

Work Task C9: Razorback Sucker and Bonytail Pen Rearing Tests

FY05 Estimate	FY05 Actual	Cumulative Accomplishment Through FY05	FY06 Approved Estimate	FY07 Proposed Estimate	FY08 Proposed Estimate	FY09 Proposed Estimate
\$62,000	\$42,000	\$ 42,000	\$48,000	\$35,000	\$35,000	\$35,000

Contact: Tom Burke, (702) 293-8711

Start Date: FY05 **Expected Duration:** FY09

Long-Term Goal: Continuously seek measures to improve quantity and quality of fish reared and released under the Fish Augmentation Program.

Conservation Measures: RASU3, RASU4, BONY3, and BONY4

Location: Reach 2, lower Colorado River at Willow Beach, AZ

Purpose: Assess utility of pen-rearing of razorback suckers (RASU) and bonytail chub (BONY) in the LCR at Willow Beach National Fish Hatchery (NFH) to increase rearing capability at the hatchery and as a means of conditioning fish to the river environment prior to release.

Connections with Other Work Tasks (past and future): The work is connected to Work Task B2, as work is being accomplished at Willow Beach NFH using fish reared at that facility.

Project Description: This project has two main objectives. The first objective is to determine whether juvenile and subadult RASU and BONY will continue to grow if placed into net pens within the Colorado River adjacent to Willow Beach NFH. Field studies have shown a direct positive relationship between survival in the lake and size of fish at time of release. Field studies also show that juvenile RASU released into Lake Mohave do exhibit some growth between October and March, the coolest period of the year. If RASU and BONY will increase in size in river water (routinely measured at 56 degrees F), then this would provide additional rearing capacity at the hatchery. The second objective is to assess use of net pens to acclimate fish to be released into Lake Mohave to ambient river conditions (temperature and flow). Field data indicate that conditioning of hatchery fish increases survival in the wild. Field data also suggest that post-stocking handling stress can be reduced by acclimation of fish to ambient water temperatures prior to release. This program will construct rearing pens in the river at Willow Beach NFH for the purposes of evaluating both of these objectives. Evaluations will continue through FY09 at which time the project will be assessed and either incorporated into routine operation at Willow Beach NFH or discontinued.

Previous Activities: This is a new start in FY05.

FY05 Accomplishments: Net pens and docking materials were purchased and delivered to Willow Beach NFH. The four-pen design was selected to provide long-term stocking space and

structural stability in the river. Local purchases for miscellaneous hardware and materials (cement, cables, eyebolts, etc.) were made. Dive inspections of river bottom for assessment of anchor placements and test installations of docking materials were both accomplished utilizing the Reclamation Dive Team.

FY06 Activities: Assembly and installation of net pens has been accomplished (see Figures C9a, C9b); 500 RASU with a mean length of 325 mm were stocked into one of the pens (see Figures C9c, C9d); Reclamation and FWS staff will monitor growth and condition of fish over the summer and into the fall.

Proposed FY07 Activities: During FY07 Reclamation propose to continue monitoring growth and survival of RASU; to harvest any fish reaching 500 cm total length and distribute them to stocking sites in Lake Mohave for repatriation; and to initiate growth and acclimation study on BONY.

Pertinent Report: Study Plan is available upon request.



Figure C9a. Putting together docking materials



Figure C9b: Assembled docking place alongside hatchery.



Figure C9c. PIT tagged razorback suckers being transferred from raceway to rearing pen.



Figure C9d: PIT tagged razorback suckers in net pen.