Thompson Lake

Livingston County, T3N R4E,5E Section 25, 30, 31,36
Shiawassee River Watershed

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Environment

Thompson Lake is located in the city limits of Howell in central Livingston County. It is an impoundment of Alger Creek, a tributary to Bogue Creek, which drains to the South Branch Shiawassee River. The South Branch Shiawassee River flows northerly to the mainstem Shiawassee River and to the Saginaw River and Lake Huron.

The Howell area lies within the Ionia district of the Southern Lower Michigan Regional Landscape Ecosystem and is characterized by features identified in the Lansing sub-district (Albert 1995). The Lansing sub-district is described as gently sloping ground moraine broke by outwash channels and numerous end-moraine ridges. Undulating topography formed alternating well drained rises and poorly drained depressions of variable soils. Soils on raised moraines generally consist of medium texture sand and loam while depressions along end moraine ridges are typically fine texture, high in organic content. Outwash channels developed by glacial retreat generally formed the river and stream drainage pattern of the watershed.

Shiawassee River basin groundwater and surface water patterns follow geological soils types. Medium textured soils found in the Howell area allow for greater permeability and hydraulic head pressure (groundwater elevation) resulting in groundwater deposits. Most groundwater deposits in the Shiawassee River watershed are largely concentrated in southern and southeastern portions where Thompson Lake is located (Cooper 2005). Groundwater inflow to Thompson Lake provides a stable water source necessary to maintain the aquatic ecosystem.

Pre-settlement vegetation in the Howell area was described as beech-sugar maple forest with hardwood swamps (Denton 1995). Some of the higher end moraine ridges supported oak-hickory forest while silver maple, American elm, red ash, and white oak were common to depressions. Originally, Thompson Lake consisted of three smaller lakes connected by Alger Creek (Pless 1975). The immediate area surrounding these three lakes was typical of a marsh and wetland ecosystem. In 1836, Moses Thompson constructed a dam for saw mill operation resulting in the formation of one large lake named in his honor.

Alger Creek enters Thompson Lake on the southeast shore as an outlet from Lake Chemung. An additional inlet which serves as the Earl Lake outlet is located on the south shore. Alger Creek then exits Thompson Lake at the north shore and flows northerly to its confluence with Bogue Creek and eventually the South Branch Shiawassee River.

Presently, the Livingston County Drain Commission (LCDC) administers the Thompson Lake dam and control structure. The structure maintains a fixed crest water level with an overspill discharge. Removable plates allow for water level manipulation. As a result of the dam and water control structure, Thompson Lake is estimated to encompass 262 surface acres. In 1984, Michigan court

established a legal lake level for Thompson Lake to be set at 904.5 feet, NGVD (National Geodetic Vertical Datum), with drawdown authorization during winter months of even numbered years (subsequently modified to odd years). Typical water level fluctuation during the drawdown period is three feet. As a condition of the court order, the Lake Board was required to stock 1,500-2,000 northern pike during drawdown years for reproductive losses attributed to lower water levels.

As a result of the Thompson Lake dam, vast areas of original marsh lands were inundated resulting in an irregular shaped shoreline with expanded littoral zones of shallow water. It can be reasonably surmised the location of the original three lakes followed the perimeters of the three deep water holes depicted in the hydrographic map (Figure 1). The largest area of inundation appears at the inlets on the south and southeast shores and in the northeast quadrant. Bottom substrate found in these locations is dominated by organic matter consistent with the decomposition of emergent vegetation. Other areas are dominated by sand substrate with a fine silt deposit.

In general, Thompson Lake is classified as a warmwater, medium size, deep lake of mesotrophic characteristics. Medium size lakes are considered between 100 acres to 1000 acres and deep lakes are those known to stratify. Average depth is estimated to be 9 feet with a maximum depth of 52 feet found just north of the island in the central portion of the lake. An estimated 75% of the lake depth is 10 feet or less.

Limnological parameters measured in August, 2005 included temperature, oxygen, and pH (Table 1). Thermal stratification in Thompson Lake occurred in mid-summer with thermocline development between 18 and 25 feet. Critical oxygen concentrations for fish (< 3 ppm) were observed at depths greater than 29 feet. Oxygen measurements observed in August, 2005 were comparable to historical data (MDNR, Fisheries Division files) but differed significantly from measurements collected in August, 2002 by the Livingston County Drain Commission (LCDC 2005). In August, 2002, the LCDC found critical oxygen concentrations for fish at depths greater than 18 feet. Oxygen measurements taken prior to lake stratification (May, 2005), showed adequate oxygen concentrations for fish to a depth of 50 feet. Both MDNR and LCDC data indicate, during mid-summer stratification, significant portions of the deep water zones become oxygen deprived and unsuitable for most fish species.

Total alkalinity found in Thompson Lake typically ranges from 170 to 190 ppm indicating moderately hard water with good buffering ability. Historical pH values for Thompson Lake have ranged from 7.5 to 9.0 and similar findings were found in August, 2005 (Table 1). Total alkalinity and pH ranges found in Thompson Lake are typical of other water bodies in southern Michigan.

Nutrient input to Thompson Lake has been a concern since the mid-1970's. The lake experiences algae blooms on a regular basis suggesting excess nutrient loading. Elevated phosphorus levels were identified in 1976 and were believed to be the result of surface water runoff and possibly faulty septic systems (Ervin and Jude 1978). Since 1976, a number of corrective actions have been implemented by the community including the installation of sewer lines to the east shore residents. In 2002, a comparative analysis showed noticeable decreases in levels of phosphorus and nitrogen (LCDC 2005). However, chlorides, an indicator of runoff, increased two fold suggesting additional corrective actions are still needed.

In 1986, polychlorinated biphenyl (PCB) contamination was found in soils at an industrial site near Thompson Lake. Fish samples collected were found with elevated PCB concentrations. Seven of ten carp exceeded the public health action level (2 ppm) with an average PCB concentration of 4 ppm. As a result, the Michigan Department of Community Health placed a health advisory on carp consumption which remains in effect today (Michigan Department of Community Health 2004). Less restrictive consumption advisories are in effect for most fish species generally sought after by the general public.

Aquatic vegetation is the dominant form of fish cover in Thompson Lake. The overall fertility of the lake along with its relatively shallow average depth make it well suited for aquatic vegetative growth. Abundant macrophytes have conflicted with recreational uses as far back as the 1950's. Presently, Eurasian milfoil (Myriophyllum spicatum) and curly leaf pondweed (Potomogeton crispus) are most abundant and problematic. To combat nuisance aquatic vegetation, the Thompson Lake Board implemented an aggressive vegetation management plan. The vegetation management plan utilizes multiple herbicides, including fluridone, on a semi-regular basis. Although relief from nuisance vegetation is provided by herbicide use, vegetative control is dependent on continual treatments. Algal blooms, a product of Thompson Lake fertility, continue to persist on a regular basis.

Thompson Lake's proximity in the city limits of Howell makes it a valuable resource to the community and it receives high recreational use. Shoreline development is extensive and most of the natural shore has been modified. The city maintains boat launch off Roosevelt Road on the northeast shore. Adjacent to the boat launch is a city park and cemetery. The south shore remains as the only significant portion of the lake in a semi-natural state largely due to shallow water depth and emergent vegetation. The remaining shoreline is developed with residential housing, many of which have had rock rip-rap or sea walls installed for shore protection.

History

Thompson Lake fish community assessments have been conducted by MDNR, Fisheries in 1949, 1957, 1973, 1980, 1986, 1995, and 2005. These assessments document the presence of 19 native fish species and 2 introduced species (Table 2). It is likely other species are present but have not been documented due to collection bias. Of the fish species present, each would be considered common to the region with the exception of redear sunfish. Redear sunfish most likely entered Thompson Lake from Lake Chemung where they have been introduced by MDNR, Fisheries.

Extensive fisheries management has not occurred on Thompson Lake. Past assessments have indicated similar species composition consisting of warm and coolwater species. As a result of a court order to stock fish during drawdown years, the LCDC has stocked northern pike and channel catfish in recent years (Table 3). A 1986 assessment indicated poor bluegill size structure but, in 1995, significant improvement was observed. In 1995, there was little evidence that the sporadic stocking of northern pike and channel catfish was contributing to the fishery. Bluegill, largemouth bass, black crappie, pumpkinseed sunfish, and bullhead occurred as the most common species collected in fisheries assessments.

Current Status

In May, 2005, Fisheries Division conducted a fisheries assessment using trap net, gill net, seine, and electrofishing gear. Four inland trap nets were fished for 2 nights at 5 locations. Three experimental mesh gill nets were used to sample deep water zones at 3 locations. Four 25 foot seine tows were made at 3 locations and 3 ten minute electrofishing runs were conducted at 3 locations. All fish were measured to the nearest inch group and scales samples were collected for age-growth analysis on common sportfish.

A total of 1,265 fish representing 15 species were collected with combined efforts. Black crappie, bluegill, and largemouth bass were the most abundant comprising 83% of the total catch by number and 57% by weight (Table 4). Other species collected included bluntnose minnow, bowfin, carp, white sucker, golden shiner, northern pike, pumpkinseed sunfish, rock bass, redear sunfish, warmouth, yellow perch, and yellow bullhead.

A total of 574 black crappie averaging 6.7 inches comprised 45% of the total catch (Table 4). Twelve percent of these fish met or exceeded the acceptable harvest size of 8 inches. Age-growth data indicates black crappies were growing below State average having a mean growth index of -1.6 (Table 5). Age frequency indicates 77% of the black crappie collected were either age 3 or age 4 corresponding to the 2002 and 2003 year classes (Table 6). Black crappie longevity peaks at age 6 and older fish appear to experience high mortality from either harvest or natural causes.

A total of 335 bluegill averaging 5.6 inches comprised 27% of the total catch (Table 4). Thirty-eight percent of these fish met or exceeded the acceptable harvest size of 6 inches. Age-growth data indicates bluegills were growing below State average having a mean growth index of -0.8 (Table 5). Age frequency indicates sufficient recruitment is occurring with good representation of bluegill aged 4 through 7 (Table 6). Bluegill longevity peaks at age 7 and older fish appear to experience high mortality from either harvest or natural causes.

A total of 135 largemouth bass averaging 11.5 inches comprised 11% of the total catch (Table 4). Thirty-two percent of these fish met or exceeded the legal harvest size of 14 inches. Age-growth analysis indicates largemouth bass were growing below State average having a mean growth index of -1.4 (Table 5). Age frequency indicates a presence of multiple year classes with strongest representation from 1999, 2002, and 2003 (Table 6).

A total of 54 pumpkinseed sunfish averaging 6.0 inches comprised 4% of the total catch (Table 4). Fifty-two percent of these fish met or exceeded the acceptable harvest size of 6 inches. Age-growth data indicates pumpkinseed sunfish were growing at State average having a mean growth index of +0.1 (Table 5). Age frequency indicates sufficient recruitment is occurring with good representation of pumpkinseed aged 4 through 7 (Table 6). Pumpkinseed longevity peaks at age 6 and older fish appear to experience high mortality either by harvest or natural causes.

Other important sportfish occurred in low abundance. Twelve northern pike averaged 28.3 inches, 15 yellow perch averaged 9.0 inches, and 18 redear sunfish averaged 6.9 inches. Age-growth data indicated northern pike were growing above State average having a mean growth index of +2.3 (Table 5). Yellow perch and redear sunfish were growing near State average with a mean growth indexes of +0.4 and +0.1, respectively (Table 5).

Analysis and Discussion

Direct comparison of the 2005 fisheries assessment to previous assessments is tenuous due to collection bias. Water temperature observed in 2005 was 10 degrees (F) cooler than in 1986 and 1995 and undoubtedly influenced catch rates. Additional sampling gear was also incorporated into the 2005 assessment. However, the 2005 catch does allow for discussion of the current fish community and some comparison to previous findings is possible.

The relative abundance and size distribution of black crappie indicates a stable fishery exists. Abundance was significantly higher in 2005 compared to 1995 and 1986 but is attributed to cooler water temperatures and increased susceptibility to trap net gear. Size structure and growth was almost identical to that found in 1995 and shows a consistent dominance of slow growing fish in the 5-7 inch range. Black crappie greater than 8 inches are present, but occur in relatively low abundance. Few black crappie appear to survive beyond 6 years enabling them to reach larger size. Strong 2002 and 2003 year classes indicate potential for size structure improvement and increased recruitment into the harvestable fishery.

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 growth data and relates them to an adjective ranking system ranging from "very poor" to "superior". Using the Schneider Index for classifying bluegill population, Thompson Lake scored 3.0 for an acceptable rank (Table 7).

Bluegill size structure has fluctuated between assessments in 1986, 1995, and 2005 (Table 7). In 1986, bluegill size structure was ranked as "poor" but improved significantly to "good" in 1995. The time span between assessments makes it difficult to ascertain cause but differences are most likely attributed to natural cycles of abundance. Bluegill growth below State average has been documented since 1957 and appears the norm rather than due to some anomaly. Presently, bluegill appear in a stable state in fair abundance and with good representation of several year classes. Few bluegill appear to live beyond age 7 enabling them to reach larger size.

The largemouth bass fishery of Thompson Lake appears in excellent shape and greatly improved from the 1995 assessment. Relative abundance, size distribution, and age frequency each indicate a healthy and stable fish community. Thirty-two percent of the largemouth bass collected exceeded 14 inches with several specimens in the 16-18 inch size range. Year classes up to age 13 were represented in 2005 and demonstrate their longevity. Recruitment to the legal size fishery appears on a steady course with good representation of 8-10 inch fish. Growth was below State average but typical of other lakes in this region. The tendency of Michigan bass anglers toward catch-release fishing undoubtedly contributes to maintaining the good size structure observed.

A small but healthy pumpkinseed sunfish stock provides additional recreational angling opportunities in Thompson Lake. Abundance, size distribution, and age frequency remained similar to past assessments indicating a stable fishery. Pumpkinseed growth was above State average suggesting the relatively low abundance observed is not dependent on available food.

Northern pike typically do not show up in high abundance in assessments unless they are specifically targeted after winter ice-out. Since only twelve northern pike were captured in the 2005 survey, it is difficult to provide comment. Catch per effort was greater in 2005 suggesting recent stocking may be contributing to the fishery. The 2000 year class contributed 50% to the catch which corresponds to the year the LCDC stocked 560 twelve to fourteen inch fish. However, year classes of non-stocked years were also found indicating some level of natural reproduction occurs. Northern pike growth was well above State average having a mean growth index of +2.3.

Redear sunfish were a new species of fish documented in Thompson Lake. It is suspected they either emigrated from Lake Chemung via Alger Creek or perhaps zealous anglers transported and stocked them without permission. In Lake Chemung, the introduction of redear sunfish has shown to be a desirable fishery amongst anglers as they tend to grow to larger size. Other introductions of redear sunfish in southern Michigan have not shown any negative affect on existing fish communities (Towns 2003). Sufficient numbers of redear sunfish were not collected in 2005 to allow for detailed comment. Redear and pumpkinseed sunfish have similar dietary needs and given the good growth observed with pumpkinseeds, it is believed a small viable redear fishery may develop.

The low abundance of other fish species found in the 2005 assessment does not allow for detailed comment. Fifteen yellow perch averaging 9.0 inches were collected indicating a limited recreational fishery exists. Bluntnose minnows and golden shiners represent important forage species. Bowfin are an important predator which help control panfish populations. Carp and yellow bullheads serve bottom feeder roles and rock bass and warmouth appear in low abundance.

Management Direction

Based on the 2005 assessment, there appears to be an indication of some improvement in the northern pike fishery. This improved fishery will greatly enhance recreational opportunities on the lake and continued stocking is recommended. Northern pike growth is above State average indicating carrying capacity has not yet been achieved. Management direction continues to be tied to the court decision relating to establishment of a legal lake level with the LCDC acting as the appointed agency. A portion of that decision requires:

"In a year which a drawdown is permitted the Lake Board is to introduce 1,500 to 2,000 six to eight inch fingerlings of a species mutually agreed upon by the Lake Board and the Michigan Department of Natural Resources after consultation with the supervising fish biologist of the Michigan Department of Natural Resources."

The 1984 court ruling remains applicable in 2006 and Fisheries Division believes stocking preference should be placed on northern pike. The quantity and quality of spawning habitat often limits northern pike populations and if Thompson Lake is at drawdown elevation during spawning time, valuable habitat is lost. Fisheries Division stocking guidelines recommend northern pike stocking rates of 10 spring fingerling (4 inch) per acre or 20 spring fingerling (2-3 inch) per acre on an alternate year schedule (Dexter and O'Neal 2004). Stocking records for Thompson Lake are incomplete and do not indicate full compliance to the court order (Table 3). Fisheries Division does not track specific years of drawdown and it is unknown if voided stocking years occurred as a result of any decision not to implement a drawdown. In some years, larger northern pike were stocked at reduced numbers. Most

recently (since 2002), the LCDC has made a more conscious effort to comply with the court order with stocking at various sizes and rates.

Due to the legality of the stocking issue, the following management recommendations are suggested in years when drawdown is implemented:

The species stocking preference for Thompson Lake should be northern pike.

Any deviation of the court ruling must be mutually agreed upon by the LCDC and MDNR, Fisheries.

A MDNR, Fish Stocking Permit shall be applied for and granted (upon review and agreement) during scheduled drawdown years.

For northern pike 4-8 inches in length, 1,500 - 2,000 shall be stocked (5.7-7.6/acre).

For northern pike 9-14 inches in length, 500 - 800 shall be stocked (2.0-3.0/acre).

An evaluation of the northern pike fishery should be scheduled in the future. Assessments specifically targeting northern pike will give better insight to relative abundance, growth, and potential contributions of stocking to the fishery.

Additional fisheries management is not warranted on Thompson Lake. The fish community appears in satisfactory state with some very good recreational opportunities for black crappie, bluegill, and largemouth bass. Northern pike, pumpkinseed, and redear sunfish offer additional angling opportunities but they exist in fewer numbers. Fish samples collected for contaminant analysis in 2005 were not available for this report.

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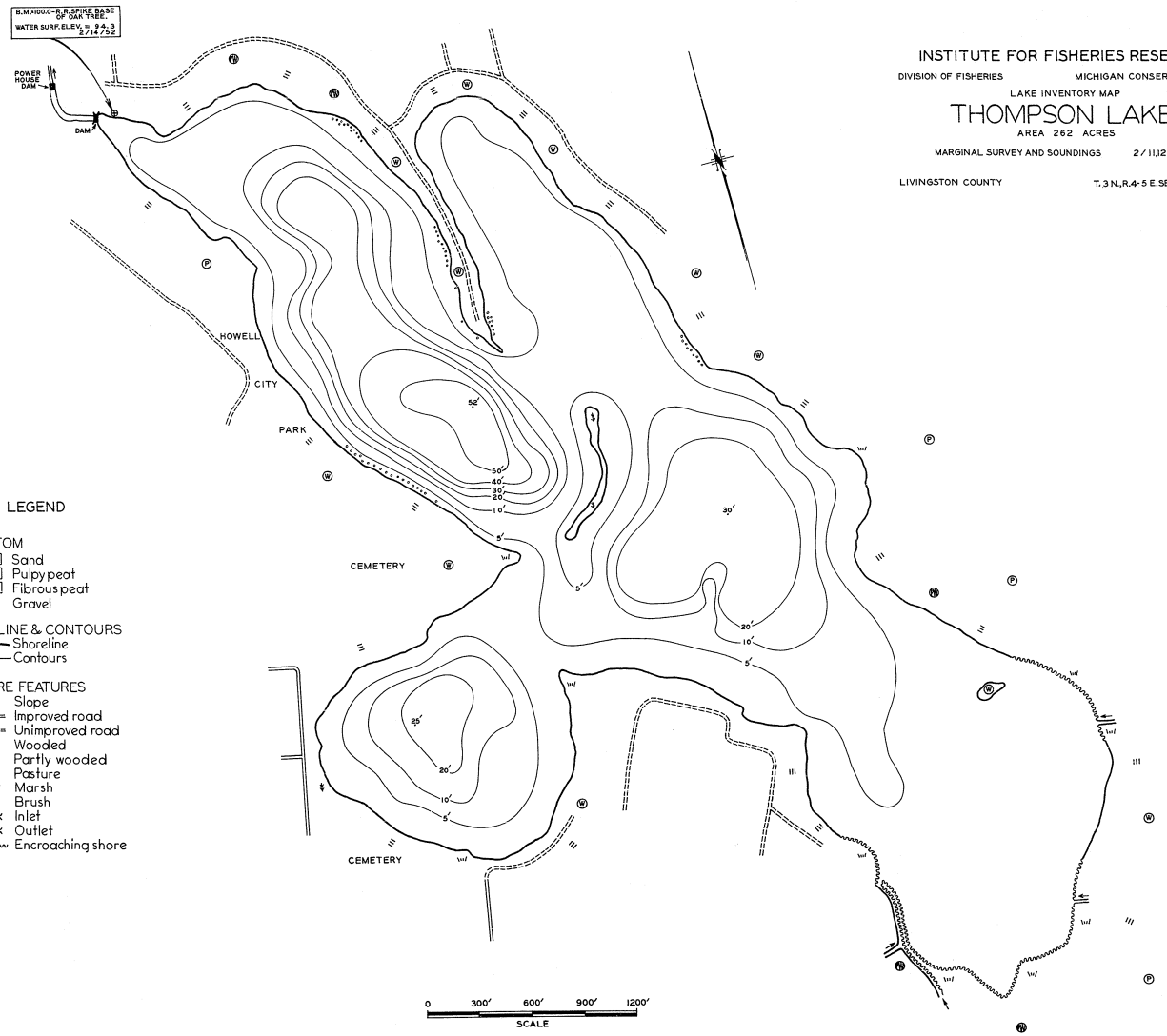

INSTITUTE FOR FISHERIES RESEARCH

DIVISION OF FISHERIES MICHIGAN CONSERVATION DEPT.

LAKE INVENTORY MAP

THOMPSON LAKE

AREA 262 ACRES

MARGINAL SURVEY AND SOUNDINGS 2/11,12,13,14/52

LIVINGSTON COUNTY T. 3 N., R. 4-5 E. SEC'S. 25,30,31,36

LEGEND

BOTTOM
- Sand
- Pulpy peat
- Fibrous peat
- Gravel

OUTLINE & CONTOURS
- Shoreline
- —5'— Contours

SHORE FEATURES
- Slope
- Improved road
- Unimproved road
- (W) Wooded
- (PW) Partly wooded
- (P) Pasture
- Marsh
- Brush
- Inlet
- Outlet
- Encroaching shore

W.L.C.

K-103-

THOMPSON LAKE Livingston County T. 3 N., R. 4-5 E. Sec's. 25,30,31,36

Table 1.-Temperature, oxygen, and pH profile from deep basin of Thompson Lake, Livingston County. Data collected August, 2005 by MDNR, Fisheries Division.

Depth (ft.)	Temperature (F)	Oxygen (ppm)	pH
1	75	8.42	9.07
2	75	8.42	9.07
3	75	8.41	9.08
4	75	8.41	9.08
5	75	8.40	9.08
6	75	8.40	9.08
7	75	8.39	9.07
8	75	8.39	9.07
9	75	8.40	9.07
10	75	8.41	9.08
11	75	8.41	9.08
12	75	8.40	9.08
13	75	8.39	9.08
14	75	8.40	9.09
15	75	8.40	9.09
16	75	8.37	9.09
17	73	8.36	9.01
18	70	7.39	8.76
19	67	7.38	8.68
20	66	7.68	8.67
21	61	8.83	8.74
22	59	9.33	8.79
23	57	10.35	8.84
24	56	10.98	8.83
25	54	10.83	8.71
26	52	8.87	8.52
27	50	5.41	8.36
28	49	3.15	8.24
29	48	2.11	8.17
30	47	1.24	8.02
31	47	0.82	7.97
32	47	0.69	7.92
33	46	0.60	7.89
34	46	0.52	7.87
35	45	0.44	7.87
36	45	0.41	7.88
37	45	0.37	7.88
38	45	0.35	7.88
39	44	0.33	7.88
40	44	0.31	7.89
41	44	0.30	7.90
42	44	0.29	7.91
43	44	0.28	7.91
44	43	0.26	7.90
45	43	0.26	7.88
46	43	0.24	7.85
47	43	0.24	7.83
48	43	0.23	7.78
50	43	0.23	7.74

Table 2.–List of fishes in Thompson Lake, Livingston County. Origin: N= native, I= introduced. Status: P= recent observations. Data from: Michigan Department of Natural Resources, Fisheries Division records.

Common name	Scientific name	Origin	Status
Bowfin	*Amia calva*	N	P
Common carp	*Cyprinus carpio*	I	P
Golden shiner	*Notemigonus crysoleucas*	N	P
Bluntnose minnow	*Pimephales notatus*	N	P
White sucker	*Catostomus commersoni*	N	P
Brook silverside	*Labidesthes sicculus*	N	P
Lake chubsucker	*Erimyzon sucetta*	N	P
Black bullhead	*Ictalurus melas*	N	P
Yellow bullhead	*Ameiurus natalis*	N	P
Brown bullhead	*Ameiurus nebulosus*	N	P
Northern pike	*Esox lucius*	N	P
Grass pickerel	*Esox americanus*	N	P
Green sunfish	*Lepomis cyanellus*	N	P
Pumpkinseed	*Lepomis gibbosus*	N	P
Warmouth	*Lepomis gulosus*	N	P
Bluegill	*Lepomis macrochirus*	N	P
Redear sunfish	*Lepomis microlophus*	I	P
Rock bass	*Ambloplites rupestris*	N	P
Largemouth bass	*Micropterus salmoides*	N	P
Black crappie	*Pomoxis nigromaculatus*	N	P
Yellow perch	*Perca flavescens*	N	P

Table 3.-Fish stocked into Thompson Lake, Livingston. Data from: Michigan Department of Natural Resources, Fisheries Division and Livingston County Drain Commission.

Year stocked	Species	Size range (inches)	Number
1925	Walleye	0.5	unknown
1931	Smallmouth bass	unknown	unknown
1938	Largemouth bass	unknown	unknown
1985	Northern pike	12.0-16.0	650
1987	Northern pike	12.0-18.0	650
1989	Channel catfish	unknown	unknown
1991	Northern pike	10.0-12.0	670
2000	Northern pike	12.0-14.0	560
2002	Northern pike	7.0-9.0	450
2004	Northern pike	5.0-6.0	800

Table 4.-Number, weight, and length range of fishes collected with trap net, gill net, and electro-fishing gear from Thompson Lake, Livingston County. Data from Michigan Department of Natural Resources, Fisheries Division records.

Common name	Number	Percent by number	Length range (inches)	Weight (lbs.)	Percent by weight	Percent legal size	Average size (inches)
Black crappie	574	45.4	4-14	100.2	20.3	100	6.7
Bluegill	335	26.5	1-7	43.9	8.9	100	5.6
Bluntnose minnow	53	4.2	1-2	0.1	0.02	100	1.5
Bowfin	7	0.6	22-28	43.6	8.9	100	25.9
Common carp	9	0.7	10-26	48.7	9.9	100	21.8
Golden shiner	2	0.2	7-8	0.3	0.06	100	8.0
Hybrid sunfish	3	0.2	5-6	0.5	0.1	100	6.2
Largemouth bass	135	10.7	4-19	135.5	27.4	31.9	11.5
Northern pike	12	0.9	13-34	68.6	13.9	91.7	28.3
Pumpkinseed	54	4.2	4-7	10.0	2.0	100	6.0
Redear sunfish	18	1.4	5-8	4.5	0.9	100	6.9
Rock bass	4	0.3	6-10	0.9	0.2	100	8.0
Warmouth	9	0.7	4-8	2.6	0.5	100	6.9
White sucker	2	0.2	18-21	6.4	1.3	100	20.0
Yellow bullhead	29	2.3	8-13	22.9	4.6	100	11.8
Yellow perch	15	1.2	8-13	5.5	1.1	100	9.0

Table 5.-Weighted mean length (inches) at age, and growth relative to the State average for fish sampled from Thompson Lake with trap nets, gill nets, and electro-fishing gear, May, 2005. Number of fish aged is in parentheses. Data from Michigan Department of Natural Resources, Fisheries Division records.

	Age											
Species	1	2	3	4	5	6	7	8	9	10	11	Mean growth index[1]
Black crappie			5.9 (12)	6.5 (13)	7.9 (12)	7.8 (13)	10.6 (8)	13.0 (3)				-1.6
Bluegill				4.8 (19)	5.9 (6)	6.8 (12)	6.8 (7)					-0.8
Largemouth bass		6.6 (3)	8.4 (15)	9.6 (33)	12.0 (10)	14.3 (5)	14.9 (13)	15.6 (5)	16.8 (5)	18.2 (2)	17.5 (2)	-1.4
Northern pike	13.4 (1)			26.2 (1)	28.7 (2)	29.6 (6)	34.5 (1)		29.5 (1)			+2.3
Pumpkinseed			4.7 (1)	5.5 (19)	6.5 (8)	7.0 (6)	7.3 (2)					+0.1
Redear sunfish			6.3 (5)	7.5 (10)								+0.1
Yellow perch			5.6 (2)	8.0 (3)	11.1 (1)	9.8 (7)	10.3 (3)					+0.4

[1] Mean growth index is the average deviation from the state average length at age.

Table 6.-Weighted age frequency (percent) of seven fish species collected in Thompson Lake in May, 2005. Data from Michigan Department of Natural Resources, Fisheries Division records.

	Age											
Species	1	2	3	4	5	6	7	8	9	10	11	Number caught
Black crappie			27	50	11	11	1	< 1				574
Bluegill				54	16	20	10					335
Largemouth bass		2	18	39	8	6	14	5	4	2	1	135
Northern pike	8			8	17	50	8		8			12
Pumpkinseed			2	59	21	14	4					54
Redear sunfish			33	67								18
Yellow perch			18	16	7	40	20					15

Table 7.-Thompson Lake bluegill classification using trap net data and the Schneider Index (Schneider 1990). Size score is given in parentheses. Data from Michigan Department of Natural Resources, Fisheries Division records.

Sample date	5/28/86	6/13/95	5/17/05
Sample size	334	205	311
Average length (inches)	5.1 (2)	6.5 (5)	5.7 (3)
% ≥ 6 inches	4 (1)	68 (4)	41 (3)
% ≥ 7 inches	0 (1)	40 (5)	11 (4)
% ≥ 8 inches	0 (2)	5 (5)	0 (2)
Schneider Index	1.5	4.8	3.0
Rank[1]	V. Poor/Poor	Good	Acceptable

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