

Work Task C39: Post-Stocking Distribution and Survival of Bonytail in Reach 3

FY14 Estimate	FY14 Actual Obligations	Cumulative Expenditures Through FY14	FY15 Approved Estimate	FY16 Proposed Estimate	FY17 Proposed Estimate	FY18 Proposed Estimate
\$250,000	\$212,290.69	\$1,135,094.18	\$0	\$0	\$0	\$0

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Start Date: FY10

Expected Duration: FY14

Long-Term Goal: Maintain effectiveness of the LCR MSCP Fish Augmentation Program

Conservation Measures: BONY3 and BONY5

Location: Reach 3, to include main stem and backwater habitats

Purpose: To determine the distribution and post-stocking survival of bonytail within Reach 3

Connections with Other Work Tasks (Past and Future): This work task is related to Work Tasks B2, B3, and B4, all of which provide bonytail for augmentation stocking. The study results will be added to the database used to complete Work Task D8. Due to the overlap in scope and intent of this work task with Work Tasks C45 and C49, these work tasks will be merged into a single work task in FY15: 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. Activities under Work Task C64 will be detailed by river reach, and the budget estimates will reflect the effort needed to complete this work.

Project Description: Stocked fish will be followed after they are released into Reach 3 of the Colorado River to design and test ways to improve post-stocking survival. Techniques for monitoring will include marking, tagging, netting, electrofishing, and visual observations. A final report will include recommendations for future bonytail augmentation stockings.

Previous Activities: Initial activities for this work task were focused on the survival and distribution of stocked bonytail within the Bill Williams River NWR. Small batches of fish were released with 3-month acoustic transmitters and tracked actively and for the expected lifespan of the transmitter. Initial results were promising, as up to 95% of the bonytail survived the 3-month study, and the fish were predominately found near the delta region of the Bill Williams River. This first stocking coincidentally occurred 2 weeks after a large-scale water discharge from Alamo Dam, which increased turbidity.

Several iterations of paired stockings of tagged fish were initiated to determine if the stocking location was the reason fish preferred the Bill Williams River delta. Survival of stocked fish within the Bill Williams River was lower for the first (50%) and second (0%) iteration, and turbidity was significantly less. All 10 fish released in the Bill Williams River were dead within 65 days. However, bonytail did show a significant preference for the Bill Williams River area regardless of release location. Fish depth was also examined, and bonytail were contacted, on average, at 78 and 79% of the available water column depth; depth was greater during the day.

Based on what had been learned from the first few years of this study, the focus was again on an alternative release location to compare the relative survival to fish being stocked into the Bill Williams River. A riverine release site was selected near Blankenship Bend in Topock Gorge. The habitat within the gorge is diverse, and it supports a different non-native fish community; the gorge has fewer larger predators such as flathead catfish and large stripers. Fish released at Blankenship Bend dispersed over three times further than those released into the Bill Williams River, and 3-month survival of tagged fish was higher (90%) at Blankenship Bend than at the Bill Williams River (60%).

After seeing the relatively poor, but highly variable survival at the Bill Williams River, a new focus became trying to characterize microhabitat use for bonytail at multiple release sites. Fish were surgically implanted with sonic tags and released into the Bill Williams River within the Bill Williams River NWR in April 2013. All acoustic-tagged bonytail were determined dead within 2 weeks post-release. As a result, conclusions were unable to be drawn about post-stocking habitat preference within the reservoir. Snorkeler-assisted underwater PIT scanning was conducted beneath a known cormorant roost, and 11 PIT tags from previous stockings were detected within the substrate.

FY14 Accomplishments: As a continuation of the microhabitat portion of this study, 10 fish were surgically implanted with sonic tags and released in October 2013 at Blankenship Bend. Only one fish released in the autumn survived the 12-week study period. Due to the poor survival in the autumn, monitoring was adjusted to be more intensive for the spring iteration. Fish were tracked intensively for 6 weeks, and five fish were still active at the end of this study period. Fish were located in both backwater and riverine environments and

showed an affinity for bulrush in main channel detections. Daytime detections were limited due to the species use of dense cover. The fish became active after sundown, and the majority of contacts and tracking occurred during the evening and night.

In addition to the survival and habitat use portion of this project, the use of remote PIT scanners to monitor bonytail in a riverine environment were evaluated. PIT tag scanning was initiated for an 8-week period immediately following a release of 500 bonytail in January 2014. These efforts resulted in contacting 321 unique fish, of which 124 were bonytail, 194 were razorback sucker, and 3 were unknown. Of the 124 unique bonytail contacted over the course of the study, 10 fish had been released on October 22, 2013, at Blankenship Bend. Most contacts (89%) occurred within 3 weeks of the second stocking from January 13–17, 2014. Besides release location, 11 PIT-tagged bonytail were contacted in Trampas Cove, and 1 was contacted in Clear Bay. Contact rates were low when compared to similar monitoring for razorback sucker, which was likely due to the low survival and limited knowledge of this species in these environments.

Additional bonytail releases are scheduled for the winter and spring in FY15. This work will be described in the “FY15 Activities” of Work Task C64. The results of the investigations conducted in FY15 and future years will also be reported 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: Reports from 2010 to 2014 titled *Distribution and Post-Stocking Survival of Bonytail in Lake Havasu* are posted on the LCR MSCP Web site.