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MONTANA DEPARTMENT OF FISH, WILDLIFE AND PARKS  
SUMMARY ANNUAL PERFORMANCE REPORT

STATE: MONTANA  
PROJECT NO.: F-46-R-1  
JOB NO.: IV-a  
PROJECT TITLE: Statewide Fisheries Investigations  
STUDY TITLE: Survey and Inventory of Warmwater Lakes  
JOB TITLE: Northwest Montana Warmwater Lake  
Investigations: Noxon Rapids and Cabinet  
Gorge Reservoirs Segment  
PROJECT PERIOD: July 1, 1987 through June 30, 1988

The attached detailed report, page 7-9, addresses attainment of project objectives from a number of funding sources for work at Noxon Rapids and Cabinet Gorge Reservoirs. Funding sources include: the F-46-R-1 Federal Aid project (D-J and state matching funds); state funding of certain objectives; and Washington Water Power Company funding. Remaining objectives under Job IV-a are covered by other reports.

Following is a summary of Federal Aid Job IV-a objectives and degree of attainment.

<u>Fed. Aid</u>	<u>Obj. # in</u>	<u>Objective</u>
<u>Job Obj.</u>	<u>Attached</u>	
	<u>Report</u>	

IV-a #1	#4, pg. 8	Establish and maintain fishable populations (catch rate = 0.25 fish/hour of smallmouth bass and burbot in Noxon and Cabinet Gorge reservoirs.
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Data presented in this report indicates an increasing population of smallmouth bass. Survey of burbot populations has not yet been done but is scheduled. Objective was partially met.

IV-a #3	#5, pg.8	Attempt to acquire and develop access sites on all lakes and reservoirs with the potential for more than 500 days of fishing annually. First priority should be given to Lake Blaine and those lakes with adjoining Champion International or Plum Creek Timberlands property.
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Since 1985, the Company and Department have constructed or improved two boat ramps in Cabinet Gorge Reservoir and four in Noxon Rapids Reservoir. The Company, Department, and U.S. Forest Service are exploring methods to fund and construct at least one additional boat ramp and campground on each reservoir. Objective was met.

NOTE: THIS OBJECTIVE WAS FUNDED ENTIRELY WITH STATE FUNDS.



<u>Fed. Aid</u>	<u>Obj. # in</u>	<u>Objective</u>
<u>Job Obj.</u>	<u>Attached</u>	
	<u>Report</u>	

IV-a #7	#6, pg. 8	Enhance fish populations through the placement of artificial habitat.
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The Company, Department, U.S. Forest Service and local sportsman clubs cooperated on the installation of Christmas tree reefs in one area of the reservoir and felling tall (100 foot average) coniferous trees into the reservoir at another site. Site inspections were made for additional reef construction or tree felling. Objective was met.

NOTE: THIS OBJECTIVE WAS FUNDED ENTIRELY WITH STATE FUNDS.

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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-a JOB TITLE: NORTHWEST MONTANA WARMWATER LAKES INVESTIGATIONS  
PROJECT PERIOD: JULY 1, 1987 THROUGH JUNE 30, 1988

ABSTRACT

The Department provided supervision in a baseline study by Washington water Power to minimize impacts of water level fluctuations on Noxon Rapids and Cabinet Gorge reservoirs (Huston 1988). A college student cooperatively worked with the Department on a senior thesis entitled, "Largemouth Bass in Echo Lake, Flathead County, Montana" (Super 1987). This work researched angler exploitation of largemouth bass, habitat assessment regarding artificial and natural cover utilization, food habits, age and growth, creel census, and angler preference. Special bass regulations evolved from this work beginning March 1, 1988. The standard 5 fish daily limit was changed to 5 bass daily and in possession, only 1 of which may exceed 12 inches with the additional restriction of catch-and-release fishing only for bass from May 1 through June 15 (spawning season). The regulations on Church and Fennon sloughs were also modified to allow 5 bass with only 1 over 12 inches. Legal habitat protection measures were undertaken in regional warmwater lakes. Negotiations are continuing toward acquisition of priority fishing access sites. Illegal introductions of non-native species were documented in eight additional lakes during FY1988. A regional Army Corps of Engineers Permit was secured allowing placement of artificial habitat structures for bass in 22 regional lakes. Structures were placed in three lakes during FY1988 and additions planned in FY1989.

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 accomplished and submitted in special segment report: Northwest Montana Coldwater Lakes Investigations, Noxon Rapids and Cabinet Gorge Reservoirs Segment, Project No. F-46-R-1 (Huston, 1988).

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 on specified water bodies with regulations for largemouth bass, however, proposed changes in standard northern pike regulations were rejected by a majority of anglers on specific waters in response to a public survey and questionnaire.
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 gamefish and reduce overabundant populations of nongamefish. Objectives were accomplished.
9. Encourage increase public knowledge and participation in resource decisions. Objectives were accomplished.

## PROCEDURES

1. Noxon Rapids and Cabinet Gorge Reservoirs

All procedures, findings, results and conclusions are included in special segment report: Northwest Montana Coldwater Lakes Investigations, Noxon Rapids and Cabinet Gorge Reservoirs Segment, Project No. F-46-R-1 (Huston 1988). The Department provided supervision in this baseline study by Washington Water Power to minimize impacts of water level fluctuations on Noxon Rapids and Cabinet Gorge reservoirs.

2. Surplus Fish Populations

Standard floating and sinking 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 mesh. Surplus fish populations were also determined through

observations and fisherman contacts. Two 100-foot by 6-foot beach seines were also used primarily for juvenile fish collection. One contained 1/4-inch mesh throughout, and the other 3/4-inch. Fyke and trap nets were also used on occasion. An 18-foot jonboat equipped with boom mounted electrodes and a 110 volt VVP and generator was also utilized for fish collection. Collected fish were weighed, measured, and scales and stomachs extracted for future analysis. A list of waters has been progressively compiled and continually updated.

### 3. Fishing Access Acquisition and Developments

Negotiations are ongoing with various landholders at specific lakes within the region. These include Alvord (Lincoln County), Horseshoe (Lake County), Upper and Lower Thompson lakes (Lincoln County), Lake Blaine (Flathead County), Echo Lake (Flathead County), Blanchard Lake (Flathead County), and Noxon Rapids Reservoir (Sanders County).

### 4. Land and Water Use Impacts on Fisheries

Water quality and aquatic habitat was protected or enhanced by participation in the Lakeshore protection Act (LPA), the Army Corps of Engineers (COD) 404 permit program, and Montana Pollution Discharge Elimination system (MPDES).

### 5. Impacts of Fisherman Use and Increase Opportunity to Catch Large Bass (>12") and Northern Pike (>28")

Echo Lake--All procedures, findings, results, and conclusions are included in a senior thesis entitled, "Largemouth Bass in Echo Lake, Flathead County, Montana (Super 1987).

Church Slough--A volunteer angler caught largemouth bass and recorded fish lengths and weights. Fish were then marked with floy tags and released during 1987. Subsequent tag returns were tracked upon fish recapture by other anglers.

Northern Pike--During fall of 1987 a Department proposal to change standard northern pike regulations was presented and voted on through a questionnaire at public hearings reviewing fishing regulations. The proposal was to reduce the regional northern pike limit of 15 per day to a 5 per day, only 1 over 26 inches.

### 6. New Species Introduction

A consulting firm, DEA Research, was awarded a contract in FY88 to complete a literature review and environmental assessment (EA) on "The Effects of Potential Introductions of Walleye into Water Beyond Their Present Range in Montana". The EA will focus on potential impacts of introductions of walleyes in Montana west of the continental divide where they are not currently known to exist. Walleyes are the species most requested by fishermen for new introductions.

7. Enhance Fish Populations through Artificial Habitat Placement

During May, 1988, the Department, acting as the authorized agent for the Montana Bass Federation, secured a COE 404 general permit for placement of artificial reef structures for bass in 22 regional lakes.

8. Mechanisms of Predator/Prey Relationships and Gamefish Competition

These relationships were addressed in work conducted on Echo Lake (Super 1987) and Noxon rapids Reservoir (Huston 1988). Modification of northern pike fishing regulations on specific water bodies were also imposed during spring, 1988 to reduce competition with gamefish.

9. Increase Public Knowledge

Sportsman club meetings, field and personal contacts, and public meetings were conducted to review fishing regulations and the Swan and Flathead fishery management plans in FY1988.

## RESULTS AND DISCUSSION

1. Noxon and Cabinet Gorge Reservoirs

Pertinent information on Noxon and Cabinet Gorge reservoirs is provided in the report: Northwest Montana Coldwater Lakes Investigations, Noxon Rapids and Cabinet Gorge Reservoirs Segment, Project No. F-46-R-1.

2. Surplus Fish Populations

Several warmwater lakes in Region 1 have been identified as having an abundance of warmwater fish species available for transplant to other waters. Lakes with the greatest potential for procuring surplus largemouth bass are Rattlebone, Parker, Savage, and Carpenter lakes. Surplus largemouth bass were collected during July, 1987, from Woodland Park Pond in Kalispell and transplanted to Church Slough on the Flathead River. Forty-one adult fish were collected, ranging from 8.5 to 17.1 inches. Smallmouth bass were collected during April, 1988, from Horseshoe Lake near Bigfork for transplanting to a pond near Heron, Montana. These fish were used as a brood source for Noxon Rapids Reservoir. In the past, largemouth bass transplants have been made to re-establish populations following a natural disaster or to introduce as 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.

3. Fishing Access Acquisition and Developments

The Department has made a final offer for a purchase and land exchange with a road easement on Alvord Lake in Lincoln County. The Department has also tendered final purchase offers on Horseshoe Lake in lake County and Upper and Lower Thompson lakes in Lincoln County. Horseshoe Lake provides fishing for smallmouth bass while the Thompson Lakes provide fishing for largemouth bass and yellow perch.



A landowner/sportsman committee is being formed to review the current access site on Lake Blaine and identify other potential sites for acquisition and development. Lake Blaine provides fishing for largemouth bass and northern pike.

Several sites were reviewed for potential acquisition on Echo Lake east of Kalispell. The Region recommended negotiations to secure a lease on a site owned by the Department of State Lands which is currently being used by the public for access.

A major site maintenance project was completed on Blanchard Lake to improve the boat ramp and provide parking. The lake provides fishing for largemouth bass and northern pike, but low water levels in 1987 and 1988 have hindered fishing.

The boat dock at Flatiron Ridge access on Noxon Rapids Reservoir was rebuilt with cooperative help from Washington Water Power (WWP) and a local sportsman's club. WWP and the U. S. Forest Service plan to develop several other sites in the near future to provide access to this rapidly developing smallmouth and largemouth bass fishery.

#### 4. Land and Water Use Impacts on Fisheries

Forty-two LPA applications were processed through regional county agencies, some requiring Department recommendations for mitigation. There were a total of 61 COE permits and violations for regional lakes and streams. Approximately 25 MPDES applications were reviewed, and no Water Quality Bureau turbidity exemptions were processed for warmwater lakes.

#### 5. Impacts of Fisherman Use and Increased Opportunity to Catch Large Bass (>12 inches) and Northern Pike (>28 inches).

Echo Lake - A college student cooperatively worked with the Department on a senior thesis entitled, "Largemouth Bass in Echo Lake, Flathead County, Montana" (Super, 1987). In summary, this work researched the following: angler exploitation of largemouth bass; habitat assessment regarding artificial and natural cover utilization; food habits; age and growth; creel census; and angler preference survey. Conclusions drawn from research conducted led to special regulations on Echo Lake beginning March 1, 1988. The previous 5 fish daily limit was changed to 5 bass daily and in possession, only 1 of which may exceed 12 inches with the additional restriction of catch-and-release fishing only for bass from May 1 through June 15 (spawning season).

Northern Pike - The results from the Department proposal to change the standard regional northern pike regulations showed that pike fisherman in general supported the reduced limit. However, the proposal was ultimately dropped because the majority of respondents were trout fishermen who wanted to see pike numbers reduced or eliminated through liberal limits. New regulations designed for individual fisheries will be proposed in 1989.

#### 6. New Species Introduction

The results of the walleye literature review conducted by DEA Research will be reviewed and recommendations made when available. Species of warmwater fish not previously found in the following lakes were documented in FY1987:

- Cabinet Gorge Reservoir (Sanders Co.) - black crappie
- Estes Lake (Lake Co.) - largemouth bass
- Foy Lake (Flathead Co.) - largemouth bass
- Glen Lake (Lincoln Co.) - yellow perch
- Leon Lake (Lincoln Co.) - yellow perch
- Little McGregor Lake (Lincoln Co.) - yellow perch
- Rogers Lake (Flathead Co.) - yellow perch
- Topless Lake (Lincoln Co.) - pumpkinseed and black bullhead

We also suspect there are an increasing number of lakes containing illegal introductions of northern pike. Other warmwater fish are obviously being transported as exhibited by the above lakes.

#### 7. Enhance Fish Populations through Artificial Habitat Placement

Habitat loss was mitigated by enlisting the aid of Washington Water Power, the U. S. Forest Service, the Western Montana Bassmasters, and other sportsman groups to place habitat improvement structures in Noxon Rapids Reservoir, Echo, and Murphy lakes. Additional placement is planned during FY1988. Christmas tree clusters were most commonly used with cement anchors in Echo Lake. In Murphy Lake root wads were submerged in strategic locations and shoreline trees were felled and anchored in littoral areas of Noxon Rapids Reservoir.

#### 8. Mechanisms of Predator/Prey Relationships and Gamefish Competition

Predator/prey relationships were briefly addressed in work conducted on Echo Lake (Super 1987) and Noxon Rapids Reservoir (Huston 1988). Liberal limits have been maintained in the past to reduce the competition between northern pike and other gamefish. Anglers have also been permitted to fish through the ice with spears or up to three attended setlines (tip-ups) on Echo, Blanchard, Lion, Lower and Upper Stillwater lakes. The means of taking was also expanded on March 1, 1988, to allow the use of spears by persons submerged in water (divers in summer) on Echo, Blanchard, and Lion lakes.

#### 9. Increase Public Knowledge

Bass club meetings were attended by biologists to provide information and increase public knowledge. Field contacts were also made with the public as well as personal communications. Public meetings were also conducted for fishing regulations and Swan and Flathead Lake fishery management plans during FY1988.

News articles were also written describing the problems of illegal fish introductions. This effort will be increased in FY1988.

## RECOMMENDATIONS

Monitor the largemouth bass of Echo Lake and Church Slough after FY1988 to determine the effect of new regulations. Consider expansion of similar regulations to applicable waters. Propose special regulations for northern pike in 1989 to provide an increased opportunity to catch large pike (>28 inches).

Increase public knowledge on the problem of exotic species introduction by releasing pertinent information on the subject and enforcing regulations.

Evaluate the success of habitat enhancement structures in selected water bodies to determine future application.

## LITERATURE CITED

- Huston, Joe. 1988. Statewide fisheries investigation, northwest Montana coldwater lakes investigations, Noxon Rapids and Cabinet Gorge reservoirs segment, F-46-R-1, July 1, 1987 through June 30, 1988. Montana Dept. of Fish, Wildlife and Parks, Kalispell, MT, U.S.A.
- Super, J. 1987. Largemouth bass in Echo Lake, Flathead County, Montana. Senior thesis. Carroll College, Helena, MT. 33pp.

Prepared by: Scott Rumsey  
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Waters Referred to: Alvord Lake 11-7840  
Blanchard Lake 7-5400  
Cabinet Gorge Reservoir 5-8512  
Carpenter Lake (a/k/a Tetrault) 11-8060  
Church Slough 7-5710  
Echo Lake 7-6180  
Estes Lake 7-6280  
Foy Lake 7-6420  
Glen Lake 11-8380  
Horseshoe Lake 7-6800  
Lake Blaine 7-5380  
Leon Lake 11-8760  
Lion Lake 8-9140  
Little McGregor Lake 5-9096  
Lower Stillwater Lake 7-7600  
Lower Thompson Lake 5-9152  
Murphy Lake 11-9280  
Noxon Rapids Reservoir 5-9328  
Parker Lake 7-8200  
Rattlebone Lake (no code)  
Rogers Lake 7-8400  
Savage Lake 11-9480  
Topless Lake 11-9830  
Upper Stillwater Lake 7-9440  
Upper Thompson Lake 5-9760  
Woodland Park Pond 7-9575

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