

## Work Task F4: Covered Bat Species Monitoring of Conservation Areas

FY13 Estimate	FY13 Actual Obligations	Cumulative Expenditures Through FY13	FY14 Approved Estimate	FY15 Proposed Estimate	FY16 Proposed Estimate	FY17 Proposed Estimate
\$125,000	\$194,445.95	\$713,241.68	\$135,000	\$135,000	\$135,000	\$135,000

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**Start Date:** FY07

**Expected Duration:** FY55

**Long-term Goal:** Pre- and post-development monitoring of covered bat species.

**Conservation Measures:** MRM1, MRM2 (WRBA, WYBA, CLNB, PTBB), WRBA1, WYBA1.

**Location:** Beal Lake, Havasu NWR; PVER, California; CVCA, Cibola NWR Unit 1, Cibola, Arizona; Imperial Ponds, Imperial NWR, Arizona; Laguna Conservation Area, Arizona, Yuma East Wetlands, and Hunters Hole.

**Purpose:** The principal goal of this monitoring is to assess seasonal use of the restoration sites by the two covered bat species (western red bat and western yellow bat), and the two evaluation species (Townsend's big-eared bat and California leaf-nosed bat). Monitor of bat use of habitat creation sites will provide data for the adaptive management process and develop management guidelines for created habitat sites. Pre- and post-development monitoring for the presence/absence of covered bat species will be conducted following a study design developed in 2008. Information obtained through this work task, in conjunction with D9, will help determine the distribution of these species.

**Connections with Other Work Tasks (past and future):** Post-development bat monitoring will be conducted at habitat creation sites listed in Section E. In addition, information obtained from this work task may be used to provide data to D9.

**Project Description:** Post-development monitoring includes both acoustic and capture methods. Acoustic monitoring will be conducted at habitat creation and demonstration sites, including CVCA, PVER, Cibola NWR Unit #1, Beal Lake, and Imperial Ponds. These surveys will utilize either active or passive AnaBat™ systems to record bat echolocation calls for presence/absence surveys. A capture program will also be used in the above-mentioned sites to acquire reference acoustic calls and determine age, sex, and reproductive status of covered bat species. These surveys will provide data on foraging habitat and use by covered species. Bat surveys will be conducted before and after habitat

creation utilizing AnaBat™, SonoBat™, infrared cameras, stationary detection equipment, and mist netting, where appropriate.

**Previous Activities:** Sites were monitored from FY07 to FY12 using acoustic and/or capture techniques.

**FY13 Accomplishments:** Acoustic monitoring consisted of long term bat detector stations that record the echolocation calls of bats every night. Stations collected data at Beal, ‘Ahakhav, PVER, CVCA, Cibola NWR Unit #1, Yuma East, and Hunters Hole. The Cibola Unit 1 station was moved from Mass Planting to Cranes Roost when the new high pole was installed. New stations were added at Hunters Hole and Yuma East Wetlands and a second station was added in phase 7 of PVER and phase 3 of CVCA. Data is still being analyzed, but high detections were again seen at PVER and CVCA. This resulted in increased project costs.

Capture surveys were conducted at five LCR MSCP habitat creation areas (Beal, PVER, CVCA, Cibola NWR, Yuma East Wetlands), and at the ‘Ahakhav Tribal Preserve. Western red bats were captured at PVER, CVCA, and Cibola NWR. Western yellow bats were captured at ‘Ahakhav, PVER, CVCA and Yuma East Wetlands. California leaf-nosed bats were captured at ‘Ahakhav, PVER and Yuma East Wetlands. Townsend’s big-eared bat was captured at Beal. This was the first captured of Townsend’s at Beal and first capture of a California leaf-nosed bat at Yuma East. Some of the red and yellow bats captured under this work task were radio-tracked for the roosting characteristics study under C35.

**FY14 Activities:** The current nine acoustic stations will continue. Data will be analyzed and detection/occupancy rates will be created. Capture surveys will continue at all sites surveyed in FY13. Red and yellow bats may be PIT tagged to determine their site fidelity. California leaf-nosed bats and Townsend’s big-eared bats captured will be radio-tracked as part of a foraging distance study being conducted under work task D9.

**Proposed FY15 Activities:** All long term stations will continue to run and one new station will be added at the Laguna Division Conservation Area. Capture surveys will continue. Data will continue to be analyzed and be used to guide adaptive management for covered bat species.

**Pertinent Reports:** Annual reports will be posted on the LCR MSCP website.