

Work Task D8: Razorback Sucker and Bonytail Stock Assessment

FY06 Estimates	FY06 Actual	Cumulative Accomplishment Through FY06	FY07 Approved Estimate	FY08 Proposed Estimate	FY09 Proposed Estimate	FY10 Proposed Estimate
\$285,000	\$306,624	\$472,624	\$325,000	\$300,000	\$300,000	\$300,000

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Start Date: FY05

Expected Duration: FY55

Long-term Goal: Conduct long-term system monitoring of RASU and BONY.

Conservation Measures: RASU6 and BONY5

Location: Lower Colorado River within the LCR MSCP planning area, including reservoirs and connected channels, from Lake Mead downstream to Imperial Dam.

Purpose: Supplement and maintain sufficient knowledge and understanding of razorback sucker (RASU) and bonytail (BONY) populations within the LCR MSCP planning area to have an effective Adaptive Management Program.

Connections with Other Work Tasks (past and future): Monitoring data for RASU and BONY have been or will be gleaned from work accomplished under C8, C12, C13, C15, and C23.

Project Description: This project collects and organizes RASU and BONY population and distribution data to maintain up-to-date, system-wide, stock assessments for these species. Data acquisition work will be accomplished by application of two strategies: 1) gleaned information from ongoing fish monitoring and fish research activities, and 2) direct data collection through field surveys within the LCR MSCP planning area not covered by other work tasks. These data will be organized to show current, end-of-year status for distribution and abundance for each LCR MSCP river reach.

Under the first strategy, LCR MSCP staff will gather and organize data from existing monitoring programs. For example, sport-fish surveys and native-fish surveys are conducted annually on lakes Mead, Mohave, and Havasu by multi-agency teams, with LCR MSCP fishery staff participating in each survey. In each survey, the lake is divided into different zones with one survey group assigned to each zone. All zones are sampled within a set time period using similar equipment. When the survey is complete, each participating agency receives information for the entire lake at a reduced cost incurred by only needing to survey a portion of the whole system.

Also under the first strategy, data will be gleaned from ongoing species research actions. For example, a RASU study is being conducted on Lake Mead (C13) and another study is being conducted in the lower river below Parker Dam (C8). Data for RASU population status and distribution will be gathered from these studies.

Under the second strategy, areas not being sufficiently surveyed through ongoing activities will be surveyed either by LCR MSCP fishery staff or another entity hired via contract, grant, or agreement. For example, the current surveys for RASU between Davis and Parker dams are being conducted jointly by USGS and Reclamation and are financially supported through D8. Another major monitoring action funded by this work task is the survey work conducted by Reclamation on Lake Mohave to assess survival and distribution of repatriated RASU. Areas along the lower two-thirds of the lake are netted monthly between October and May. The upper third of the lake, including the area above Willow Beach and up to Hoover Dam are electro-fished and netted during the June to September period (due to cool water releases from Lake Mead).

In some cases, LCR MSCP fishery staff conducted native fish surveys to fill in seasonal gaps left by other research activities. For example, USGS surveys for RASU between Davis Dam and Lake Havasu are only conducted during the January to April spawning period. Staff from the LCR MSCP monitor sonic-tagged fish in this reach during the summer and conduct electro-fishing in the fall, to provide a more complete assessment of the fishery.

Work routinely includes trammel netting and electro-fishing, but visual surveys using Reclamation's helicopter are also conducted within different river reaches throughout the year. Other specialized equipment and techniques are periodically utilized for monitoring, such as aerial and underwater photography and video recordings.

All project costs described under this work task are for salary, travel, and materials necessary for Reclamation staff to accomplish this work. In cases where Reclamation staff assist contractors or researchers, or conduct work in similar areas or at similar times, Reclamation's presence allows for improved quantity and quality of observations (i.e., additional effort, additional spatial coverage, additional temporal coverage). Project costs include all costs associated with conducting field surveys, gleaned or capturing data from ongoing research actions and monitoring programs (both internal and external to the LCR MSCP), transfer of these data into record archives, and organizing these data into a cohesive report.

Previous Activities: Reclamation has cooperatively conducted fish surveys with Nevada and Arizona on Lake Mead each fall since 1999, and has provided funding and support to the Lake Mead Razorback Study (C13) since 1995. Interagency cooperative native fish roundups have been occurring since 1987 on Lake Mohave and since 1999 on Lake Havasu (including the river reach below Davis Dam). Fish monitoring on reaches 4 and 5 has been conducted by Reclamation and ASU as part of the Razorback Sucker Survival Study (C8) annually since 2003. Reclamation financially supports the Colorado River Fishes database maintained by ASU through G1.

FY06 Accomplishments: Accomplishments for this work task have been summarized by river reach for clarity.

Reach 1 (Lake Mead) — Reclamation participated in annual fall netting and electro-fishing surveys on Lake Mead. This lake-wide effort (totaling over 140 net nights) was completed in cooperation with AGFD and NDOW; no native fishes were captured. Collection of RASU larvae was conducted over the course of the spawning season, capturing a total of 1,716 larvae while sampling all major spawning sites. These larval fish are being reared at Lake Mead SFH (B6). Evaluations of new off-channel repatriation stocking sites were completed, which included Driftwood Cove and Grand Wash Bay (C13). Evaluations consisted of netting for existing species, collecting water quality data, and bathymetry. A rough population estimate for RASU generated from contacts made during FY06 investigations is 250 adults (no BONY occur in Lake Mead.)

Reach 2 (Lake Mohave) — Reclamation repatriated 11,344 RASU into Lake Mohave in 2006. Lake-wide surveys for native fish were conducted monthly and included both trammel netting (99 total net nights) and electro-fishing (18,230 seconds), which resulted in the capture of 130 and 166 RASU, respectively. All native fish capture data were provided to ASU, and used to derive a current population estimate of 4,221 adult RASU (C12). Reclamation also assisted with tracking sonic-tagged RASU in accordance with the ASU telemetry study.

Annual spring BONY round-up and spring and fall RASU round-ups were conducted. The LCR MSCP partners and cooperators for these efforts included NPS, USFWS, AGFD, NDOW, and ASU. Biweekly helicopter surveys to verify the presence of RASU on known spawning beds and to search for new spawning congregations were completed during the spawning season. A total of 64,000 RASU larvae were collected and delivered to Willow Beach NFH for rearing (B2).

Reach 3 (Davis Dam to Parker Dam or Lake Havasu) — Reclamation participated in the ongoing multi-agency native fish round-up, and collected data from LCR MSCP partners fall electrofishing surveys. The first field season of FLSU surveys associated with work task C15 was completed, and the RASU population was monitored through work task G3. Data were collected using dive surveys, seines, trammel nets, hoop nets, and electrofishing. Electrofishing proved most effective in sampling riverine populations of native suckers and will provide increased accuracy in the development of mark/recapture population estimates in 2007.

The FLSU population estimate based on netting and electrofishing was 2,437, calculated based on more than 350 contacts between Davis Dam and RM 257. The RASU population was congregated near Needles, California, during the spawning months and a population estimate of 3,431 fish was calculated based on more than 200 contacts. The majority of the BONY contacts for the year were recently stocked fish, thus not allowing for the generation of a population estimate. The nonnative fish community did not show any significant changes and was represented by 15 different species.

Reaches 4 and 5 (Parker Dam to Imperial Dam) — Reclamation and ASU conducted fish surveys from Parker Dam to Imperial Dam, with the exception of CRIT Reservation (C8). Surveys included a suite of standard fishery techniques including electro-fishing, trammel netting, gill netting, and hoop netting and resulted in 489 RASU captured. A circular PIT-tag antenna installed into a 36-inch culvert connected to the river was tended throughout the year,

and results suggest that few fish moved from the backwater into the river. A radio telemetry study was initiated to examine post-stocking dispersal. Studies were initiated to determine possible effects of RASU that imprint on surface feeding and remain near the surface after stocking. Reclamation repatriated 4,185 RASU in Reach 4, and 7,270 RASU in Reach 5; also, 4,006 BONY were repatriated in Reach 5.

Status Report for RASU and BONY — Due to the seasonality of fish surveys, the development of a comprehensive status report for RASU and BONY in the LCR MSCP program area will cover a calendar year. The report for calendar year 2006 will be available in mid-2007.

FY07 Activities: Monitoring data will continue to be collected for RASU and BONY from reaches 1 through 5, including the stretch of river from Headgate Rock Dam downstream to Palo Verde Diversion Dam. This area encompasses the CRIT Reservation and was not surveyed in 2006. An agreement has been reached with CRIT to allow for incorporation of this stretch into the fishery monitoring program. A comprehensive status report for RASU and BONY in the LCR MSCP program area will be completed.

Proposed FY08 Activities: Monitoring data will be collected for reaches 1 through 5. A comprehensive status report for RASU and BONY in the LCRMSCP program area will be completed.

Pertinent Reports: The status report for RASU and BONY in the LCR MSCP program area for calendar year 2006 is in production and will be posted on the LCR MSCP Web site.