91-17

Michigan Department of Natural Resources
Status of the Fishery Resource Report 91-17, 1991.

Status of the Fishery Resource Report

Round Lake, Jackson County

(T4S; R1,2S; Sections 25, 30, 31, 36)

Gary L. Towns

February, 1991

Discussions of this fishery have confused anglers for years because there are several other lakesby the same name within a twenty-five mile radius. The subject of this report is the.Round Lake (155 acres) in extreme southern Jackson County. It is immediately northeast of Farwell Lake. The City of Jackson lies just 10 miles to the north, and the village of Hanover is 4 miles to the west.

Round Lake is surrounded by gently rolling land which is dotted with several lakes, ponds and wetlands. The primary soil type in the immediate area is sandy loam. A single outlet drains Round Lake to the north, eventually into the Kalamazoo River. A small and marginally boatable channel once connected this lake with Farwell Lake to the west. However, flooding problems on Round Lake eventually led to the court-ordered construction of the new northern drain in the early 1970's. This new drain flows directly into the North Branch of the Kalamazoo River. Subsequent to that construction, the development of a roadway in the vicinity of the old channel completely closed the connection of the two lakes. There are no inlets of consequence. Cottages and permanent homes now surround nearly the entire shoreline. A county park on the southeast shore has a small gravel ramp to the water's edge which provides public access for small boats..

The basin substrate of Round Lake is composed almost completely of marl. Some sand and gravel is evident in the near-shore waters along the eastern shore and in a northwest offshore shoal. The basin has extensive areas of very sparsely vegetated shallow shoals and four deeper areas with maximum depths from 30 to 40 feet (see attached map).

History of the Fishery

The earliest Fisheries Division records of fish population analysis in Round Lake date back to 1953. In the spring of that year, Fisheries Division employees used gill nets and seines to collect fish. Results of that study indicated that a rather typical population of warmwater fish was present with some exceptions. A few smallmouth bass and rock bass were collected. These species are not typically found in the majority of lakes in the area and are usually found only in rivers, impoundments or very clear water lakes. Also, many large yellow perch were captured. Good number of large perch occur in only a small minority of area lakes.

An intensive trap and fyke net survey in 1975 indicated the presence of a good sport fishery. Panfish displayed large average sizes and fair numbers of largemouth bass and bullheads were available for anglers. Yellow perch were the "feature" of the survey. Nintyeight percent of the 84 individuals captured were over 8 inches in length. Yet, fishing reports were only fair to poor. Lakes with clear water and very sparse vegetation often present the greatest challenge for anglers.

In 1985, trap and gill nets were used to check on the progress of the fish population. The fishery was quite similar to that observed 10 years earlier indicating that a very stable aquatic environment was present. Age and growth analysis using fish scales indicated that all species were growing near or slightly above state average growth rates. Yellow perch were still the most outstanding feature of the population. A remnant population of smallmouth bass was still present.

Several physical and biological features suggested that this lake would support redear sunfish. In September of 1985, Fisheries Division stocked a total of 16,300 redear sunfish fall fingerlings in Round Lake. A new state record redear sunfish was caught from this lake in 1986. That fish was one of a few brood fish which had been removed from the rearing pond and stocked with the fingerlings the previous fall. In the summer of 1990, the third largest redear reported in the MDNR, Master Angler Award Program was caught in this lake. That fish was 11 inches long and weighed 1.38 pounds.

Current Status of the Pisherv

The 1990 survey showed that Round Lake has an outstanding panfish population. However, this survey confirmed past survey results regarding the low numbers of large predatory game fish. The open, sparsely vegetated type of habitat present in Round Lake favors moderate populations of large panfish and perch which feed primarily on plankton, insects, small fish and snails. Yet, this

habitat restricts predatory fish like bass and northern pike which thrive in situations where they can hide and ambush their prey.

The **308** bluegills captured in the trap nets averaged an impressive **7.1** inches. A trap net average exceeding 6.25 inches in this area of the state is considered good for this species. Nine inch bluegills are quite rare in trap net surveys, yet Round Lake produced **6** nine-inchers. Growth analysis using fish scales suggested that bluegills were growing at above state average growth rates in all age groups. Collectively the bluegill population was growing **0.7** inches above state rates. Bluegill average size and growth rates have increased substantially since **1985.**

Only 12 redear sunfish were captured, however, all were between **10** and **11** inches in length. The **10.6** inch average was the largest observed anywhere to date in the six county area of DNR Fisheries District **13.** The absence of smaller sizes may indicate that redear natural reproduction has not been successful in this lake. However, most of the panfish had not spawned at the time of the survey and very few fish nests were observed. Perhaps the majority of redear sunfish were still in deeper water and not susceptible to capture by trap nets. Redear sunfish growth in Michigan lakes is still being evaluated and as yet no standards for comparisons have been developed. Fingerlings were stocked in Round Lake in the fall of **1985** as **1.8** inch fingerlings. The fact that these fish have attained a **10.6** inch average size in only 5 growing seasons is extraordinary when compared to the growth of other panfish in the same fishery.

A few large yellow perch were caught during the **1990** survey. Gill nets are most often used to sample this species, however, most of the fish captured in gill nets usually expire due to stress, loss of scales, and damage to the skin and gill filaments. Since a very good catch of perch resulted from the **1986** survey, gill nets were not employed in **1990.** Perch are rarely caught in trap nets and the fact that **12** were captured indicated the population of large perch is still a major feature of this fish population. Growth analysis using fish scales in the large sample of perch in **1985** indicated that above state average growth was occurring at all age groups. The perch sampled in **1990** suggested that this trend of fast growth was continuing.

Although trap nets usually catch only a few largemouth bass, 32 largemouth were captured in the **1990** Round Lake Survey. While the great majority were small (2 and 3-year-olds), three were **12** inches or larger (legal size). Analysis of bass scales indicated that positive growth rates have continued since **1985.** The **1990** bass population was found to be growing at **0.8** inches above state average growth rates. Apparently most bass are being removed from the popula- tion soon after they reach legal size **(12** inches**).**

Round Lake will probably not develop into a good bass fishery in the near future. This could happen if the lake became enriched with nutrients (fertilizers, organic materials, etc.) and plant growth increased several fold. In such a case, the increased hiding space would lead to increased survival of small bluegills. Increased competition for food would result in poorer bluegill growth. Correspondingly, largemouth bass growth would probably increase. Most anglers and riparians would agree that the trade-offs would not be desirable.

The 1990 survey confirmed that a small population of smallmouth bass still persists in this system. Clear water lakes with basin substrates composed largely of rock, gravel and boulders usually hold the best chance for supporting large populations of smallmouth. This substrate allows the production of the principle food of smallmouth: crayfish, Unfortunately, Round Lake has little of this habitat and will not support many smallmouth. Yet, the presence of this species adds a bit of spice to the fishery for the anglers.

Round Lake also supports a fair population of very large bullheads. The average of 12 inches in the 1990 catch was the largest this author has witnessed. This species is often overlooked by anglers even though they provide excellent food for the table.

As in 1985, the 1990 survey produced a rather small catch of pumpkinseeds. However, the latter population appeared to be faster growing and was sustaining a larger average size (7.2 inches). These results were somewhat surprising since redear sunfish were introduced in 1985 and these two species are considered to be competitors for the same foods (primarily snails).

A significant population of good sized rock bass was captured in 1990. While most anglers do not consider this species a top gamefish, the large individuals in this population (average size was 7.8 inches) could offer a good deal of recreation.

Many large bowfin (dogfish) and longnose gar were also taken in the trap nets. While these fish do not provide preferred sport or tablefare, they serve the fish population as predators of small bluegills and other panfish which can overpopulate if not held in check. Anglers should return these fish to the lake unharmed so the fish can carry on their vital role of predation.

The ten carp captured in this survey were the first observed in any Round Lake fishery survey to date. This exotic species has invaded and resides in nearly all area lakes and streams since its introduction into this country in the late 19th century.

Fishery Management Considerations

The character of the fish population in Round Lake has been one of stability over the last several decades. The fishery has provided several species of fish of medium to large size for anglers. Larger sport fish predators such as bass and especially pike are few in number. However, lake habitat could not easily or economically be altered to accommodate large numbers of additional predators.

suggestions have been made to stock rainbow trout in this water body. However, water chemistry surveys in 1953 and 1985 indicated that conditions were not adequate in mid-summer in the deeper cooler regions of the lake to allow for trout survival.

Growth and average sizes of several species have increased since the survey in 1985, and since the introduction of redear sunfish. These changes are desirable but also somewhat puzzling. This fish population should be frequently monitored (every 3 or 4 years) to ascertain any positive or negative effects of the introduction of redears.

Redear sunfish natural reproduction is as yet a question in this lake. In 1991, further study should be made to determine the extent of any year classes which may have occurred over the last few years. If none (or very few) are found, redear fingerlings should again be stocked in accordance with the District 13 Redear Sunfish Management Plan. This lake will support trophy-sized redears but it is possible that it may not support the natural reproduction of this species.

No drastic fishery management measures are recommended at this time.

MICHIGAN DEPARTMENT OF NATURAL RESOURCES
Fisheries Division

FISH COLLECTION

Water: ROUND LAKE

County: JACKSON T. 4S R. 1W Sec. 30 and 31 Date: 5-1-90 sheet 1 of:

( )All sites ( )Coll. site No. ( )All gear (x)Gear: Trap Nets

Sample site(~):Number of- 5 Depth, Range- 0 to 4 feet Temp, Range-

Location(s) (describe or map below): See attached rap.

Cover (abundance, type): very sparce

Fish foods: bluntnose minnows abundant in the shallows
Water clarity, level, etc,: normal and clear Secchi=16.5 ft, Cond.- Electro. eff-

Heather: Present- clear and mild Preceding-

Tenperature: Air- 70 F Water surface- 66 F Tire of day- 10 AM
Stream: Length- Avg width- Avg. depth-
Velocity: Ave.- Surface- Discharge-
Bottom type- mostly marl and sand
Gear Description: 6X3 foot standard trap nets nith 125 to 150 foot leads

Effort: Net lifts- 5TN Net nights- 5TN Area = 155 acres Hrs. shocked-
Purpose of collection: Redear sunfish survival and genera! survey.

Data cullected (XI: (X)CATCH SUMMARY (XI LENGTH-FRERUEWCY ( )LENGTH-BIOMASS ( )LENGTH-WEIGHT REGRESSION
(X)GROWTH ( )MARK & RECAP. ESTIMATES ( )AGE-FREQUENCY & SURVIVAL

Analysis, map, remarks, fishina reports:

Round Lake has an outstanding panfish population. Bluegill, yellow perch and redear populations are very good as reflected in the catch. Only 12 redear were captured, however, they were large fish and averaged 10.5 inches.

Anatomical features indicated that fish were vwy close to spawning tire, yet few nests were observed. If this survey had taken place three or four days later fish nests would probably have been very prevelant and the catch may have been better.

For more information see Status of the Fishery Report in the files.

Analysis by: Gary L. Towns Sec.- D-13, Fisheries
Collection by: D-13 crew Sec.- Fisheries I.D. by- Towns Sec.-
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CATCH SUMMARY BY GEAR

Species: ROUND LAKE	BLUEGILL	LARGEMOUTH BASS	REDEAR SUNFISH	SMALLMOUTH BASS	YELLOW PERCH	BULLHEADS
Legal Size(in)	6	12	6	12	7	7
Avg. Length(in)	7.1	9.4	10.6	9.8	10.3	12.0
Avg. Weight(lb)	.3	.41	1.12	.80	.45	1.08

TRAP NETS	No.	Lb.	No.	Lb.	No.	Lb.	No.	Lb.	No.	Lb.	No.	Lb.
Sample Total	308	86.7	32	13.0	12	13.5	3	2.4	12	5.4	26	28.0
% Total Catch	62.2%	35.7%	6.5%	5.4%	2.4%	5.5%	.6%	1.0%	2.4%	2.2%	5.3%	11.5%
CPE	61.6	17.3	6.4	2.6	2.4	2.7	.6	.5	2.4	1.1	5.2	5.6
% Legal Size	94.8%		9.4%		100.0%		.0%		100.0%		100.0%	

Inches						
1						
2						
3						
4	5					
5	11					
6	119	2				
7	133	6		1		
8	34	12				
9	6				6	2
10		2	11	1	3	2
11		7	1	1	3	6
12		1				13
13		1				3
14		1				
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						
33						
34						
35						
36						
Subsamp Total	308	32	12	3	12	26

Water: Net lifts or no. of hr. shocked= 5.0

ROUND LAKE — **All Species Total:** Number= 495 Pounds= 242.7

Trap Nets

CATCH SUMMARY BY GEAR

Species: ROUND LAKE	BLACK CRAPPIE	PUMPKINSEED SUNFISH	ROCK BASS	WARMOUTH	GREEN SUNFISH	BOWFIN (dogfish)
Legal Size(in)	7	6	6	6	6	
Avg. Length(in)	7.5	7.2	7.8	6.5	6.5	23.1
Avg. Weight(lb)	.22	.36	.32	.25	.30	4.14

TRAP NETS	No.	Lb.	No.	Lb.	No.	Lb.	No.	Lb.	No.	Lb.	No.	Lb.
Sample Total	3	.7	16	5.7	48	15.4	2	.5	1	.3	5	20.7
% Total Catch	.6%	.3%	3.2%	2.3%	9.7%	6.3%	.4%	.2%	.2%	.1%	1.0%	8.5%
CPE	.6	.1	3.2	1.1	9.6	3.1	.4	.1	.2	.1	1.0	4.1
% Legal Size	66.7%		93.8%		95.8%		100.0%		100.0%			

Inches						
1						
2						
3						
4						
5		1	2			
6	1	5	5	2	1	
7	1	8	20			
8	1	2	17			
9			4			
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						1
21						1
22						
23						1
24						1
25						1
26						
27						
28						
29						
30						
31						
32						
33						
34						
35						
36						
Subsample Total	3	16	48	2	1	5

Water
ROUND LAKE
Trap Nets

CATCH SUMMARY BY GEAR

Species:	LONGNOSE	CARP
ROUND LAKE	GAR	
Legal Size(in)		
Avg. Length(in)	25.4	17.0
Avg. Weight(lb)	1.24	2.94

TRAP NETS	No.	Lb.	No.	Lb.	No.	Lb.	No.	Lb.	No.	Lb.	No.
Sample Total	17	21.1	10	29.4							
% Total Catch	3.4%	8.7%	2.0%	12.1%							
CPE	3.4	4.2	2.0	5.9							
% Legal Size											

Inches		
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		1
13		2
14		1
15		
16		
17		
18		2
19		3
20		1
21		
22	2	
23	2	
24	6	
25	2	
26	2	
27	1	
28	1	
29		
30		
31		
32		
33	1	
34		
35		
36		

Subsamp Total	17	10

Water
ROUND LAKE
Trap Nets

INSTITUTE FOR FISHERIES RESEARCH

DIVISION OF FISHERIES — MICHIGAN CONSERVATION DEPT.

LAKE INVENTORY MAP

ROUND LAKE

AREA 155 ACRES

MARGINAL SURVEY AND SOUNDINGS INVENTORY — 2/10-16/53, 8/23-25 & 8/6/53

JACKSON COUNTY — T. 4 S R.1-2 W. SEC'S. 25,30,31,36

- 1990 Trap Net Sites

LEGEND

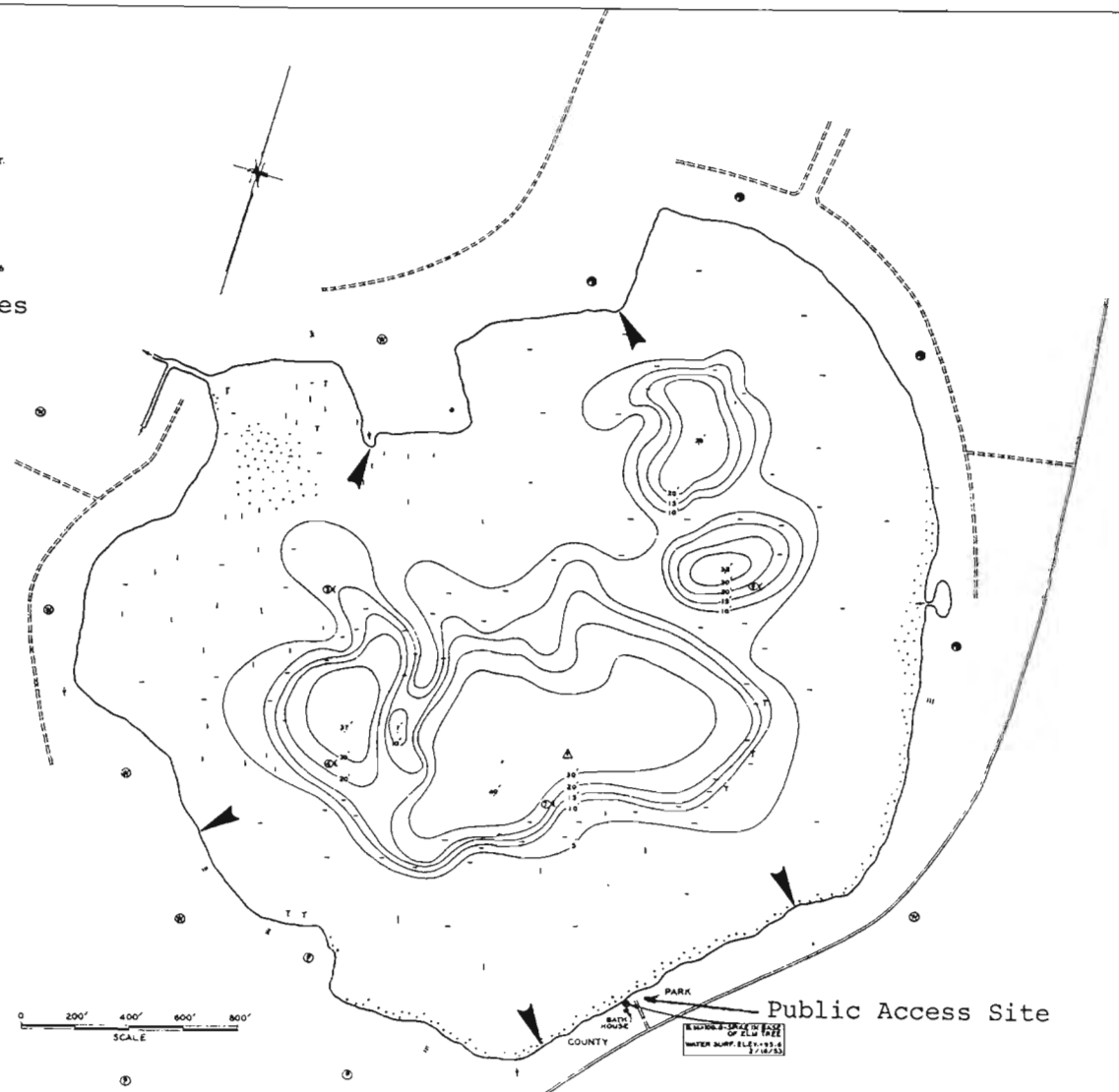
BOTTOM
- Sand
- Marl
- Fibrous peat
- Gravel

OUTLINE & CONTOURS
- Shoreline
- Contours

SHORE FEATURES
- Slope
- Improved road
- Unimproved road
- Brush
- Cottage
- Wooded
- Partly wooded
- Pasture
- Inlet
- Outlet

VEGETATION
- Emergent
- Submergent
- Floating

STATIONS
- Temp.chem. analysis
- Fish sample



TO ORDER, CONTACT.
MICHIGAN UNITED CONSERVATION CLUBS
P.O. Box 30235 Lansing Michigan 48909

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ROUND LAKE Jackson County T. 4 S.R.1-2 W. Sec's.25,30,31,36

R-8070 4/81

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

Water Round Lake T. 4S R. 1, 2S Sec. 25, 30, 31, & 36 FISH GROWTH ANALYSIS

County Jackson Id. Near Farwell Lake Collection Date 06/01/90

Gear and Methods Standard 6' x 3' Trap Nets

Collected By D-13 Crew Section Fisheries Aged By J. Stark & G. Towns Section D-13, Fisheries

Species ↓	Age Group ↕	Number of fish	Lenth range in inches	Mean length in inches	State avg. length	Growth index (by age group)	Mean growth index for species
Bluegill	III	14	4.5 - 6.8	5.5	5.3	0.2	
	IV	17	4.5 - 8.6	7.0	6.2	0.8	
	V	15	6.8 - 9.0	7.9	6.9	1.0	
	VI	3	9.2 - 9.5	9.6	7.6	(2.0)	
	VII	1	9.5	9.5	8.0	(1.5)	
							0.7
Pumpkinseed Sunfish	III	10	5.7 - 7.7	6.8	5.2	1.6	
	IV	6	6.9 - 8.4	7.6	5.8	1.8	
	V	1	8.9	8.9	6.3	(2.3)	
							1.7
Redear Sunfish	V	12	10.1 - 11.0	10.6	NA	NA	
							NA
Largemouth Bass	I	8	6.2 - 7.8	7.1	5.4	1.7	
	II	13	8.4 - 10.9	9.0	8.7	0.3	
	III	4	11.1 - 11.2	11.2	10.6	(0.6)	
	IV	6	11.3 - 14.7	12.5	12.0	0.5	
							0.8

↓ Several species may be listed on one sheet.
↕ Age in years. Fish become one year older on January 1.

(over)

Species ↓	Age Group →	Number of fish	Lenth range in inches	Mean length in inches	State avg. length	Growth index (by age group)	Mean growth index for species
Yellow Perch	III	3	9.0 - 9.9	9.4	6.8	(2.6)	
	IV	6	9.6 - 11.5	10.2	7.8	2.4	
	V	3	10.7 - 11.5	11.1	8.7	(2.4)	
							2.4

Numbers in parenthesis can only be regarded as growth trends since not enought fish were captured per age group to be statistically significant.

Analysis: All species demonstrate growth and improvements since 1985.

Prepared by G. Towns Section D-13, Fisheries Date 02/20/91

Copies to: XX Lansing, XX Region, XX District, XX I.F.R.