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

FY07 Estimates	FY07 Actual	Cumulative Accomplishment Through FY07	FY08 Approved Estimate	FY09 Proposed Estimate	FY10 Proposed Estimate	FY11 Proposed Estimate
$60,000	$69,898	$69,898	$70,000	$90,000	$90,000	$90,000

Contact: Theresa Olson, (702) 293-8127, tolson@lc.usbr.gov

Start Date: FY07

Expected Duration: FY55

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

Conservation Measures: AMM1, MRM1, MRM2, WRBA2, WYBA2, and WYBA3.

Location: Beal Lake, Havasu NWR; PVER, CA; CVCA, Cibola Nature Trail, Cibola NWR, Cibola, AZ; Imperial Ponds, Imperial NWR, AZ.

Purpose: 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 protocol developed in 2006. 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 utilize a protocol developed in 2006. Acoustic monitoring will be conducted at habitat creation sites, including CVCA, PVER, Cibola NWR Unit #1, Beal Lake, and Imperial Ponds. These surveys will utilize either active or stationary Anabat systems to record bat sounds for presence/absence surveys. In some circumstances, capture techniques may be used for those species not readily recorded by the Anabat™ system. These surveys will provide data on foraging habitat and use by covered species. Reclamation staff will conduct bat surveys before and after habitat creation utilizing Anabat, Sonabat, infrared cameras, stationary detection equipment, and mist netting, where appropriate.

Previous Activities: This is a new start in FY07.

FY07 Accomplishments: Quarterly post-development bat monitoring was conducted utilizing Anabat bat detectors in six LCR MSCP habitat creation areas, including Beal Lake Habitat Restoration, Palo Verde Ecological Reserve, Cibola Valley Conservation Area, Cibola National

Wildlife Refuge Conservation Unit 1, Pratt Restoration, and the Imperial Ponds Conservation Area. 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), the two evaluation species (pale Townsend's big-eared bat and California leaf-nosed bat), and an indicator species (hoary bat) that may be more common than the other two tree bats (red and yellow). The hoary bat may be a good indicator for native riparian tree habitat along the LCR.

In July 2007, a bat capture program was established utilizing mist nets and harp traps. During this quarter, three restoration sites were sampled, including Beal Lake Riparian Restoration, Cibola NWR Unit #1 Area, and Pratt Restoration Demonstration Site. Together, these two sampling methods increase the odds of accurately detecting bats using a given habitat. Netting and trapping may allow a better understanding of how bats use habitat creation sites, which would aid the future design of these sites to better accommodate bat use. A total of 76 individual bats, from eight or possibly nine species, were captured among the four sites. Two LCR MSCP target species, the western yellow bat and the California leaf-nosed bat, were captured. One yellow bat was captured at a site in which no acoustic data had been found, confirming the importance of using both acoustic and capture techniques to survey an area.

A total of 57 detector nights were completed on nine monitoring sites in the Beal Lake Habitat Restoration area. A total of 17,204 call files were collected, edited, and identified to species or species groups for valid call files. All four LCR MSCP covered and evaluation species were identified utilizing the Beal Lake site and surrounding areas. Thirteen detector nights were completed on four monitoring sites in the Palo Verde Ecological Reserve. A total of 3,733 bat call files were collected and edited. Western red bat, western yellow bat, and California leaf-nosed bat were all identified as utilizing the PVER site and surrounding habitats. A total of 42 detector nights were completed for six CVCA sites. A total of 3,052 call files were obtained, edited, and identified to species or species group. Western red bat, Townsend's big-eared bat, and California leaf-nosed bat were identified as utilizing CVCA. Eight detector nights were completed for two Cibola NWR Unit #1 Conservation Area sites. A total of 569 call files were obtained, edited, and identified to species or species group. California leaf-nosed bat was identified as utilizing Cibola Nature Trail. A total of 12 detector nights were completed for two Pratt sites. A total of 2,423 call files were obtained, edited, and identified to species or species group. Western red bat was recorded and western yellow bat was captured during mist netting at the Pratt site. A total of 48 detector nights were completed for eight Imperial Conservation Area sites. A total of 22,853 call files were obtained, edited, and identified to species or species group. All four covered and evaluation species were recorded utilizing the Imperial Conservation Area sites.

FY08 Activities: Conduct pre- and post-development bat surveys on habitat creation sites, including Beal Lake, Cibola Nature Trail, CVCA, Imperial Ponds, and PVER. Anabat™ files will be analyzed to determine species richness and abundance at restoration sites. Capture techniques will be utilized to enhance acoustic surveys, identify hard to record (whispering bat) species, and obtain voucher calls.

Proposed FY09 Activities: Pre- and post-development bat surveys will be conducted on habitat creation sites, including Beal Lake, Cibola Nature Trail, CVCA, Imperial Ponds, and PVER. Anabat files will be analyzed to determine species richness and abundance at restoration sites.

Capture techniques will be utilized to enhance acoustic surveys, identify hard to record (whispering bat) species, and obtain voucher calls.

Pertinent Reports: *Post-Development Bat Monitoring of Restoration Sites along the Lower Colorado River – 2007* will be posted on the LCR MSCP Web site.