

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

FY10 Estimates	FY10 Actual	Cumulative Accomplishment Through FY10	FY11 Approved Estimate	FY12 Proposed Estimate	FY13 Proposed Estimate	FY14 Proposed Estimate
\$210,000	\$226,354.82	\$988,127.37	\$210,000	\$280,000	\$280,000	\$280,000

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**Start Date:** FY06

**Expected Duration:** FY55

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

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

**Location:** System-wide.

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

**Connections with Other Work Tasks (past and future):** 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 conservation areas (F2) 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. The avian multi-species protocol described below is designed to monitor six LCR MSCP covered species as well as non-covered neo-tropical migratory bird species. The six LCR MSCP covered species are gilded flicker, Gila woodpecker, summer tanager, vermilion flycatcher, Sonoran yellow warbler, and Arizona Bell's vireo.

Single-species surveys for the elf owl are necessary due to the nocturnal nature of this species and its rarity along the LCR. 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 HMIII, CWI, and CWII habitat.

#### **Previous Activities:**

**Multi-species Bird Surveys:** In 2005-06, 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, the monitoring plan shifted to a double sampling technique in 2007. System-wide avian monitoring was conducted during the 2007-2009 breeding seasons utilizing a double sampling rapid/intensive area search protocol. This protocol was utilized to provide density estimates of the six focal species and other common species in the LCR MSCP planning area. The Sonoran yellow warbler and Arizona Bell's vireo were the most abundant species detected. The summer tanager and the Gila woodpecker were detected in moderate numbers. The vermilion flycatcher was detected in low numbers and the gilded flicker was not detected. In 2008 and 2009, system monitoring, post-development monitoring, and habitat suitability modeling were combined into one agreement to more efficiently manage avian monitoring programs.

**Elf Owl 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 2008 and 2009. Suitable habitat was defined as historical locations, incidental sightings, and HMIII, CWI, and CWII habitat. Surveys were conducted from 27 March to 1 May 2008, and used a tape-playback presence-absence survey protocol. One elf owl was detected near Blankenship Bend.

#### **FY10 Accomplishments:**

**Multi-species Bird Surveys:** In 2010, the habitat definitions were changed based on the 2007-2009 data. The final scheme had four habitat types: tall woody, low woody, herbaceous, and not vegetated. In 2010, 80 plots were randomly selected, using the new GIS plots layer. Each rapid area search plot was surveyed twice in 2010; one plot was surveyed between mid-April and mid-May and the other plot was surveyed between mid-May and Mid-June. A random subsample of eight plots was surveyed intensively to determine actual numbers of breeding birds present in each plot. Each intensive area search plot was surveyed eight times between 13 April and 16 June 2010. 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 for 2010. Population estimates from 2010 were compared to population estimates from 2007-2009.

During system-wide rapid area searches in 2010, 166 species were recorded. Of these, 96 species were presumed breeders and 70 were migrants or presumed non-breeders. During system-wide intensive area searches, 218 breeding territories of 32 species were

recorded. The most common of the focal species in 2010 was the Bell's vireo, the rarest was the vermilion flycatcher, and the gilded flicker was absent during all surveys. The population estimates for the number of territories of focal species in the LCR MSCP planning area from 2010 were: 1) Arizona Bell's vireo (4,613), 2) Sonoran yellow warbler (2310), 3) Gila woodpecker (938), 4) summer tanager (259), and 5) vermilion flycatcher (8). The vermilion flycatcher population estimates are skewed due to difficulties in detections of this species. The gilded flicker was not detected in any surveys conducted for the past three years. Population size estimates for covered species were generally higher in 2007-2009 than in 2010. The 2010 estimates may overall be lower based on the smaller sample size of plots occupied by covered species and the lack of access to the Bill Williams River area.

A final three year project report (2008-2010) was submitted including detailed methods and evaluation sampling design. The sampling plan for riparian birds of the lower Colorado River was finalized. A software program (DS) to automate the calculation of the detection ratios was developed. A Sampling Large Landscape Workshop was held to educate others on the double sampling method, and to receive feedback on the survey methods.

**Elf Owl Surveys:** Elf owl surveys in 2010 utilized the same protocol as in 2008 and 2009, and were conducted at the same three sites that were not surveyed in 2008 but surveyed in 2009. No elf owls were detected. An elf owl detectability study was initiated and will continue in FY10 under work C36. This study will evaluate the current protocol to make it more efficient and effective.

#### **Proposed FY11 Activities:**

**Multi-species Bird Surveys:** Area searches will be conducted during the breeding season of 2011 following the double sampling intensive/rapid area search protocol used in previous years. A new set of 80 rapid area search plots will be randomly chosen from the new plots layer using a stratified random sampling design. Two rapid surveys will be conducted per plot during the breeding season. Eight of these plots will be surveyed intensively with each plot being surveyed eight times during the breeding season.

The user's manuals for the GIS tools and the DS program will be finalized. Finishing touches will be put on the trend program, DS program and power program. These programs were specifically developed to be used with the Lower Colorado Riparian Bird sampling design, but can also be used for similar sampling designs.

**Elf Owl Surveys:** A final three-year project (2008-2010) report for elf owl monitoring will be written.

**Proposed FY12 Activities:** System-wide area search surveys for riparian obligate species including the six focal species will continue in 2012. Area searches will be conducted during the breeding season of 2012 following the double sampling intensive/rapid area search protocol used in previous years. These surveys will determine the population estimates and distribution of LCR MSCP species to use to compare to

populations at restoration sites. Area searches will be conducted during the breeding season of 2011 following the double sampling intensive/rapid area search protocol used in previous years. Two rapid surveys will be conducted per plot during the breeding season. Eight of these plots will be surveyed intensively with each plot being surveyed eight times during the breeding season.

**Pertinent Reports:** *Nevada Bird Count: Searches and Spot Mapping, Sampling Plan for Riparian Birds of the Lower Colorado River, and Elf Owl Surveys Along the Lower Colorado River 2009* are posted on the LCR MSCP website.