

Work Task F2: Avian Use of Conservation Areas

FY16 Estimate	FY16 Actual Obligations	Cumulative Expenditures Through FY16	FY17 Approved Estimate	FY18 Proposed Estimate	FY19 Proposed Estimate	FY20 Proposed Estimate
\$220,000	\$273,682.73	\$1,921,937.38	\$350,000	\$350,000	\$350,000	\$350,000

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Start Date: FY05

Expected Duration: FY55

Long-Term Goal: Conduct pre- and post-development monitoring for avian species at conservation areas

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

Location: Beal Lake Conservation Area (BLCA), Havasu National Wildlife Refuge, Arizona; Bill Williams Habitat Creditable Acreage, Bill Williams National Wildlife Refuge, Arizona; Planet Ranch, Arizona; Cibola Valley Conservation Area (CVCA), Arizona; the Cibola National Wildlife Refuge Unit #1 Conservation Area (Cibola NWR Unit #1), Cibola National Wildlife Refuge, Arizona; Imperial Ponds Conservation Area, Arizona; Laguna Division Conservation Area (LDCA), Arizona; Yuma East Wetlands, Arizona; Hunters Hole, Arizona; Mohave Valley Conservation Area, California; Parker Dam Camp, California; Palo Verde Ecological Reserve (PVER), California; Palo Verde Ecological Reserve-South, California; Pretty Water Conservation Area (PWCA) California; and Three Fingers Lake, California.

Purpose: To monitor Arizona Bell's vireo (*Vireo bellii arizonae*), elf owl (*Micrathene whitneyi*), Gila woodpecker (*Melanerpes uropygialis*), gilded flicker (*Colaptes chrysoides*), Sonoran yellow warbler (*Dendroica petechia sonorana* = *Setophaga petechia sonorana*), summer tanager (*Piranga rubra*), and vermilion flycatcher (*Pyrocephalus rubinus*) use of conservation areas

Connections with Other Work Tasks (Past and Future): Pre- and post-development avian monitoring will be conducted at conservation areas listed in "Conservation Area Development and Management (Section E)." In addition, information obtained from this work task may be used to provide data for avian system monitoring by using the same protocols established in system monitoring (D6).

Project Description: The creation of riparian habitat will benefit LCR MSCP covered avian species (Arizona Bell's vireos, elf owls, Gila woodpeckers, gilded flickers, Sonoran yellow warblers, summer tanagers, and vermilion flycatchers). Conservation areas will be monitored for bird activity using the double sampling area search method, which involves intensive and rapid area searches. Data gathered will be used to document the presence of covered species at the conservation areas to inform habitat management and the creation of future conservation areas.

Previous Activities: Pre- and post-development monitoring for avian covered species has been conducted at conservation areas since FY05. Avian pre-development monitoring was conducted at the CVCA, Cibola NWR Unit #1, the Imperial Ponds Conservation Area, Hart Mine Marsh, the PVER, the PWCA, the Mohave Valley Conservation Area, and the LDCA. Post-development monitoring for avian covered species was conducted at the BLCA, Cibola NWR Unit #1, the CVCA, the PVER, Yuma East Wetlands, and Hunters Hole. The double sampling rapid and intensive area search survey protocol has been used since 2008 for pre- and post-development monitoring. From FY08 to FY10, all area search plots were surveyed using intensive area search surveys due to the small acreage of habitat in the conservation areas. In FY11 and FY12, all area search plots were surveyed with rapid area search protocols, and a subset of those area search plots was surveyed using intensive area search protocols. In FY13, three additional area search plots were established at Yuma East Wetlands and were surveyed with intensive area search surveys. Beginning in FY14, area search plots were selected with a stratified random approach because existing habitat at the conservation areas exceeded the amount of habitat that could be covered within 80-area search plots. Each year, avian use was evaluated at each conservation area and compared among conservation areas. Sonoran yellow warblers and Arizona Bell's vireos were the covered species that had the largest populations breeding at the conservation areas.

FY16 Accomplishments: Avian post-development monitoring was conducted at existing conservation areas in FY16. The following conservation areas were surveyed: the BLCA, Cibola NWR Unit #1, the CVCA, the PVER, the LDCA, Yuma East Wetlands, and Hunters Hole. Eighty area search plots on the conservation areas were surveyed using the double sampling protocol. Rapid area search surveys were conducted on all area search plots, and intensive area search surveys were conducted on a stratified random subsample of eight of those area search plots.

A total of 155 avian species were detected. LCR MSCP covered bird species and other territorial breeding birds were documented at each conservation area:

- BLCA – Three area search plots were surveyed at this conservation area. There were 103 pairs of territorial breeding birds comprising 18 species detected. These included eight pairs of Sonoran yellow warblers, 15 pairs of Arizona Bell's vireos, and three pairs of summer tanagers.

- Cibola NWR Unit #1 – Eleven area search plots were surveyed at this conservation area. There were 166 pairs of territorial breeding birds comprising 26 species detected. These included one pair of Arizona Bell’s vireos, two pairs of summer tanagers, and one pair of vermilion flycatchers.
- CVCA – Sixteen area search plots were surveyed at this conservation area. There were 214 pairs of territorial breeding birds comprising 20 species detected. These included three pairs of Sonoran yellow warblers and one pair of summer tanagers.
- PVER – Twenty-five area search plots were surveyed at this conservation area. There were 403 pairs of territorial breeding birds comprising 26 species detected. These included six pairs of Sonoran yellow warblers, one pair of Arizona Bell’s vireos, and six pairs of summer tanagers.
- LDCA – Eighteen area search plots were surveyed at this conservation area. There were 302 pairs of territorial birds comprising 27 species detected. These included one pair of Sonoran yellow warblers and one pair of Arizona Bell’s vireos.
- Yuma East Wetlands – Six area search plots were surveyed at this conservation area. There were 188 pairs of territorial breeding birds comprising 25 species detected. These included two pairs of Sonoran yellow warblers and one pair of Gila woodpeckers.
- Hunters Hole – There were 16 pairs of territorial breeding birds comprising 10 species detected. These included one pair of Sonoran yellow warblers.

All conservation areas had numerous pairs of non-territorial breeders as well. Many species of migrants and non-breeders were detected at all conservation areas.

Data and record management activities continued. The FY16 annual report was finalized. A performance work statement was prepared for pre- and post-development monitoring occurring in FY17 and FY18. An evaluation of the monitoring plan for conservation area monitoring (F2) and system-wide monitoring (D6) was initiated to clarify the monitoring questions the data will inform and to improve the accuracy of monitoring methods.

Obligations in FY16 exceeded the approved budget; this project could not share logistical costs with system-wide monitoring (D6) surveys because they were not conducted in FY16.

FY17 Activities: Avian post-development monitoring will be conducted at conservation areas, including the BLCA, Cibola NWR Unit #1, the CVCA, the creditable acreage in the middle portion of the Bill Williams River National Wildlife Refuge, the LDCA, the PVER, the PWCA, Parker Dam Camp, Yuma East Wetlands, and Hunters Hole. Surveys will be conducted using the double sampling method. Eighty area search plots will be selected from all possible plots within the conservation areas using a stratified random approach. All plots will be surveyed with rapid surveys, and a subset of eight area search plots will be selected to be surveyed with intensive surveys using a stratified random approach.

Avian pre-development will be conducted at future conservation areas, including Palo Verde Ecological Reserve-South, Three Fingers Lake, and Planet Ranch. Data and record management activities will continue. Two annual reports will be finalized: one for pre-development monitoring and one for post-development monitoring.

An evaluation of the study design for post-development (F2) and avian monitoring system-wide (D6) will continue. The results of this evaluation will be incorporated into updated protocols, and a 10-year monitoring plan will be developed.

The project budget will increase in FY17, as pre-development surveys will require additional funds.

Proposed FY18 Activities: Avian post-development monitoring for LCR MSCP covered species will be conducted at conservation areas supporting riparian vegetation, including the BLCA, Cibola NWR Unit #1, the CVCA, creditable acreage in the middle portion of the Bill Williams River National Wildlife Refuge, the LDCA, the PVER, the PWCA, Parker Dam Camp, Yuma East Wetlands, and Hunters Hole. Data and record management activities will continue. The annual report will be finalized. The 10-year monitoring plan for conservation area monitoring (F2) and system-wide monitoring (D6) will be completed with updated protocols.

Pertinent Reports: The report titled *Lower Colorado River Riparian Bird Surveys, 2014* is posted on the LCR MSCP Web site.