

Work Task D2: Southwestern Willow Flycatcher Presence/Absence Surveys

FY10 Estimates	FY10 Actual	Cumulative Accomplishment Through FY10	FY11 Approved Estimate	FY12 Proposed Estimate	FY13 Proposed Estimate	FY14 Proposed Estimate
\$650,000	\$152,316.08	\$4,597,478.56	\$675,000	\$675,000	\$675,000	\$675,000

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Start Date: FY05

Expected Duration: FY55

Long-term Goal: System monitoring for southwestern willow flycatcher.

Conservation Measures: MRM1, MRM2, MRM4 (WIFL).

Location: Reaches 1-7 along the LCR, the Virgin River between the Virgin River Gorge and Lake Mead, NPS lands in the Grand Canyon below Separation Canyon, and Pahrnagat NWR. Life history study sites are located at 1) Pahrnagat NWR in east-central Nevada, 2) along the Virgin River at Mesquite, Nevada, 3) along the Virgin River, near Mormon Mesa, Nevada, and 4) Topock Marsh, Havasu NWR, Arizona.

Connections with Other Work Tasks (past and future): Information gathered under this work task, and D3 provide data on SWFL population numbers and demographics along the LCR.

Project Description: Presence/absence surveys are conducted along the LCR from the Southerly International Boundary with Mexico (SIB) to Separation Canyon in the Grand Canyon (excluding Hualapai tribal lands), including the lower Virgin River, lower Bill Williams River, and lower Gila River. Life history and cowbird control studies are conducted at four known breeding areas.

Previous Activities: Presence/absence surveys and life history studies for SWFL have been conducted along the LCR since 1996.

FY10 Accomplishments: Contract costs were obligated in FY09 for the FY10 study. Presence/absence surveys were conducted at 74 sites in 15 study areas along the LCR and its tributaries in 2010. Life history studies were conducted at the following sites: Pahrnagat NWR, Nevada; Mesquite, Nevada; Mormon Mesa, Nevada; Muddy River, Nevada; Littlefield, Arizona; Topock Marsh, Arizona; and Bill Williams NWR, Arizona. Sites were not surveyed in the Grand Canyon in 2010 due to low water and inaccessibility. Surveys in the Grand Canyon will be discontinued until water levels rise to a point where access is once again possible.

Studies included banding, nest monitoring, extensive vegetation analysis, and microclimate analysis. Brown-headed cowbird trapping studies were discontinued after 2007, but information from life history studies were utilized to determine effectiveness of post-trapping.

Willow flycatchers were detected on at least one occasion at 44 sites. Breeding SWFLs were detected at 16 sites within the following six study areas: Pahrnagat NWR, Littlefield, Mesquite, Mormon Mesa, Muddy River, Topock Marsh, and Bill Williams River NWR. No flycatcher detections were recorded at any sites south of Bill Williams River NWR after June 16, 2010, and no breeding was confirmed south of Bill Williams River NWR.

During the summer of 2009, the breeding population of flycatchers at Topock Marsh severely declined from a high of 59 birds in 2004 to only one nesting pair, and one successful nest. In 2010 breeding population numbers were also low with two nesting pairs and one successful nest. A study and demonstration is being conducted to monitor the hydrology closely within the stand and to place additional water in a portion of the stand to determine the effects this would have to increasing nesting pairs and potentially successful nests. This was originally scheduled to take place in 2010 but has been postponed until 2011. Pre-monitoring for this study was conducted in 2009 and 2010. Pumping costs associated with this study are being covered under G3.

A total of 21 adult flycatchers were captured in 2010 at the four life history study areas and at Muddy River, and Bill Williams River NWR. An additional 49 adults banded in previous years were resighted. A total of 52 nestlings from 22 nests were banded. Flycatchers were banded opportunistically at St. George. Three new adults and five nestlings were color banded from two nests at St. George. A total of 64 territories were recorded with 39 territories consisting of paired flycatchers and 25 consisting of unpaired individuals. Of the 75 adult flycatchers identified to individuals in 2009, 38 (49%) were located in 2010; 5 (13%) were detected at a different study area from where they were last detected in 2009. Of the 40 banded juveniles from 2009, 8 (20%) were recaptured and identified in 2010. Thirteen individuals originally banded as nestlings in previous years were identified for the first time in 2010.

Nest success was calculated for 60 SWFL nests. Twenty-six (43%) nests were successful and fledged young. Depredation was the major cause of nest failure, accounting for 45% of all failed nests and 59% of nests that failed after flycatcher eggs were laid. Brown-headed cowbird brood parasitism was observed in 12 of 56 nests (21%). One flycatcher nest at Pahrnagat was brood parasitized and subsequently abandoned by the flycatchers; this is the first recorded instance of brood parasitism at Pahrnagat since a 5-year cowbird trapping program was implemented in 2003.

Vegetation and microhabitat data were collected from the territories of the 14 territorial male flycatchers at Mesquite and Bill Williams. Four habitat types were delineated at these sites: 1) coyote willow, 2) tamarisk with coyote willow, 3) Goodding's willow with tamarisk understory, and 4) cottonwood-willow.

FY11 Activities: Presence/absence SWFL surveys will be conducted at approximately 70-90 sites, in 16 study areas, along the Virgin River, Pahranaagat NWR, and the LCR to the Southerly International Boundary. Key Pitman was added and funded by NDOW. Grand Canyon below Separation Canyon will not be surveyed in 2011 due to low water levels and access problems.

Life history studies are being conducted at Pahranaagat NWR, Mesquite, Mormon Mesa, and Topock Marsh. Studies include banding, nest monitoring, vegetation analysis, and microclimate analysis. The brown-headed cowbird trapping study was completed in 2007, but post-trapping data will continue to be collected.

The study and demonstration adding additional water to a subset of sites at Topock Marsh is continuing with the actual demonstration of adding the water to the sites and continuing to monitor the hydrology, presence of breeding pairs, and nest success.

A study on the effects of salt cedar beetles on nesting willow flycatcher habitat in the areas of St. George, Utah and Mormon Mesa, Nevada will continue. This is a cooperative study between the Utah Department of Natural Resources, USGS, Reclamation, and the LCR MSCP. The salt cedar beetle was present in 2010 defoliating plants in the St. George area and is moving south into Nevada. The defoliation caused by the beetle could have detrimental effects to willow flycatcher nesting success in areas where salt cedar is used as nesting habitat. The study will be used to evaluate the possible impact further southward expansion of the beetle may have on willow flycatcher populations along the LCR.

Proposed FY12 Activities: Presence/absence SWFL surveys along the Virgin River, Pahranaagat NWR, and the LCR to the SIB will continue. Grand Canyon below Separation Canyon will be reviewed from the air to determine habitat status. If the habitat has improved and there is access, this area will once again be surveyed.

Life history data will continue to be collected at four sites, including Pahranaagat NWR, Mesquite, Mormon Mesa, and Topock Marsh. Monitoring activities will concentrate on collecting demographic data including banding and nest monitoring, and habitat data including vegetation and microclimate, but at a reduced level from previous efforts. Existing brown-headed cowbird control has been discontinued and post-trap data will be collected and analyzed to determine trapping frequency.

Pertinent Reports: *Southwestern Willow Flycatcher Surveys, Demography, and Ecology along the LCR and Tributaries, 2010* will be posted on the LCR MSCP website.