

Work Task G3: Adaptive Management Research Projects

FY15 Estimate	FY15 Actual Obligations	Cumulative Expenditures Through FY15	FY16 Approved Estimate	FY17 Proposed Estimate	FY18 Proposed Estimate	FY19 Proposed Estimate
\$300,000	\$133,374.64	\$2,469,533.27	\$300,000	\$300,000	\$300,000	\$300,000

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Start Date: FY06

Expected Duration: FY55

Long-Term Goal: Effective conservation of native species and their habitats

Conservation Measures: All conservation measures relating to habitat creation, species research, system monitoring, and fish augmentation

Location: System-wide

Purpose: To develop tools to effectively evaluate conservation actions

Connections with Other Work Tasks (Past and Future): Research projects initiated under this work task may be continued as Species Research (Section C). Information obtained may be used for Fish Augmentation (Section B), System Monitoring (Section D), Conservation Area Development and Management (Section E), Post-Development Monitoring (Section F), or Funding Accounts (Section H) work tasks.

Project Description: The adaptive management process is an assurance that the conservation actions presented in the Habitat Conservation Plan are effectively accomplished. Tools by which the conservation actions can be measured will be developed and evaluated, and data to improve the efficacy of techniques to successfully create habitat will be provided.

LCR MSCP staff will initiate priority research projects in a timely manner. For example, opportunistic research proposals (e.g., time sensitive, such as spawning or breeding-season dependent) can be considered and initiated during the funding year and then be elevated to full research or monitoring status (Section C, D, or F work tasks) the following year. Also, experimental techniques can be evaluated through research to assess their utility, and if found to be useful, they would be incorporated into monitoring activities.

Previous Activities: All previous activities were moved to other work tasks after the initial year of funding.

FY15 Accomplishments:

Assessment of avian predation on native fishes: A literature review was completed in FY15, and cursory techniques for assessing predation were initiated. Radio tags are now being used in conjunction with sonic telemetry research in Reach 3. Radio tags are capable of being detected even if they are removed from the river, and this will provide additional opportunity to identify the fate of some stocked fishes. Remote passive integrated transponder scanning of known bird roosts in Laughlin Lagoon accompanied releases of razorback suckers and bonytail. Initial scanning efforts were on a trial basis to determine their efficacy in detecting passive integrated transponder tags in avian predators. This method proved effective and will be incorporated into additional releases in order to quantify this predation pressure. All future work relative to avian predation will be incorporated into Work Task C65.

Marsh bird water depth analyses: The Habitat Conservation Plan requires the creation of a minimum of 512 acres of marsh habitat for three LCR MSCP covered marsh bird species. Marsh habitat is created in a mosaic of water depths and vegetation complexity to meet habitat requirements for these species. This study will help define possible water depth fluctuations to better inform marsh management. Existing marsh bird and river depth data for marshes along the lower Colorado River was compiled to assess if sufficient data exist to evaluate water depth fluctuations in California black rail, western least bittern, and Yuma clapper rail existing breeding sites along the river. Data were sufficient, and an analysis was conducted to identify ranges of daily, monthly, and annual water depth variability in occupied Yuma clapper rail breeding sites in Topock Gorge. This will continue under Work Task C66 in FY16.

FY16 Activities: Research questions identified during fish augmentation, species research, system-wide monitoring, habitat creation, and post-development monitoring will be evaluated for development into adaptive management research projects under this work task.

Razorback sucker species status assessment (SSA): Funds will be contributed under the LCR MSCP for a cooperative adaptive management effort with the Upper Colorado River Basin recovery programs (Upper Colorado River Endangered Fish Recovery Program, San Juan River Basin Recovery Implementation Program, and Glen Canyon Dam Adaptive Management Program) to develop an SSA for razorback suckers. The purpose of the SSA is to characterize the species' current status, future condition, and long-term viability to the extent possible using existing data, expert, and currently available information under various scenarios and timeframes. The SSA will provide

key information that can be used to help generate a 5-year status review (or other documents) by the U.S. Fish and Wildlife Service for assessing the species' status with respect to the Endangered Species Act.

Proposed FY17 Activities: Research questions identified during fish augmentation, species research, system-wide monitoring, habitat creation, and post-development monitoring will be evaluated for development into adaptive management research projects under this work task.

Pertinent Reports: The report titled *Development and Characterization of Microsatellite PCR Primers for Bonytail Chub for use in Assessing Relatedness of Fishes Produced in Off-Channel Habitats* is posted on the LCR MSCP Web site.