

## Work Task B6: Lake Mead Fish Hatchery

| FY15 Estimate | FY15 Actual Obligations | Cumulative Expenditures Through FY15 | FY16 Approved Estimate | FY17 Proposed Estimate | FY18 Proposed Estimate | FY19 Proposed Estimate |
|---------------|-------------------------|--------------------------------------|------------------------|------------------------|------------------------|------------------------|
| \$255,000     | \$238,485.46            | \$651,098.11                         | \$240,000              | \$325,000              | \$325,000              | \$325,000              |

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**Start Date:** FY05

**Expected Duration:** FY55

**Long-Term Goal:** Fish augmentation

**Conservation Measures:** BONY3, BONY4, RASU3, RASU4, RASU5, RASU7, RASU8, and FLSU2

**Location:** Reach 1, Lake Mead, Boulder City, Nevada

**Purpose:** To support Lake Mead razorback sucker studies and contribute bonytail and razorback suckers to the LCR MSCP Fish Augmentation Program

**Connections with Other Work Tasks (Past and Future):** Activities at the Lake Mead Fish Hatchery contribute to other LCR MSCP Work Tasks, including B11, C13, C39 (closed), C41, C49 (closed), C53, C57, C61, and D8.

**Project Description:** The Lake Mead Fish Hatchery is managed and operated by the Nevada Department of Wildlife (NDOW). The Bureau of Reclamation and the NDOW are cooperatively rearing both bonytail and razorback suckers at this facility in support of the LCR MSCP Fish Augmentation Program. Bonytail for this work task are produced and supplied by the Southwestern Native Aquatic Resources & Recovery Center, and razorback suckers are wild caught individuals from Lakes Mead and Mohave. Funds from this work task are provided for the salaries, equipment, feed, and chemicals necessary to rear these fish. Fish produced through this work task will be used to support research and augmentation in Reaches 1–5.

**Previous Activities:** A number of infrastructure and facilities improvements were made to the Lake Mead Fish Hatchery prior to 2007 to accommodate native fish production for the LCR MSCP. Since 2007, larval and fingerling razorback suckers, from Lakes Mead and Mohave respectively, have been brought into the Lake Mead Fish Hatchery and reared in these tanks. Subsequently, these fish have been transferred to ponds at the Overton Wildlife Management Area

(Overton WMA) for additional grow-out, used for Lake Mead research and monitoring projects, and stocked into Lake Mohave. Additional rearing space was made available at the hatchery in 2012 in continued support of the LCR MSCP Fish Augmentation Program. This additional space has allowed for a greater number of native fishes to be kept on station and is currently being used to rear razorback suckers, flannelmouth suckers, and bonytail. Prior to 2014, adult bonytail had only been held on station for short durations. The Lake Mead Fish Hatchery received an estimated 35,000 bonytail from the Wahweap State Fish Hatchery in December 2013, marking the first time that this species has been reared at the facility. The additional rearing capacity now available at the Lake Mead Fish Hatchery will continue to be necessary in future years when the number of fish stocked annually into Reaches 3–5 is expected to increase.

**FY15 Accomplishments:** During FY15, the Lake Mead Fish Hatchery continued rearing the approximately 28,000 bonytail, 7,000 razorback suckers, and 50 flannelmouth suckers that were on station from previous years. The Lake Mead Fish Hatchery received approximately 4,000 fingerling bonytail during FY15, bringing the total number of bonytail on station to approximately 32,000. The hatchery's razorback sucker stocks were also augmented in FY15 with an additional 100 razorback sucker larvae from Lake Mead, 4,000 razorback sucker larvae from Lake Mohave, and approximately 5,800 razorback sucker fingerlings also from Lake Mohave. At the end of FY15, approximately 16,000 razorback suckers from the 2010–2015 year classes were on station.

A number of small stockings occurred during FY15 in support of ongoing LCR MSCP work task activities. These stockings have been organized by river reach and include their associated work tasks where applicable. A total of 11 razorback suckers were stocked into Reach 1 during FY15 in support of ongoing research. These fish were sonic-tagged juvenile razorback suckers released in order to investigate habitat use and seasonal movements of immature razorback suckers in Lake Mead (C57). A total of 200 razorback suckers were stocked into Reach 2 during FY15. Fifty-one were harvested from Center Pond at the Overton WMA and stocked into Reach 2 by the NDOW in November. These fish were mostly from the 2008–09 year class and had an average total length of 515 millimeters (mm) (range 343–593 mm). The Lake Mead Fish Hatchery provided an additional 149 razorback suckers stocked in cohorts of 77 and 72 fish in support of ongoing latent mortality research (C65). These fish were from the 2010 and 2011 year classes and had average total lengths of 372 mm (300–415 mm) and 439 mm (345–520 mm), respectively. The Lake Mead Fish Hatchery also provided 410 bonytail that were stocked into Davis Cove in support of research continuing under Work Task C63, and 8 sonic-tagged bonytail were stocked into Reach 3 for research under Work Task C64. The final stocking of FY15 occurred in Reach 3. A total of 42 sonic-tagged, juvenile flannelmouth suckers were stocked in support of other ongoing research (C53).

Similar to the previous year, only minimal stockings of Lake Mohave razorback suckers occurred during FY15. It was anticipated that five hundred 500-mm razorback suckers would be stocked into Reach 2 by the end of FY15, but only 84 razorback suckers of this size have been stocked. The remainder will require additional time for grow-out. Over 47,000 native fishes from multiple year classes remain on station. These fish will be stocked or made available for research purposes as needs are identified.

**FY16 Activities:** The NDOW will continue to operate the Lake Mead Fish Hatchery for bonytail, flannelmouth sucker, and razorback sucker production. Operations will include grow-out and stocking of native fishes from the 2011–16 year classes, capture and rearing of up to 500 wild-caught razorback sucker larvae from Lake Mead, rearing of up to 6,000 additional fingerling bonytail, rearing of 5,000 additional fingerling Lake Mohave razorback suckers, and rearing of up to 100 juvenile flannelmouth suckers from Lake Mead and Reach 3 for research. An additional 7 sonic-tagged, juvenile razorback suckers will be stocked in the first quarter of FY16 to complement the cohort of 12 that were stocked as part of ongoing research funded in FY15 (C57). Approximately 2,000 Lake Mohave razorback suckers will also be stocked toward annual fish augmentation goals in FY16.

The NDOW will also continue to make improvements to the Lake Mead Fish Hatchery, including an electrical upgrade, which will enhance the ability to flow condition native fish prior to stocking. This upgrade was originally scheduled for FY15; however, the NDOW has rescheduled for FY16. Upon completion of the electrical upgrade, the hatchery will begin pre-stocking flow conditioning of native fishes. The Lake Mead Fish Hatchery will also establish a low-density raceway for adult bonytail during FY16 to provide the LCR MSCP with larger specimens for use in future sonic telemetry studies.

In FY16, the Lake Fish Mead Hatchery will start preparations to expand razorback sucker production by 4,000 per year, for a total goal of 6,000 per year expected in FY18–19. This will likely require a number of infrastructure upgrades to the hatchery and a corresponding increase in budget expenditures in FY16 and out-years.

**Proposed FY17 Activities:** Rearing and stocking of native fishes from previous year classes will continue. Lake Mead Fish Hatchery stocks will be augmented with 2017 year class razorback sucker larvae from Lake Mead; the NDOW will also receive and rear up to 6,000 additional fingerling bonytail and razorback suckers from the Southwestern Native Aquatic Resources & Recovery Center and Lake Mohave, respectively. Additional razorback suckers will also be reared directly from larvae at this facility to accommodate increases in production for this species. Adult and subadult Lake Mead razorback suckers will be delivered to the Overton WMA and additional off-channel grow-out sites as

necessary. Bonytail stockings from the Lake Mead Fish Hatchery are expected to begin in FY17. Budget estimates for FY17 and later years have been increased to account for escalation of native fish production at this facility.

In FY17, hatchery production under this work task will include the use of the Overton WMA ponds (B11) and will be reported under this work task. This consolidation will also contribute to the increase in the estimated budget proposed for this work task in FY17.

**Pertinent Reports:** Annual administrative reports are available upon request.