow perch, logperch, and fathead minnow.

A total of 334 bluegill averaging 5.0 inches were collected in the 2010 assessment (Table 3). Forty-nine percent of the bluegill catch was captured with trap net gear compared to 25% captured with electrofishing gear. Average size of the bluegill trap net catch was 6.0 inches, compared to 4.4 inches with electrofishing gear, which is able to capture smaller fish. Forty percent of the trap net catch met or exceeded the acceptable harvest size of 6 inches, compared to 7% of the electrofishing catch. Bluegill size structure was dominated by fish in the 2-7 inch size range. Age and growth analysis indicated bluegill were growing below State average having a mean growth index of -1.2 (Table 4). Age frequency showed good representation of ages 2-9. Bluegill as old as age 9 were observed in the catch and older fish experience mortality either by harvest or natural causes.

A total of 66 pumpkinseed sunfish averaging 7.3 inches were collected in the 2010 assessment (Table 3). Seventy-nine percent of the total catch met or exceeded the acceptable harvest size of 6 inches. Age and growth analysis indicated pumpkinseed sunfish were growing above State average, having a mean growth index of +0.5 (Table 4). Eight year classes were present.

A total of 51 rock bass averaging 7.6 inches were collected in the 2010 assessment (Table 3). Thirty-three percent of the rock bass catch was captured with trap net gear. Rock bass size structure was dominated with fish in the 6 inch to 9 inch size range. Eighty-four percent of the rock bass met or exceeded the acceptable harvest size of 6 inches. Age and growth analysis indicated rock bass were

growing slightly above State average having a mean growth index of +0.2 (Table 4). Age frequency showed highest representation of ages 4-7. Eight year classes were represented in the survey catch. Rock bass as old as age 10 were observed in the catch.

A total of 159 largemouth bass averaging 9.7 inches were collected in the 2010 assessment (Table 3). Forty percent of the total largemouth bass catch was captured with electrofishing gear compared to 13 % with trap nets, 37% fyke nets, and 9% with gill nets. Average size of the electrofishing catch was 7.5 inches, average size of the trap net catch was 12.8 inches, and average size of the gill net catch was 12.4 inches. Largemouth bass size structure was dominated by fish in the 10-13 inch size range and a fair amount that are smaller. Only 4 % of the largemouth bass catch met or exceeded the legal harvest size of 14 inches. Age and growth analysis indicated largemouth bass were growing below State average, having a mean growth index of -2.5 (Table 4). Largemouth bass were represented by 8 year classes.

In addition to largemouth, 5 smallmouth bass were captured representing an additional 0.5% of the total catch (Table 3). Smallmouth bass ranged from 10-14 inches and averaged 12.3 inches. Twenty percent of the smallmouth bass met or exceeded the legal harvest size of 14 inches. Three year classes of smallmouth bass were captured but insufficient numbers were collected to calculate a mean growth index. Ages 3-5 were represented in the catch.

A total of 41 yellow perch averaging 3.6 inches were collected in the 2010 assessment (Table 3). One-hundred percent of the yellow perch catch was captured with electrofishing gear. Yellow perch size structure was dominated by fish in the 1-5 inch size range. Only 2% of the catch met or exceeded the acceptable harvest size of 7 inches. Age and growth analysis indicated yellow perch were growing below State average, having a mean growth index of -0.7 (Table 4). Age frequency showed relatively equal representation of the 2008 and 2009 year classes (ages 1-2). Surveys rarely capture large numbers of larger, older yellow perch.

Twenty black crappie averaging 9.1 inches were collected in the 2010 assessment (Table 3). One hundred percent of the black crappie captured met or exceeded the acceptable harvest size of 7 inches.

Six walleye averaging 19.2 inches were collected in the June assessment (Table 3). Eighty-three percent of the walleye catch met or exceeded the legal harvest size of 15 inches. Nine year classes of walleye were represented in the catch (of both early netting and status and trend netting) indicating both survival of stocked fish and survival of naturally reproduced fish. Ages 3, 4 and 11 are well represented (Table 4). Walleye growth remains well above State average for age-3 fish, having a growth index of +3.6.

Twenty-six northern pike averaging 20.4 inches were collected in the June assessment (Table 3). Fifty eight percent of the northern pike catch were captured with gill net gear and 23% with trap net gear. Average size of the gill net catch was 20.4 inches and average size of the trap net catch was 21.3 inches. Northern pike size structure was dominated by small fish. None of the northern pike collected met or exceeded the legal harvest size of 24 inches. Northern pike were represented by 7 year classes, ages 1-6 and 8 (Table 4). The pike captured for age growth were supplemented with northern pike from the early netting conducted in March. An additional 119 northern pike were captured early. Only one of these met or exceeded the legal size. Northern pike were observed to be mature and ripe

at very small sizes. Length frequency showed most northern pike to be between 15 and 22 inches. These pike were found to be growing very slowly with a mean growth index well below State average at -3.9.

Brown and yellow bullhead were common in the survey catch. Collectively they represented almost 4% of the survey catch. They ranged from 7 to 14 inches and averaged over 12 inches. These bullhead can provide anglers another species to target and can provide some predatory control on juvenile panfish.

Bowfin and white sucker, were also captured but in low numbers. Anglers may enjoy catching these species. Other species collected were very low in abundance and may not significantly contribute to the sport fishery.

Bluntnose minnow, spottail shiners, and fathead minnows represent the nongame forage base.

Analysis and Discussion

The Eight Point Lake fish community remains similar in species composition and size structure to that found in 1995 (Table 5). The 1995 data is just for gill nets and fyke nets, so it is compared with only the gill and fyke net data for 2010. Bluegill remain the most abundant species when just comparing similar gear types. One species, pumpkinseed sunfish, seems to be increasing in abundance and size structure and age distribution appear very good. These offer anglers another panfish to target. Walleye, smallmouth bass, largemouth bass, northern pike, rock bass and black crappie occur in lesser abundance but provide additional angling opportunities.

Bluegill are typically the most abundant fish species present in many lakes in the region and play a key role in community structure and overall sport fishing quality (Schneider 1981). Schneider (1990) suggests indices of bluegill characteristics can be used to classify populations. The "Schneider Index" uses size scores of length frequency and growth data and relates them to an adjective ranking system ranging from "very poor" to "superior". Using the Schneider Index for classifying bluegill populations, Eight Point Lake scored 4.0 for a "satisfactory" rating (Table 6). Comparisons with earlier surveys were difficult because bluegills were captured using different gear types. There appears to be a good number of larger bluegill for anglers to catch.

The species that should be highlighted in this lake is the pumpkinseed sunfish. These sunfish exhibit excellent growth and attain very desirable sizes. Their success is probably tied to the large population of snails in Eight Point Lake. These, together with the bluegill, offer anglers great opportunities for fishing.

Rock bass catch rate and size structure in 2010 appears satisfactory and improved from 1995 and there is ample opportunity for anglers to catch rock bass.

Very few black crappie were netted in 2010. Despite the low number caught, data suggest that crappie are growing well and reach larger sizes offering anglers opportunities to catch harvestable fish.

Largemouth bass and smallmouth bass represent two of the primary predator fish in Eight Point Lake. Numbers of largemouth bass appear high but size structure shows them stacking up from 9 to 13

inches and very few larger fish were present. Growth is also slow. Very few largemouth bass were legal size in the netted population. There appear to be adequate older fish up to age 8 but very few are attaining larger sizes due to slow growth. Not enough smallmouth bass were caught to assess the population but they did appear larger than the largemouth.

The catch rate, size structure, and growth of walleye indicate a fairly stable population. Early netting added information on walleye age distribution, length frequency and growth. An additional 34 walleye were captured ranging from 12 to 27 inches. Ninety-four percent were legal size or 15 inches or greater. There were 9 year classes represented suggesting survival of stocked fish and survival of naturally reproduced fish. Walleye growth is excellent. The mean growth index was +3.6. There are large walleyes available for anglers to catch. The reason for this survival may be that that the larger fall fingerlings stocked in the past exhibited superior survival.

The Lake Association has been complaining about the northern pike population over the past few years. They believe the pike population is too high and complain about the size of the pike. The Lake Association members were asking for the size limits and bag limits to be relaxed. Additional netting was conducted in March immediately following ice out to get more information. A supplemental 119 pike were netted. These added to the age analysis and size distribution. Of these 119 pike, only one pike was legal size (24 inches or larger). The northern pike population was dominated by ages 3-5 but they are not getting large enough to be desirable or legal for anglers. They were also sexually mature at these smaller sizes, suggesting a stunted population. Northern pike were very slow growing, exhibiting a mean growth index of -3.8 when compared with state average.

Although yellow perch were found in appreciable numbers, their size structure and age distribution was relatively poor. Few yellow perch appear to survive beyond age 3 and grow large enough to recruit into the harvestable fishery. This mortality is most likely due to natural causes and predation from other piscivorous fishes may play a role. At best, the current fishery only offers an opportunity for incidental catch of yellow perch of harvestable size.

Management Direction

Management direction on Eight Point Lake should continue for warm and cool water species. Specific management for bluegill, smallmouth bass, largemouth bass, black crappie, rock bass, and yellow perch is not warranted as all of these species are self sustaining.

A new fisheries management prescription for Eight Point Lake is currently being drafted and it recommends stocking walleye to help maintain this population. The Lake Association has started the walleye stocking and there is evidence that the population was also present historically. With the added pressure and the new access site, it may be important to supplement the stocking. This prescription recommends stocking 19,400 walleyes biennially (50 per acre). The fingerlings the DNR stocks are spring fingerlings that average 2 inches in length in contrast to the fall fingerlings stocked by the Association which are often 6 inches or larger.

The northern pike population was found to be abundant and slow growing with very few or none reaching legal size. Recommendations would be to thin the stunted population and allow the fewer remaining northern pike to experience better growth. Unfortunately at the present time, no changes can be made to the northern pike regulations, and given manpower and financial situations, a manual

removal is an inefficient use of our limited management resources. The effects of manual removals may be temporary or short term. The overall statewide northern pike regulations are currently being examined and will be revised, and this process needs to be completed before individual lake's regulations can be altered.

References

Eight Point Lake Association Website. http://www.8pointlake.org/association.html. Accessed on 1/19/2011.

Lake Improvement Board Website. http://www.8pointlake.org/lake.html. Accessed on 1/19/2011.

Schneider, J.C. 1981. Fish communities in warmwater lakes. Michigan Department of Natural Resources, Fisheries Division, Fisheries Research Report 1890, Ann Arbor.

Schneider, J.C., 1990. Classifying bluegill populations from lake survey data. Michigan Department of Natural Resources, Fisheries Technical Report No. 90-10, Ann Arbor.

Figure 1. Map depicting location of Eight Point Lake, Clare County.

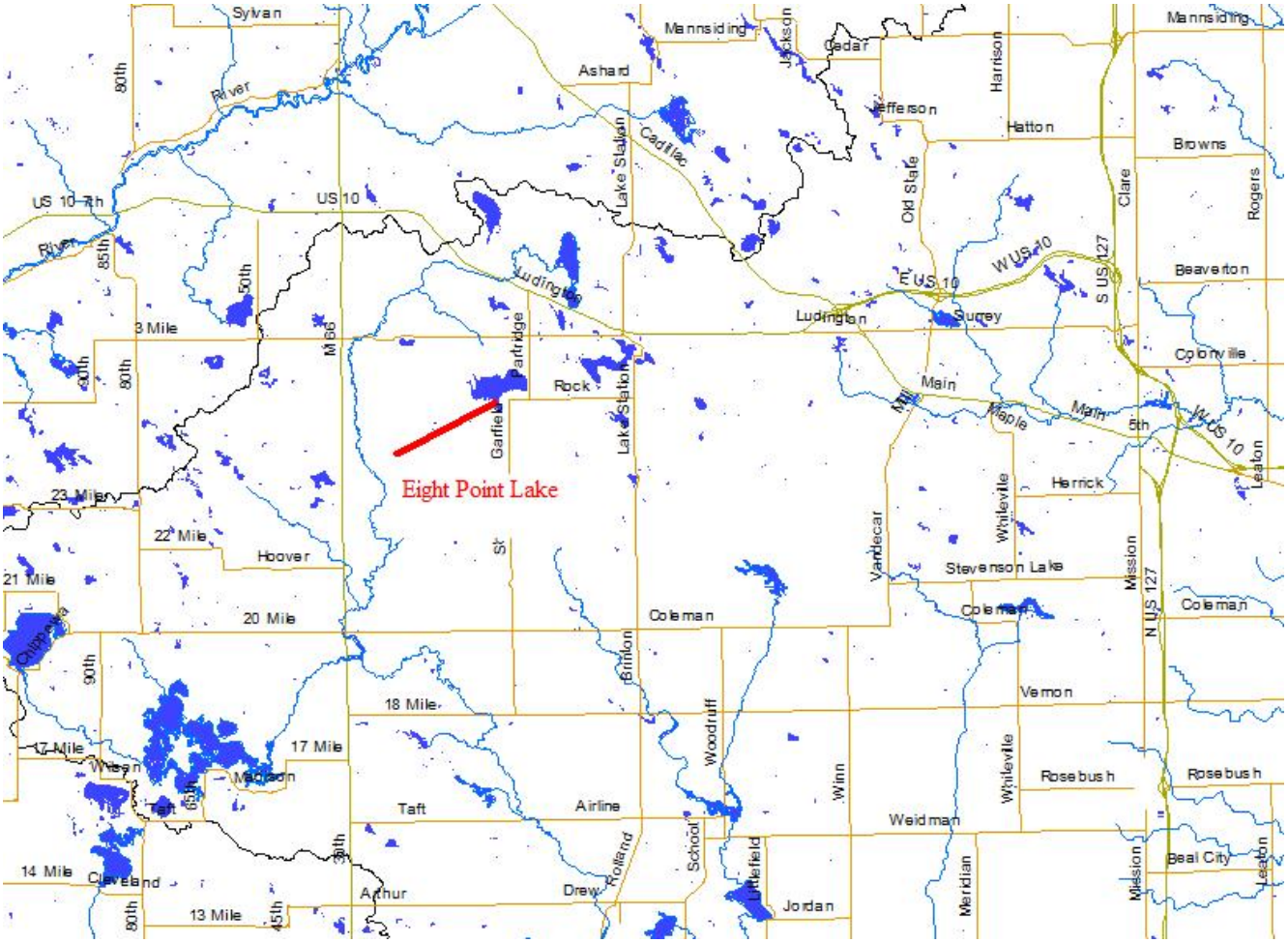

Figure 2. Bathymetric map of Eight Point Lake, Clare County, showing locations sampled with fyke nets, trap nets, gill nets, seines, and electrofishing in June 2010.

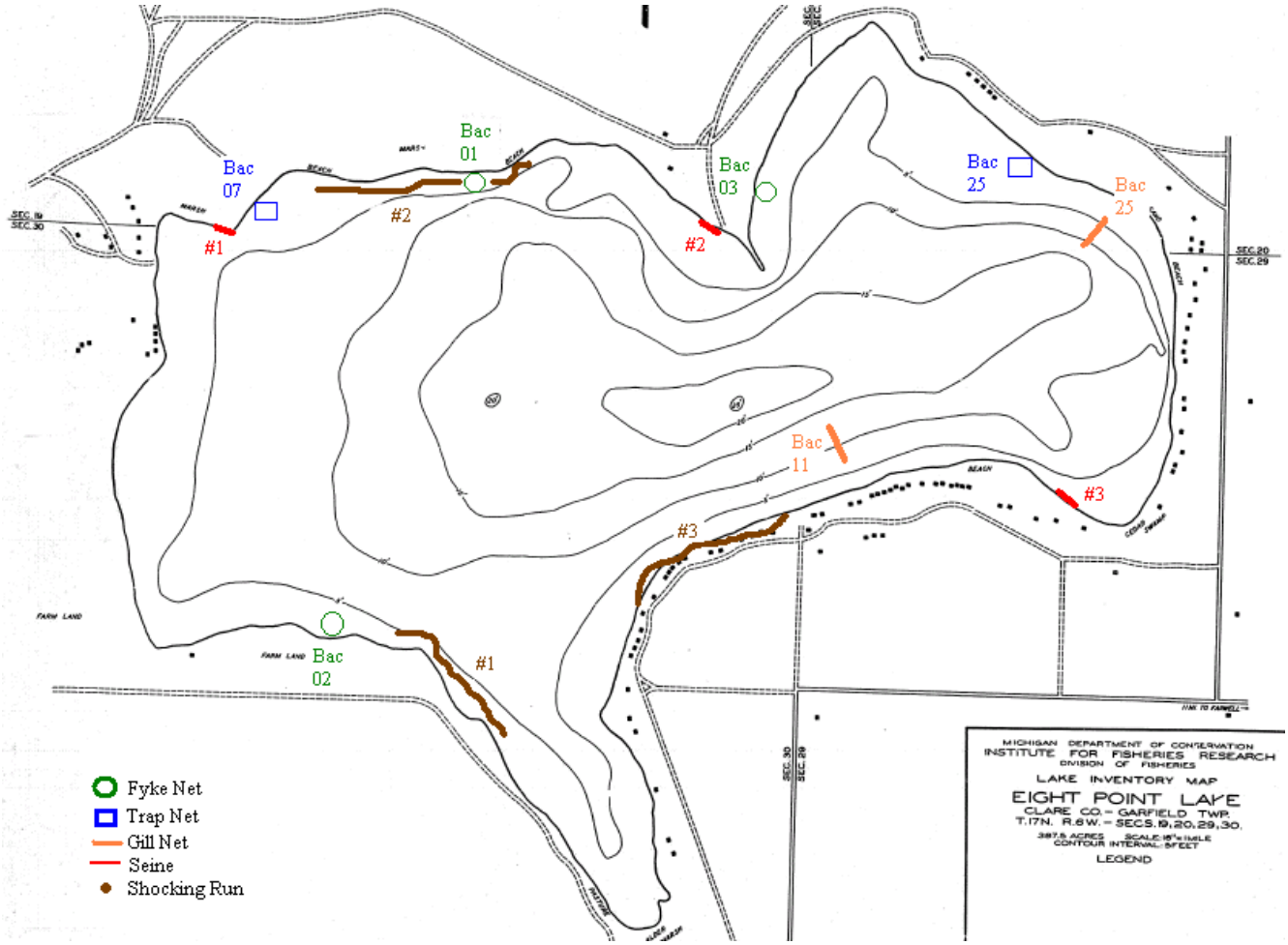

Table 1. Limnological data for Eight Point Lake, Clare County, August 6, 2010.

Depth (ft)	Temperature (°F)	pH
0	78.37	8.26
1	78.35	8.28
2	78.35	8.27
3	78.37	8.28
4	78.37	8.29
5	78.37	8.29
6	78.37	8.29
7	78.35	8.28
8	78.34	8.27
9	78.34	8.28
10	78.34	8.27
11	78.34	8.26
12	78.34	8.22
13	78.33	8.21
14	78.31	8.22
15	78.31	8.22
16	78.26	8.23
17	78.27	8.21
18	78.26	8.23
19	78.18	8.23
20	78.18	8.23
21	78.14	8.23
22	78.14	8.23

Table 2. Fish stocked from 1997 to present by Eight Point Lake Association under State Permit.

Year	Species	Size (in.)	Quantity
1997	Bluegill	4-6	1500
2000	Bluegill	4-6	1500
2001	Bluegill	4-6	1000
2002	Largemouth bass	4-6	700
2003	Yellow perch	5-7	2000
2004	Walleye	6-9	1000
2005	Black crappie	5-7	900
2006	Walleye	6-9	1000
2007	Black crappie	5-7	900
2008	Walleye	6-9	1000
2009	Black crappie	5-6	990
2010	Walleye	6-9	1000

Table 3. Number, estimated weight, length range, average length, and percent legal size, by species, for fish caught in the Status and Trends survey in Eight Point Lake, Clare County, in June 2010.

Species	Number	Percent by number	Weight (lb.)	Percent by weight	Length range (in.)*	Average length (in.)	Percent legal size**
Black crappie	20	2.1	8.3	2.8	08-10	9.1	100
Bluegill	334	35	37.9	12.7	1-9	5	24
Bluntnose minnow	55	5.8	0.3	0.1	2-3	2.6	--
Bowfin	2	0.2	9.6	3.2	20-26	23.5	100
Brown bullhead	7	0.7	8.3	2.8	10-14	13.6	100
Fathead minnow	5	0.5	0.1	0	3-3	3.5	--
Hybrid sunfish	2	0.2	0.3	0.1	5-6	6	50
Largemouth bass	159	16.6	92.2	30.8	3-17	9.7	4
Logperch	13	1.4	0.2	0.1	2-4	3.5	--
Northern pike	26	2.7	48.8	16.3	13-23	20.4	0
Pumpkinseed sunfish	66	6.9	25.3	8.4	3-9	7.3	79
Rock bass	51	5.3	19.1	6.4	4-11	7.6	84
Smallmouth bass	5	0.5	5	1.7	10-14	12.3	20
Spottail shiner	132	13.8	0.9	0.3	2-3	2.7	--
Walleye	6	0.6	15.1	5	13-24	19.2	83
Yellow perch	41	4.3	1.9	0.6	2-8	4.6	2
Yellow bullhead	31	3.2	25.9	8.7	7-14	11.9	100
All species totals:	**955**		**299.2**				

*Some fish may be measured to the 0.1 inch, others to the inch group.

** Percent legal or acceptable size for angling.

Table 4. Number aged, length range, state average length, and weighted age frequency, by species and age group, for fish caught in the Status and Trends and Early netting of Eight Point Lake, Clare County.

Species / Age	No. aged	Length range (in.)	State avg.length (in.)	Weighted mean len. (in.)	Weighted age freq.	Mean growth index*
Black crappie						0.4
Age III:	6	8.3-8.8	7.9	8.48	35.45%	
Age IV:	9	8.2-10.6	8.9	8.99	48.55%	
Age V:	4	10-10.8	9.7	10.3	16.00%	
Bluegill						-1.2
Age I:	1	1.8-1.8	2.4	1.8	0.30%	
Age II:	7	2.3-2.8	4.2	2.51	10.48%	
Age III:	11	2.8-3.8	5.3	3.18	17.27%	
Age IV:	15	3.7-5.5	6.2	4.69	33.75%	
Age V:	11	4.9-7.2	6.9	5.61	19.13%	
Age VI:	14	6.4-8	7.4	6.96	12.43%	
Age VII:	5	7.8-9.1	8	8.1	2.87%	
Age VIII:	5	8.1-8.8	8.4	8.42	2.69%	
Age IX:	2	8.1-8.2	8.7	8.15	1.08%	
Largemouth bass						-2.5
Age I:	1	3.3-3.3	5.4	3.3	0.63%	
Age II:	18	4.7-7.1	8.7	5.52	22.66%	
Age III:	15	6.9-9.3	10.6	8.29	14.46%	
Age IV:	13	8.9-10.4	12	9.68	16.72%	
Age V:	24	9.7-13.3	13.7	11.72	27.62%	
Age VI:	13	10.7-14.5	15	12.07	13.39%	
Age VII:	5	13.8-15.5	16.7	14.25	2.77%	
Age VIII:	3	14.2-17.5	17.6	16.13	1.76%	
Northern pike						-3.8
Age I:	1	12.5-13.5	14.5	13.5	1.92%	
Age II:	2	13.5-18.2	19	14.32	2.33%	
Age III:	13	15.3-22.6	21.8	19.36	7.71%	
Age IV:	32	17.4-23.1	24.2	20.41	47.21%	
Age V:	16	18.5-22.7	26.1	20.94	30.72%	
Age VI:	4	20-22.9	27.8	21	8.19%	
Age VIII:	1	23.7-32.9		23.7	1.92%	
Pumpkinseed						0.5
Age III:	3	3.7-4.2	5.2	3.93	4.70%	
Age IV:	8	3.4-6	5.8	4.85	11.97%	
Age V:	18	5.2-7.7	6.3	6.75	33.64%	
Age VI:	9	6.5-8.3	6.8	7.74	20.91%	
Age VII:	6	8.3-9	7.2	8.7	12.88%	
Age VIII:	7	8.9-9.4		9.08	11.36%	
Age IX:	2	9.1-9.5		9.3	3.03%	
Age X:	1	9.4-9.4		9.4	1.52%	

Rock bass						0.2
Age III:	5	4-5.6	5.4	4.94	9.80%	
Age IV:	13	5-6.8	6.4	6.22	25.49%	
Age V:	12	6.7-8	7.2	7.39	27.23%	
Age VI:	8	8-9.4	8.1	8.67	13.80%	
Age VII:	8	8.7-10.4	8.8	9.55	13.33%	
Age VIII:	3	9.3-9.7	9.4	9.53	4.81%	
Age IX:	2	9.8-11.1		10.52	3.57%	
Age X:	1	10.8-10.8		10.8	1.96%	
Smallmouth bass						--
Age III:	2	10.8-11.8	11.1	11.3	40.00%	
Age IV:	1	11.8-11.8	13	11.8	20.00%	
Age V:	2	13.7-14	14.7	13.85	40.00%	
Walleye						3.6
Age II:	2	12.2-13	11.4	13	16.67%	
Age III:	9	17.2-19.5	14.4	17.97	29.52%	
Age IV:	3	18.1-19.7	16.2	18.85	8.10%	
Age VI:	1	20.8-23.5	19.6	21.7	3.33%	
Age VII:	1	18.6-18.6	20.8	18.6	2.38%	
Age VIII:	1	19.8-19.8	21.7	19.8	3.33%	
Age IX:	1	19-27	22.6	19	3.33%	
Age X:	1	20-22.2	23.1	21.5	3.33%	
Age XI:	5	19.8-24.3		22.78	30.00%	
Yellow perch						-0.7
Age I:	12	2.8-4.1	4	3.36	42.51%	
Age II:	16	4.2-6.1	5.7	4.98	46.52%	
Age III:	5	5.6-6.5	6.8	6.1	8.54%	
Age IV:	1	8.1-8.1	7.8	8.1	2.44%	

* Mean growth index is the average deviation from the state average length at age.

Table 5. Comparison of catch and average size (inches) in parenthesis, by species, in the 1995 survey (all gear-gill nets and fyke nets) and the June 2010 survey (gill nets and fyke nets) of Eight Point Lake, Clare County.

Species	**1995**	**2010**
Bluegill	32	24
	(4.1)	(6.7)
Bullhead (sp.)	10	10
	(11.7)	(12.4)
Pumpkinseed	0.4	15
	(7.1)	(8.0)
Rock bass	6	10.7
	(7.1)	(7.8)
Largemouth bass	2	27
	(13.3)	(10.8)
Black crappie	1	4
	(11.3)	(9.0)
Northern pike	1	7
	(21.6)	(20.5)
Yellow perch	0.4	0
	(4.8)	(--)
Walleye	2	0
	(18.8)	(--)
Smallmouth bass	0.5	0.7
	(15)	(12.5)

Table 6. Classification of the bluegill population in Eight Point Lake, Clare County, using trap net data from the June 2010 survey and the Schneider Index (Schneider 1990).

Sample date	5/24/2010
Sample size	80
Average length (inches)	6.0 (4)
% $\geq$ 6 inches	40 (3)
% $\geq$ 7 inches	21 (4)
% $\geq$ 8 inches	8.8 (5)
Schneider Index	4.0
Rank*	satisfactory

* Denotes ranking scale: 1—very poor, 2—poor, 3—acceptable, 4—satisfactory, 5—good, 6—excellent, 7—superior.