MONTANA DEPARTMENT OF FISH, WILDLIFE AND PARKS

FISHERIES DIVISION
JOB PROGRESS REPORT

State: Montana

Project Title: Statewide Fisheries Investigations

Project No.: F-46-R-1

Study Title: Survey and Inventory of Warmwater Lakes

Job No.: IV-e

Job Title: Tongue River Reservoir Investigations

Segment (Fiscal) Period: July 1, 1987 - June 30, 1988

Report Period: April 1, 1987 - March 31, 1988

ABSTRACT

White crappie continue to dominate fish populations at Tongue River Reservoir. Evidence is accumulating that walleye fingerling plants survive well and that planted fry do not survive. Northern pike numbers will be very low until fingerlings are available for planting. Negotiations continue with DNR to improve water levels.

OBJECTIVES AND DEGREE OF ATTAINMENT

1. To increase the average size of crappie so that 10 percent of crappie in mid-summer gill net catches are at least 250 mm total length. This objective was not met, but can be achieved when predator fish species have increased in number and size. Only 4.2 percent exceeded 250 mm total length in August 1987 gill net catches.

2. To increase mid-summer gill net catches of walleye to an average of at least 2.0 walleye per overnight experimental gill net set. This objective was met. Gill net catches in 1987 averaged 5.6 walleye per overnight set.

3. To increase mid-summer gill net catches of northern pike to an average of at least 2.0 northern pike per experimental gill net set. This objective was not met. Gill net catches in 1987 averaged only 0.1 northern pike per overnight set because northern pike fingerlings have not been available for planting.

METHODS

Fish populations were sampled with gill nets and seines. Gill nets were of the sinking experimental type, 125 feet long. The bag seine was 100 feet long with 1/4 inch mesh. Walleye were aged from plastic scale impressions.

WORK ACCOMPLISHED

Experimental gill nets were fished in early August over the length of the reservoir for a total of 12 net nights. Results are shown in Table 1. Catch rates overall were higher in 1987 (51.3 fish per net night) than in 1986 (34.4 fish per net night).

White crappie continue to be the dominant species in gill net catches, making up 34.7 percent of the catch in 1987. Numbers of larger crappie increased from 1986 to 1987. Crappie larger than 250 mm total length made up only 0.6 percent of gill net catches in 1986. The corresponding figure for 1987 is 4.2%. The year class of crappie formed in 1987 appears small. An average of only 6.8 crappie YOY was collected in seine hauls (Table 2). This number is the lowest in several years.

Gill net catch rate of walleye in 1987 was 5.6 walleye per overnight gill net set. Average number of walleye per overnight gill net set from 1980 through 1987 was 4.3, 5.6, 2.0, 0.2, 0.4, 0.6, 1.6, and 5.6. In 1986 88% of the walleye sampled in gill nets were age 1+ fish. In 1987 the entire gill net catch was made up of age 1+ and age 2+ fish. This indicates that year classes of walleye were formed in 1985 and 1986.

Evidence is accumulating that walleye fingerling plants survive at Tongue River Reservoir. Fingerling plants were made in both 1985 and 1986, years when strong year classes were formed. A fry plant in 1984 failed to form a year class. The same is true for 1987. No walleye YOY were found in 1987 seine hauls (Table 2).

Northern pike continue at extremely low levels at Tongue River Reservoir. Only a single northern was taken in gill nets in 1987. The pike marsh has not proven effective in producing northern pike. No further efforts will be made to produce northern pike fingerlings from the marsh. Habitat for northern pike reproduction or survival of planted fry is not present in the reservoir. Formation of a significant population will not be possible until northern pike fingerlings are available for planting.

The largest number of yellow perch YOY sampled in five years was found in 1987 seine hauls. The 1987 average was 47.3 YOY per haul (Table 2). The previous high figure was 15.3 per seine

Table 1. Results of 12 overnight experimental gill net sets at Tongue River Reservoir, August 1987.

Species	Number Caught	Mean No./ Net Set	Mean Len.(mm)	Mean WT.(gm)	Ln. Range (mm)	Wt.Range (gm)	% Of Catch
Northern Pike	1	0.1	728	2910	------	------	0.2
Carp	31	2.6	460	1177	257-540	270-1850	5.0
Shorthead redhorse	39	3.2	266	355	169-506	50-1280	6.3
White sucker	53	4.4	365	588	225-445	130- 920	8.6
Longnose sucker	2	0.2	246	165	200-292	70- 260	0.3
Yellow bullhead	43	3.6	254	180	172-325	45- 470	7.0
Black bullhead	2	0.2	242	195	238-245	190- 200	0.3
Channel catfish	14	1.2	368	478	300-558	230-1840	2.3
Smallmouth bass	4	0.3	249	216	161-294	55- 310	0.6
White crappie	214	17.8	207	120	112-280	10- 220	34.7
Black crappie	24	2.0	192	106	117-241	20- 160	3.9
Yellow perch	118	9.8	191	86	142-253	20- 200	19.2
Sauger	2	0.1	300	238	241-360	115- 360	0.3
Walleye	67	5.6	279	171	228-387	90- 490	10.9
Totals	616 [1]						99.9

[1] Also includes one brown trout and one rainbow trout.

Table 2. Results of 12 seine hauls at Tongue River Reservoir, August 1987.

Species	No. Caught	Mean Number/ Haul	Mean Length (mm)	Mean Weight (gm)	Length Range (mm)	Weight Range (gm)
Carp	3	0.2	----	----	----	----
Carp YOY	40	3.3	82	----	61-108	----
Shorthead redhorse	14	1.2	186	----	144-286	----
Green sunfish	1	0.1	110	----	----	----
Smallmouth bass	9	0.8	192	134	135-262	40-245
Smallmouth bass YOY	130	10.8	65	----	43-102	----
White crappie	2	0.2	224	145	202-247	120-170
Black crappie	7	0.6	212	133	202-220	115-150
Crappie YOY	81	6.8	51	----	26- 70	----
Yellow perch	65	5.4	134	24	120-144	20- 30
Yellow perch YOY	568	47.3	65	----	50- 86	----
Walleye	7	0.6	252	110	227-275	90-275

haul. The large 1987 figure is surprisingly high because of the nearly complete lack of aquatic vegetation.

Other fish species present were sampled at rates similar to previous years.

Low winter water levels, beginning in 1980, have been associated with lack of young walleye survival, with the exception of years when fingerling walleye have been planted. Beginning in February 1987 negotiations were begun with the State Deprtment of Natural Resources to obtain a higher water level in the reservoir through winter to aid young walleye survival. No firm commitment has been received as yet from DNR for the needed reservoir water levels, but negotiations will continue.

Waters Referred to:

Tongue River Reservoir 7-21-9000

Key Words:

Crappie
Walleye Management

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