

Work Task C66: Marsh Bird Water Depth Analysis

FY16 Estimates	FY16 Actual Obligations	Cumulative Expenditures Through FY16	FY17 Approved Estimate	FY18 Proposed Estimate	FY19 Proposed Estimate	FY20 Proposed Estimate
\$100,000	\$83,717.80	\$83,717.80	\$100,000	\$20,000	\$0	\$0

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Start Date: FY16

Expected Duration: FY18

Long-Term Goal: Define marsh water depth requirements for covered marsh birds

Conservation Measures: MRM1 and MRM2 (BLRA, CLRA, and LEBI)

Location: LCR MSCP project area

Purpose: To identify the range of acceptable water depths in California black rail (*Laterallus jamaicensis coturniculus*), western least bittern (*Ixobrychus exilis hesperis*), and Yuma clapper rail (*Rallus longirostris yumanensis* [also known as Yuma Ridgway's rail = *R. obsoletus yumanensis*]) breeding sites and ranges of acceptable daily, monthly, and annual variability

Connections with Other Work Tasks (Past and Future): Marsh bird habitat was studied previously under Work Task C24. The first year of funding was provided through Work Task G3.

Project Description: The Habitat Conservation Plan requires the creation of a minimum of 512 acres of marsh habitat for three LCR MSCP covered marsh bird species. All 512 marsh acres should have water depths no greater than 12 inches to provide habitat for Yuma clapper rails and western least bitterns, while 130 acres of marsh is required with water depths no greater than 1 inch to provide habitat for California black rails.

Water depths in California black rail and Yuma clapper rail existing breeding sites along the lower Colorado River will be evaluated. Data will be analyzed to identify the range of water depths in California black rail and Yuma clapper rail breeding sites throughout the breeding season and to identify the ranges of daily, monthly, and annual variability that can occur and still have successful breeding.

Previous Activities: This is a new start in FY16.

FY16 Accomplishments: Yuma clapper rail breeding data from 52 monitoring points and existing daily river gauge data collected from FY06–14 in Topock Gorge and Topock Marsh were compiled and analyzed. Detections of Yuma clapper rails at each monitoring point during the three surveys conducted each year (known occupancy) were compared to the range of water depth fluctuation occurring during that monitoring period to determine whether presence of Yuma clapper rails was influenced by water level fluctuations in each survey period. The data were analyzed using occupancy modeling techniques in Program Presence (Version 9.0). Models were compared using Akaike’s information criterion. The results did not support the hypothesis that the per-period levels of water fluctuation as recorded in Topock Gorge affect the presence of Yuma clapper rails, and nesting occurred each year with greater than 12-inch fluctuations in water depth. There is very strong evidence that detectability of Yuma clapper rails varies by year and survey period.

FY17 Activities: Existing water depth measurements and California black rail breeding data will be compiled and analyzed. Detections of California black rails at each monitoring point during the three surveys conducted each year (known occupancy) will be compared to the range of water depth fluctuations occurring during that monitoring period. Occupancy modeling will be conducted to evaluate the relationship between the probability of the monitoring points being occupied by California black rails during the breeding season and fluctuations in water depth.

Proposed FY18 Activities: The *Marsh Bird Water Depth Analysis Final Report* will be finalized.

This work task will be closed in FY18.

Pertinent Reports: The *Marsh Bird Water Depth Analysis 2016 Progress Report* will be posted on the LCR MSCP Web site upon completion.