Big Seven Lake
Oakland County, 05N, 07E, 19
Flint River Watershed, Last Surveyed 2012

Joseph M. Leonardi, Fisheries Biologist

Environment

Big Seven Lake is located in the Seven Lakes State Park in Oakland County one mile northwest of Holly, Michigan (Figure 1). It is a 170 acre impoundment of Swartz Creek of the Flint River watershed. Big Seven Lake dam was built by private developers in 1967 to form one large impoundment from seven existing small lakes. In 1969, unable to follow through with plans, developers sold the dam and land surrounding Big Seven Lake to DNR Parks and Recreation Division. DNR Parks and Recreation Division developed the land as a state park and now maintains a paved boat launch along with camping, picnicking, and swimming facilities. No-wake watercraft regulations are enforced and park entry is subject to user fees.

Swartz Creek flows indiscernibly into Big Seven Lake from the northeast as an outlet of Little Seven Lake. Little Seven Lake was once used for fish rearing (walleye) by Fisheries Division. Some years ago, the water control structure of Little Seven Lake was removed and the area is now wetland habitat. Big Seven Lake dam, on the west shore, is fairly extensive consisting of approximately 220 feet of earthen dike with a concrete water control structure. The dam has a structural height of 15 feet, however, normal head is maintained at 11 feet. Lake water level is typically maintained at a fixed elevation with surface water discharging to Swartz Creek. In addition to the Swartz Creek inlet, additional water augmentation is provided via pump which, when needed, draws from a small unnamed water body adjacent to Big Seven Lake.

The surrounding topography of Big Seven Lake is described as gently rolling hills of poor to moderately well drained ground moraines and glacial outwash. Upland soils are of sand and sand-loam consistency with depressions of organic deposits. The upper reach of Swartz Creek is characterized by meandering stream flow with numerous shallow open water areas of marsh and wetland habitat. Upland landscape is described as a combination of deciduous (oak, hickory, maple) tree growth and open meadow fields. Shoreline development is light, primarily consisting of a maintained picnic area and sand swimming beach. Outside the park boundaries, land use is largely agriculture and nearby Holly supports a population of approximately 7,000 people.

In general, water quality of Big Seven Lake is considered good. Water color is clear and secchi disk visibility ranges from 7-10 feet during mid-summer. The lake is sufficiently buffered with alkalinity ranges of 140 parts per million (ppm) to 175 ppm. pH ranges from 7 to 8.5. Big Seven Lake reaches a maximum depth of 50 feet, however, 70% of the lake has a depth of 10 feet or less. A thermocline typically develops in mid-summer at depths between 15 and 25 feet. Water temperatures above the thermocline are generally between 70F and 85F during summer months. Oxygen concentrations below the thermocline are typically less than 3 ppm and can be fish limiting.

History

Fisheries management of Big Seven Lake has been extensive. Historical management focused on warmwater species (largemouth bass, bluegill) but early stocking efforts also sought to establish coolwater species including walleye and tiger muskellunge (Table 1). Walleye were first introduced in 1970 but discontinued shortly after due to poor survival. From 1979 to 1984, tiger muskellunge were stocked into Big Seven Lake but were also discontinued due to poor survival. From 1988 to 1996, Big Seven Lake was one of sixteen lakes in southern Michigan chosen for experimental management of stunted bluegill (Schneider and Lockwood 1997). Big Seven was a control lake and no specific management was allowed for the study period. In 1998, walleye stocking was again initiated on an alternate year schedule. Walleye stocking rates have varied, in some years fall fingerling walleye were stocked at 10/acre, in other years, spring fingerling walleye were stocked at 36-55/acre.

Based on Fisheries Division records, 27 species of fish have been documented in Big Seven Lake (Table 2). Of these species, 26 are believed still present. Tiger muskellunge are believed extirpated. The fish community is largely composed of warmwater species common to this area of the state. Bluegill are abundant and have historically experienced "stunting". The largemouth bass fishery is one of noted reputation for producing sizable fish. Other sportfish including black crappie, pumpkinseed, walleye, northern pike, and yellow perch appear in lesser abundance but provide for additional angler opportunity. Walleye stocking has been considered marginally successful. A small walleye population has been documented but management objectives to improve bluegill growth by introducing this predator have not been achieved. Although specific stocking of redear sunfish was never recommended, they occur as a by-product of the fall fingerling walleye stocking. Lake Erie Management Unit fall walleye rearing was known to have redear sunfish mixed with the fall fingerling walleye and redear were likely harvested and included in the Big Seven Lake stocking. As a result, a self-sustaining redear sunfish population now exists in Big Seven Lake.

In spring of 2007, leaks found in the earthen portion of Big Seven Lake dam required a 54 inch drawdown in water level. Full pool water level was not restored until spring of 2008. A cursory investigation of the fishery in the summer of 2008 determined no catastrophic effects on the fish community. Most fish species remained present in similar proportions found prior to the drawdown. Management recommendations from the 2008 survey were to allow populations to stabilize and return for surveying in a few years.

Current Status

A discretionary fish survey was conducted May 7-10, 2012 using trap nets, small mesh fyke nets, experimental gill nets, seine, and electrofishing gear. A total of 1,627 fish representing 17 species were collected (Table 3). Trap nets comprised 41% of the total with the remaining catch being divided between small mesh fyke nets (36%), day time electrofishing (17%), seine (5%), and experimental gill nets (1%).

Bluegill were the most abundant species collected. A total of 989 bluegill averaging 4.8 inches comprised 61% of the total catch (Table 3). A total of 496 bluegill averaging 5.5 inches were collected with trap nets, 361 averaging 4.0 inches were collected with small mesh fyke nets, and 120 averaging 4.7 inches were collected electrofishing. Fourteen percent of the bluegill collected met or exceeded the acceptable harvest size of 6 inches. Growth analysis indicated bluegill were growing below state average having a mean growth index of -1.1 (Table 3). Suppressed growth appeared to occur after one

year. Age frequency found 9 year classes with an estimated 82% between the ages of 2 and 5 years (Table 4). Bluegill longevity appears to peak at 7 years.

A total of 299 redear sunfish averaging 4.6 inches were collected (Table 3). Seventy-four redear sunfish averaging 5.7 inches were collected with trap nets, 149 averaging 4.2 inches were collected with small mesh fyke nets, and 67 averaging 4.5 inches were collected electrofishing. Nine percent of the redear sunfish collected met or exceeded the acceptable harvest size of 6 inches. Growth analysis indicated redear sunfish were growing below state average having a mean growth index of -2.2 (Table 4). Suppressed growth appeared to occur after one year. Age frequency found 8 year classes with 85% between the ages of 2 and 5 years (Table 4). Redear sunfish longevity appeared to peak at 7 years.

A total of 68 largemouth bass averaging 11.8 inches were collected (Table 3). Twelve largemouth bass averaging 11.8 inches were collected with trap nets, 50 averaging 13.0 inches were collected electrofishing. Forty-six percent of the largemouth bass collected met or exceeded the legal harvest size of 14 inches. Growth analysis indicated largemouth bass were growing below state average having a mean growth index of -1.8 (Table 4). Suppressed growth appeared to occur during the first year of life. Age frequency found 12 year classes with representation widely distributed between 1 and 10 years. Largemouth bass longevity appears to peak at 10 years.

A total of 37 black crappie averaging 8.1 inches were collected (Table 3). Ninety-nine percent were collected with trap nets. Eighty-six percent of the black crappie met or exceeded the acceptable harvest size of 7 inches. Growth analysis indicated black crappie were growing below state average having a mean growth index of -1.4 (Table 4). Suppressed growth appeared to occur early in life and prior to age 3. Age frequency showed the presence of 8 year classes with 89% between 3 and 7 years (Table 4). Black crappie longevity appeared to peak at 8 years.

A total of 34 pumpkinseed sunfish averaging 4.4 inches were collected (Table 3). Five pumpkinseed sunfish averaging 5.5 inches were collected with trap nets, 17 averaging 3.8 inches were collected with small mesh fyke nets, and 12 averaging 4.7 inches were collected electrofishing. Six percent of the pumpkinseed sunfish met or exceeded the acceptable harvest size of 6 inches. Growth analysis indicated pumpkinseed sunfish were growing slightly below state average having a mean growth index of -0.5 (Table 4). Age frequency indicated the presence of 7 year classes with 76% between 2 and 5 years (Table 4). Pumpkinseed sunfish longevity appears to peak at 7 years.

Other fish species found in the 2012 survey were collected in relatively low abundance. Preferred sportfish captured included yellow perch, walleye, and northern pike. Twelve yellow perch averaged 4.2 inches, 6 walleye averaged 22.3 inches, and 5 northern pike averaged 28.3 inches. Sand shiners were a common forage species but were only found in the sand beach area. Brown bullheads and common carp were observed in appreciable numbers. Other species collected included bowfin, brook silverside, central mudminnow, grass pickerel, green sunfish, and warmouth. Centrachid hybridization was common.

Analysis and Discussion

In southern Michigan warmwater lakes, bluegill are one of the most abundant fish species present and play a key role in community structure and overall sportfishing 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 relates them to an adjective ranking system ranging from "very poor" to "superior". Using the Schneider Index for classifying bluegill populations, Big Seven Lake scored 2.75 for a "poor-acceptable" ranking (Table 5).

Historical data indicates Big Seven Lake has experienced poor bluegill size structure since its creation. This poor size structure is further collaborated when applying the Schneider Index to previous assessments (Table 5). Stunted bluegill populations are fairly common in southern Michigan, particularly in shallow weed choked lakes like Big Seven Lake, and are often the result of a number of conditions. Essentially, there is an undesirable balance among recruitment of young fish (too low) and mortality of adults (too high) (Schneider and Lockwood 1997). Excessive weed growth allows young bluegill cover to escape from predation often resulting in over abundance. Overabundance intensifies competition for a limited food source resulting in slow growth. In Michigan's top bluegill fishing lakes, longevity typically extends beyond 7 years resulting in larger fish. On state average, an 8 inch bluegill is generally near 8 years of age. In Big Seven Lake, few bluegill live beyond 7 years enabling them to obtain larger size. It's difficult to believe angler harvest (mortality) of larger bluegill plays a role in Big Seven Lake since historical data indicates large fish have always been lacking.

Fish managers have struggled to find an effective management technique to improve historically poor bluegill lakes. Efforts to reduce bluegill populations have typically been short lived. Increasing the predator base with walleye has shown some encouraging results (Schneider and Lockwood 1997). Recent management on Big Seven Lake has sought to establish a significant walleye population to help control this over abundant bluegill population. However, after multiple years of stocking, walleye appear in relatively low abundance and it is difficult to attribute the slight improvement in bluegill size structure found in 2012 to their presence.

Historical data indicates the largemouth bass fishery in Big Seven Lake has been respectable for larger fish. In 1994, the legal harvest size of largemouth bass was increased from 12 inches to 14 inches. This regulation change was well received by the angling public who has increasingly adopted a catch-release attitude. The 2012 survey found an excellent recreational fishery for larger size largemouth bass. In fact, it constitutes one of the best recreational fisheries for largemouth bass in this area of the Southern Lake Huron Management Unit. Although the abundance of bass > 14 inches cannot be directly attributed to the regulation change, continued catch-release practices will assure high quality of this fishery.

Redear sunfish have colonized in Big Seven Lake. Fisheries Division objectives with redear management have been to provide a "trophy fish" recreational fishery since they typically achieve sizes > 8 inches. Since redear sunfish populations and food diets are more similar to pumpkinseed, it was believed the two species could co-exist with minimal effect on the fish community as a whole. The average size of redear sunfish collected with trap nets declined from 8.3 inches in 2004 to 5.7 inches in 2012. Specific causes for this decline are unknown but could be attributed to either sampling bias or over harvest during the 2007 drawdown period. Presently, redear sunfish occur in higher abundance than pumpkinseeds with a slightly improved size structure. It is unknown what long term effects redear sunfish will have on the Big Seven Lake fish community, but hybridization has become evident.

Although black crappie represent a smaller component of the Big Seven Lake fish community, they appear in appreciable numbers and provide for a limited recreational fishery. Compared to previous surveys, the 2012 catch showed an improved size structure (Table 6). Specific reasons for the improved size structure are not evident and are likely reflective of natural fluctuations.

Northern pike in Big Seven Lake appear in relatively low abundance. Past surveys, along with the 2012 survey, confirm their low abundance and do not provide for detailed analysis. There appears to be limited recreational opportunity to catch northern pike in Big Seven Lake.

Although yellow perch appear in Big Seven Lake, their poor growth and early age mortality are not conducive to a viable sport fishery. Past surveys indicate few yellow perch live long enough to achieve harvestable size. Viable yellow perch sport fisheries in inland lakes do not occur in this region of the state. This is attributed to most lakes having only marginal cool water habitat, high abundance of competing fish species, limited food resources, and high abundance of predator species targeting them as forage.

Carp, bowfin, and bullhead (sp.) provide additional angling opportunities on Big Seven Lake. Each of these species is found in moderate abundance and reach appreciable size. Sand shiners, golden shiners, and brook silversides appear as common forage species.

Management Direction

Fisheries management of Big Seven Lake should continue to focus on warm and cool water species. Expectations of creating significant coolwater fishery (walleye, yellow perch, northern pike) are probably not achievable given the limited coolwater habitat available in Big Seven Lake.

Presently, the largemouth bass fishery is excellent but the overall fishing quality of the lake is hampered by the stunted bluegill population. Given the resilience of stunted bluegill populations to change, management efforts should continue to focus on increasing the predator fish communities. Management recommendations are to continue with either fall fingerling or spring fingerling walleye stocking, depending upon availability. Recommendations are to stock fall fingerlings at a rate of 10 fish per acre on an alternate year schedule or stock spring fingerlings at a rate of 50 fish per acre on an alternate year schedule. Future surveys should focus on walleye stocking success and impacts of redear sunfish colonization in the lake. Additionally, the largemouth bass fishery of Big Seven Lake provides a research opportunity to gain knowledge on bass population and size structure dynamics.

References

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

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

Schneider, J.C. and R.N. Lockwood 1997. Experimental management of stunted bluegill lakes. Michigan Department of Natural Resources, Fisheries Division, Research Report 2040, Ann Arbor.

Figure 1. Location of Big Seven Lake in Seven Lakes State Park, Oakland County.

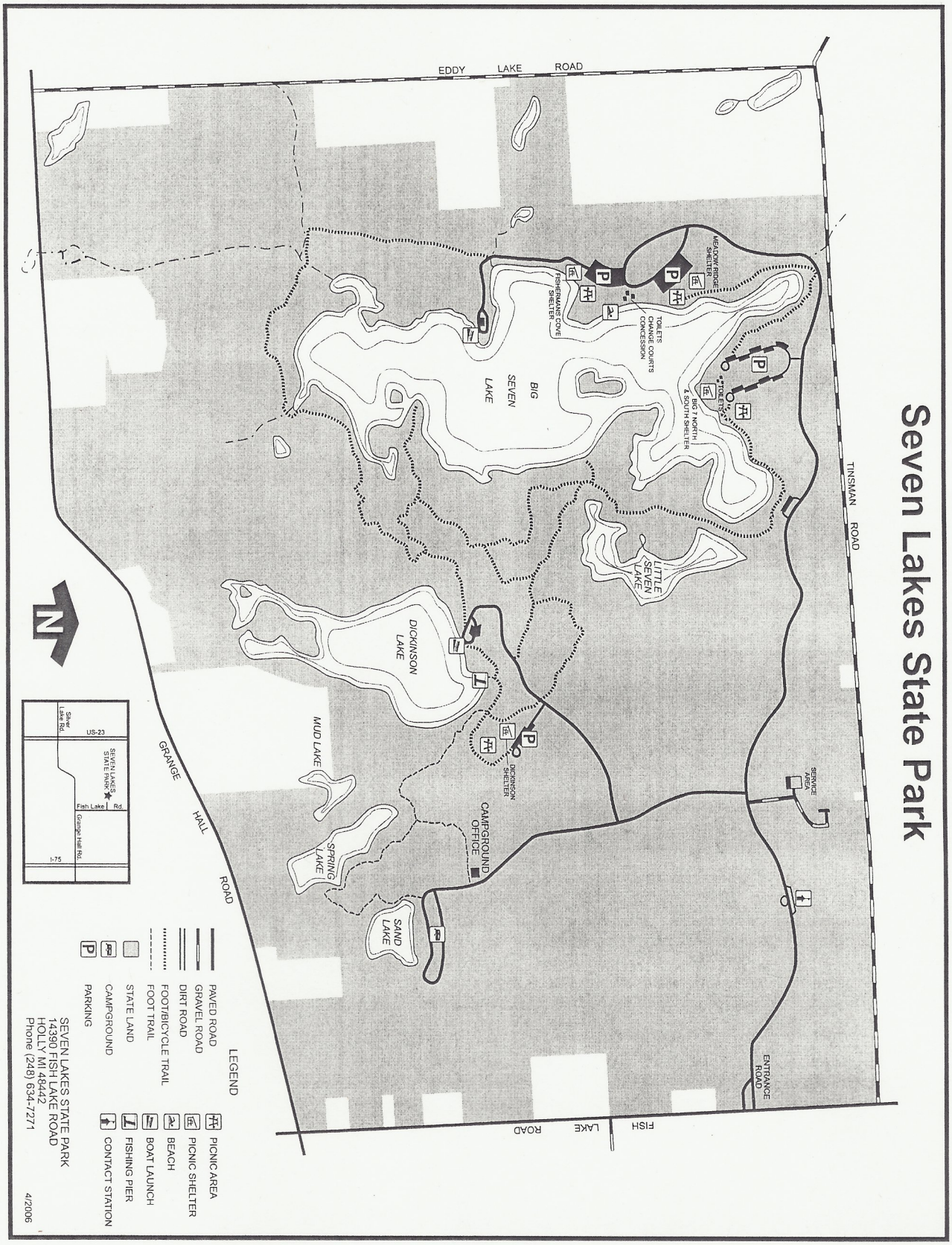

Figure 2. Hydrogaphic map of Big Seven Lake, Oakland County.

Table 1. Fish stocked into Big Seven Lake, Oakland County, 1979-2012. TI=Tittabawassee, MU=Muskegon

Species	Year	Number	Size		Rate (#/acre)
Walleye (MU)	2012	1,722	fall fingerling	(5.3")	10
Walleye (MU)	2011	6,150	spring fingerling	(1.7")	36
Walleye (MU)	2010	8,500	spring fingerling	(1.7")	50
Walleye (MU)	2008	9,960	spring fingerling	(1.4")	59
Walleye (TI)	2006	9,320	spring fingerling	(1.8")	55
Walleye (TI)	2004	2,223	fall fingerling	(3.9")	13
	2004	1,347	fall fingerling	(6.4")	8
Walleye (TI)	2002	2,273	fall fingerling	(4.3")	13
Walleye (TI)	2000	2,564	fall fingerling	(5.0")	15
	2000	464	fall fingerling	(9.0")	3
	2000	373	fall fingerling	(6.7")	2
Walleye (MU)	1998	6,727	fall fingerling	(7.0")	40
Walleye (MU)	1997	36,637	spring fingerling	(2.4")	215
Walleye (MU)	1985	14,000	spring fingerling	(2.5")	82
Tiger muskellunge	1984	560	fall fingerling	(6.8")	3
Tiger muskellunge	1982	850	fall fingerling	(5.8")	5
Walleye	1982	3,402	spring fingerling		20
Walleye	1981	2,980	spring fingerling		18
Tiger muskellunge	1981	500	fall fingerling	(6.3")	3
Tiger muskellunge	1980	600	fall fingerling	(6.6")	4
Tiger muskellunge	1979	600	fall fingerling	(6.6")	4
Walleye	1979	400	spring fingerling		2

Table 2. List of fishes in Big Seven Lake, Oakland County. Origin: N= native, C= colonized, I= introduced. Status: O= extirpated, P= recent observations.

Common name	Scientific name	Origin	Status
Carps and minnows			
Bluntnose minnow	*Pimephales notatus*	N	P
Common carp	*Cyprinus carpio*	C	P
Golden shiner	*Notemigonus crysoleucas*	N	P
Sand shiner	*Notropis stramineus*	N	P
Mudminnows			
Central mudminnow	*Umbra limi*	N	P
Suckers			
Lake chubsucker	*Erimyzon sucetta*	N	P
White sucker	*Catostomus commersoni*	N	P
Bullhead catfishes			
Black bullhead	*Ameiurus melas*	N	P
Brown bullhead	*Ameiurus nebulosus*	N	P
Yellow bullhead	*Ameiurus natalis*	N	P
Channel catfish	*Ictalurus punctatus*	I	P
Pikes			
Grass pickeral	*Esox americanus*	N	P
Northern pike	*Esox lucius*	N	P
Tiger muskellunge	*E.lucius x E. masquinongy*	I	O
Sunfishes			
Black crappie	*Pomoxis nigromaculatus*	N	P
Bluegill	*Lepomis macrochirus*	N	P
Green sunfish	*Lepomis cyanellus*	N	P
Largemouth bass	*Micropterus salmoides*	N	P
Pumpkinseed	*Lepomis gibbosus*	N	P
Redear sunfish		I	P
Warmouth	*Lepomis gulosus*	N	P
Perches			
Yellow perch	*Perca flavescens*	N	P
Johnny darter		N	P
Walleye	*Stizostedion vitreum*	I	P
Bowfins			
Bowfin	*Amia calva*	N	P
Killifishes			
Blackstripe topminnow	*Fundulus notatus*	N	P
Silversides			
Brook silverside	*Labidesthes sicculus*	N	P

Table 3. Total catch (all gear) from Big Seven Lake, Oakland County, May 2012.

Common name	Number	Percent by number	Length range (inches)	Weight (lbs.)	Percent by weight	Percent legal size	Average size (inches)
Black crappie	37	2.3	5-10	11.0	2.6	86.5	8.1
Bluegill	989	60.8	1-8	85.9	20.0	14.0	4.8
Bowfin	5	<1	24-30	36.7	8.6	100	27.3
Brook silverside	1	<1	3.5	-	<1	-	3.5
Brown bullhead	19	1.2	8-13	13.6	3.2	100	11.4
Central mudminnow	1	<1	1.5	-	<1	-	1.5
Common carp	18	1.1	19-26	112.8	26.3	100	23.7
Grass pickerel	1	<1	9.5	0.2	<1	-	9.5
Green sunfish	10	0.6	2-5	0.3	<1	-	3.0
Hybrid sunfish	27	1.7	2-6	1.9	<1	100	4.5
Largemouth bass	68	4.2	2-18	82.3	19.2	45.6	11.8
Northern pike	5	<1	16-33	29.1	6.8	80	28.3
Pumpkinseed	34	2.1	1-6	2.5	<1	5.9	4.4
Redear sunfish	299	18.4	2-7	21.7	5.1	9.0	4.6
Sand shiner	75	4.6	1-2	0.3	<1	-	2.3
Walleye	6	<1	19-23	22.2	5.2	100	22.3
Warmouth	20	1.2	2-5	8.2	1.9	-	4.7
Yellow perch	12	<1	3-6	0.4	<1	0	4.2

Table 4. Age and growth data from selected sportfish, Big Seven Lake, Oakland County, May 2012.

Species/Age	No. aged	Length range (in.)	State avg. length (in.)	Weighted mean length (in.)	Weighted age frequency (%)	Mean growth index*
Black crappie						-1.4
Age III	7	5.9-7.2	7.5	6.47	16.76	
Age IV	9	6.9-8.8	8.6	7.80	27.03	
Age V	5	7.7-9.0	9.4	8.03	14.14	
Age VI	1	9.0-9.0	10.2	9.00	2.25	
Age VII	9	7.5-9.8	10.8	8.51	28.83	
Age VIII	2	8.6-9.2	11.4	8.82	6.04	
Age IX	1	9.8-9.8	11.9	9.8	2.25	
Age X	1	10.2-10.2		10.2	2.7	
Bluegill						-1.1
Age I	10	1.5-2.0	1.8	1.83	1.24	
Age II	16	2.8-3.8	3.8	3.34	12.91	
Age III	5	3.6-4.5	5.0	4.19	11.89	
Age IV	11	4.6-5.1	5.9	4.87	37.64	
Age V	6	4.8-5.5	6.7	5.09	19.41	
Age VI	6	5.4-8.0	7.3	5.86	5.6	
Age VII	10	6.1-7.2	7.8	6.37	10.86	
Age VIII	4	7.1-8.3	8.2	7.38	0.37	
Age IX	1	8.4-8.4	8.6	8.40	0.07	
Largemouth bass						-1.8
Age I	4	2.2-2.8	4.2	2.48	5.88	
Age II	6	4.9-7.2	7.1	5.84	10.29	
Age III	8	6.7-7.9	9.4	7.50	11.76	
Age IV	9	8.4-13.3	11.6	10.22	13.24	
Age V	4	9.9-13.5	13.2	10.95	5.88	
Age VI	5	12.0-15.5	14.7	13.96	7.35	
Age VII	4	12.7-16.9	16.3	14.75	5.88	
Age VIII	9	13.4-17.0	17.4	15.27	13.24	
Age IX	10	14.4-16.8	18.3	15.61	14.71	
Age X	6	15.3-18.6	19.3	17.10	8.82	
Age XI	1	16.5-16.5		16.50	1.47	
Age XII	1	16.3-16.3		16.30	1.47	
Pumpkinseed						-0.5
Age I	1	1.7-1.7	1.8	1.70	2.94	
Age II	11	3.0-3.7	3.8	3.40	35.29	
Age III	8	4.0-4.5	4.9	4.26	30.59	
Age IV	3	4.4-5.0	5.6	4.76	9.71	
Age V	1	4.6-4.6	6.2	4.60	3.82	
Age VI	4	5.4-6.5	6.6	5.87	9.80	
Age VII	3	5.3-6.4	7.1	5.76	7.84	
Redear sunfish						-2.2
Age I	8	1.6-2.1	1.9	1.84	2.76	
Age II	12	2.6-3.9	4.4	3.42	23.23	
Age III	5	3.6-4.7	6.2	4.17	15.95	
Age IV	10	4.5-5.2	7.6	4.84	31.77	
Age V	5	5.1-5.5	8.7	5.30	14.38	
Age VI	3	5.0-6.1	9.6	5.44	4.97	
Age VII	7	6.4-7.7	10.3	6.60	5.67	
Age VIII	2	6.5-7.6	10.8	6.69	1.27	

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

Table 5. Big Seven Lake bluegill classification using the Schneider Index (Schneider 1990). Size score is given in parenthesis.

Sample date	5/23/94	05/15/95	05/28/96	05/11/98	05/17/04	05/07/12
Sample size	487	475	266	477	434	496
Average length (inches)	5.0 (2)	4.9 (1)	4.8 (1)	5.0 (2)	5.0 (2)	5.5 (3)
% ≥ 6 inches	14.9 (2)	3.8 (1)	1.8 (1)	11.8 (2)	5.1 (1)	26 (3)
% ≥ 7 inches	0.2 (1)	0.2 (1)	0 (1)	1.3 (1)	1.4 (1)	1.6 (1)
% ≥ 8 inches	0 (2)	0 (2)	0 (2)	0 (2)	0.7 (4)	0.4 (4)
Schneider Index	1.75	1.25	1.25	1.75	2.0	2.75
Rank[1]	Poor-V. Poor	V. Poor	V. Poor	Poor-V. Poor	Poor	Poor-Accpt.

[1]Rank: 1 = Very poor, 2 = Poor, 3 = Acceptable, 4 = Satisfactory, 5 = Good, 6 = Excellent, 7 = Superior

Table 5-continued.

Sample date	05/22/89	05/30/90	06/03/91	05/11/92	05/24/93
Sample size	443	234	238	297	305
Average length (inches)	5.6 (3)	5.7 (3)	5.5 (2)	5.4 (2)	5.2 (2)
% ≥ 6 inches	22 (2)	40.5 (3)	13.8 (2)	18.2 (2)	13 (2)
% ≥ 7 inches	0.9 (1)	2.6 (2)	0.4 (1)	1.7 (1)	0.7 (1)
% ≥ 8 inches	0 (2)	0 (2)	0 (2)	0 (2)	0 (2)
Schneider Index	2.0	2.5	1.75	1.75	1.75
Rank[1]	Poor	Poor	V. Poor-Poor	V. Poor-Poor	V. Poor-Poor

[1]Rank: 1 = Very poor, 2 = Poor, 3 = Acceptable, 4 = Satisfactory, 5 = Good, 6 = Excellent, 7 = Superior

Table 6. Black crappie size structure using trap or fyke net gear from Big Seven Lake, Oakland County.

Sample date	05/15/95	05/11/98	05/17/04	05/07/12
Sample size	43	38	34	36
Average length (inches)	8.0	6.8	7.1	8.1
% $\geq$ 7 inches	93	26	59	86
% $\geq$ 8 inches	35	5	21	56
% $\geq$ 9 inches	7	5	6	17
Mean Growth Index	-	-1.5	-2.3	-1.4