

MONTANA DEPARTMENT OF FISH, WILDLIFE AND PARKS

FISHERIES DIVISION
JOB PROGRESS REPORT

STATE: MONTANA PROJECT TITLE: STATEWIDE FISHERIES INVESTIGATIONS
PROJECT NO.: F-46-R-4 STUDY TITLE: SURVEY AND INVENTORY OF WARMWATER LAKES
JOB NO.: IV-a JOB TITLE: NORTHWEST MONTANA WARMWATER LAKES INVESTIGATIONS
PROJECT PERIOD: JULY 1, 1990 THROUGH JUNE 30, 1991

ABSTRACT

Surplus largemouth bass (Micropterus salmoides) were transferred to lakes with poor recruitment. Dr. David Bennett (1991) completed an environmental assessment for the Department entitled "Effects of Potential Introductions of Smallmouth Bass (Micropterus dolomieu) into Waters of the Clark Fork, Flathead, and Kootenai Drainages of Western Montana." This EA, combined with public review and input, will aid in the selection of suitable waters for the potential introduction of smallmouth bass. Habitat improvement structures were placed in five regional waters to benefit largemouth bass. The Kootenai National Forest and Washington Water Power purchased \$10,000 of artificial habitat structures for experimental placement in Noxon Rapids Reservoir. Compiled a literature review investigating potential social and biological impacts of bass fishing tournaments throughout the nation. Illegal introduction of exotic species continues to be a problem.

OBJECTIVES AND DEGREE OF ATTAINMENT

1. Establish and maintain fishable populations (catch rate = 0.25 fish/hour of smallmouth bass and burbot in Noxon and Cabinet Gorge reservoirs. Objectives partially accomplished and submitted in special segment report: Northwest Montana Coldwater Lakes Investigations, Noxon Rapids and Cabinet Gorge Reservoirs Segment, Project No. F-46-R-3 (Huston, 1990).
2. Identify populations with surplus fish that can be used for transplants. Objectives accomplished using state funding.
3. Attempt to acquire and develop access sites on all lakes and reservoirs with the potential for more than 500 mandays of fishing annually. First priority should be given to Lake Blaine and those lakes with adjoining Champion International or Plum Creek Timberlands property. Objectives were accomplished using state funding.
4. Minimize the impacts of land and water use on fisheries. Objectives were accomplished using state funding.
5. Define the impacts of fishermen use on specified fisheries and provide an increased opportunity to catch large bass (>12-14 inches) and northern pike (>28 inches). Objectives were accomplished using state funding.
6. Address the demand for new species introductions. Define the parameters of interspecific competition, participate in a walleye introduction EIS, halt the illegal spread of northern pike. Objectives were partially accomplished. Illegal northern pike introductions continue.

7. Enhance fish populations through the placement of artificial habitat. Objectives were accomplished using state funding.
8. Define the mechanisms of predator/prey relationships in area lakes. Reduce competition with game fish and reduce overabundant populations of non-game fish. Objectives were accomplished.
9. Encourage increased public knowledge and participation in resource decisions. Objectives were accomplished.

PROCEDURES

Standard floating and sinking monofilament gill nets 125-feet long by 6-feet deep were used for fish collection. Nets contained 25-foot panels of 3/4, 1, 1 1/2, 1 3/4, and 2-inch bar mesh. One-hundred foot by 6-foot beach seines were used primarily for juvenile fish collection. An 18-foot jon boat with boom mounted electrodes operating on a Coffelt VVP-IIC electrofishing box powered with 110 volt current was also used for sampling. We weighed and measured collected fish and extracted scales and stomach samples for future analysis. A list of waters with available species has been progressively compiled and updated (Appendix A).

Water quality and aquatic habitat were protected or enhanced by participation in the Lakeshore Protection Act (LPA), the Army Corps of Engineers (COE) 404 permit program, and Montana Pollution Discharge Elimination System (MPDES). Proposed projects were reviewed and mitigative measures recommended where appropriate.

A proposal for a Master of Science (M.S.) degree research project was drafted cooperatively by the U. S. Forest Service (USFS), DFWP, and the University of Montana to identify factors limiting largemouth bass production in Echo and Seeley lakes. Baseline data were collected to aid in the study design. Data included water temperature profiles and thermograph recordings, secchi disc readings, and largemouth bass spawning surveys (Walker-Smith in preparation).

RESULTS AND DISCUSSION

Species Introductions

Several warmwater lakes in Region 1 have been identified as having a surplus of warmwater fish species available for transplant into other waters. Lakes with the greatest potential for procuring surplus largemouth bass are Rattlebone, Parker, Savage, and Carpenter lakes. In the past, largemouth bass transplants have been made to supplement populations with poor survival or to introduce a predator fish species in a lake inhabited by an overabundance of prey species. In most instances, warmwater lakes are self sustaining and do not require augmentation. Exceptions might include successive years of poor climatic conditions for spawning, or transfer of stunted populations to waters where recruitment is limited. Local bass clubs have cooperated in this effort by reconstructing a 200 gallon fish transport tank. During July of 1990 nearly 100 bass averaging eight inches in length were collected by the Echo Lake Bassmasters and transported from Costich Lake to Murphy Lake.

Western Montana contains several lakes and streams that presently support marginal trout fisheries or could support mixed species fisheries. An environmental assessment titled "Effects of Potential Introductions of Smallmouth Bass (Micropterus Dolomieu) into waters of the Clark Fork, Flathead, and Kootenai Drainages of Western Montana," was prepared for the Department by Dr. David Bennett (1991). This report, combined with public review and individual environmental assessments, will be used to propose smallmouth bass introductions

into selected waters. The report is available through MDFWP fish divisions in Helena, Missoula and Kalispell.

Illegal introductions continue to plague fish management within the region. An environmental assessment is in preparation for rehabilitation of Lion Lake which presently contains a "stunted" population of illegally introduced northern pike (Esox lucius), largemouth bass and yellow perch (Perca flavescens). Historically, Lion Lake was considered a good trout fishery. Preliminary cost estimates for rotenone treatment approach \$10,000. Requests for walleye (Stizostedion vitreum) come weekly both from private pond owners, anglers, and organized groups.

DFWP continued to cooperate with Washington Water Power to document effects of reservoir drawdown on benthic organisms and fish in Noxon Rapids Reservoir (Huston 1990).

Access

Champion International donated approximately 4,000 acres to the State of Montana during FY 1990. The area contains recreational land on 17 lakes extending from McGregor Lake on the east to Loon Lake on the west. The area is referred to as the "Chain of Lakes" and the waters contain largemouth and smallmouth bass, northern pike, yellow perch, trout and salmon. The Department has formed an ad-hoc committee that is investigating future management and development of the area.

Three regional fishing access sites are presently undergoing site redesign modifications that will continue into FY 1992. These sites include Smith Lake, Skyles Lake, and Flatiron Ridge on Noxon Rapids Reservoir.

Habitat Protection and Enhancement

Lakeshore protection applications, some requiring Department recommendations for mitigation, were processed through regional county agencies. Comments were submitted on COE 404 permits for regional lakes and streams.

Fish populations were enhanced and habitat loss mitigated by enlisting the aid of Washington Water Power, USFS, Western Montana Bassmasters, Echo Lake Bassmasters, Clark Fork Bass Anglers, Noxon Rod and Gun Club and other local groups to purchase and install bass habitat structures. Waters receiving structure improvements include: Echo Lake, Middle Thompson Lake, Murphy Lake, Noxon Rapids Reservoir and Sophie Lake.

Washington Water Power, the Clark Fork Bass Anglers, Noxon Rod and Gun Club, Cabinet Ranger District of Kootenai National Forest (USFS) and the DFWP entered into a partnership agreement in December 1990 regarding fish habitat enhancement in Cabinet Gorge and Noxon Rapids reservoirs. The agreement stated that Washington Water Power and the USFS will initially purchase \$10,000 of artificial bass structures. The other partners would then provide \$7,000 of in-kind services including labor, miscellaneous equipment and additional supplies for the project. The project total is \$17,000. Installation of the structures has been delayed but will be completed during FY 1992.

Fishermen Impacts on Specified Fisheries

The DFWP defines a "Fishing Contest" as any event where an entry fee is charged and where 30 or more people are expected to, or do in fact compete to win prizes or cash worth \$200 or more, based on the capture of individual fish or combination of fish. Application for a fishing contest must be submitted to the

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DFWP at least 180 days but not more than 365 days prior to the scheduled contest date.

During FY 1991, 5 contests were held that pertained to warmwater species. Nearly all of these contests targeted largemouth bass. There is a growing concern over impacts of tournament bass fishing. In an effort to investigate potential social and biological impacts we conducted a literature review of bass fishing tournaments throughout the nation through the Montana State Library system. A portion of this review (Rumsey 1991) is included as an appendix within this report.

RECOMMENDATIONS

There is an increasing demand for baseline population and habitat data on the 114 warmwater lakes within the region. As time allows we need to collect population indices for prioritized waters. This information would help confirm a need for different management such as more restrictive regulations if necessary.

The number of bass fishermen and interest among them is ever increasing. Tournament requests, requests for special regulations, and concern over specific fisheries continue to come in at a greater frequency. Complaints about illegal spear fishing are also more frequent as are complaints about mortality or injury to fish during tournaments. A more conservative policy will need to be evaluated that will reduce potential impacts from the above issues.

Habitat enhancement structures need additional evaluation. It is the intent of the aforementioned M. S. graduate study to evaluate the use of different structure types.

A more extensive genetic sample of regional bass populations would be desirable. This would identify populations needing additional genetic diversity that could be infused through stocking.

LITERATURE CITED

- Bennett, David H. 1991. Effects of potential introductions of smallmouth bass (Micropterus dolomieu) into waters of the Clark Fork, Flathead, and Kootenai Drainages of western Montana.
- Huston, Joe E. 1990. Northwest Montana coldwater lakes investigations, Noxon Rapids and Cabinet Gorge Reservoirs segment, July 1, 1989 through June 30, 1990, Project No. F-46-R-3, Job No. II-a, Montana Dept. of Fish, Wildlife and Parks, Helena, MT.
- Rumsey, Scott S. 1991. Bass tournament literature review and discussion. MDFWP, Kalispell, MT.
- Walker-Smith, Kate. In Preparation. Comparison of limiting factors for reproduction, recruitment and growth of largemouth bass in Seeley and Echo Lakes, Montana.

Prepared by: Scott Rumsey

Date: August 21, 1991

Waters referred to:

Cabinet Gorge Reservoir 5-8512
Costich Lake - No code
Lion Lake 8-9140
Lower Thompson Lake 5-9152
Murphy Lake 11-9280
Parker Lake - 7-8200
Savage Lake 11-9480
Skyles Lake 7-8650
Sophie Lake 11-9620

Carpenter Lake 11-00AF
Echo Lake 7-6180
Loon Lake 11-8940
Middle Thompson Lake 5-9232
Noxon Rapids Reservoir 5-9328
Rattlebone Lake 11-9430
Seeley Lake 4-7260
Smith Lake 7-8700

Key Words: warmwater lakes; artificial habitat structures, smallmouth bass,
largemouth bass, northern pike, exotic species introductions,
fishing access acquisition

Appendix A

age No. 2

5/90

KNOWN SPECIES DISTRIBUTIONS - REGION 1

September, 1990

x = present xx = fishable population

Waterbody Name	River Drainage	Location T R S	Blue- gill	Brook Trout	Crappie	Grayling	Kokanee	Largemouth Bass	Smallmouth Bass	Northern Pike	Perch
Lagoni Lake	Flathead	33 24 26								x	xx
Lake Blaine	Flathead	29 20 25					x	xx		xx	x
Lake Five	Flathead	31 19 09						x			xx
Lake Mary Ronan	Flathead	25 22 11					xx	xx			
Lake McDonald	Glacier Pk	32 18 00					x				
Lake Monroe (L. Ashley)	Flathead	27 23 04								xx	
Lindbergh Lake	Flathead	18 17 02					x			xx	x
Lion Lake	Flathead	30 19 09								xx	
Little Bitterroot River	Flathead	20 22 00					xx		x		
Little Loon Lake - Hwy. 2	Kootenai	27 28 14					x				x
Little McGregor Lake	Flathead	26 25 04		xx						x	
Logan Creek	Flathead	31 23 29								x	
Lone Lake (Mid. Ashley Lk)	Flathead	28 24 36					x			xx	x
Lonepine Reservoir	Flathead	22 24 00					x		x	x	xx
Loon Lake - Ferndale	Flathead	26 19 10					xx		x		
Loon Lake - Hwy. 2	Kootenai	27 28 22					x			xx	
Lost Coon Lake	Flathead	30 22 02									
Lost Lake	Flathead	26 21 08		x							
Lost Lake	Clark Fork	27 27 26		x							
Lost Lake - Happy's Inn	Kootenai	27 27 07		x							
Lower Blossom Lake	Clark Fork	21 32 30		xx							
Lower Martin Lake	Flathead	32 24 10								x	x
Lower Stillwater Lake	Flathead	32 23 00								xx	x
Lower Thompson Lake	Clark Fork	26 27 11					x	xx		x	xx
Lynch Lake	Kootenai	28 26 14		x				x			
Marl Lake	Flathead	34 26 03								x	
Martin Lake - Stryker	Kootenai	34 25 04		x							
McCaffery Lake	Flathead	27 19 18					xx				
McWeneger Slough	Flathead	28 20 06								xx	xx
Middle Thompson Lake	Clark Fork	26 27 04					xx	xx		x	xx
Miller Lake	Kootenai	25 29 00		x				x		x	
Milnor Lake	Kootenai	31 33 28						xx			
Moran Lake	Kootenai	37 27 21						x		x	
Mud Lake	Flathead	27 19 10		x				xx		x	x
Murphy Lake - Fortine	Kootenai	34 25 05						xx			xx
Ninepipes Reservoir - I.R.	Flathead	19 20 02						xx		xx	x
Noxon Rapids Reservoir	Clark Fork	26 33 00						xx			
Pablo Reservoir	Flathead	22 20 27						xx			
Parker Lake	Flathead	26 20 30						xx		xx	x
Peterson Lake	Flathead	27 19 07						xx			
Pothole Lakes	Flathead	27 19 00						xx		xx	x
Rainbow (Dog) Lake	Clark Fork	20 25 03						x			
Rainbow Lake - Hwy. 2	Kootenai	27 27 30						xx			
Rattlebone Lake	Flathead	34 25 22									
Red Meadow Lake	Flathead	34 23 34				xx					xx
Rogers Lake	Flathead	27 23 31		xx		xx					
Savage Lake	Kootenai	31 33 27		x				xx			
Skyles Lake	Flathead	31 22 33						xx			

Appendix A

Page No. 3
09/05/90

KNOWN SPECIES DISTRIBUTIONS - REGION 1 September, 1990

x = present xx = fishable population

Waterbody Name	River Drainage	Location T R S	Blue- gill	Brook Trout	Crappie	Grayling	Kokanee	Largemouth Bass	Smallmouth Bass	Northern Perch Pike
Slee Lake - private	Kootenai	31 33 00						x		
Smiley's Slough	Clark Fork	20 26 28			x			x		
Smith Lake	Flathead	27 22 00		x						xx
Smith Lake - Whitefish	Flathead	32 22 32		x						
Smokey Lake	Flathead	33 24 17		x						
Sophie Lake	Kootenai	37 27 15						xx		x
Spar Lake	Kootenai	29 34 21		x			xx			
Spill Lake	Flathead	27 19 07						x		
Spoon Lake	Flathead	31 20 03		x						
Stillwater River	Flathead	28 21 00								xx xx
Sunrise Lake	Flathead	30 23 13								x
Swan Lake	Flathead	25 18 14					xx	x		xx x
Swan River - Porcupine Cr	Flathead	27 20 36								x
Swan River - backwaters	Flathead	27 19 32								x
Swimming Lake	Flathead	28 20 14						x		
Swisher Lake	Kootenai	37 27 17		x						
Sylvan Lake	Kootenai	25 29 24		x						
Sylvia Lake	Flathead	30 25 20				xx				
Tally Lake	Flathead	30 23 00					x			xx
Tamarack Lake	Flathead	36 24 36						x		
Tetrault Lake (Carpenter)	Kootenai	37 27 27	xx					xx		
Thompson Falls Reservoir	Clark Fork	21 29 08						x		x
Troops Lake - private	Kootenai	31 33 16						x		
Upper Blossom Lake	Clark Fork	21 32 30		xx						
Upper Foys Lake	Flathead	28 22 23						x		x
Upper Martin Lake	Flathead	32 24 10								x
Upper Red Meadow Creek	Flathead	35 21 05				x				
Upper Slee Lake - private	Kootenai	31 33 06						x		
Upper Stillwater Lake	Flathead	33 23 00								xx x
Upper Sunday Lake	Flathead	33 24 07						x		
Upper Thompson Lake	Flathead	27 27 30						xx	x	xx xx
West Lake (private)	Flathead	31 19 16						x		
Whitefish Lake	Flathead	31 22 00								xx
Whitefish River	Flathead	28 21 00								xx

**THE BIOLOGICAL AND SOCIAL IMPACTS OF
BASS TOURNAMENTS**

LITERATURE REVIEW AND DISCUSSION

Scott Rumsey

Montana Department of Fish, Wildlife & Parks

April 2, 1991

EFFECTS OF POTENTIAL INTRODUCTIONS OF
SMALLMOUTH BASS (*MICROPTERUS DOLOMIEUI*) INTO WATERS
OF THE CLARK FORK, FLATHEAD, AND KOOTENAI DRAINAGES
OF WESTERN MONTANA

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P.O. Box 67
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The Confederated Salish and Kootenai Tribes
of the Flathead Reservation
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June, 1991