

**MONTANA DEPARTMENT OF FISH, WILDLIFE AND PARKS  
FISHERIES DIVISION  
JOB PROGRESS REPORT**

STATE: MONTANA PROJECT TITLE: STATEWIDE FISHERIES  
INVESTIGATIONS

PROJECT NO: F-46-R-6 STUDY TITLE: SURVEY AND INVENTORY OF  
COOLWATER AND WARMWATER  
ECOSYSTEMS

JOB NO: V-c JOB TITLE: SOUTH CENTRAL MONTANA  
WARMWATER FISHERIES  
INVESTIGATIONS

PERIOD COVERED: APRIL 1, 1992 THROUGH MARCH 31, 1993

**OBJECTIVES AND DEGREE OF ATTAINMENT**

- 1) To provide optimum conditions for walleye forage production on Bighorn Lake by implementing water-level control guidelines in cooperation with the Bureau of Reclamation.

Maintained close working relationship with USBR personnel, and achieved water level controls during the spring within constraints imposed by power demand and water supply. Met with the USBR, the National Park Service, and Wyoming Game and Fish during spring to discuss options and make recommendations on operation for the next year that would benefit forage fish production in Bighorn Lake.

- 2) To optimize water-level conditions in area irrigation reservoirs in order to enhance production of warm and cool-water species by formalizing and adopting water-level controls prior to the irrigation season on Lake Elmo, and other waters. (State funded).

Maintained working relationship with Billings Bench Water Association and Huntley Irrigation District concerning Lake Elmo and Anita Reservoir. Discussed water levels and habitat projects for both water bodies as they related to the associated fisheries.

- 3) To improve habitat conditions for both warm and cool-water species in area bass ponds by installing artificial habitat and enhancing natural cover.

Assisted the Billings Fishing Club in installing habitat structures for various species in Lake Elmo. Placed 107 catfish condos (consisting of 5 gallon plastic buckets weighted with concrete) along the 6 to 9 foot contour on the

west and north side of the lake. Placed 13 stake beds along the drop-off on the north shore to provide security cover and concentrate fish.

- 4) To at least maintain the existing flow conditions in the Musselshell River by analyzing instream flow needs, and participating in the reservation process and pursuing other options which may supplement existing flows.

Attended three meeting as the Department representative on the advisory board of the newly formed Musselshell Basin Commission. This commission was formed to bring water users, landowners, government agencies and all interested parties together to try and develop a coordinated water management plan for the Musselshell Basin. Established 11 photo sites along the Musselshell River between Melstone and Twodot where flow conditions will be recorded using photographs. Completed two photo series at these sites.

- 5) To maintain streambanks and channels in their present or improved conditions by administering existing laws.

Reviewed projects affecting stream habitat through the Montana Stream Protection Act of 1963 (SPA) and the Natural Streambed and Land Preservation Act of 1975 (310). Processed 3 SPA's and 19 310's on the lower Bighorn and Musselshell drainages during FY93.

- 6) To maintain water quality at or above current levels as measured at U. S. Geological Survey water quality monitoring stations.

Encountered no significant water quality problems during this report period. Maintained contact with the local irrigation districts so affected waters could be monitored when herbicides were applied to area ditches. Started evaluating non-point pollution problems along the Musselshell River as part of the Musselshell Basin Commission study.

- 7) To develop at least 30 producing bass ponds in the region that are open to public use, supporting at least 15,000 man-days of angling per year by 1992.

Planted 79,200 largemouth bass in four lakes in Region 5 during 1992. Continued to monitor the developing bass fisheries in numerous other ponds. Have planted more than 40 ponds in the region with largemouth bass since 1985.

- 8) To acquire two new access sites on the Yellowstone River downstream from Billings. (State funded)

Continued to develop and make improvements at two new access sites (Gritty Stone and Voyagers Rest) acquired in 1989.

9) To develop plans for construction of at least two new public fishing ponds in the region by 1992. (State funded)

Met with consultant and other interested parties to discuss the possible future development of Valley Creek Reservoir west of Billings. Reviewed preliminary feasibility report on this project.

10) To intensify management of existing urban area pond fisheries (Lake Elmo, Josephine, Arapooish, Chief Joseph, Broadview) by developing artificial reef projects, fishing docks, etc. to maximize the productivity of these fisheries.

Conducted a habitat enhancement project in Lake Elmo in cooperation with the Billings Fishing Club. Worked with the Parks Department in developing plans for a fishing pier on Lake Elmo. Continued to work with the Big Horn County Parks Board to maintain an aeration system in Arapooish Pond to prevent winter kill of bass. Coordinated efforts with the Billings Fishing Club to catch and transplant larger crappie from Tongue River Reservoir to Lake Elmo. Continued efforts to establish channel catfish in Chief Joseph Pond, and Lake Josephine, and tiger muskie in Broadview pond.

11) To convert marginal trout fisheries such as Glaston and Lebo lakes into productive warm and cool-water fisheries, and diversify the existing trout fishery at Cooney Reservoir by developing a two-story fishery supporting both walleye and trout.

Canceled scheduled tiger muskie plants for Lebo Lake and Glaston Lake in 1992 due to access problems. Began working with landowners on both lakes to formalize long term solutions to the access question. Stocked 166,000 6 inch rainbow trout and 75,000 walleye fingerlings into Cooney Reservoir, and continued to monitor this fishery. Assisted a graduate student from MSU with a walleye food habit study designed to look at the walleye-trout interaction on Cooney Reservoir.

12) To broaden and diversify existing warm and cool-water fishing opportunities by developing a yellow perch fishery in the area and exploring potential for new species introduction. (State funded)

Have not yet identified any good yellow perch ponds in Region 5. Continued efforts to increase predation on small perch in Lake Elmo in hopes of increasing size of the remaining fish and improve the existing perch fishery. Transplanted large crappie to Lake Elmo from Tongue River Reservoir. Stocked 600 6.3 inch tiger muskie into Broadview Reservoir, and 14,800 channel catfish into four regional lakes.

- 13) To monitor developing warm and cool-water fisheries and to make recommendations to enhance the forage base where necessary.

Monitored forage fish and game fish production in Bighorn Lake in cooperation with Wyoming Game and Fish. Successfully collected spottail shiners from Wyoming's 1992 plant in the upper end of Bighorn Lake. Plans to transplant spottail shiners into Bighorn Lake from Fort Peck Reservoir were unsuccessful due to low water conditions at Fort Peck. Continued to sample fish populations in Lebo Lake, Lake Elmo, the lower Bighorn and Yellowstone rivers, and numerous small ponds and reservoirs in the region.

- 14) To create a smallmouth bass fishery in the lower Bighorn River capable of supporting 10,000 angler days of use per year.

Planted 86,400 smallmouth bass into the lower Bighorn River in 1992. Shocked the lower Bighorn River from Two Leggings access to the mouth, and shocked the Yellowstone River between the Bighorn River and Huntley Diversion looking for smallmouth. Found a few smallmouth in the Bighorn River, but most bass appeared to be moving downstream to the Yellowstone.

- 15) To develop a walleye egg source in Bighorn Lake or Cooney Reservoir. (State funded)

Captured 205 mature walleye during eight nights of electrofishing on Bighorn Lake in April. Collected 3.4 million eggs from 41 ripe females. Attempts to collect walleye eggs from Cooney Reservoir were largely unsuccessful. Four nights of electrofishing captured 63 walleye, but only 7 females were successfully spawned producing 480,000 poor quality eggs. Planted 4.7 million walleye fry and 44,000 fingerlings back into Bighorn Lake, and 75,000 fingerlings into Cooney Reservoir.

- 16) To develop contingency plans for walleye and bass fingerling production ponds in the region. (State funded)

This objective was abandoned after the Miles City hatchery became fully operational and able to raise the walleye and bass fingerlings needed in Region 5. As long as the hatchery program is successful, no attempt will be made to develop rearing ponds locally.

- 17) To determine the amount of fishing effort expended and success rates for warm and cool-water species in the region's mixed-species fisheries by utilizing existing warden and parks division contacts in the field and supplementing with fisheries division follow-up where necessary. (State funded)

Abandoned this program because warden and parks division contacts have not provided much usable data on warm and cool-water fisheries within the region in the past. Plan to rely more on the state-wide mail survey for this information. Conducted year-long joint creel study and angler opinion study involving Montana, Wyoming and the National Park Service on Bighorn Lake beginning January 1992.

- 18) To increase public awareness of the availability of warm and cool-water fishing opportunity and the resource that provides them. (State funded)

Maintained bass pond database used in directing the public to planted ponds. Worked with media to promote warm and cool-water fisheries on public waters such as Lake Elmo. Assisted with kids fishing programs on Lake Elmo and Lake Josephine to introduce more young people to fishing.

#### SUMMARY

Progress was achieved on all objectives during FY93.

