Olive Creek Lake (Salt Valley #2) 1983 Fishery Survey Report

By

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Nebraska Game and Parks Commission
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Introduction

Olive Creek Lake is located approximately 20 miles southwest of Lincoln, Nebraska, and 1.5 miles southeast of Kramer, Nebraska (S½ Sec. 10; T7N; R5E) in Lancaster County. This lake was constructed in 1963 as a part of the flood control project on the Upper Salt section of the Salt-Wahoo Creeks Watershed. At conservation pool the structure maintains a volume of 175 surface acres.

In 1963, the lake, its tributary and farm ponds in the watershed were treated with rotenone for rough fish removal. The initial fish stocking was begun in the spring and early summer of 1964 included a total of 60,070 largemouth bass, channel catfish, flathead catfish and northern pike (Table 1). Additional fish stockings were continued for several years. Stockings included such species as walleye, northern pike, channel catfish, bluegill and largemouth bass. From 1973 thur 1980 no fish stockings were made with the various species left to maintain their population through reproduction. Other species have been sampled during surveys, but were never stocked by this agency; they include: golden shiner, white crappie, black bullhead, green sunfish and common carp.

Fish population surveys of Olive Creek Lake were conducted in 1966, 1967, 1969 and 1973 (Bliss, 1968; Hutchinson, 1970; and Johnson, 1974). Reports of these surveys are on file in the District V office in Lincoln.

Reviewing past surveys, Olive Creek Lake has changed dramatically in water quality with a substantial increase in turbidity. In 1966 and 1967 secchi disk readings were made during the summer months with measurements reading from 39 to 76 inches. At that time various species of submergent aquatic vegetation were quite abundant. During the past several years water clarity has decreased and Olive Creek is now considered the most turbid lake in the Salt Valley system with secchi disk readings generally less than 12 inches. With this decrease in water clarity, the amount of vegetation present has been greatly reduced, along with primary productivity.

In 1983, a fishery survey was conducted to assess the status of the lake's current fishery, check for maximum depth and evaluate stocking survivals of largemouth bass and northern pike since the last survey.

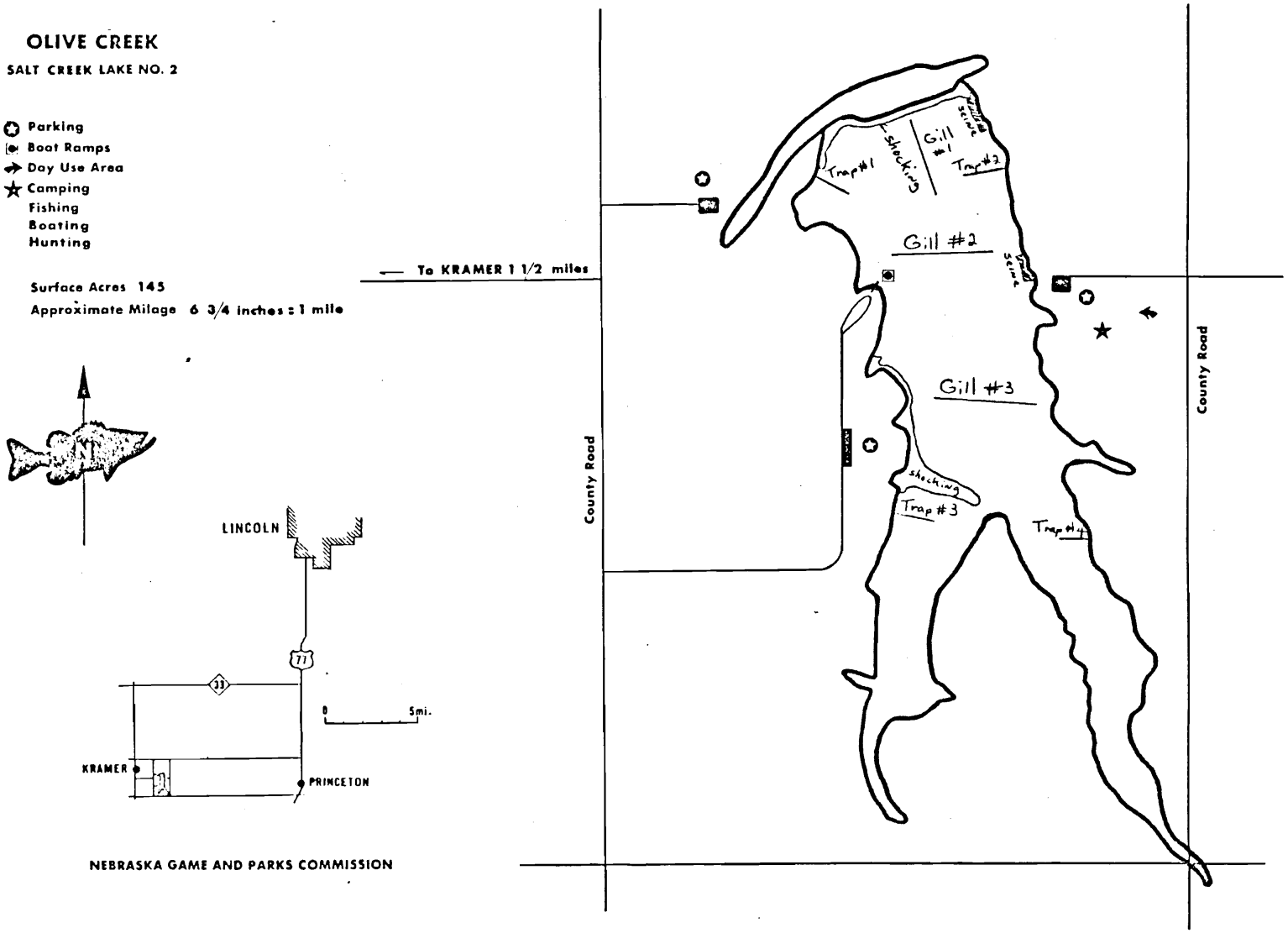
Procedures

Four 5/8 inch mesh double throated trap nets and three 150 foot experimental mesh gill nets were fished overnight on 21 June 1983 (Figure 1). Additional sampling was conducted with electrofishing gear during daylight on 24 June for approximately 60 minutes using DC current at 250 volts, 9 amps and half wave. Length and weight data along with scales or spines were taken for age-growth information and length frequency in accordance with the state standard survey format.

Table 1. Fish stocking record for Olive Creek Lake.

Date Stocked	Species	Size	Number
4-03-64	Largemouth bass	3"	8,000
5-11-64	Largemouth bass	3-5"	8,000
6-22-64	Channel catfish	1"	12,000
7-12-64	Northern pike	22-26"	15
7-12-64	Largemouth bass	10-14"	25
7-09-64	Flathead catfish	10-20"	30
7-01-64	Largemouth bass	1.25"	20,000
7-08-64	Flathead catfish	1"	3,500
4-07-65	Northern pike	16-18"	21
5-07-65	Walleye	Fry	60,000
5-14-65	Northern pike	1.5"	7,000
5-19-65	Northern pike	1.5"	10,000
9-10-65	Channel catfish	2"	10,000
8-06-65	Channel catfish	2"	17,500
10-27-65	Bluegill	1"	17,500
5-20-66	Northern pike	2-3"	7,000
6-14-66	Walleye	1-2"	34,300
7-02-66	Channel catfish	Fry	4,400
3-17-67	Channel catfish	1"	25,600
8-28-68	Catfish	8-18"	637
10-29-68	Channel catfish	5-6"	3,350
10-10-68	Channel catfish	6-26"	3,349
5-21-69	Northern pike	2.5-3.5"	32,844
7-14-71	Largemouth bass	1.25"	4,000
5-25-71	Northern pike	2.5-3.5"	23,700
5-19-72	Northern pike	2.5-3.0"	27,054
5-23-73	Northern pike	3-3.5"	19,235
5-24-73	Northern pike	2.5-3.5"	5,910
6-04-81	Northern pike	4-7"	6,800
8-18-81	Largemouth bass	3.0-5.5"	382
10-08-82	Largemouth bass	3-5"	1,730

Figure 1. Sampling sites on Olive Creek.



Results and Discussion

A total of 916 fish were sampled with the relative abundance of all species collected in the survey broken down by total number and weight (Table 2). White crappie and channel catfish represented 88.1% of the total sample by number consisting of 51.5 and 36.6% respectively. When listed in decreasing order by weight, channel catfish, carp, white crappie and walleye made up 95.3% of the total and represented the following percentages, 37.9, 32.8, 14.8 and 9.8. Age-growth and length-frequency information for six major species will be discussed in detail while the less abundant species will be mentioned briefly. The complete survey is on file on microfiche. Catch per unit effort for frame and gill net catches is listed on Table 3 while the electrofishing data based on 60 minute sample is in Table 4.

White Crappie

White crappie were never stocked in Olive Creek and were first sampled during the 1973 survey. A total of 472 crappie were sampled in the current survey with 76% represented by 1982 year class having a size range of 80 to 139mm (Table 5). Additional year classes sampled included 1982-1979 and 1976. CPUE data from frame nets calculated a mean catch of 108 crappie which was significant at the 80/20 level (Table 3). The 1980 survey collected 238 crappie which calculated to 26.6% PSD value while the 1983 survey indicates little population change with a 24.4% PSD value. Relative stock were 17.9% for the 200-249mm range and 4.1% for crappie over the 250mm size compared to 14.4 and 12.5% found in 1980, respectively. Optimum ranges of PSD, $RSD_{200-249}$ and RSD_{250+} are as follows 40-60%, 30-40% and 10-20% and in all cases the Olive Creek crappie population are below the optimum range. The 1980 survey indicated a strong 1978 year class making up 74% of the sample however, only two were sampled in the 1983 survey indicating high mortality.

Growth rate has continued to decline from what was found in the 1973 and 1980 surveys. In 1973 crappie attained 200+mm their second growing season. The attainment of this size was delayed to the third season in the 1980 survey and by the 1983 survey it takes on the average four growing seasons to reach 200mm (Table 6). Increase in population size and continued poor water clarity has put greater competition pressure on available food sources. Body condition was surprisingly good with a W_r value of 0.892 (Table 5).

Olive Creek Lake's white crappie are present in excellent numbers; however, their slow growth and the low productivity capacity of the lake reduces the possibility of the development of a good sport fishery.

Channel Catfish

A large natural sustaining catfish population resides in Olive Creek. A slight decrease in population was indicated in CPUE for gill nets from 1969, 1973 and 1980 data being 6.8, 6.5 and 4.7 catfish per net. The 1983 survey collected a total of 335 channel catfish with a gill net mean catch of 15.0 and a frame net mean catch of 69.25 with the latter nearly significant at the 90/20 level (Table 3).

Table 2. Relative abundance of fish species collected by number and weight.

BY NUMBER			BY WEIGHT		
SPECIES	TOTAL NUMBER	PERCENT OF TOTAL	SPECIES	TOTAL WEIGHT	PERCENT OF TOTAL
WH CRAP (85)	472	51.53	CH CAT (59)	41734	37.90
CH CAT (59)	335	36.57	CARP (22)	36120	32.81
CARP (22)	42	4.59	WH CRAP (85)	16315	14.82
G SHAD (10)	23	2.51	WALLEYE (91)	10778	9.79
WALLEYE (91)	15	1.64	LM BASS (75)	1956	1.78
BLUEGILL (83)	14	1.53	G SHAD (10)	1731	1.57
LM BASS (75)	5	0.55	FTHD CAT (60)	640	0.58
G SHNR (37)	3	0.33	BLUEGILL (83)	552	0.50
FTHD CAT (60)	3	0.33	BL BULLH (56)	109	0.10
BL BULLH (56)	2	0.22	G SHNR (37)	97	0.09
GR SUNF (78)	2	0.22	GR SUNF (78)	72	0.07
TOTALS	916			110104	

Table 3. Mean catch per unit effort data for all species collected by gill and frame nets in Olive Creek Lake in 1983.

SPECIES		COLLECTION METHOD AND EFFORT BOAT SHK(11) (0. PER)	DT FRM N(21) (4. N-DY)	EXP GL N(31) (3. N-DY)	COMBINED(1) (0.)
G SHAD (10)	MEAN C/E	0.0	0.50	0.33	0.0
	SETS REQUIRED(95/20)	0	1012	1388	0
	SETS REQUIRED(90/20)	0	553	639	0
	SETS REQUIRED(80/20)	0	268	266	0
CARP (22)	MEAN C/E	0.0	2.50	0.67	0.0
	SETS REQUIRED(95/20)	0	130	347	0
	SETS REQUIRED(90/20)	0	71	159	0
	SETS REQUIRED(80/20)	0	34	66	0
BL BULLH(56)	MEAN C/E	0.0	0.0	0.67	0.0
	SETS REQUIRED(95/20)	0	0	347	0
	SETS REQUIRED(90/20)	0	0	159	0
	SETS REQUIRED(80/20)	0	0	66	0
CH CAT (59)	MEAN C/E	0.0	69.25	15.00	0.0
	SETS REQUIRED(95/20)	0	10	276	0
	SETS REQUIRED(90/20)	0	5	127	0
	SETS REQUIRED(80/20)	0	2	53	0
LM BASS (75)	MEAN C/E	0.0	0.50	0.0	0.0
	SETS REQUIRED(95/20)	0	337	0	0
	SETS REQUIRED(90/20)	0	184	0	0
	SETS REQUIRED(80/20)	0	89	0	0
GR SUNF (78)	MEAN C/E	0.0	0.25	0.0	0.0
	SETS REQUIRED(95/20)	0	1012	0	0
	SETS REQUIRED(90/20)	0	553	0	0
	SETS REQUIRED(80/20)	0	268	0	0
BLUEGILL(83)	MEAN C/E	0.0	1.75	0.0	0.0
	SETS REQUIRED(95/20)	0	376	0	0
	SETS REQUIRED(90/20)	0	205	0	0
	SETS REQUIRED(80/20)	0	99	0	0
WH CRAP (85)	MEAN C/E	0.0	108.00	4.67	0.0
	SETS REQUIRED(95/20)	0	18	311	0
	SETS REQUIRED(90/20)	0	10	143	0
	SETS REQUIRED(80/20)	0	4	59	0
WALLEYE (91)	MEAN C/E	0.0	0.75	2.33	0.0
	SETS REQUIRED(95/20)	0	372	352	0
	SETS REQUIRED(90/20)	0	203	162	0
	SETS REQUIRED(80/20)	0	98	67	0

Table 4. Results from the 60 minutes of electrofishing.

Species	Golden Shiner	White Crappie	Flathead Catfish	Gizzard Shad	Channel Catfish	Walleye
Number	1	4	3	19	8	5

Species	Largemouth Bass	Carp	Bluegill	Green Sunfish
Number	3	30	5	1

Table 5. Length frequency distribution of white crappie.

LENGTH INTERVAL (MM)	NUMBER OF FISH	PERCENT OF TOTAL	WEIGHT (GRAMS)	PERCENT OF TOTAL	MEAN WEIGHT	MEAN KTL	MEAN WR	AGE GROUP 0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
80- 89	3	0.6	24	0.3	8.3	1.36	1.04	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
90- 99	50	10.6	550	1.5	11.0	1.32	1.00	0	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0
100- 109	94	19.9	1588	2.2	16.9	1.46	1.10	0	94	0	0	0	0	0	0	0	0	0	0	0	0	0	0
110- 119	142	30.1	3109	2.8	21.9	1.49	1.11	0	142	0	0	0	0	0	0	0	0	0	0	0	0	0	0
120- 129	60	12.7	1223	2.6	20.4	1.12	0.83	0	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0
130- 139	10	2.1	258	3.3	25.9	1.11	0.81	0	9	1	0	0	0	0	0	0	0	0	0	0	0	0	0
140- 149	5	1.1	156	2.0	31.4	1.04	0.75	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
150- 159	2	0.4	99	1.3	49.5	1.38	0.99	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
160- 169	15	3.2	793	6.7	52.9	1.21	0.86	0	0	6	1	8	0	0	0	0	0	0	0	0	0	0	0
170- 179	24	5.1	1471	7.8	61.3	1.17	0.83	0	0	7	7	10	0	0	0	0	0	0	0	0	0	0	0
180- 189	20	4.2	1441	9.2	72.1	1.17	0.83	0	0	8	6	6	0	0	0	0	0	0	0	0	0	0	0
190- 199	17	3.6	1387	10.4	81.6	1.15	0.80	0	0	0	12	5	0	0	0	0	0	0	0	0	0	0	0
200- 209	14	3.0	1377	13.8	98.4	1.16	0.81	0	0	0	6	8	0	0	0	0	0	0	0	0	0	0	0
210- 219	5	1.1	587	7.5	117.6	1.17	0.81	0	0	0	4	1	0	0	0	0	0	0	0	0	0	0	0
220- 229	3	0.6	403	5.1	134.7	1.19	0.82	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0
230- 239	2	0.4	325	4.1	162.5	1.28	0.88	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
240- 249	1	0.2	205	2.6	205.0	1.34	0.92	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
250- 259	2	0.4	434	5.5	217.0	1.30	0.89	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
260- 269	2	0.4	490	6.2	245.0	1.39	0.95	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0
270- 279	0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
280- 289	0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
290- 299	0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
300- 309	1	0.2	395	5.0	395.0	1.46	0.98	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
TOTAL -	472		16315		NO. BY AGE CLASS			0	358	29	36	46	2	0	1	0	0	0	0	0	0	0	0
					% BY AGE CLASS			0	76	6	8	10	0	0	0	0	0	0	0	0	0	0	0
					SE % BY AGE CLASS			0	2	1	1	1	0	0	0	0	0	0	0	0	0	0	0

MEAN WR - 0.892
SEX RATIO (M/F) - 1.000

TOTAL AGED FISH 128 (27.1%)
TOTAL UNAGED FISH 344 (72.9%)

PSD - 24.4 WITH 95% CI 16.8-32.0 BASED ON 123.0 FISH AND A RATIO OF 30.0/123.0

WEIGHT-LENGTH REGRESSION EQUATION - WEIGHT = 0.0000170562*LENGTH**2.9307 R= 0.96817

LENGTH-SCALE RADIUS EQUATION - LENGTH = 58.7894287 + 1.29652*SCALE RADIUS R= 0.97321

Table 6. Age and growth analysis for white crappie.

YEAR CLASS	AGED FISH	AT CAPTURE: LENGTH RANGE (MM)	AT CAPTURE: MEAN LENGTH (MM)	AT CAPTURE: MEAN WEIGHT (G)	MEAN KTL	MEAN WR	AGE: BACKCALCULATED LENGTHS AT ANNULUS (MM) 1	2	3	4	5	6	7	8	9	10	11
1983	0	0- 0	0	0	0.0	0.0											
1982	53	85- 139	111	19	1.32	0.98	87										
1981	19	136- 185	161	49	1.12	0.80	73	140									
1980	23	162- 218	194	87	1.17	0.82	90	156	187								
1979	30	164- 260	200	103	1.20	0.84	79	128	171	194							
1978	2	253- 300	277	313	1.44	0.97	111	178	218	250	276						
1977	0	0- 0	0	0	0.0	0.0	0	0	0	0	0	0					
1976	1	260- 260	260	240	1.37	0.93	71	107	159	197	224	245	259				
TOTAL	128	WEIGHTED MEAN LENGTH AT ANNULUS (MM)					84	140	179	198	259	245	259				
		SE MEAN LENGTH (MM)					1.3	3.1	3.8	5.7	22.1	0.0	0.0				
		MEAN LENGTH INCREMENT (MM)						56	39	19	61	-14	14				
		MINIMUM BACKCALCULATED LENGTH (MM)					54	89	131	157	224	245	259				
		MAXIMUM BACKCALCULATED LENGTH (MM)					125	195	239	267	299	245	259				
		SAMPLE SIZE (N)					128	75	56	33	3	1	1				
		CALCULATED MEAN WEIGHT (GRAMS)					7	33	69	92	201	171	203				
		MEAN WEIGHT INCREMENT (GRAMS)						26	36	23	109	-30	32				

From the 225 catfish sampled, eight year classes were sampled (1975-1981) with a dominate 1978 year class making up 68% of the sample. This same year class was the most abundant in the 1980 survey making up 56.7% of a sample of 30 total channel catfish. A PSD value of 46.2% was derived in 1980 while the 1983 survey had a value of 27.8%. However, this was based on a ratio of 10/36 out of a total of 335 fish (Table 7). Their body condition as indicated by the mean W_r value of 1.07 is excellent; however, poor growth rates are being attained. Growth rates for the first two seasons has not changed between surveys; however, growth has declined in the older ages as shown by the backcalculated growth for age IV. In the 1980 survey they were 323mm (Tunink 1981) while in 1983 they were only 241 and this continues for the rest of the years (Table 8).

A high density of channel catfish is available in the lake, but due to their slow growth rates provide a very poor quality fishery. Natural reproduction is totally responsible for the present population which indicate consistent recruitment with one excellent year class (1978).

Carp

During the 1983 survey a total of 42 carp were collected with six year classes represented (1982, 1980-1976) (Table 9). The 1979 year class was the most abundant accounting for 43%. Growth rates have remained similar since the last survey with carp attaining 414mm by the end of the four years (Table 10). A W_r value of 0.727 reflect the poor body condition present in the unproductive water in Olive Creek. Through conversation with several local fishermen, carp fishing account for a large percentage of the total fishing pressure and harvest along with channel catfish and crappie. One fisherman alone harvested over 200 pounds, of carp in one week in the spring of 1983. So the carp fishery is providing a recreational benefit to fishermen.

Gizzard Shad

Gizzard shad were sampled for the first time in the 1983 survey with 23 yearling collected ranging in size from 168-260mm (Table 11). Backcalculated growth for the first year was 164mm which is larger than most predators in Olive Creek can utilize (Table 12). The introduction of shad into the lake, apparently by a fishermen's bait bucket, is viewed with mixed feelings. It will increase foraging pressure on the zooplankton population by the YOY shad which could further slow crappie growth rates.

Walleye

The walleye in Olive Creek continue to maintain a small population through natural recruitment. A total of 15 walleye were collected representing five year classes (1982, 1978-1975) with the 1983 class accounting for 67% or 10 walleye (Table 13). These ten walleye ranged in size from 151 to 235mm and was the only recruitment sampled for the past three years. In the 1980 survey, the 1978 year class was the most dominate year class with an absent 1979 year class. Growth rates for the walleye are good attaining 300mm the second growing season and nearly 400mm the end of the third (Table 14). Walleye do provide good fishing opportunity during the spawning season; however, the poor water clarity and small size of the lake it is unlikely this population

Table 7. Length frequency distribution of channel catfish.

LENGTH INTERVAL (MM)	NUMBER OF FISH	PERCENT OF TOTAL	WEIGHT (GRAMS)	PERCENT OF TOTAL	MEAN WEIGHT	MEAN KTL	MEAN WR	AGE GROUP 0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
50- 74	1	0.3	7	0.0	7.0	2.04	3.24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
75- 99	0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
100- 124	0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
125- 149	3	0.9	66	0.3	22.0	0.84	1.13	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
150- 174	17	5.1	667	1.7	39.3	0.88	1.14	0	0	0	9	2	7	0	0	0	0	0	0	0	0	0	0
175- 199	120	35.8	5687	1.9	47.4	0.77	0.98	0	0	0	0	24	96	0	0	0	0	0	0	0	0	0	0
200- 224	109	32.5	8676	3.2	79.6	0.83	1.00	0	0	0	0	11	87	11	0	0	0	0	0	0	0	0	0
225- 249	34	10.1	3668	3.9	107.9	0.81	0.96	0	0	0	0	0	19	15	0	0	0	0	0	0	0	0	0
250- 274	15	4.5	2255	6.6	150.4	0.87	1.01	0	0	0	0	0	14	1	0	0	0	0	0	0	0	0	0
275- 299	6	1.8	1154	3.9	192.4	0.88	0.99	0	0	0	0	0	2	4	0	0	0	0	0	0	0	0	0
300- 324	3	0.9	942	3.8	314.0	1.08	1.20	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0
325- 349	4	1.2	1514	6.1	378.5	1.03	1.13	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0
350- 374	8	2.4	3132	12.6	391.5	0.84	0.89	0	0	0	0	0	1	0	3	3	1	0	0	0	0	0	0
375- 399	5	1.5	3377	13.6	675.6	1.13	1.18	0	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0
400- 424	4	1.2	3057	12.3	764.2	1.12	1.16	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0
425- 449	3	0.9	2832	11.4	944.0	1.13	1.15	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0
450- 474	1	0.3	1000	4.0	1000.0	1.10	1.11	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
475- 499	0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
500- 524	1	0.3	1350	5.4	1350.0	1.04	1.02	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
525- 549	0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
550- 574	1	0.3	2350	9.4	2350.0	1.27	1.21	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
TOTAL -	335		41734		NO. BY AGE CLASS			0	0	3	9	37	227	35	15	6	3	0	0	0	0	0	0
					% BY AGE CLASS			0	0	1	3	11	68	10	4	2	1	0	0	0	0	0	0
					SE % BY AGE CLASS			0	0	1	1	2	3	2	1	1	1	0	0	0	0	0	0

MEAN WR - 1.070
SEX RATIO(M/F) - 1.000

TOTAL AGED FISH 88 (26.3%)
TOTAL UNAGED FISH 247 (73.7%)

PSD - 27.8 WITH 95% CI 12.6-42.9 BASED ON 36.0 FISH AND A RATIO OF 10.0/ 36.0

WEIGHT-LENGTH REGRESSION EQUATION - WEIGHT = 0.0000045651*LENGTH**3.1214 R= 0.97940

LENGTH-SCALE RADIUS EQUATION - LENGTH= 25.9860229 + 4.36123*SCALE RADIUS R= 0.89121

Table 8. Age and growth analysis of channel catfish.

YEAR CLASS	AGED FISH	AT CAPTURE: LENGTH RANGE (MM)	AT CAPTURE: MEAN LENGTH (MM)	AT CAPTURE: MEAN WEIGHT (G)	AT CAPTURE: MEAN KTL	AT CAPTURE: MEAN WR	AGE: BACKCALCULATED LENGTHS AT ANNULUS (MM) 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1983	0	0- 0	0	0	0.0	0.0															
1982	0	0- 0	0	0	0.0	0.0	0														
1981	3	131- 143	138	22	0.84	1.13	82	136													
1980	5	155- 166	161	36	0.86	1.11	90	140	161												
1979	4	170- 220	187	55	0.81	1.02	94	137	167	186											
1978	39	172- 370	227	112	0.84	1.01	97	143	172	199	226										
1977	13	205- 398	289	280	0.91	1.02	108	174	216	250	266	288									
1976	15	308- 446	373	577	1.05	1.12	117	187	260	306	326	345	372								
1975	6	350- 506	401	654	0.94	0.98	104	184	266	322	346	366	380	399							
1974	3	360- 570	460	1275	1.13	1.14	107	202	283	328	360	385	404	427	458						
TOTAL	88	WEIGHTED MEAN LENGTH AT ANNULUS (MM)					101	159	204	241	268	332	378	409	458						
		SE MEAN LENGTH (MM)					1.8	3.5	5.9	7.3	7.6	10.3	10.3	20.9	59.2						
		MEAN LENGTH INCREMENT (MM)						58	45	37	27	64	46	31	49						
		MINIMUM BACKCALCULATED LENGTH (MM)					71	105	129	150	171	204	307	346	359						
		MAXIMUM BACKCALCULATED LENGTH (MM)					133	253	347	400	435	476	494	505	564						
		SAMPLE SIZE (N)					81	88	85	80	76	37	24	9	3						
		CALCULATED MEAN WEIGHT (GRAMS)					8	34	74	124	173	337	508	649	923						
		MEAN WEIGHT INCREMENT (GRAMS)						26	40	50	49	164	171	141	274						

Table 9. Length frequency distribution of carp.

LENGTH INTERVAL (MM)	NUMBER OF FISH	PERCENT OF TOTAL	WEIGHT (GRAMS)	PERCENT OF TOTAL	MEAN WEIGHT	MEAN KTL	MEAN WR	AGE GROUP 0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
150- 174	8	19.0	547	1.0	68.4	1.51	0.81	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0
175- 199	1	2.4	85	0.3	85.0	1.51	0.82	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
200- 224	0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
225- 249	0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
250- 274	0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
275- 299	2	4.8	635	1.9	317.5	1.32	0.77	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
300- 324	15	35.7	5169	6.3	344.7	1.14	0.67	0	0	0	2	12	0	0	0	0	0	0	0	0	0	0	0
325- 349	4	9.5	1809	5.5	452.2	1.20	0.72	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0
350- 374	0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
375- 399	0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
400- 424	1	2.4	900	2.7	900.0	1.19	0.73	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
425- 449	0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
450- 474	0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
475- 499	0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
500- 524	1	2.4	1425	4.3	1425.0	1.00	0.63	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
525- 549	1	2.4	1950	5.9	1950.0	1.24	0.79	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
550- 574	2	4.8	3850	11.7	1925.0	1.13	0.72	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0
575- 599	2	4.8	4500	13.7	2250.0	1.13	0.73	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
600- 624	1	2.4	2250	6.9	2250.0	1.03	0.67	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
625- 649	2	4.8	6000	18.3	3000.0	1.13	0.74	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
650- 674	0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
675- 699	0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
700- 724	1	2.4	3250	9.9	3250.0	0.95	0.63	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
725- 749	1	2.4	3750	11.4	3750.0	0.98	0.65	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
TOTAL -	42		36120		NO. BY AGE CLASS			0	9	0	3	18	3	6	2	0	0	0	0	0	0	0	0
					% BY AGE CLASS			0	21	0	7	43	7	14	5	0	0	0	0	0	0	0	0
					SE % BY AGE CLASS			0	6	0	4	8	4	5	3	0	0	0	0	0	0	0	0

MEAN WR - 0.727
SEX RATIO(M/F) - 1.000

TOTAL AGED FISH 30 (71.4%)
TOTAL UNAGED FISH 12 (28.6%)

PSD - 36.4 WITH 95% CI 19.3-53.4 BASED ON 33.0 FISH AND A RATIO OF 12.0/ 33.0

WEIGHT-LENGTH REGRESSION EQUATION - WEIGHT = 0.0000463852*LENGTH**2.7684 R= 0.98801

LENGTH-SCALE RADIUS EQUATION - LENGTH =-235.734909 + 3.12860*SCALE RADIUS R= 0.84479

Table 10. Age and growth analysis of carp.

YEAR CLASS	AGED FISH	AT CAPTURE: LENGTH RANGE (MM)	AT CAPTURE: MEAN LENGTH (MM)	AT CAPTURE: MEAN WEIGHT (G)	AT CAPTURE: MEAN KTL	AT CAPTURE: MEAN WR	AGE: BACKCALCULATED LENGTHS AT ANNULUS (MM) 1	2	3	4	5	6	7	8	9	10	11
1983	0	0- 0	0	0	0.0	0.0											
1982	6	162- 178	168	71	1.51	0.82	140										
1981	0	0- 0	0	0	0.0	0.0	0	0									
1980	2	288- 300	294	215	0.87	0.51	105	185	293								
1979	11	290- 559	358	653	1.23	0.74	142	237	310	357							
1978	3	330- 592	448	1193	1.15	0.71	119	242	327	385	446						
1977	6	540- 700	601	2392	1.09	0.70	142	282	395	497	557	599					
1976	2	646- 726	686	3425	1.06	0.70	134	256	378	518	594	648	680				
TOTAL	30	WEIGHTED MEAN LENGTH AT ANNULUS (MM)					136	246	338	414	533	611	680				
		SE MEAN LENGTH (MM)					5.9	12.9	18.7	23.4	28.1	19.8	34.7				
		MEAN LENGTH INCREMENT (MM)					110	92	76	119	78	69					
		MINIMUM BACKCALCULATED LENGTH (MM)					88	182	233	280	329	535	646				
		MAXIMUM BACKCALCULATED LENGTH (MM)					232	422	522	604	639	690	715				
		SAMPLE SIZE (N)					30	24	24	22	11	8	2				
		CALCULATED MEAN WEIGHT (GRAMS)					38	194	465	815	1647	2398	3229				
		MEAN WEIGHT INCREMENT (GRAMS)					156	271	350	832	751	831					

Table 11. Length frequency distribution of gizzard shad.

LENGTH INTERVAL (MM)	NUMBER OF FISH	PERCENT OF TOTAL	WEIGHT (GRAMS)	PERCENT OF TOTAL	MEAN WEIGHT	MEAN KTL	MEAN WR	AGE GROUP 0	1	2	3	4	5	6	7	8	9
160- 169	1	4.3	51	3.2	51.0	1.08	1.07	0	1	0	0	0	0	0	0	0	0
170- 179	6	26.1	331	17.1	55.2	1.06	1.05	0	6	0	0	0	0	0	0	0	0
180- 189	8	34.8	491	26.6	61.4	0.98	0.96	0	8	0	0	0	0	0	0	0	0
190- 199	2	8.7	128	7.9	64.0	0.91	0.89	0	2	0	0	0	0	0	0	0	0
200- 209	1	4.3	80	5.0	80.0	0.99	0.95	0	1	0	0	0	0	0	0	0	0
210- 219	1	4.3	88	5.4	88.0	0.87	0.83	0	1	0	0	0	0	0	0	0	0
220- 229	2	8.7	230	14.2	115.0	1.01	0.96	0	2	0	0	0	0	0	0	0	0
230- 239	1	4.3	127	7.9	127.0	0.95	0.89	0	1	0	0	0	0	0	0	0	0
240- 249	0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0
250- 259	0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0
260- 269	1	4.3	205	12.7	205.0	1.17	1.08	0	1	0	0	0	0	0	0	0	0
TOTAL -	23		1731		NO. BY AGE CLASS			0	23	0	0	0	0	0	0	0	0
					% BY AGE CLASS			0	100	0	0	0	0	0	0	0	0
					SE % BY AGE CLASS			0	0	0	0	0	0	0	0	0	0

MEAN WR - 0.975
SEX RATIO(M/F) - 1.000

TOTAL AGED FISH 20 (87.0%)
TOTAL UNAGED FISH 3 (13.0%)

PSD - 0.0 WITH 95% CI 0.0- 0.0 BASED ON 16.0 FISH AND A RATIO OF 0.0/ 16.0

WEIGHT-LENGTH REGRESSION EQUATION - WEIGHT= 0.0000126884*LENGTH**2.9549 R= 0.97440

LENGTH-SCALE RADIUS EQUATION - LENGTH= 129.632919 + 0.51827*SCALE RADIUS R= 0.51467

Table 12. Age and growth analysis of gizzard shad.

YEAR CLASS	AGED FISH	AT CAPTURE: LENGTH RANGE (MM)	MEAN LENGTH (MM)	MEAN WEIGHT (G)	MEAN KTL	MEAN WR	AGE: BACKCALCULATED LENGTHS AT ANNULUS (MM) 1	2	3	4	5	6	7	8	9	10
1983	0	0- 0	0	0	0.0	0.0										
1982	20	168- 260	194	78	1.01	0.98	164									
TOTAL	20	WEIGHTED MEAN LENGTH AT ANNULUS (MM)					164									
		SE MEAN LENGTH (MM)					7.4									
		MEAN LENGTH INCREMENT (MM)					-164									
		MINIMUM BACKCALCULATED LENGTH (MM)					122									
		MAXIMUM BACKCALCULATED LENGTH (MM)					239									
		SAMPLE SIZE (N)					20									
		CALCULATED MEAN WEIGHT (GRAMS)					44									
		MEAN WEIGHT INCREMENT (GRAMS)					-44									

Table 13. Length frequency distribution of walleye.

LENGTH INTERVAL (MM)	NUMBER OF FISH	PERCENT OF TOTAL	WEIGHT (GRAMS)	PERCENT OF TOTAL	MEAN WEIGHT	MEAN KTL	MEAN WR	AGE GROUP 0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
150- 174	2	13.3	50	0.2	25.0	0.73	0.0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
175- 199	2	13.3	125	1.2	62.5	0.81	0.0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
200- 224	5	33.3	356	3.3	71.4	0.72	0.0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
225- 249	1	6.7	97	0.9	97.0	0.75	0.0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
250- 274	0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
275- 299	0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
300- 324	0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
325- 349	0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
350- 374	0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
375- 399	0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
400- 424	0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
425- 449	0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
450- 474	1	6.7	850	7.9	850.0	0.90	0.0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
475- 499	1	6.7	1150	10.7	1150.0	0.95	0.0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
500- 524	0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
525- 549	1	6.7	1750	16.3	1750.0	1.06	0.0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
550- 574	0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
575- 599	0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
600- 624	0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
625- 649	0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
650- 674	0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
675- 699	1	6.7	3300	30.7	3300.0	1.05	0.0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
700- 724	1	6.7	3100	28.8	3100.0	0.90	0.0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
TOTAL -	15		10778		NO. BY AGE CLASS			0	10	0	0	0	2	1	1	1	0	0	0	0	0	0	0
					% BY AGE CLASS			0	67	0	0	0	13	7	7	7	0	0	0	0	0	0	0
					SE % BY AGE CLASS			0	12	0	0	0	9	6	6	6	0	0	0	0	0	0	0

MEAN WR - 0.0
SEX RATIO(M/F) - 1.000

TOTAL AGED FISH 14 (93.3%)
TOTAL UNAGED FISH 1 (6.7%)

PSD - 100.0 WITH 95% CI ****-**** BASED ON 5.0 FISH AND A RATIO OF 5.0/ 5.0

WEIGHT-LENGTH REGRESSION EQUATION - WEIGHT = 0.0000019957*LENGTH**3.2474 R= 0.99869

LENGTH-SCALE RADIUS EQUATION - LENGTH = 39.4361115 + 2.26102*SCALE RADIUS R= 0.96254

Table 14. Age and growth analysis of walleye.

YEAR CLASS	AGED FISH	AT CAPTURE: LENGTH RANGE (MM)	AT CAPTURE: MEAN LENGTH (MM)	AT CAPTURE: MEAN WEIGHT (G)	AT CAPTURE: MEAN KTL	AT CAPTURE: MEAN WR	AGE: BACKCALCULATED LENGTHS AT ANNULUS (MM) 1	2	3	4	5	6	7	8	9	10	11
1983	0	0- 0	0	0	0.0	0.0											
1982	9	151- 235	206	67	0.74	0.0	186										
1981	0	0- 0	0	0	0.0	0.0	0	0									
1980	0	0- 0	0	0	0.0	0.0	0	0	0								
1979	0	0- 0	0	0	0.0	0.0	0	0	0	0							
1978	2	455- 494	475	1000	0.93	0.0	160	275	350	421	466						
1977	1	548- 548	548	1750	1.06	0.0	213	314	381	427	472	529					
1976	1	680- 680	680	3300	1.05	0.0	156	237	365	484	570	651	672				
1975	1	702- 702	702	3100	0.90	0.0	292	412	507	543	582	624	660	690			
TOTAL	14	WEIGHTED MEAN LENGTH AT ANNULUS (MM)					189	302	391	459	511	601	666	690			
		SE MEAN LENGTH (MM)					9.9	30.5	29.9	24.1	26.8	37.1	6.3	0.0			
		MEAN LENGTH INCREMENT (MM)					113	89	68	52	90	65	24				
		MINIMUM BACKCALCULATED LENGTH (MM)					140	237	339	418	454	529	660	690			
		MAXIMUM BACKCALCULATED LENGTH (MM)					292	412	507	543	582	651	672	690			
		SAMPLE SIZE (N)					14	5	5	5	5	3	2	1			
		CALCULATED MEAN WEIGHT (GRAMS)					49	227	523	884	1250	2116	2951	3303			
		MEAN WEIGHT INCREMENT (GRAMS)					178	296	361	366	866	835	352				

will increase.

Bluegill

A total of 14 bluegill were collected during the 1983 survey compared to 109 in 1980. Mean catch per frame net was 1.75 compared to 34.7 per net in 1980. From the 1983 sample, four year classes were represented (1982-1979) all in very low numbers (Table 15). Growth rates are very slow and nearly identical to the previous survey attaining only 99mm by the end of second year (Table 16). With such slow growth no bluegill were sampled that exceeded 150mm thus a PSD value of 0% which was the same as the 1980 value. Under present conditions bluegill would not provide a sport fishery.

Other Species

Fish species collected in low numbers included five largemouth bass, three golden shiners, three flathead catfish, two black bullheads and two green sunfish, Table 17 lists their mean growth rates. Of the five bass sampled, two were from each the 1981 and 1982 year class which correlates with fingerlings stockings in those years. None of these species provide much in fishing opportunity and probably never will. There were two predators in this list the largemouth bass and the flathead catfish. The bass recruitment appears to be low, a reflection of the quality of the lake while the flathead catfish could be present in higher density than indicated by the survey. Flathead catfish are not readily accessible to most of our collection methods but had shown the capacity for recruitment in Olive Creek. No northern pike were collected which indicates no or very low survival of the 4-7" pike stocked in 1981. The complete information on this species are on the microfiche.

Seining Results

A total effort of two shoreline seine hauls consisted of 30.5mm (100 feet) each, using a 40 foot ¼" bag seine. This was conducted to assess the juvenile and forage fish population. The only specie sampled was red shiner with 63 individuals collected and the majority in the 40-49mm range (Table 18).

Water Quality

Water quality parameters measurements were taken on 21 June 1983 and the results are listed in Table 19. The measurements taken were water temperature, dissolved oxygen, specific conductivity, pH, total alkalinity, total dissolved solids, and secchi disk. Water clarity has been consistently poor throughout the year and is reflected by secchi disk reading of 310mm.

Aquatic vegetation concentration are low with smartweed covering approximately 2% of surface area while cattails, water sedge and arrowhead are present only in trace amounts.

Sonar readings were taken during the survey with a maximum depth of 3.96m (13 feet) found only in a very small area. The main body of the lake ranges from 2.4 to 3.0m (8 to 10 feet) while the upper end has had severe siltation and is generally three feet and less in depth.

Table 15. Length frequency distribution of bluegill.

LENGTH INTERVAL (MM)	NUMBER OF FISH	PERCENT OF TOTAL	WEIGHT (GRAMS)	PERCENT OF TOTAL	MEAN WEIGHT	MEAN KTL	MEAN WR	AGE GROUP 0	1	2	3	4	5	6	7	8	9
70- 79	1	7.1	8	1.4	8.0	2.33	1.44	0	1	0	0	0	0	0	0	0	0
80- 89	0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0
90- 99	0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0
100- 109	0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0
110- 119	6	42.9	198	35.8	33.0	2.28	1.21	0	0	6	0	0	0	0	0	0	0
120- 129	5	35.7	218	39.6	43.8	2.22	1.14	0	0	3	1	1	0	0	0	0	0
130- 139	0	0.0	0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0
140- 149	2	14.3	128	23.1	64.0	2.08	1.02	0	0	0	0	2	0	0	0	0	0
TOTAL -	14		552		NO. BY AGE CLASS			0	1	9	1	3	0	0	0	0	0
					% BY AGE CLASS			0	7	64	7	21	0	0	0	0	0
					SE % BY AGE CLASS			0	7	13	7	11	0	0	0	0	0

MEAN WR - 1.175
SEX RATIO (M/F) - 1.000

TOTAL AGED FISH 14 (100.0%)
TOTAL UNAGED FISH 0 (0.0%)

PSD - 0.0 WITH 95% CI 0.0- 0.0 BASED ON 13.0 FISH AND A RATIO OF 0.0/ 13.0

WEIGHT-LENGTH REGRESSION EQUATION - WEIGHT = 0.0000489993*LENGTH**2.8333 R= 0.96342

LENGTH-SCALE RADIUS EQUATION - LENGTH = 37.1576538 + 0.92409*SCALE RADIUS R= 0.88872

Table 16. Age and growth analysis of bluegill.

YEAR CLASS	AGED FISH	AT CAPTURE: LENGTH RANGE (MM)	AT CAPTURE: MEAN LENGTH (MM)	AT CAPTURE: MEAN WEIGHT (G)	AT CAPTURE: MEAN KTL	AT CAPTURE: MEAN WR	AGE: BACKCALCULATED LENGTHS AT ANNULUS (MM) 1	2	3	4	5	6	7	8	9	10	11
1983	0	0- 0	0	0	0.0	0.0											
1982	1	70- 70	70	8	2.33	1.44	46										
1981	9	110- 125	117	36	2.27	1.19	35	99									
1980	1	128- 128	128	42	2.00	1.02	42	83	103								
1979	3	128- 146	140	59	2.18	1.08	38	96	116	134							
TOTAL	14	WEIGHTED MEAN LENGTH AT ANNULUS (MM)					37	97	113	134							
		SE MEAN LENGTH (MM)					1.2	2.5	5.9	6.2							
		MEAN LENGTH INCREMENT (MM)						60	16	21							
		MINIMUM BACKCALCULATED LENGTH (MM)					31	83	103	121							
		MAXIMUM BACKCALCULATED LENGTH (MM)					46	114	130	141							
		SAMPLE SIZE (N)					14	13	4	3							
		CALCULATED MEAN WEIGHT (GRAMS)					1	21	32	52							
		MEAN WEIGHT INCREMENT (GRAMS)						20	11	20							

Table 17. Age and growth analysis of fish species sampled in low numbers.

Species	Number Aged	Age: Weighted mean length at each annulus (mm) 1	2	3	4	5	6
Golden shiner	3	89	153				
Black bullhead	2	140					
Flathead catfish	1	73	121	155	252	343	
Green sunfish	2	51	89	120			
Largemouth bass	5	100	252	378	403	432	442

Table 18. Length frequency of juvenile fish collected from seining.

Species	Length Internal (mm)	Number
Red Shiner	35-39	1
	40-44	25
	45-49	24
	50-54	7
	55-59	3
	60-64	3

Table 19. Water quality data taken on 21 June 1983 from Olive Creek.

Water Depth (m)	Temperature C°	Dissolved Oxygen mg/.	Specific Conductivity mhos	pH	Total Alkalinity mg/1	Total Dissolved Solids mg/1	Secchi Disk (mm)
0	23.5	9.0	320	7.9	153.9	208.0	310
1	23.5	8.95					
2	23.5	8.9					
3	23.3	8.85					
3.5 bottom	23.2	8.7					

Comments: Sunny, 90-95°F, S-SW 10-15 mph

Summary and Recommendations

The majority of the fishery in Olive Creek involves three species, channel catfish, white crappie and carp. Recruitment has been adequate for all these species; however, growth rates are slow due to the poor water clarity. Surprisingly, the walleye continues to maintain a small but reproducing population. Gizzard shad have gained access to the lake which could be helpful for the walleye and catfish populations for an additional prey but possibly harmful to the growth of the smaller crappie.

Water depth of Olive Creek has been reduced due to siltation the last several years and has made winterkill a significant possibility. This being the situation, management options are limited. Summer drawdowns and subsequent shoreline seeding would be beneficial to the water quality and may be considered; however, if the lake fails to refill prior to ice cover it would be susceptible to winterkill. Related to the poor water quality and lack of depth the stocking of sight feeding predators would have little benefits to the sport fishery. At the present time there are no recommendations for Olive Creek lake in the form of fish stocking or management work due to the above mentioned problems which are presently too costly to correct (lack of water depth and watershed degradation). This lake will continue to be promoted to the fishermen as a catfish, carp and crappie lake until winterkill becomes a problem. When this becomes the case, lake renovation and deepening project hopefully will be undertaken along with work in improving the watershed to reduce siltation.

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