

Work Task D9: System Monitoring and Research of Covered Bat Species

FY13 Estimate	FY13 Actual Obligations	Cumulative Expenditures Through FY13	FY14 Approved Estimate	FY15 Proposed Estimate	FY16 Proposed Estimate	FY17 Proposed Estimate
\$150,000	\$139,177.55	\$956,659.76	\$375,000	\$380,000	\$380,000	\$200,000

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Start Date: FY04

Expected Duration: FY55

Long-term Goal: System monitoring and species research will be conducted for LCR MSCP bat species to determine distribution and to evaluate habitat implementation success.

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

Location: System-wide along the Lower Colorado River below Hoover Dam.

Purpose: To conduct system monitoring and research for the distribution of covered bat species utilizing roost surveys, acoustic survey techniques, and capture techniques.

Connections with Other Work Tasks (past and future): System monitoring data will be used in conjunction with post-development monitoring (F4) to determine habitat needs and characteristics of covered bat species. Data collected will be used in future habitat creation projects listed in Section E.

Project Description: Several survey techniques will be utilized to detect covered species or provide equivalent data using indicator species. Acoustic surveys, conducted with AnaBat™ or SonoBat™ technology, will be used to identify foraging behavior in native riparian stands for covered bat species. Roost surveys will be conducted to track bat populations and to survey species that are not readily detected by acoustic technology, such as Townsend's big-eared bat and California leaf-nosed bat. Individual bats will be captured using techniques such as mist netting to obtain reference calls for bat identification and to verify reproductive status.

Previous Activities: A Lower Colorado River Bat Monitoring Protocol was produced to assist in the development of a system-wide distribution and demography monitoring plan for covered bat species. A system-wide acoustic monitoring program was implemented that coordinated the collection and analysis of acoustic bat data for system-wide monitoring of the LCR. Four permanent acoustic detector stations were placed along the

river and are providing data that may be useful for analyzing migration movements along the river as well as correlating bat activity with environmental variables.

FY13 Accomplishments: The four permanent AnaBat™ monitoring stations continued to operate to provide year-round data. The Bill Williams River NWR station had the most overall calls from LCR MSCP species. Outflight counts were conducted at various mines along the LCR including surveys of mines within the vicinity of Planet Ranch in the winter and early summer. These counts will be used to determine trends in California leaf-nosed bat and Townsends big-eared bat populations. Populations continue to appear stable.

FY14 Activities: The four permanent AnaBat™ monitoring stations will continue to operate and a fifth station will be constructed at Havasu NWR to fill a gap in data. Data will be collected and analyzed. Station data from the five non-MSCP managed sites will be analyzed together with the nine MSCP habitat creation area stations as a single acoustic monitoring network to establish trends in MSCP species occupancy across the MSCP program area. Outflight counts will continue to be conducted as the main method to monitor California leaf-nosed bats and Townsend's big-eared bats in the winter and early summer. Archived California leaf-nosed bat banding data will be compiled and entered into a single database. Archived acoustic data will be organized, analyzed, and compiled so that it may be entered into a single database.

A study is being initiated to investigate if either mine roosting species (California leaf-nosed and Townsend's big-eared bats) forage at greater distances than what previous research suggests and to identify any additional roosts for either species within foraging distance of the program area. Bats will be radio-tracked during the winter and summer (post-maternity) seasons at roost sites and foraging areas. Average and maximum foraging distances will be determined. If new roosts are discovered, they will be monitored. Radio-tracking will continue through September during each of the three years of the study.

Proposed FY15 Activities: The five permanent AnaBat™ monitoring stations will continue to operate and data will be analyzed with the nine habitat creation area stations. Outflight counts will be conducted at various mines along the LCR including surveys of mines within the vicinity of Planet Ranch in the winter and early summer. Banding and acoustic data will continue to be added to a single database. All historic banding and acoustic data will be archived into the database by FY16. The foraging study will continue tracking bats from roosts and foraging areas.

Pertinent Reports: The FY11 and FY12 acoustic reports are available on the website and the FY13 acoustic report will be available once finalized. The 2010 summary mine roost report is available on the website and the 2011-2013 report will be available once finalized.