

Work Task C13: Lake Mead Razorback Sucker Study

| FY13 Estimate | FY13 Actual Obligations | Cumulative Expenditures Through FY13 | FY14 Approved Estimate | FY15 Proposed Estimate | FY16 Proposed Estimate | FY17 Proposed Estimate |
|---------------|-------------------------|--------------------------------------|------------------------|------------------------|------------------------|------------------------|
| \$135,000 | \$135,193.23 | \$1,657,330.38 | \$135,000 | \$135,000 | \$0 | \$0 |

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Start Date: FY05

Expected Duration: FY15

Long-term Goal: Investigate conditions that allow for natural recruitment of RASU in Lake Mead.

Conservation Measures: RASU7.

Location: Reach 1, Lake Mead, Nevada/Arizona.

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). The long-term monitoring portion of this research has now been moved to D8, and larvae collected through that effort are being 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. The focus areas of these studies are to:

1. Locate populations of RASU in Lake Mead.
2. Document use and availability of spawning areas at various water elevations.
3. Monitor potential nursery areas.
4. Continue aging of captured RASU.
5. Confirm recruitment events that may be tied to physical conditions in the lake.

Previous Activities: In 1995 the Southern Nevada Water Authority, Nevada Department of Wildlife, and Reclamation began a monitoring program for RASU in Lake Mead. Between 1995 and 2004, some 200 adult and 30 juvenile RASU were captured. Aging data showed that a low level of recruitment had occurred in at least 22 of the past 30 years. This remarkable recruitment has happened in the face of extensive non-native fish populations and declining lake elevations. A summary report of the first 10 years of the study was completed and posted to the LCR MSCP website. The general sites identified in that report are now part of the long-term monitoring for RASU in Lake Mead (D8). Research under this work task has now been focused on an additional area of Lake Mead,

the Colorado River inflow (CRI). Through FY12, 82 RASU larvae, 12 FLSU larvae, 38 wild adult RASU, and 365 FLSU have been captured from the CRI. All captured adult and subadult native fish were marked with passive integrated transponder tags for individual identification before being released back into Lake Mead, and all captured RASU have been aged between 6 and 11 years old.

FY13 Accomplishments: In FY13, the general study area for this project was expanded to include the lower Grand Canyon. Efforts in this portion of the study area were limited to active and passive tracking of 10 new sonic-tagged hatchery reared RASU released near Separation Canyon, one new wild fish captured, tagged, and released at the CRI, as well as other sonic-tagged RASU released in the CRI in previous years that have moved into this section of the river. In total, habitat use and information pertaining to movement patterns of RASU were obtained from 17 sonic tagged fish that were contacted during the year. Using sonic-tagged RASU contacts to locate potential spawning sites, trammel netting was used to capture adults where concentrations of RASU were suspected. From 70 total net-nights, 4 wild RASU, 4 razorback-flannelmouth sucker hybrids, 271 FLSU, and 1 bluehead sucker were captured. Of these fish, 3 RASU and 22 FLSU were recaptured fish. A fin ray specimen was obtained from the single newly caught RASU for aging purposes. This fish was determined to be a 2 year old juvenile, measuring 215 mm in total length. The capture of this fish marked the first time where a young, juvenile RASU has been documented in the CRI. Catostomid larval sampling was also conducted on a total of 11 nights, but no RASU or other native sucker larvae were captured.

FY14 Activities: All research actions including larval sampling, trammel netting, tracking of sonic-tagged fish, evaluating growth rates of recaptured fish, and fin-ray sectioning for aging adult and subadult RASU are expected to continue. An additional 10 sonic-tagged RASU are also expected to be stocked into the lower Grand Canyon in the Whitmore Wash area to further assess habitat use within the Grand Canyon. Data obtained through the preceding actions will help further identify the size, age structure, habitat use, spawning areas, and recruitment patterns of RASU located in the CRI and lower Grand Canyon.

Proposed FY15 Activities: Activities conducted in FY14 will continue in FY15. Investigations for this work task will be completed and a final report written.

Pertinent Reports: The *Razorback Sucker Investigations at the Colorado River Inflow Area, Lake Mead, Nevada and Arizona 2013 Final Annual Report* is available upon request and will be posted to the LCR MSCP website.