

## Work Task F5: Post-Development Monitoring of Fish Restoration Sites

FY08 Estimates	FY08 Actual	Cumulative Accomplishment Through FY08	FY09 Approved Estimate	FY10 Proposed Estimate	FY11 Proposed Estimate	FY12 Proposed Estimate
\$130,000	\$137,912.88	\$179,486.88	\$150,000	\$150,000	\$200,000	\$200,000

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**Start Date:** FY07

**Expected Duration:** FY55

**Long-term Goal:** Post-development monitoring.

**Conservation Measures:** RASU6 and BONY5.

**Location:** Reaches 3-6, backwater habitats developed and stocked with RASU and BONY, NV, AZ, and CA.

**Purpose:** Monitor fish use of habitat creation sites to provide data for the adaptive management process and develop management guidelines for created backwater habitats.

**Connections with Other Work Tasks (past and future):** All backwaters created in Section E.

**Project Description:** This work will monitor the fish and fish habitat at restoration sites. It is anticipated that fish restoration sites will play various roles for conservation of target fish species throughout the term of the LCR MSCP. Some habitats will be able to develop self-sustaining populations, others may become overpopulated requiring harvest or thinning, and some will require continuous population augmentation. Most isolated fish habitats will require some stock rotation to maintain genetic diversity through time. Basic surveys of the fish population and the physical and chemical habitat developed or restored will be required. Fish monitoring will include trapping (hoop, fyke, and minnow traps), trammel netting, electro-fishing, larvae light trapping, and ocular surveys (including scuba and snorkeling where necessary and practical). Water quality assessment will require annual measurements of temperature, oxygen, pH, and conductivity (salinity), as well as periodic monitoring of chemical makeup, including electro-ions and selenium.

**Previous Activities:** Renovation and stocking of Beal Lake, as well as the completion and stocking of Imperial Ponds.

**FY08 Accomplishments:** A draft water sampling protocol was developed to assess changes in water quality as ponds age. This protocol is intended to collect a suite of characteristics ranging from chemical composition, to the micro organisms that occupy this habitat.

Beal Lake was stocked with 6,415 RASU and 333 BONY in 2008. Two monitoring trips were conducted and sampling methods included electro-fishing, netting (hoops/trammels), and remote sensing. Twenty RASU and one BONY were contacted, seventeen of the natives were scanned using the remote sensors. All native fish were returned to the pond following processing. All non-natives were harvested and game species were released into Topock Marsh, non-natives included carp, largemouth bass, threadfin shad and black crappie.

RASU and BONY were stocked into two ponds each at the Imperial Ponds, and the first year of monitoring was completed through a research grant with Arizona State University (C25). The development of a remote sensing protocol proved effective in monitoring populations with out handling the fish. A fall monitoring of all the ponds showed BONY were able to successfully spawn in Pond 2, all native fish populations declined throughout the year, and numerous species of non-natives were identified in all ponds. Non-native species included carp, threadfin shad and multiple *Lepomis* species. An interagency coordination team has continued to meet quarterly.

**FY09 Activities:** Post-development monitoring of Beal Lake similar to FY08 monitoring will be continued. RASU and BONY will be stocked and monitored with 500 mm RASU being harvested and stocked into Reach 3 as research subjects for work task (C33). Roughfish biomass will be reduced through quarterly netting and shocking operations. Sportfish will be salvaged and stocked into Topock Marsh.

Increased monitoring of the Imperial Ponds will be continued to include physical and chemical conditions in the ponds and surveys of the fish populations. Netting and electrofishing will only be conducted in the fall to reduce stress related to high summer water temperatures. A minimum of one pond will be rennovated in preparation for restocking.

Staff will participate in fishery surveys of other native fish sanctuary habitats in the lower river floodplain to gather information on developing fisheries.

**Proposed FY10 Activities:** Native fish restoration sites will continue to be monitored for physical, chemical, and biological conditions.

**Pertinent Reports:** N/A.