

Work Task E1: Beal Lake Riparian and Marsh

FY05 Estimate	FY05 Actual	Cumulative Accomplishment Through FY05	FY06 Approved Estimate	FY07 Proposed Estimate	FY08 Proposed Estimate	FY09 Proposed Estimate
\$293,000	\$393,000	\$1,625,267	\$200,000	\$358,000	\$210,000	\$210,000

Contact: Barbara Raulston, (702) 293-8788

Start Date: FY04 **Expected Duration:** FY09 decision point

Long-term Goal: Restoration research

Conservation Measures: CLRA1, WIFL1, WRBA2, WYBA-3, CRCR2, YHCR2, LEBI1, BLRA1, YBCU1, ELOW1, GIFL1, GIWO1, VEFL1, BEVI1, YWAR1, SUTA1, and, MNSW2

Location: Reach 3, Havasu NWR, ½ mile east of RM 237, AZ

Purpose: Backwater habitat creation along the Colorado River typically involves excavation or dredging of large quantities of material. Placement and reuse of the excavated material is often a limiting factor when estimating the total cost of creating a backwater. This research project addresses that issue by tracking the process and costs associated with clearing, blending dredge material with existing soils, leveling, and planting various native plants. In addition, the reclaimed area has been divided into cells or small fields with independent flood irrigation capabilities that allows testing of various planting and seeding methods while potentially creating habitat. Results of this project are expected be used elsewhere on the LCR in the creation and management of backwater and riparian habitats.

Connections with Other Work Tasks (past and future): This Work Task was previously included in both FY04 Work Tasks and Draft FY05 Work Tasks as Beal Lake, Havasu National Wildlife Refuge (D1) and (E1) respectively. Dredge material from Beal Lake Native Fish (E2), was leveled in 2001 to create the substrate for planting the riparian habitat adjacent to Beal Lake. Vegetation and species monitoring are being addressed under F1-F4.

Project Description: Reclamation has partnered with the FWS to conduct restoration research at Beal Lake until FY09. In FY09 a decision will be made to continue research activities, manage any habitat created during the research for the life of the program, or discontinue funding. In this restoration research project planting, irrigation, and management techniques, coupled with vegetation and species monitoring, are being demonstrated, as well as the creation of over 100 acres of native riparian land cover types. Planning includes clearing, root plowing, and leveling areas previously comprised of sparse arrowweed and saltcedar, and replanting with cottonwood, willow, and mesquite. Irrigation, as needed, is through a pump, pipe, and valve system with dates and amounts documented and reported to Reclamation monthly. The site provides an opportunity to test various methods of seeding combined with flood irrigation such as direct “hand seeding”, “whole branch” seeding, hydro-seeding, and perimeter seeding. Trees

are planted around perimeter of the field to block wind-borne weed seeds, and to naturally seed center of field when mature (Figures E1b and E1c). Monitoring will determine if these methods can produce the desired results:

1. Densities of cottonwood and willow high enough to shade out competing non-native vegetation and provide habitat for SWFL.
2. Provide habitat for other LCR MSCP targeted species.

Future management of any created habitat for targeted species such as SWFL and YBCU may include increased irrigation to specific areas and cutting and clearing to re-establish and/or maintain high vegetation density (Figure E1a). Monitoring vegetation and irrigation will provide guidance on future riparian establishment and management procedures.

Previous Activities: Restoration began in 2001; site preparation and planting for Phase 1 (56 acres), and site preparation for Phase 2 (50 acres) were completed prior to FY05. Phase 3 (80 acres) was cleared during dredging and has developed into a mix of screwbean mesquite, salt grass, tumbleweed, arrowweed, and sparse saltcedar. In FY04-05, honey mesquite seed was collected and placed in piles in Phase 3 for possible scarification and distribution by resident wildlife.

FY05 Accomplishments: Fifty-six (56) acres of cottonwood and willow planted in Phase 1 were irrigated during the growing season. Twenty-one (21) acres of Phase 2 were planted with cottonwood and willow (7,000 combined), and mesquite (1,500), including perimeter plantings. Approximately eight acres of ground in existing mesquite areas were seeded with a salt-tolerant mix of three shrub species. The interior of fields in Phase 2, which received perimeter plantings, were planted with a cover crop. All 50 acres of Phase 2 are now planted and were irrigated during the growing season. Honey mesquite seed pods were collected and scattered in Phase 3. Land cover types were monitored. At this time, no additional work is planned for Phase 3.

FY06 Activities: Improvements to Phase 2 were completed in December 2005 and January 2006 when water retention features were installed to create micro-habitats with wet soil within the site to attract SWFL. Irrigation of the site continues, with newly planted areas requiring more water than established vegetation. Monitoring of groundwater levels, irrigation, vegetation, birds, bats, and small mammals will continue. Establishment of a small (13 acres) wetland demonstration site for rail species is in the planning stage. A draft design is anticipated during the summer of FY06 and, if acceptable, is tentatively scheduled to be constructed in FY07.

Proposed FY07 Activities: Approximately 106 acres of native plant species created in Phases 1 and 2 will be irrigated throughout the growing season. The FY07 proposed budget includes the estimated cost of creating and monitoring 13 acres of California black rail habitat being designed in FY06. If the wetland is not created the costs would be reduced accordingly.

Pertinent Reports: *Beal Lake Habitat Restoration, April 2005* is posted on the LCR MSCP website. *Beal Riparian Restoration, Annual Report*, and a study plan for future actions, such as the rail wetland development, will be posted to the LCR MSCP website.

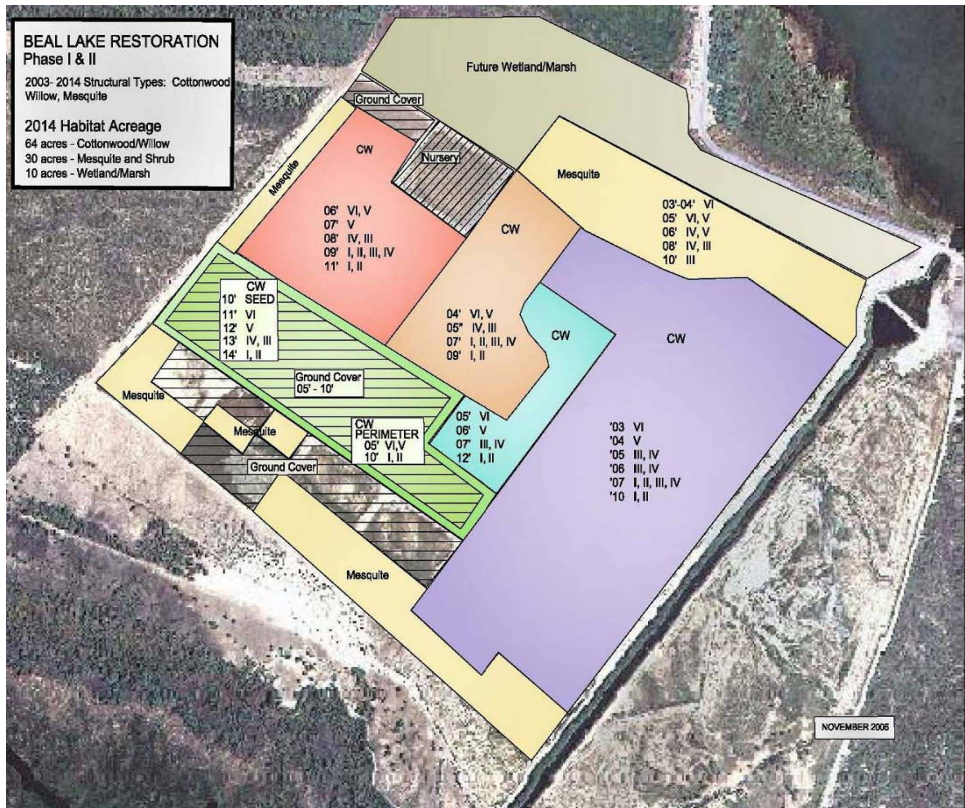


Figure E1a: Possible structural type changes, projected through 2014, due to management activities.



Figure E1b: Trees planted in January 2005 around the perimeter of the field (July 2005).



Figure E1c: Trees planted in January 2005 around the perimeter of the field (May 2006).