

Work Task C41: Role of Artificial Habitat in Survival of RASU and BONY

FY10 Estimates	FY10 Actual	Cumulative Accomplishment Through FY10	FY11 Approved Estimate	FY12 Proposed Estimate	FY13 Proposed Estimate	FY14 Proposed Estimate
\$25,000	\$5,885.67	\$5,885.67	\$25,000	\$25,000	\$15,000	\$0

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Start Date: FY10

Expected Duration: FY13

Long-term Goal: Assess effectiveness of the fish augmentation program.

Conservation Measures: BONY3, BONY5, RASU3, RASU5, RASU6.

Location: Reach 3, Beal Lake.

Purpose: To assess use and role of artificial reefs and structures by native fishes released by the LCR MSCP.

Connections with Other Work Tasks (past and future): This work is related to all work tasks in Section B that provide RASU and BONY for augmentation stocking, particularly B7, C23, and F5. Study results will add to the database used to complete D8.

Project Description: Approximately 800 acres of artificial fish habitat have been constructed and deployed in Lake Havasu over the past 15 years. Similar structures have recently been placed into coves in Lake Mohave. RASU have been periodically observed by SCUBA divers in and around these structures, along with numerous species of exotic fishes. This study will determine which if any of these structures may be preferred by native species.

This study was originally to be done in Beal Lake. It was moved to Davis Cove due to low post-stocking survival in Beal Lake. Davis Cove, a rearing pond along Lake Mohave, provides the best opportunity to monitor and assess a native fish population's response to the deployment of artificial habitat. Davis Cove is a 2.7-acre backwater pond that has supported a native fish community since 2005. It is dominated by rock and sand shorelines with little emergent vegetation, and it is devoid of large submerged habitats. This study will place a variety of constructed habitat types into Davis Cove and attempt to determine which types of structures are preferred by native species. The information may be used to guide current habitat projects in reaches 2 and 3, as well as facilitate the design and development of LCR MSCP backwater habitats. It will also be used to determine future stocking locations in reaches 2 and 3. For example, if certain types of

structures are known to be used as cover by native fishes, fish could be released in the vicinity of these structures.

Previous Activities: N/A

FY10 Accomplishments: PIT-tag antennae have been purchased and are being incorporated into artificial habitats. Beal Lake was stocked with 610 PIT tagged RASU in February and fish were tracked throughout the year using remote PIT-tag antenna. The population dropped to approximately 130 individuals by the end of the year with more than 50% of the loss occurring during the first 3 months post stocking. The reasons for the loss of stocked fish are unknown, but some possibilities are predation by migratory birds, mortalities associated with stocking and handling, or water quality deficiencies.

FY11 Activities: In the fall, Beal Lake was again stocked with approximately 400 PIT-tagged RASU and the population was monitored into the spring until it had dropped to well below 100 individuals. This poor survival prompted us to move the study to Davis Cove, which has a more reliable native fish population. Davis Cove was stocked with approximately 400 PIT-tagged subadult RASU as part of the association with B7. Constructed habitats equipped with PIT-tag antennae will be deployed in Davis Cove. Additional stockings of marked fish will occur as needed in order to maintain a detectable population size. Use of artificial structures by the fish will be recorded. Data will be analyzed and results developed into annual reports.

Proposed FY12 Activities: Monitoring use of artificial habitats will continue. Stockings of RASU and BONY will continue as needed. Data will be analyzed and developed into a final report.

Pertinent Reports: The study design is available upon request and annual reports will be posted to the LCR MSCP website upon completion.