

Work Task F4: Post-Development Monitoring of Covered Bat Species

FY10 Estimates	FY10 Actual	Cumulative Accomplishment Through FY10	FY11 Approved Estimate	FY12 Proposed Estimate	FY13 Proposed Estimate	FY14 Proposed Estimate
\$110,000	\$115,018.90	\$370,759.61	\$110,000	\$100,000	\$100,000	\$100,000

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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; ‘Ahakhav Tribal Preserve, CRIT; PVER, California; CVCA, Cibola NWR Unit 1, Cibola, Arizona; Imperial Ponds, Imperial NWR, Arizona; Laguna Conservation Area, Arizona, Pratt Demonstration area.

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 (pale Townsend’s big-eared bat and California leaf-nosed bat). Monitor bat use of habitat creation sites to 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 will compare bat activity between four habitat types (agricultural fields, saltcedar stands, mesquite created habitat, and cottonwood-willow created habitat). Acoustic monitoring will be conducted at habitat creation and demonstration sites, including ‘Ahakhav, CVCA, PVER, Cibola NWR Unit #1, Beal Lake, and Imperial Ponds. These surveys will utilize either active or stationary 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 FY09 using acoustic and/or capture techniques.

FY10 Accomplishments: Quarterly post-development bat monitoring was conducted utilizing Anabat bat detectors in seven LCR MSCP habitat creation and demonstration areas, including Beal Lake Habitat Restoration, 'Ahakhav Tribal Preserve, Palo Verde Ecological Reserve, Cibola Valley Conservation Area, Cibola NWR Unit #1 Conservation Area, Pratt Restoration, and the Imperial Ponds Conservation Area.

A total of 2,935 minutes of bat activity were recorded at the Beal Restoration site, and all four LCR MSCP species were recorded, though in low numbers. A total of 1,406 minutes of bat activity were recorded at the 'Ahakhav Tribal Preserve and all four LCR MSCP species were recorded, though monitoring only occurred during 2 of the 4 seasons. A total of 12,128 minutes of bat activity were recorded at PVER, and all four LCR MSCP species were recorded, red and yellow bat activity increased dramatically in FY10. A total of 7,914 minutes of bat activity were recorded at CVCA, and all four LCR MSCP species were recorded, red and yellow bat activity increased dramatically in FY10. A total of 8,484 minutes of bat activity were recorded at Cibola NWR, all four LCR MSCP species were recorded, and red bats showed a dramatic increase in FY10. A total of 9,403 minutes of bat activity was recorded at Imperial NWR, all four LCR MSCP species were recorded, and yellow bat activity increased dramatically in FY10. A total of 1,279 minutes of bat activity were recorded at Pratt, all MSCP species except for the Townsend's big-eared bat were detected, though in very low numbers.

The Beal permanent Anabat acoustic station has continued operating until late July when the internal battery of the detector began to lose power; the unit was replaced after the start of FY11. The 'Ahakhav Tribal Preserve long-term station, which uses a full spectrum detector, was moved to PVER in January 2010.

A bat capture program utilizing mist nets was conducted between February and September. Four habitat creation and demonstration areas were sampled, including 'Ahakhav Tribal Preserve, CVCA, Cibola NWR Unit #1, and PVER. Surveys were also conducted at the Bill Williams River NWR to compare to the habitat creation areas. A total of 717 individual bats from 13 species were captured among the four sites. All four LCR MSCP target species were captured. The western red bat was captured in February at 'Ahakhav and CVCA during a single survey at each site (being the only survey conducted at 'Ahakhav in FY10). Red bats were also captured at PVER during the summer season. Yellow bats were captured at CVCA and PVER. California leaf-nosed bats were captured at all sites except for PVER. The Townsend's big-eared bat was only captured at the Bill Williams River NWR. Arizona myotis, a species not covered under the LCR MSCP, was captured at CVCA. This capture, along with a capture at 'Ahakhav Tribal Preserve, are the first detections of Arizona myotis since 1945.

FY11 Activities: Acoustic surveys will be modified this year to switch from the habitat comparison study to a more wide scale sampling using driving transects, in addition to adding long-term stations at CVCA and Cibola NWR. Pre-development acoustic surveys will begin at the Laguna Conservation Area. Capture surveys will resume at 'Ahakhav, and continue at CVCA, Cibola Unit #1, and PVER.

Proposed FY12 Activities: If the driving acoustic surveys are successful in FY11 they will continue in FY12. The two types of detectors being used in long term stations will be evaluated and if new software is available to automate species identification, all long term stations will be converted to the automated type. Capture surveys will also continue.

Pertinent Reports: *Post-Development Bat Monitoring of Habitat Creation Areas along the Lower Colorado River – 2010 Acoustic Surveys*, and *Post-Development Bat Monitoring of Habitat Creation Areas along the Lower Colorado River – 2010 Capture Surveys* will be posted on the LCR MSCP website.