

## Work Task D5: Monitoring Avian Productivity and Survivorship

FY16 Estimates	FY16 Actual Obligations	Cumulative Expenditures Through FY16	FY17 Approved Estimate	FY18 Proposed Estimate	FY19 Proposed Estimate	FY20 Proposed Estimate
\$250,000	\$234,559.10	\$3,086,331.62	\$250,000	\$250,000	\$250,000	\$250,000

**Contact:** Chris Dodge, (702) 293-8115, [cdodge@usbr.gov](mailto:cdodge@usbr.gov)

**Start Date:** FY05

**Expected Duration:** FY55

**Long-Term Goal:** System monitoring for avian covered species by conducting intensive monitoring of habitat creation sites and sites that typify current conditions along the lower Colorado River (LCR)

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

**Location:** Reach 3, Beal Lake Conservation Area (BLCA), Havasu National Wildlife Refuge, Arizona; and Reach 4, Cibola National Wildlife Refuge Unit #1 Conservation Area (Cibola NWR Unit #1).

**Purpose:** To collect intensive, site-specific data on avian species' demographics, physical condition, species composition and diversity, and site persistence at existing and created habitat sites

**Connections with Other Work Tasks (Past and Future):** Data from this work task are used in conjunction with data collected from the system-wide bird monitoring program (D6) to monitor overall bird use of the LCR. Data collected at Monitoring Avian Productivity and Survivorship (MAPS) banding stations located at habitat creation sites may also be used for post-development monitoring.

**Project Description:** Under this work task, conservation areas and existing habitat sites along the LCR that represent typical avian riparian habitat will be monitored. Banding allows for the collection of detailed information about avian species' use patterns and demographics, and this site-specific data can be used to characterize habitats and monitor habitat use, population trends, and demographics of avian species along the LCR.

Avian populations throughout the United States, Canada, and Mexico are monitored using the MAPS protocol. Long-term population trend data are collected by conducting intensive banding throughout breeding seasons. Data collected are analyzed by the Institute for Bird Populations, and long-term population trends are determined on a regional and continental level, as the larger database has increased statistical power that cannot be economically duplicated at a site-specific level.

The Bureau of Reclamation established a MAPS banding station at the Cibola NWR Unit #1 Nature Trail in 2002 prior to LCR MSCP implementation. In 2005, an additional station was established on the Havasu National Wildlife Refuge, at the New South Dike, and in mixed cottonwood-saltcedar (*Populus fremontii*-*Tamarix ramosissima*) habitats. These sites provided data from different reaches of the LCR and from different habitat types to allow for comparisons among areas more typically found along the LCR and habitat creation sites like the LCR MSCP conservation areas.

The Institute for Bird Populations recommends netting birds at MAPS banding stations a minimum of 5 years to acquire site-specific data. After 5 years, each site will be evaluated and a decision made to continue, discontinue, or move the station to a new location.

**Previous Activities:** MAPS banding along the LCR has been conducted during different seasons since 2000 to provide information on habitat use by birds during the breeding and non-breeding seasons. Color banding target species such as Bell's vireo (*Vireo bellii*), yellow warbler (*Setophaga petechia*), and summer tanager (*Piranga rubra*) was initiated in August 2008 at the banding sites to monitor site persistence during the breeding and winter banding seasons.

**FY16 Accomplishments:** Banding was conducted at the BLCA and Cibola NWR Unit #1 during summer using the MAPS protocol. Banding was conducted once during every 10-day banding period for 5 hours a day, beginning 1/2 hour before sunrise. During the breeding season, there were 202 captures at Cibola NWR Unit #1 and 136 total captures at the BLCA.

Three LCR MSCP listed species were captured and color banded during the MAPS season. There were two Bell's vireo, seven summer tanagers, and four yellow warblers at the BLCA and three yellow warblers at Cibola NWR Unit #1.

Two yellow warblers were recaptured after being initially captured in a previous year at the BLCA. One had been captured and color banded in 2015 and the other in 2013. There were four listed LCR MSCP species that were resighted at MAPS stations. One vermilion flycatcher (*Pyrocephalus rubinus*) was resighted at Cibola NWR Unit #1 that was captured in 2015. This bird was a female, and photo documentation was taken of this bird on a nest. Three summer tanagers were resighted at the BLCA; the birds were first captured in 2011, 2014, and

2015. One Bell's vireo was resighted at the BLCA that was captured in 2014. Two yellow warblers were resighted at the BLCA that were first captured in 2010 and 2013.

One migrant willow flycatcher (*Empidonax traillii*) was banded at Cibola NWR Unit #1 on May 3, one was heard on May 24, and one was heard on June 4. Yellow-billed cuckoos (*Coccyzus americanus occidentalis*) were heard at Cibola NWR Unit #1 from June 8 through July 28 and at the BLCA on June 16 and June 28. No yellow-billed cuckoos were banded during MAPS sessions or MAPS summer target netting in FY16.

**FY17 Activities:** MAPS banding stations will continue to operate at Cibola NWR Unit #1 and the BLCA during the FY17 breeding season. Color banding of LCR MSCP covered species will continue to be implemented to increase the effective recapture rate. A visual identification of a color-banded bird qualifies as a recapture for statistical purposes. The evaluation will continue in order to identify if the information gathered from the MAPS banding stations is meeting LCR MSCP system-wide and conservation area monitoring needs. If the MAPS stations meet monitoring needs, the sampling intensity (number of stations) will be evaluated.

**Proposed FY18 Activities:** Breeding season monitoring will continue in FY18 based on the recommendations from the project evaluation.

**Pertinent Reports:** The *2016 MAPS Summary Banding Report* will be posted on the LCR MSCP Web site upon completion.