Work Task C8: Razorback Sucker Survival Studies

FY05 Estimate	FY05 Actual	Cumulative Accomplishment Through FY05	FY06 Approved Estimate	FY07 Proposed Estimate	FY08 Proposed Estimate	FY09 Proposed Estimate
$250,000	$237,979	$237,979	$190,000	$190,000	$190,000	$45,000

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

Long-Term Goal: Assess overall effectiveness of stocking program and acquire data for adaptive management program.

Conservation Measures: RASU6

Location: Reaches 4 – 5, River Mile 50 – 175, Imperial Dam to Parker Dam

Purpose: Assess survival and distribution of razorback suckers (RASU) released into the lower Colorado River.

Connections with Other Work Tasks (past and future): The work is connected to Work Task B5, as fish being studied are reared at Bubbling Ponds SFH and implanting of radio and sonic tags occurs at the hatchery prior to delivery at the river.

Project Description: Reclamation has stocked more than 50,000 RASU into the Colorado River below Parker Dam since 1997. This project is an assessment of survival, growth, and distribution of these fish. The work is being performed by ASU in cooperation with Reclamation and AGFD. The work consists mainly of netting, electro-shocking, and radio/sonic tagging and tracking stocked fish to determine survival and distribution. Field sampling is conducted monthly from September to May (nine trips). No sampling occurs during June, July, or August, because high water temperatures exceed safe handling protocols for these fishes. Trip reports are provided to Reclamation following each of the nine sampling trips, and these are summarized into an annual report covering the calendar year (January through December).

Previous Activities: Reclamation was required under the 1997 BO from FWS to rear and stock 50,000 RASU into the Colorado River downstream of Parker Dam. During Endangered Species Act consultations in 2002 aimed at extending the regulatory relief of the 1997 BO, Reclamation agreed to assess the survival of the released fish. This study began in 2003.

FY05 Accomplishments: Portions of the lower Colorado River from Parker Dam downstream to Imperial Dam were surveyed using electro-fishing, trammel netting, and hoop netting equipment. The survey sites primarily encompassed areas of known RASU occupation, including main river channel and confluent, watercraft-accessible backwaters, and side channels.

(Due to access restrictions by the Colorado River Indian Tribes, no surveys were conducted within the boundaries of the CRIT Reservation.)

Fish surveys resulted in the total capture of 31,122 fish, representing at least 22 species and including 654 RASU. Of the 654 RASU captured, 62 were recaptures; so only 592 individual RASU were located during the surveys. All of these RASU were assumed to have been stocked fish, as all had detectable marks (wire tags or PIT tags). Of the 592 individual RASU handled during the surveys, 500 wire-tagged fish were given PIT tags in order to assess growth and short-term survival should they be recaptured. The remaining 92 fish already had PIT tags received at the hatchery prior to release during prior year captures. Growth of recaptured fish was unremarkable and similar to growth of subadult RASU released into Lake Mohave. However, short-term survival of RASU stocked into backwaters was extremely poor. Over summer survival in Backwater A-10 of fish stocked March-May 2005 was less than 17 percent based on September survey data; and winter survival of fish stocked into backwater A-7 in November and December 2004 was only 10 percent, based on January 2005 survey data.

The original 2003 agreement was modified in 2005 to provide $60,000 to conduct telemetry work. In April, 20 fish were surgically implanted with radio tags (6-month battery life) and monitored for one month prior to the summer sampling hiatus. During this one month period, the fish stayed in the backwater. The fish could not be located in September when sampling reconvened.

FY06 Activities: Monthly monitoring of stocked fish using nets and electro-fishing equipment was conducted from January to May, and again from September through December. In addition, radio-tracking will again be attempted with newly tagged fish. To assist with this work, a circular radio antenna was installed in the throat of a modified hoop net, and this hoop net was then inserted into the culvert which connects backwater A-10 to the main river (see Figures C8a, C8b). This should provide data to assess movement between the river and backwater.

Proposed FY07 Activities: Monthly monitoring of stocked fish using nets and electro-fishing equipment will be conducted from January to May, and again from September through December.

Pertinent Reports: FY05 annual report will be posted to the LCR MSCP website. Study plans for FY06 and FY07 are available upon request.

Figure C8a: Circular antenna installed in the throat of a modified hoop net to serve as a tracking gate for radio-tagged fish stocked into Backwater A-10.

Figure C8b: Hoop net in culvert separates the backwater from the river. Tracking equipment inside the metal barrel is protected from damage by armor plating.