

Work Task D7: Yellow-billed Cuckoo Presence/Absence Surveys

FY07 Estimates	FY07 Actual	Cumulative Accomplishment Through FY07	FY08 Approved Estimate	FY09 Proposed Estimate	FY10 Proposed Estimate	FY11 Proposed Estimate
\$500,000	\$450,165	\$904,940	\$500,000	\$540,000	\$550,000	\$550,000

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Start Date: FY06

Expected Duration: FY55

Long-term Goal: Acquire yellow-billed cuckoo data as part of the system monitoring program.

Conservation Measures: AMM1, AMM2, AMM3, AMM6, MRM1, MRM2, and YBCU2.

Location: General presence/absence surveys are conducted in approximately 55 sites of suitable habitat within the LCR MSCP project boundary.

Purpose: Conduct surveys to determine existing YBCU populations along the LCR from the Grand Canyon to the Southerly International Boundary with Mexico and monitor long-term trends.

Connections with Other Work Tasks (past and future): Information obtained from C21 and C22 in FY05 was used to develop the monitoring protocol currently being utilized in D7.

Project Description: Yellow-billed cuckoo utilize mature cottonwood-willow habitat and may act as an umbrella species for other covered avian species that use these mature habitats. Existing YBCU populations and habitat are being determined along the LCR as systematic surveys are conducted over the project area. This work task assesses existing YBCU populations and evaluates required habitat characteristics. Data collected on vegetation characteristics of occupied sites enables Reclamation to design habitat creation sites for YBCU and recommend future demographic studies necessary to understand more about the YBCU populations along the LCR.

Previous Activities: This project was a new start for FY06. Surveys were conducted at 55 sites within 17 areas. Biologists recorded 180 YBCU detections during the 2006 breeding season. Five breeding events were confirmed.

FY07 Accomplishments: Yellow-billed cuckoo surveys were conducted at 40 sites, within 14 geographic areas, between June 11 and September 9, 2007. In 2007, field biologists conducted 169 visits and recorded 163 YBCU detections. Cuckoos were detected at 25 of the 40 sites. The majority of detections (139) were at the Bill Williams River NWR. There were no detections at

the Grand Canyon National Park/Lake Mead NRA sites in 2007, compared to 29 detections in 2006 (Table 1).

Table 1. Yellow-billed Cuckoo Detections, 2006 and 2007

Geographic Area	2006	2007
Pahrnagat NWR	1	0
Overton WMA	7	0
Grand Canyon/LMNRA	29	0
Havasu NWR	1	3
Bill Williams River NWR	123	139
'Ahakhav Tribal Preserve	N/S	2
Cibola NWR	3	7
Picacho SRA	1	0
Imperial NWR	3	3
Mittry Lake WMA	0	0
Gila/Colorado River	9	2
Yuma West Wetlands	0	0
Limitrophe Division	6	2
Quigley Pond WMA	1	5

In 2007, all seven confirmed breeding sites were located on the Bill Williams River NWR. These observations included nesting observations, fledgling sightings, nest-building activities, food carrying, and copulations.

Methods for vegetation data collection were refined in 2007 to more accurately represent the general vegetation characteristics of YBCU habitat and at the nest location. In general, habitat occupied by YBCU had higher canopies, denser cover in the upper canopy layers, and sparse shrub layers compared to unoccupied sites. The upper canopy was typically dominated by native tree species in both occupied and unoccupied habitats, while the sub-canopy was either saltcedar or Goodding's willow. A distinct shrub/sapling layer was rare at occupied sites, but if present, it was typically native arrowweed or seep-willow. The dominant shrub layer within unoccupied sites was saltcedar.

Microclimate variables (temperature, relative humidity, soil moisture) were measured at occupied and unoccupied sites in both 2006 and 2007. Based largely on data from the Bill Williams River NWR for occupied sites (67%) and Grand Canyon NP/Lake Mead NRA (50%), results indicate that occupied sites are cooler during the day and more humid day and night than unoccupied sites across the entire study area. Diurnal temperatures at the Bill Williams River NWR averaged 88.9-92.5°F and minimum relative humidity was 45% and 56% for diurnal and nocturnal periods, respectively. Diurnal temperatures in occupied habitats at Havasu NWR, Cibola NWR and the Yuma Restoration Sites ranged from 98.6 to 107.6°F, and minimum diurnal humidity ranged from 25 to 38%. No apparent relationship was found between soil moisture and cuckoo occupancy. There was also no relationship detected between mean canopy cover and mean diurnal temperature or mean soil moisture. These results are based on only 2 years of data and more information is needed to make any firm conclusions about microclimate and use of habitat by cuckoos.

FY08 Activities: Activities in 2008 will include, but are not limited to, presence/absence surveys, vegetation monitoring, and microclimate data collection for the LCR in general and at habitat creation sites. Reclamation will award a new 5-year contract for YBCU surveys and life history studies for FY08-12.

Proposed FY09 Activities: Activities in 2009 will include, but are not limited to, presence/absence surveys, habitat data collection such as vegetation measurements, and micro-habitat analysis for areas along the LCR and at habitat creation projects targeting YBCU. Survey effort, protocols, and studies will be modified following FY08 evaluation.

Pertinent Reports: *Yellow-billed Cuckoo Distribution, Abundance, and Habitat Use along the Lower Colorado and Gila Rivers — 2007 Annual Report*, will be posted to the LCR MSCP Web site.