

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

FY11 Estimate	FY11 Actual Obligations	Cumulative Expenditures Through FY11	FY12 Approved Estimate	FY13 Proposed Estimate	FY14 Proposed Estimate	FY15 Proposed Estimate
\$150,000	\$147,131.56	\$694,529.69	\$150,000	\$150,000	\$150,000	\$150,000

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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:** Conduct system monitoring and research for the distribution of covered bat species utilizing roost surveys, acoustic survey techniques, and capture techniques following a protocol developed in FY06 and additional information gathered since then.

**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:** Indigenous bat species were surveyed annually along the LCR from 2001 to 2006. 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.

**FY11 Accomplishments:** The four permanent Anabat monitoring stations continued to operate to provide year-round data. One of the stations was damaged due to a fire at Cibola NWR. This station will be repaired and be operational once new equipment is purchased. 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. A total of 441,550 usable bat call files were collected. The station at Mittry Lake Wildlife Area recorded a total of 134,493 (23%) files, Picacho State Recreation Area recorded 73,640 (13%), Bill Williams River National Wildlife Refuge recorded 200,592 (34%), and Cibola National Wildlife Refuge recorded 177,834 (30%). All four LCR MSCP covered species were recorded at all locations, with the Bill Williams River NWR recording the most call minutes.

**FY12 Activities:** The four permanent Anabat monitoring stations will continue to operate. 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. Archived California leaf-nosed bat banding data will continue to 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 FY13 Activities:** The four permanent Anabat monitoring stations will continue to operate. 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. Banding and acoustic data will continue to be added to a single database.

**Pertinent Reports:** *Monitoring of Covered and Evaluation Bat Species for the Lower Colorado River Multi-Species Conservation Program, Annual Report, 2010* is posted to the LCR MSCP website. A final mine survey summary report for years 2002-2010 will be posted to the website. An FY11 report for the analyses of data from the four long-term acoustic stations and an FY11 report for mine surveys will be prepared and posted to the website.