Work Task C45: Ecology and Habitat Use of Stocked RASU in Reach 3

FY13 Estimate	FY13 Actual Obligations	Cumulative Expenditures Through FY13	FY14 Approved Estimate	FY15 Proposed Estimate	FY16 Proposed Estimate	FY17 Proposed Estimate
$200,000	$203,401.27	$528,569.47	$200,000	$0	$0	$0

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Start Date: FY11

Expected Duration: FY14

Long-term Goal: To assess survival and habitat use of stocked RASU.

Conservation Measures: RASU6.

Location: Reach 3 from Davis to Parker dams.

Purpose: To assess ecology and distribution of habitats available to stocked RASU in Reach 3, and to evaluate the overall effectiveness of the Fish Augmentation Program.

Connections with Other Work Tasks (past and future): Work is related to C33, D8, and G3. Due to the overlap in scope and intent of this work task with work tasks C39 (Post-Stocking Distribution and Survival of Bonytail in Reach 3) and C49 (Investigations of RASU and BONY Movements and Habitat Use Downstream of Parker Dam), these work tasks will be merged into a single work task, C64: Post-Stocking Movement, Distribution, and Habitat use of RASU and BONY in FY15. This combination of work tasks will allow sharing of overlapping resources is expected to increase efficiency in implementation and reporting and may also reduce overall expenditures. Activities under C64 will be detailed by river reach and the budget estimates will reflect the effort needed to complete this work.

Project Description: There continue to be more than 6,000 RASU per year reared and released into Reach 3 through the Fish Augmentation Program and roughly 30,000 more RASU were stocked prior to the LCR MSCP. We regularly contact several hundred of these fish each year through annual surveys and associated work task. The contacted fish appear to be in excellent health with little to no signs of parasites or disease, and they demonstrate growth rates comparable to other populations of repatriated RASU. In winter and spring, fish are located at known spawning areas near Needles, California, and Laughlin, Nevada. During summer and fall, stocked fish are found throughout the main channels, and in numerous off-channel lakes and ponds within Topock Gorge. This five-year study will assess the availability of physical, chemical, and biological fish habitats within Reach 3 to help identify habitat limitations to survival and to allow assessment of possible habitat saturation.

Previous Activities: A group of select backwaters (Park Moabi, Pulpit Rock, Sand Dunes, Blankenship, Castle Rock, Clear Bay, and two small unnamed backwaters) were used to study RASU habitat use in Reach 3. RASU use of these backwaters was quantified through catch per unit effort data (CPUE) of fish captured with trammel nets. Park Moabi had the highest catch rate (106 fish/1000 m^2). The remaining backwaters had catch rates less that 8 fish/1000 $m^{2.}$ Catch rates from 2012 were calculated for all species and compared to data collected prior to 2005, results were similar with the exception of increases in redear, bluegill, yellow bullhead, and smallmouth bass to a lesser degree. Liminological data continued to be collected and will be compared once several years of data have been obtained. Water chemistry along with the zooplankton, phytoplankton, and macroinvertebrate communities within the backwaters were sampled quarterly. Aquatic plant communities were sampled monthly during their growing season.

FY13 Accomplishments: Fish sampling with trammel nets continued in the select group of backwaters to monitor RASU CPUE. Like previous years, catch rates in Park Moabi (138 fish/1000 m^2) were significantly higher than the remaining backwaters (0-14 fish/1000 m^2) Beginning in February, 2013, remote PIT tag scanners were used to quantify RASU usage of the backwaters on a monthly basis. CPUE mirrored trammel netting results for the backwaters. The selected backwaters were stocked with RASU at a rate of 20 fish per acre in February and March, 2013. The PIT tag scanners were used to monitor backwater use of these fish. Preliminary results indicate most of these fish left the backwaters fairly quickly after their release. Scanners deployed at the mouths of some of the backwaters showed 35 to 70 percent of stocked fish leaving within a day. Additionally, very little movement between backwaters was detected; only 13 of the 3,018 (0.4%) fish were detected in backwaters, other than one of the eight where they were originally stocked. Monitoring for all limnological and peripheral ecological variables continued at frequencies similar to previous years.

FY14 Activities: RASU will again be stocked directly into the select backwaters and fish will continue to be monitored via trammel nets and PIT tag scanners. In addition, the monitoring for all limnological, and peripheral ecological variables will continue at the prescribed frequencies.

Proposed FY15 Activities: Closed in FY14.

Pertinent Reports: A report summarizing results through 2012 titled, *Ecology and Habitat use of Stocked Razorback Suckers in the Colorado River between Davis and Parker Dams (Reach 3 of the LCR-MSCP)*, is completed and will be posted to the LCR MSCP website; and the 2013 report is being prepared and will be posted to the LCR MSCP website upon completion.