## Work Task C13: Lake Mead Razorback Sucker Study

| FY07 Estimates | FY07 Actual | Cumulative Accomplishment Through FY07 | FY08 Approved Estimate | FY09 Proposed Estimate | FY10 Proposed Estimate | FY11 Proposed Estimate |
|---|---|---|---|---|---|---|
| $300,000 | $302,066 | $665,687 | $150,000 | $150,000 | $150,000 | $150,000 |

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**Start Date:** FY05

**Expected Duration:** FY11

**Long-term Goal:** Determine conditions that allow for natural recruitment of RASU.

**Conservation Measures:** RASU7.

**Location:** Reach 1, Lake Mead, NV/AZ.

**Purpose:** Assess RASU population and recruitment in Lake Mead.

**Connections with Other Work Tasks (past and future):** This work task was previously included in the Draft FY05 Work Tasks as Lake Mead Razorback Study (D7). Larvae collected during this effort are to be reared at Lake Mead Hatchery (B6) and Overton WMA (B11).

**Project Description:** The LCR MSCP will continue to fund and support the ongoing studies of RASU in Lake Mead that were implemented under the SIA BO. The focus areas of the studies are to:

1. Resolve any remaining questions about the location of populations of RASU in Lake Mead from the lower Grand Canyon area downstream to Hoover Dam.
2. Document use and availablility of spawning areas at various water elevations.
3. Clarify substrate requirements for spawning.
4. Monitor potential nursery areas.
5. Continue aging of captured RASU.
6. Confirm recruitment events that may be tied to physical conditions in the lake.

These studies began in 1995 and were anticipated to be completed within a 5-10 year period. However, under RASU7, these studies may be followed by further research and monitoring within the adaptive management program of the LCR MSCP. Reclamation proposes that the current studies be completed in FY07, and then a reduced monitoring effort be initiated in FY08. However, this final decision on level of future monitoring activities has not been determined.

**Previous Activities:** The SNWA began a monitoring program for RASU in Lake Mead in 1995, partnering with NDOW and Reclamation. Between 1995 and 2004, some 200 adult and 30 juvenile RASU were captured. Aging data showed that a low-level of recruitment has occurred in at least 22 of the past 30 years. This remarkable recruitment has happened in the face of extensive nonnative fish populations.

**FY07 Accomplishments:** 2007 was the eleventh year of this cooperative study. Trammel netting surveys during the spawning season resulted in the capture of 88 RASU (16 from the Muddy River/Virgin River inflow area, 33 from Echo Bay, and 39 from Las Vegas Bay), 50 of which were recaptures. This is the highest number of RASU contacted in a single season since the beginning of this study. Aging and growth data were again collected, and evaluation of captured fish suggests continued, recent recruitment in Lake Mead. RASU larvae were also collected during the spawning season in a joint effort between Reclamation, NDOW, SNWA, and BIO-WEST Inc. Larvae were delivered to Lake Mead SFH for rearing. Monitoring of sonic-tagged fish continued in an effort to gather information on habitat use and movements of RASU. Data obtained from these fish once again indicated shifts in the Muddy River/Virgin River, Echo Bay, and Las Vegas Bay spawning locations.

**FY08 Activities:** A document summarizing the first 10 years of research is available from the LCR MSCP. Reclamation has initiated a Lake Mead RASU monitoring program based on information supplied by the 10-year summary report. Program goals will include observation and identification of population trends, annual observations of spawning area use at known spawning sites, and continued confirmation of recruitment. Additional monies that do not count toward the LCR MSCP cost share will be received from SNWA to accomplish Lake Mead RASU activities.

An interagency team will be convened that will utilize the 10-year review to determine future need for management activities.

**Proposed FY09 Activities:** Limited research and monitoring will be conducted on RASU ecology in Lake Mead, as described in the report, *Lake Mead Razorback Sucker Monitoring Recommendations*, available on the LCR MSCP Web site.

**Pertinent Reports:** The *Annual Lake Mead Razorback Sucker Study* report for 2006-2007 has been posted to the LCR MSCP Web site. A 10-year comprehensive report, *Razorback Sucker Studies on Lake Mead, Nevada and Arizona 1996-2007,* is currently available.