

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

FY12 Estimate	FY12 Actual Obligations	Cumulative Expenditures Through FY12	FY13 Approved Estimate	FY14 Proposed Estimate	FY15 Proposed Estimate	FY16 Proposed Estimate
\$150,000	\$188,280.52	\$836,042.21	\$150,000	\$375,000	\$375,000	\$375,000

Contact: Allen Calvert, (702) 293-8311, acalvert@usbr.gov

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 through the Arizona Game and Fish Department (AGFD) 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.

FY12 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, though the Mittry Lake station had more western red bat calls and the Picacho State Park station had the most California leaf-nosed bats. The Cibola NWR and Picacho State Park stations did not detect the Townsend's big-eared bat. The total number of LCR MSCP species calls only made up 0.18% of all species calls combined. 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. The increase in funding was due to additional surveys conducted in the vicinity of Planet Ranch.

FY13 Activities: The four permanent Anabat monitoring stations will continue to operate. Data will be collected and analyzed. Acoustic monitoring will continue as the main survey method for system-wide (non-restoration are) monitoring of the four covered species (especially western red and western yellow bats) into future years. 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. These counts will be used to determine trends in California leaf-nosed bat and Townsends big-eared bat populations. 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.

Proposed FY14 Activities: The four permanent Anabat monitoring stations will continue to operate. A fifth permanent Anabat monitoring station will be installed in Reach 3 to reduce the data gap for stations operating in areas other than habitat creation areas. Data will be collected and analyzed. 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. These counts will be used to determine trends in California leaf-nosed bat and Townsends big-eared bat populations, as acoustic methods are not as successful in documenting presence due to their low decibel echolocation calls. Outflight counts will continue as the primary survey method for monitoring California leaf-nosed bat and Townsend's big-eared bat populations into future years. 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.

A study will be 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 starting in 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.

Pertinent Reports: *Monitoring of Covered and Evaluation Bat Species for the Lower Colorado River Multi-Species Conservation Program, Annual Report, 2011* is posted to the LCR MSCP website.