

## Work Task C24: Avian Species Habitat Requirements

FY15 Estimates	FY15 Actual Obligations	Cumulative Expenditures Through FY15	FY16 Approved Estimate	FY17 Proposed Estimate	FY18 Proposed Estimate	FY19 Proposed Estimate
\$310,000	\$161,927.64	\$1,707,382.89	\$270,000	\$340,000	\$150,000	\$0

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**Start Date:** FY08

**Expected Duration:** FY18

**Long-Term Goal:** Identify covered bird species' habitat characteristics to inform conservation area management

**Conservation Measures:** MRM1 and MRM2 (CLRA, LEBI, BLRA, SWFL, YBCU, ELOW, GIFL, GIWO, VEFL, BEVI, YWAR, and SUTA)

**Location:** Reaches 1–7 from Lake Mead to the Southerly International Boundary with Mexico, Bill Williams River, and other river systems in Arizona

**Purpose:** The purpose of this work task is to evaluate the habitat requirements of covered marsh and riparian bird species, including Arizona Bell's vireo, California black rail, elf owl, Gila woodpecker, gilded flicker, western least bittern, Sonoran yellow warbler, southwestern willow flycatcher, summer tanager, vermilion flycatcher, yellow-billed cuckoo, and Yuma clapper rail. Conservation measures within the Habitat Conservation Plan call for research to better identify habitat requirements (Monitoring and Research Measure 1[MRM1]) and to manage habitat of covered bird species (MRM2). The research under this work task fulfills those goals. Research questions will be focused on habitat elements that can be managed at the habitat conservation areas. Conservation measures to create habitat exist for each of the above species; knowledge of their habitat requirements will assist in habitat creation.

**Connections with Other Work Tasks (Past and Future):** Information gained from this work task will be used to conduct pre- and post-monitoring at conservation areas in Conservation Area Development and Management (Section E) that target covered bird species and system-wide monitoring of avian species (D2, D3 [closed], D5, D6, D7, and F2). Information gained from this work task will be incorporated into Conservation Area Development and Management (Section E) work tasks and adaptive management (G5 [closed]).

**Project Description:** A requirement under the LCR MSCP is the creation of a minimum of 512 acres of marsh habitat for three covered marsh bird species. All 512 marsh acres should provide habitat for the Yuma clapper rail and western least bittern, while 130 acres will provide habitat for the California black rail. The Habitat Conservation Plan requires the creation of a minimum of 5,940 acres of cottonwood-willow habitat and 1,320 acres of honey mesquite habitat for nine covered riparian obligate bird species. Studies will be conducted to evaluate the habitat elements of covered bird species that can be managed at habitat conservation areas: Arizona Bell's vireo, California black rail, elf owl, Gila woodpecker, gilded flicker, Sonoran yellow warbler, summer tanager, vermilion flycatcher, western least bittern, and Yuma clapper rail. Habitat characteristics for the southwestern willow flycatcher (D2), yellow-billed cuckoo (D7) and the gilded flicker (C52) are covered under separate work tasks.

### **Previous Activities:**

**Yellow-billed cuckoo:** A Geographic Information System-based model of yellow-billed cuckoo breeding habitat was developed.

**Arizona Bell's vireo, Gila woodpecker, Sonoran yellow warbler, and summer tanager:** From FY08 to FY10, habitat data were collected and summarized. More detailed habitat characterizations addressing microclimate for the Arizona Bell's vireo, Gila woodpecker, Sonoran yellow warbler, and the summer tanager were conducted from FY11 to FY14. Forty bird territories and 40 sites without territories were monitored for each species to detect vegetation differences where they choose to nest to inform habitat management. The characteristics measured included overstory trees, the shrub and intermediate layer, canopy closure and gaps, total vegetation volume, the herbaceous layer, and microclimate.

**Restoration of managed marsh units to benefit black rail and other marsh birds:** In 2009, vegetation surveys were conducted, water depth data were monitored at wells, and biweekly marsh bird surveys were conducted throughout the breeding season at the Imperial National Wildlife Refuge in Fields 16 and 18. The locations of all black rails, clapper rails, and western least bitterns were mapped in both fields. Black rails were first detected in Fields 16 and 18 in April and July 2009. Yuma clapper rails were consistently detected in Field 16 throughout summer, with a high of 21 birds. In Field 18, clapper rails were also detected in 2009. In 2011, a final report was prepared, giving recommendations on the creation of marshes for both clapper and black rails. Further research on marsh bird habitat requirements will be conducted under Work Tasks C60 and C66.

**Elf owl:** A study was initiated to refine the survey methods for elf owls in dense habitat and estimate the general habitat characteristics of occupied riparian habitat to inform nest box placement and management of habitat conservation areas. A study plan was developed and reviewed.

## **FY15 Accomplishments:**

**Arizona Bell's vireo, Gila woodpecker, Sonoran yellow warbler, and summer tanager:** The FY13 report was published, and the FY14 report was reviewed. An audit of the data from FY11 to FY14 was conducted to verify its completeness and quality.

**Elf owl:** Surveys were conducted to locate elf owls in order to confirm that they use riparian habitat; identify birds that could be used to test the accuracy of the call-playback survey method in dense riparian conditions; and identify nesting territories to inform where we should install nest boxes on conservation areas. No elf owls were located along the lower Colorado River, so surveys were conducted throughout their range in Arizona. In FY15, approximately 550 elf owls were detected, including 113 elf owls detected in riparian areas. A preliminary analysis suggests that elf owls in western Arizona are more likely to be found in riparian areas with greater canopy cover, tree height, and riparian width than in eastern Arizona. Elf owls are also more likely to be found in native riparian habitat than non-native riparian habitat and in riparian habitat adjacent to desert scrub with saguaros than in riparian habitat adjacent to other vegetation types. Mobile electronic field form (MEFF) and database development were initiated, and MEFFs were used during discovery surveys.

The FY15 obligations were less than the approved budget, as intensive radio tracking of elf owls was delayed until FY16 in order to focus efforts on locating owls for the study.

## **FY16 Activities:**

**Elf owl:** Surveys will be conducted at four to six study sites in Arizona where elf owls were documented in riparian habitat during the FY15 breeding season, such as along the Bill Williams, Santa Maria, and Big Sandy Rivers. Fifteen elf owl nests will be located, and rapid habitat assessments will be conducted at the nest and surrounding territory to describe the vegetation community and structure. The data will be used to inform where to install nest boxes on conservation areas. The accuracy of the call-playback survey method will be tested to evaluate how vegetation density affects the accuracy of the survey protocol. The MEFFs and database will be completed, including queries and reports.

The budget increases in FY16 due to the intensity of the field work required to capture and radio track owls.

## **Proposed FY17 Activities:**

**Elf owl:** Surveys will be conducted at four to six study sites in Arizona where elf owls were documented in riparian habitat during the FY15 breeding season, such as along the Bill Williams, Santa Maria, and Big Sandy Rivers. An additional 15 elf owl nests will be located, and rapid habitat assessments will be conducted

at the nest and surrounding territory to describe the vegetation community and structure. The data will be used to inform where to install nest boxes on conservation areas. The survey protocol evaluation will continue.

The budget increases in FY17, as data analysis will begin in addition to field work to capture and radio track owls.

**Pertinent Reports:** The report titled *Lower Colorado River Riparian Bird Surveys 2013 Annual Report* is posted on the LCR MSCP Web site.