

LIBBY RESERVOIR MITIGATION PLAN

9500400

SHORT DESCRIPTION:

Compile loss/gain statement, Libby fisheries mitigation options and site plans, criteria for selecting and prioritizing mitigation projects, for public scoping and submittal to NPPC. Initiate pilot projects for long-term guidance.

SPONSOR/CONTRACTOR: MDFWP

Montana Department of Fish, Wildlife & Parks
Brian Marotz, Fisheries Program Officer
Kalispell, MT 59901
406/751-4546

marotz@digisys.net

SUB-CONTRACTORS:

none

GOALS

GENERAL:

Supports a healthy Columbia basin, Program coordination or planning, Plan for program to achieve all above goals

RESIDENT FISH:

Habitat

NPPC PROGRAM MEASURE:

10.3B11;10.3B.1

RELATION TO MEASURE:

Provides support for developing the Libby Mitigation and Implementation Plan

OTHER PLANNING DOCUMENTS:

Excessive Drawdown Mitigation work plan British Columbia Hydropower Compensation Program

TARGET STOCK

Westslope cutthroat interior redband mountain
whitefish rainbow trout

Kootenai River burbot

Bull trout

Endangered Kootenai white sturgeon

LIFE STAGE

All

All

All

All, with special emphasis on spawners,
eggs and sudy yearlings

MGMT CODE (see below)

N,WA,N,WNN

N,W

(P),N,W

(L),A,N

AFFECTED STOCK

Northern squawfish

Torrent and spoonhead sculpins

BENEFIT OR DETRIMENT

Detrimental

Beneficial

BACKGROUND

STREAM AREA AFFECTED

Stream name:

Kootenai River

Stream miles affected:

Approx. 200

Hydro project mitigated:

Libby Dam

Project is an office site only

LAND AREA INFORMATION

Subbasin:

Upper Columbia

Land ownership:

both

Acres affected:

entire basin in Montana

Habitat types:

Reservoir, river, tributary, lake, pond.

HISTORY:

Public scoping, project site selection and loss/gain assessment began in 1995. CSKT and MFWP produced a draft document in 1996. Four public meetings were held in Libby and Eureka. Two more are scheduled for spring 1997. Public input will be incorporated into the plan before submittal to NPPC during spring 1997. Pilot projects will begin in 1997.

BIOLOGICAL RESULTS ACHIEVED:

Planning phase only.

PROJECT REPORTS AND PAPERS:

Draft of loss/gain statement, criteria for project selection and list of proposed projects is on file at MFWP.

ADAPTIVE MANAGEMENT IMPLICATIONS:

Libby Fisheries Mitigation Plan will guide mitigation activities under project 8346700.

PURPOSE AND METHODS

SPECIFIC MEASUREABLE OBJECTIVES:

(1) Prepare a mitigation plan to compensate for fisheries losses due to the construction and operation of Libby Dam including loss/gain statement, criteria for project prioritization and list of mitigation options. (2) Stimulate public interest in the Kootenai Drainage using education measures, public scoping meetings and a citizens advisory committee.

CRITICAL UNCERTAINTIES:

The timing of submittal to NPPC is subject to funding and efficiency of personnel. Note: No new personnel have been hired to complete the plan. Everything accomplished to date has been done with no additional funding. This project will facilitate the planning process by initiating demonstration projects and enhancing public involvement. No risks to date.

BIOLOGICAL NEED:

Mitigation for the construction and operation of Libby Dam is called for by the NPPC program. Libby Reservoir and upper Kootenai River in British Columbia contains what may be the most viable metapopulation of bull trout in existence. The Kootenai River downstream contains the last vestige of the endangered Kootenai white sturgeon. Despite introduced fish species, the drainage remains relatively pristine. Headwaters remain relatively pristine and contains functioning ecosystems and species diversity that can be used as a source for repairing past damages in other areas. Today, man's activities have effected nearly all areas that are not too high, steep, wet or dry, cold or hot to develop. Pristine (wild) ecosystems have become fractionated and isolated, and as such become unstable and vulnerable to cataclysmic events (e.g. fire, flood, pollution etc.). In many areas, there is no longer a nearby reserve of a like ecotype that can protect or restock an area after a cataclysm. This makes the remaining pristine areas more valuable than ever before as living laboratories and reserves of species diversity. The drainage is inhabited by grizzly bear, mountain goats, bighorn sheep, bald eagles and many endangered plants. These areas must be recognized for their scientific and biological value.

HYPOTHESIS TO BE TESTED:

See project 8346700 in reference to mitigation implementation.

ALTERNATIVE APPROACHES:

Approaches will be outlined by this plan.

JUSTIFICATION FOR PLANNING:

This plan was requested by NPPC for approval before full scale mitigation can begin. However, pilot projects, site plans for larger projects and permitting processes can begin immediately. Quite frankly, nearly all identified projects could begin now if the funding were available. We are completely open to public input and project recommendations, so long as the suggestions are biologically sound. We have learned a great deal from this effort's sister project: Hungry Horse Mitigation. This planning process is an exercise to prove to policy makers that we know what we're doing and will be efficient with the funding when it hits the ground. If anyone has an idea as to how we can implement Libby mitigation more effectively or cost-efficiently, let me know. I'm all ears.

Entities involved are MFWP, CSKT and KTOI as per NPPC Program language. MFWP and KTOI are currently funded for projects in the Kootenai drainage. Libby Mitigation is in developmental stages, and not currently funded.

METHODS:

Loss statement involved digitization of inundated tributary and river habitat. Lost production of juvenile recruitment was extrapolated from pristine drainages by measurement of stream gradient, size and order. Population status was derived from ongoing research in the Kootenai Drainage. This plan will be modeled after the Hungry Horse mitigation planning and implementation documents and public scoping process. Very little statistical analysis is necessary but all such mathematical analysis will be conducted through University statistical consultation.

PLANNED ACTIVITIES

SCHEDULE:

Planning Phase **Start** 1997 **End** 1997 **Subcontractor** None

Task Plan is expected to be submitted to NPPC in December 1996 as per NPPC measures 10.3B.1 and 11. Public scoping was not complete in 1996, so we requested an extension from NPPC. Public scoping is scheduled for Feb. and Mar. 1997 in preparation for submitting the plan this spring.

Implementation Phase **Start** 1997 **End** 1998 **Subcontractor** TBA

Task Implement pilot projects

PROJECT COMPLETION DATE:

1997

CONSTRAINTS OR FACTORS THAT MAY CAUSE SCHEDULE OR BUDGET CHANGES:

Council's review process may vary in duration.

OUTCOMES, MONITORING AND EVALUATION

SUMMARY OF EXPECTED OUTCOMES

Expected performance of target population or quality change in land area affected:

Libby Mitigation Plan and subsequent implementation.

Present utilization and conservation potential of target population or area:

Multi use, potential for conservation high.

Assumed historic status of utilization and conservation potential:

Resource extraction, frontier ethic.

Long term expected utilization and conservation potential for target population or habitat:

Protect what is left. Restore what we can.

Contribution toward long-term goal:

All resident fish species in Lake Koocanusa and in the Kootenai River below Libby Dam have been impacted by man's activities including hydropower development. Modifications to dam operation will help balance hydropower and fish requirements. We recognize that hydropower is more efficient and cleaner than comparable power sources available today (with similar capacity). Our "operational" mitigation recommendations, therefore seek to protect fisheries concerns while minimizing impacts to the power system. We also consider our actions in the scope of the Columbia River system as a whole watershed. The IRCs and tiered sturgeon flows are examples of this concept.

"Non-operational" mitigation strategies (measures that do not require changes to dam operation) and recommendations are designed with multiple species in mind, terrestrial and aquatic. We have developed new techniques with applicability elsewhere in the basin, and will strive to do so in the future.

Indirect biological or environmental changes:

Habitat projects will benefit terrestrial species as well as aquatic.

Physical products:

This will be described in the plan and future documents.

Environmental attributes affected by the project:

Reservoir operation, river flows, discharge temperature, reconnection of blocked habitat, rehabilitation of lake and stream habitat.

Changes assumed or expected for affected environmental attributes:

Improved reservoir and stream habitat will improve survival and growth of fish by enhancing biological productivity. Reconnecting blocked habitat will provide more spawning and rearing habitat for fluvial and adfluvial fish species. Restoration of flood plain function will improve system health. Also see above.

Measure of attribute changes:

Planning only

Assessment of effects on project outcomes of critical uncertainty:

Population monitoring, sampling of primary production using C14 scintillation, chlor a, zooplankton density and vertical distribution, benthic insect grabs, fish food habits, growth rate evaluation (scale and otolith), migrant trapping, riparian revegetation evaluation, hydrographic monitoring.

Information products:

Libby Mitigation and Implementation Plan, site plans, permits, landowner agreements, monitoring plan.

MONITORING APPROACH

The loss statement in the mitigation plan involved digitization of inundated tributary and river habitat. Lost production of juvenile recruitment was extrapolated from pristine drainages by measurement of stream gradient, size and order. Population status was derived from ongoing research in the Kootenai Drainage. This information forms the basis of an accounting system for program accomplishments. This plan will be modeled after the Hungry Horse mitigation planning and implementation documents which were already approved by the NPPC.

Provisions to monitor population status or habitat quality:

Monitoring is coordinated through the Kootenai Basin Steering Committee. This plan will include a monitoring plan.

Data analysis and evaluation:

see above

Information feed back to management decisions:

Adaptive management will guide future direction. Things that produce measurable results will continue, things that do not work will be modified or discontinued.

Critical uncertainties affecting project's outcomes:

The main issue here is when the IRCs will be implemented. Dam operation will be a major factor in the effectiveness of non-operational mitigation measures. Effectiveness can be improved by balancing system operation to benefit resident and anadromous fish species.

We are constantly assured that the Biological Opinion is "a living document" with flexibility to change as new information becomes available, but no change in implementation has occurred. ESA actions must be based on the best available science. Policy makers should assure this occurs.

EVALUATION

See above

Incorporating new information regarding uncertainties:

Our track record has shown that we readily accept and adapt to new information. Scientific principal leads us to search for the truth. If we are wrong we admit it and gratefully accept the correction, this makes our product better.

Increasing public awareness of F&W activities:

Public scoping, media

RELATIONSHIPS

RELATED BPA PROJECT

9502600 Model Watershed Program

9500400 Libby Mitigation Plan

8446500

9501200 Libby Tech. Analysis/IRC development

RELATIONSHIP

Implement Mitigation Projects

Provides pilot projects, assists public scoping and literature compilation to develop Libby Mitigation Plan

Modeling to link river/reservoir components.

RELATED NON-BPA PROJECT

Projects 8806400, 8806500, 9401200 and 9404900:
Kootenai River system projects - KTOI and IDFG

RELATIONSHIP

Work coordinated under Kootenai Basin Steering Committee and White Sturgeon Recovery Plan

OPPORTUNITIES FOR COOPERATION:

Final form depends on NPPC approval. See Libby mitigation cooperative agreements in project 8346700. Cooperative efforts and cost-shares have already been demonstrated in public scoping, pilot projects and through state/tribal contacts. The plan will be jointly submitted by FWP, CSKT and the Kootenai Tribe of Idaho. Many projects have and will be jointly prepared with the U.S. Forest Service.

COSTS AND FTE

1997 Planned: \$38,240

1996 Unobligated: \$124,067

FUTURE FUNDING NEEDS:

PAST OBLIGATIONS (incl. 1997 if done):

<u>FY</u>	<u>\$ NEED</u>	<u>% PLAN</u>	<u>% IMPLEMENT</u>	<u>% O AND M</u>
1998	\$40,000	25%	75%	0%

OTHER NON-FINANCIAL SUPPORTERS:

Public, sporting and conservation groups, landowners.

LONGER TERM COSTS: none

This project may be complete by FY98. If so, no funding will be needed.

1997 OVERHEAD PERCENT: 17%

HOW DOES PERCENTAGE APPLY TO DIRECT COSTS:

[Overhead % not provided so BPA appended older data.]
