

## Work Task C49: Investigations of Razorback Sucker and Bonytail Movements and Habitat Use Downstream from Parker Dam

FY14 Estimate	FY14 Actual Obligations	Cumulative Expenditures Through FY14	FY15 Approved Estimate	FY16 Proposed Estimate	FY17 Proposed Estimate	FY18 Proposed Estimate
\$150,000	\$111,069.75	\$224,143.99	\$0	\$0	\$0	\$0

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**Start Date:** FY12

**Expected Duration:** FY14

**Long-Term Goal:** To maintain an effective LCR MSCP Fish Augmentation Program

**Conservation Measures:** BONY3, BONY 4, BONY5, RASU3, RASU4, and RASU6

**Location:** Reach 4, Colorado River, between Parker and Palo Verde Diversion Dams

**Purpose:** To assess distribution and habitat use of stocked razorback sucker

**Connections with Other Work Tasks (Past and Future):** This work task is related to Work Tasks C8 (closed) and D8. Due to the overlap in scope and intent of this work task with Work Tasks C39 and C45, these work tasks will be merged into a single work task in F15: Work Task C64 (Post-Stocking Movement, Distribution, and Habitat Use of Razorback Sucker and Bonytail). This combination of work tasks will allow sharing of overlapping resources, which is expected to increase efficiency in implementation and reporting, and it may also reduce overall expenditures.

**Project Description:** Under this 3-year study, post-stocking survival, movement, and habitat use of razorback sucker and bonytail released between Parker and Palo Verde Diversion Dams will be evaluated. Both species have been stocked into the river below Parker Dam, and both species show low levels of survival. Most of this reach occurs on CRIT land and has not previously been examined under the LCR MSCP.

**Previous Activities:** Research conducted under Work Task C8 will continue. Razorback sucker and bonytail have been stocked below Parker Dam since 2005.

An agreement was finalized in FY12 with the USFWS. In FY12, a study plan and literature review were completed, and a Memorandum of Understanding for project activities on CRIT lands was signed.

Prior to the release of telemetered fish, six electrofishing surveys were conducted from October through November between Parker Dam and Headgate Dam. These efforts resulted in the capture of 15 razorback sucker and 16 bonytail. The wire tag location indicated that the bonytail were released at River Island State Park on October 4, 2012, and the razorback sucker were from two different releases within the past 10 months.

Over 5,000 razorback sucker and 5,000 bonytail were released into several backwaters within CRIT lands, specifically Moovalya Lake, 'Ahakhav Tribal Preserve, and Lost Lake. These fish were released as part of the LCR MSCP Fish Augmentation Program and represent the first stockings of razorback sucker and bonytail from the LCR MSCP on CRIT lands. These releases were made possible through the Memorandum of Understanding, between the CRIT and USFWS.

Per the study plan, 60 sonic tags were surgically implanted into 30 razorback sucker and 30 bonytail. Fifteen of each species were stocked into two different reaches separated by Headgate Dam (Blue Water Lagoon and River Island State Park). Both razorback sucker and bonytail showed variable dispersal patterns, which is common for hatchery-reared fish. Survival of telemetered fish was poor; over 75% of the fish were presumed dead within 6 weeks of release and 100% dead after 4 months. These mortality rates are similar to those observed in other projects within Reach 4 and have been documented in reports associated with Work Task C8 (closed). Predation continues to be the major suspected reason for mortality; a large number of these telemetered fish were presumably consumed by avian predators, specifically cormorants. Numerous tags from fish released below Headgate Dam were later detected above the dam at a cable crossing, which is frequently occupied by cormorants. An additional tag was recovered in Lake Havasu above Parker Dam, also likely due to an avian predator.

Trammel netting and remote PIT scanning were conducted in the backwaters where native fish were previously stocked. Contact rates were low for both types of surveys; only 18 razorback sucker and 1 bonytail were captured with trammel nets in the Moovalya backwater, and an addition 14 unique contacts were made via remote PIT tag scanners. Electrofishing proved equally ineffective throughout the majority of the river and backwaters. An exception was the area located within the discharge canal below Lost Lake; 10 unique (untagged) and 2 recaptured razorback sucker were recorded, and both originated from the 2013 Lost Lake stocking.

The results from the first year of this study were not entirely unexpected. This area ,the CRIT lands below Parker Dam, has not been previously stocked or surveyed, and little is known about these two species habitat use within this

section of the LCR. The large numbers of fish released this year, combined with future releases and additional telemetry, should begin to provide more resolution about long-term survival, the habitats used by native fishes, and areas that may suggest improved stocking success.

**FY14 Accomplishments:** Bonytail of sufficient size were not available in time for FY14 study purposes. Due to the general lack of knowledge for any native fish in this reach (primarily in areas on CRIT lands), we instead sonic-tagged additional razorback sucker. Paired releases of razorback sucker from two different rearing environments, hatchery and backwater, were released in order to monitor dispersal and relative survival. The average net movement of all backwater razorback was 15% greater than hatchery razorback. Mortality of backwater razorback as a whole (36%) was greater than hatchery razorback (32%) but varied based on stocking location.

Due to the inability to draw meaningful inference from these data because of few re-contacts of released fish, work in this section of Reach 4 will not be continued in FY15. A new strategy and new set of research questions may be evaluated in this area at a future time. Any future work will be described under Work Task C64.

**FY15 Activities:** This work task was closed in FY14.

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

**Pertinent Reports:** A study plan and a literature review have been completed and are available upon request. A report summarizing the first year's activities is in draft and will be posted on the LCR MSCP Web site upon completion.