Work Task C56: Characterization of Lake Mohave Backwaters to Evaluate Factors Influencing Spawning Success

FY14 Estimate	FY14 Actual Obligations	Cumulative Expenditures Through FY14	FY15 Approved Estimate	FY16 Proposed Estimate	FY17 Proposed Estimate	FY18 Proposed Estimate
$100,000	$0	$22,208.29	$0	$0	$0	$0

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Start Date: FY13

Expected Duration: FY14

Long-Term Goal: To help facilitate future design and management of created backwater habitats

Conservation Measures: RASU3, RASU6, BONY3, and BONY5

Location: Lake Mohave, Reach 2

Purpose: To characterize Lake Mohave backwater rearing ponds to include, but not be limited to, AJ, Dandy, and Yuma Cove where stocked juvenile razorback sucker have been observed to spawn at different rates in order to determine which factors are most influential in promoting spawning and subsequent survival of razorback sucker larvae.

Connections with Other Work Tasks (Past and Future): This work task was related to Work Task C40 (closed). Continued baseline monitoring of Lake Mohave backwaters will be captured under Work Tasks B1, B7, and C40 as appropriate. Additional findings related to this work task may be undertaken under Work Task C63 (new in FY15): Evaluation of Habitat Features that may Influence Success of Razorback Sucker and Bonytail in Backwater Environments.

Project Description: Disconnected backwater ponds on Lake Mohave are used for rearing razorback sucker in support of the LCR MSCP Fish Augmentation Program. Subadult fish are currently PIT tagged at 300 mm TL, fin clipped for genetics, and stocked into these ponds during the winter or spring. The ponds are harvested in the fall, as the backwaters are drawn down with the seasonally declining water level of Lake Mohave.

Over the past 2 years, genetic analyses of larvae that were spawned from stocked razorback sucker in the AJ and Dandy backwaters showed differences in reproductive success. In the AJ backwater, a minimum of 52% of the stocked fish contributed to the larvae sampled, while in the Dandy backwater, a minimum of 33% contributed in 2010. In 2011, only larvae were captured from the AJ backwater; a minimum of 68% of the adults contributed to the larvae sampled.

A detailed characterization of selected Lake Mohave backwaters will be provided to determine which factors are most influential toward successful razorback sucker spawning and subsequent larval survival. The research will begin with a narrow focus on the AJ and Dandy ponds, two ponds with different spawning success at Lake Mohave, but the research may be expanded to include other backwaters or other known razorback sucker spawning areas.

Previous Activities: A reduced amount of funds was expended on this work task in FY13 due to budget constraints, including budget reductions caused by sequestration. Activities were confined to determining if there was indeed a marked difference in spawning rates among Lake Mohave backwaters compared to the relative sampling efforts. Larval sampling at the AJ, Dandy, and Yuma Cove backwaters was completed biweekly. The AJ and Dandy backwaters were sampled five times each and the Yuma Cove backwater four times. The AJ backwater had the greatest catch-per-unit-effort (CPUE) of 0.64, and the Dandy and Yuma Cove backwaters had similar CPUEs of 0.20 and 0.22, respectively.

These results suggest that spawning rates among these backwaters varied, but it did not indicate any pattern outside the regular spectrum of variation observed across the backwaters at Lake Mohave. In addition, there appears to be wide variation in physical and chemical parameters among these backwaters and year-to-year differences in other life stage success. Because of likely interacting affects, potentially confounding variables, and the inability to suggest any particular causal links, this work task will be closed in FY14.

FY14 Accomplishments: This work task was closed in FY14. No expenditures were incurred under this work task in FY14.

Additional baseline data on these backwaters will continue to be collected in FY14 within the scope of other appropriate work tasks, including Work Tasks B1, B7, and C40, which will include larval sampling at the AJ, Dandy, and Yuma Cove backwaters on Lake Mohave (Arizona/Nevada) on a biweekly basis to obtain a second year of CPUE data. If longer-term standardized monitoring reveals more consistent patterns centered on particular variables that may be important in influencing success, a study plan will be developed, and with Steering Committee approval, investigations will commence under Work Task C63.

FY15 Activities: This work task was closed in FY14.

Proposed FY16 Activities: This work task was closed in FY14.

Pertinent Reports: N/A