

I. Project Title: Highline screening operation and maintenance

II. Principal Investigator:

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III. Project Summary:

A spillway barrier net designed to control escapement of nonnative, warmwater fishes from Highline Reservoir (Highline State Park, Colorado) that might enter the Colorado River was installed in August 1999. Research has shown that nonnative fishes eat young, native fish and compete for food and habitat in the river. In addition to keeping the nonnative and native fishes apart, installation of the fish barrier net brings the reservoir into compliance with the nonnative fish stocking requirements established by the states of Colorado, Utah, and Wyoming, and the U.S. Fish and Wildlife Service. Ayres Associates, Inc., of Boulder, Colorado, was the design engineer; Redden Nets of Bellingham, Washington, was the net manufacturer; and Ashley Construction of Grand Junction, Colorado, installed the net.

The fish barrier net is made of Dynema, a high molecular weight polyethylene material, which is extremely strong and durable. The net is approximately 363 feet wide, 19 feet deep, weighs 1,400 pounds, and has mesh openings no larger than a quarter inch. The net stretches across an area of the reservoir that empties into a concrete spillway that flows into Mack Wash and Salt Creek before reaching the Colorado River. Rigging attaches to the spillway's sides and to 13 anchors secured on the bottom of the lake. It is designed to flex with the surge of the current and changing water depth to prevent fish from escaping over or under it.

As this is the first time this separation has been attempted an MOU was reached between the Colorado Division of Parks (CDP) and the Colorado Division of Wildlife (CDOW) to permit CDP to operate the net with funding from the CDOW and to evaluate the operations and maintenance of the fish barrier net.

IV. Study Schedule: 1999-2003

V. Relationship to RIPRAP:

Colorado River Action Plan: Mainstem

III.A. Reduce negative impacts to endangered fishes from sport fish management activities.

VI. Accomplishment of FY 2000 Tasks and Deliverables, Discussion of Initial Findings and Shortcomings:

Task Description

Task 1. Monitor while on site the performance of the non-native fish containment net using weekly visual observations and underwater visual observations and video as needed.

Task 2. Cooperate with the Colorado Division of Wildlife (CDOW) in their Stocking Management Plans for Highline Lake.

Task 3. Determine the most effective manner to properly deploy the fish net skirt - the use of 4" PVC pipe notched at each end appears to be an excellent solution.

Task 4. Construct a rock jetty to protect the West end of the non-native fish containment net from silt and gravel being deposited on the net and submerging it.

Task 5. Find the most productive method to clean the net of algae without expending large amounts of project funds.

VII. Recommendations:

Monitoring of the net should continue but additional effort should be made to ensure that the algae load not become confluent and limit water exchange during the period of high inflow in the Spring and Fall.

Cleaning operations will be focused to the period prior to high inflows - early March and late August. Cleaning will be conducted using the Colorado Division of Parks (CDPOR) barge and the highly efficient self-contained pump using lake water.

VIII. Project Status:

This project is on track and ongoing but the issue of timely cleaning prior to high flows which caused concern last fall is unproven. Additionally the rock jetty will need to be monitored to ensure that it effectively contains the deposition of gravel on the net.

An analysis of a replacement of the current net will need to be undertaken this year.

IX. FY 2000 Budget Status:

A. Funds Provided: \$10,000 (CDOW) These funds were used for such items as divers to inspect the net, repair construction to ensure shoreline connections remained viable and cleaning of the net to maintain water flow.

B. Funds Expended: All

C. Difference: None

D. Percent of the FY 2000 work completed, and projected costs to complete: 100%

E. Recovery Program funds spent for publication charges: None

X. Status of Data Submission: Not applicable

XI. Signed: Chris Foreman 12/07/00  
Principal Investigator Date