

## Work Task D6: System Monitoring for Riparian Obligate Avian Species

FY08 Estimates	FY08 Actual	Cumulative Accomplishment Through FY08	FY09 Approved Estimate	FY10 Proposed Estimate	FY11 Proposed Estimate	FY12 Proposed Estimate
\$135,000	\$124,050.07	\$460,784.07	\$135,000	\$210,000	\$210,000	\$210,000

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**Start Date:** FY06

**Expected Duration:** FY55

**Long-term Goal:** System monitoring for avian covered species

**Conservation Measures:** MRM1, MRM2 (WIFL, YBCU, ELOW, GIFL, GIWO, VEFL, BEVI, YWAR, SUTA)

**Location:** System-wide.

**Purpose:** Monitor riparian obligate bird species covered under the LCR MSCP to document long-term population trend and habitat use.

**Connections with Other Work Tasks (past and future):** Sample transects, completed under C18, were used to design this monitoring program. Information obtained through this work task will be used in conjunction with data from D5 to conduct system monitoring for avian covered species. Data collected during post-development monitoring of habitat creation sites listed in Section E may also be used in this work task. Information obtained through this work task will also be used in association with C24 to help define habitat requirements for riparian obligate bird species.

**Project Description:** The LCR MSCP includes conservation measures for 26 covered species and 5 evaluation species, including 9 neo-tropical migratory bird species. It is inefficient to monitor every covered species individually throughout the entire LCR MSCP planning area. Many bird populations can be monitored effectively using multi-species survey protocols.

Avian system monitoring protocols have been developed that can incorporate data into a coordinated bird monitoring network. Data from the LCR can be incorporated into a larger, regional database, which makes the data more powerful during analysis. Population trends can be derived over time, thus enabling Reclamation to monitor existing avian populations.

Single species tape-playback surveys of the elf owl will be conducted in suitable habitat in the LCR MSCP planning area. Suitable habitat includes known historical locations, locations of

incidental sightings, and all HM III, CW I, and CWII habitat. Single-species surveys for the elf owl are necessary due to the nocturnal nature of this species and its rarity along the LCR.

**Previous Activities:** In FY05-06, existing vegetation, characterized using the Anderson and Ohmart classification system, was stratified and random point-count transects were established and conducted. After reviewing data collected during the 2005-06 breeding seasons, a monitoring plan was finalized in 2007. System-wide avian monitoring was conducted during the 2007 breeding season. A double sampling rapid/intensive area search protocol was utilized to provide density estimates of the six focal species and other common species in the LCR MSCP planning area. One hundred and sixty rapid area search plots were randomly chosen using a stratified random sampling design. Strata were defined as region-class combinations using 6 classes and 13 regions. Eighty-eight rapid area search plots of the 160 chosen were surveyed once in FY07. Fifteen of the 88 plots were chosen as intensive plots and surveyed eight times in FY07. The gilded flicker and summer tanager were the only focal species not detected during the area search surveys in FY07.

**FY08 Accomplishments:** In FY08, system monitoring, post-development monitoring, and habitat suitability modeling were combined into one agreement to more efficiently manage avian monitoring programs.

The remaining 72 plots of the 160 that were chosen in FY07 were surveyed as rapid area search plots in FY08. Each rapid area search plot was surveyed twice in FY08, once in May and once in June. A random sub-sample of these plots was surveyed intensively to determine actual numbers of breeding birds present in each plot (10 in 2008). Each intensive area search plot was surveyed eight times between 23 April and 30 June, 2008. Data from intensive surveys and rapid surveys were combined to provide detection ratios and density estimates for the six focal species and other common species in the LCR MSCP planning area.

Habitat assessments were conducted within the breeding territories of the focal species as well as in non-use sites randomly selected from the same, or nearest, similar stratum. Forty-eight habitat assessments were conducted in use and non-use area for the focal species in FY08. The FY08 habitat assessment effort focused on the Sonoran yellow warbler and Arizona Bell's vireo. The habitat assessments consisted of the following estimates: 1) photographs of the site; 2) a series of categorical landscape variables; 3) cover and foliage height diversity via point-intercept and a 5-m pole with marked heights; 4) tree density and size (including snags); 5) shrub density; 6) canopy closure, and 7) soil moisture.

During system-wide rapid area searches, 7943 adults of 147 species were recorded. The most common of the focal species was the Bell's vireo, the rarest was the vermilion flycatcher, and gilded flickers were absent during all surveys. The following were the population estimates for the focal species in the LCR MSCP planning area in FY08: 1) Arizona Bell's vireo (6800); 2) Sonoran yellow warbler (5100); 3) Gila woodpecker (1700), and 4) summer tanager (1100). The vermilion flycatcher and gilded flicker, were too rare (or absent, in the latter case) to be subject to detection ratio calculations. A draft report was written for the 2008 system wide riparian surveys.

Twenty-one survey sites and 45 single call stations in suitable habitat in the LCR MSCP planning area were selected to be surveyed for elf owls in FY08. Suitable habitat was defined as historical locations, incidental sightings and HM III, CW I and CW II habitat. Surveys were conducted from March 27 to May 1 and used a tape-playback presence-absence survey protocol. No elf owls were detected during surveys.

**FY09 Activities:** A software program to automate the calculation of the detection ratios is being developed. Preliminary analysis of the habitat assessment data for the Sonoran yellow warbler and Arizona Bell's vireo will be completed.

Area searches will be conducted during the breeding season of FY09 following the double sampling intensive/rapid area search protocol used in previous years. A new set of rapid area search plots will be randomly chosen using the same stratified random sampling design as in previous years. Two rapid surveys will be conducted per plot, one in May and one in June.

Twenty use and non-use habitat assessments for each of the six focal species will be completed in FY09, this includes those already conducted in FY08. A complete analysis of habitat assessments including multivariate statistical modeling will be conducted.

The great basin bird observatory will write a final 3-year report (FY07, FY08, FY09) for the avian systemwide study and habitat creation project monitoring. Information obtained from these studies will also be used in C24 to refine habitat requirements for riparian obligate covered species.

Elf owl surveys using the same protocol as in FY08 will be conducted at the same 21 sites and 45 single call stations as in FY08. Worktask C36 is testing this protocol to make it more efficient and effective.

**Proposed FY10 Activities:** The existing protocols will be evaluated and a new scope of work will be developed.

**Pertinent Reports:** The study design is available upon request: *Draft Study Plan for Monitoring of Riparian Land birds*. The following reports will be posted on the Web site: *Lower Colorado River Riparian Bird Surveys; Annual Report on the Lower Colorado River Riparian Bird Surveys, 2008; System Monitoring for Riparian Obligate Avian Species (Work Task D6) and Avian Use of Restoration Sites (Work Task F2); and System Wide Surveys of the Elf Owl (Micrathene whitneyi) along the Lower Colorado River, 2008*. The final report "*System monitoring for riparian obligate avian species (work task D6) and avian use of restoration sites (work task F2)-Lower Colorado River Multi-Species Conservation Program* will be posted on the LCR MSCP Web site.