

Work Task C37: Hydrology Studies for Avian Riparian Obligate Species

FY08 Estimates	FY08 Actual	Cumulative Accomplishment Through FY08	FY09 Approved Estimate	FY10 Proposed Estimate	FY11 Proposed Estimate	FY12 Proposed Estimate
\$0	\$0	\$0	\$0	\$150,000	\$250,000	\$250,000

Contact: Theresa Olson, (702) 293-8127, tolson@usbr.gov

Start Date: FY10

Expected Duration: FY15

Long-term Goal: Species Research

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

Location: Southwestern willow flycatcher and yellow-billed cuckoo breeding sites and LCR MSCP habitat creation sites.

Purpose: To determine hydrologic conditions such as soil moisture, depth to ground water, and amount of standing water needed underneath habitat for the willow flycatcher and yellow-billed cuckoos in order to duplicate conditions at habitat creation sites.

Connections with Other Work Tasks (past and future): Breeding habitat for willow flycatchers is being determined through studies completed under D2 and breeding habitat for yellow-billed cuckoos is being determined through studies completed under D7. Habitat parameters for other obligate riparian species, such as summer tanagers, yellow warblers, and Bell's vireos that may benefit from these type of studies are being addressed under Work Task D6. Contracting began under G3 in 2009.

Project Description: Based on information gathered during surveys for southwestern willow flycatchers on the LCR since 1997, it has been noted that within the dense, moist riparian habitats where flycatchers are found, several other LCR MSCP covered species are also commonly encountered. These species include yellow-billed cuckoos, summer tanagers, vermilion flycatchers, yellow warblers, gilded flicker, and Gila woodpecker. Some soil moisture and/or standing water may be an important feature of optimal riparian habitat, but the exact role this water has in habitat use is not known. It may increase vegetation health, which may be related to insect abundance, or it may increase humidity and lower temperatures. It is also not known how long moisture needs to be present or how large an area needs to be kept in this state during the breeding season.

Although much has been determined regarding site conditions needed for breeding southwestern willow flycatchers (flycatchers) and yellow-billed cuckoos (cuckoos), quantification of how much moist soil or standing water within breeding locations, and how to maintain needed hydrological conditions is still undetermined. This study will review hydrological studies that have been completed already within other river systems that have nesting flycatchers and cuckoos. Monitoring will also begin on hydrologic conditions such as ground water, soil moisture and standing water under known breeding flycatcher and cuckoos sites along the Virgin and lower Colorado River systems in order to quantify them.

Previous Activities: This is a new start in FY10

FY09 Activities: None, this is a new start in FY10. See G3 for FY09 activities.

Proposed FY10 Activities: Research will be conducted to determine methods and results of previous hydrology studies at flycatcher and cuckoo sites in the Southwest. An intensively monitored habitat-based hydrological/microhabitat study will be designed to collect data at at known breeding flycatcher and cuckoo locations along the Virgin and lower Colorado rivers. Variables to be monitored may include but are not limited to ground water depth, soil type, soil microbes, standing water, soil moisture, soil moisture capacity across types, humidity, and temperature. Soil and microhabitat response to different irrigation regimes on restoration sites across different soil types will be monitored and compared to conditions found in existing habitats where flycatcher and cuckoo breeding are recorded. Once a sufficient amount of data has been collected on results of irrigation, it can be correlated with existing habitat parameters and restored habitat.

Pertinent Reports: None.