

Work Task E4: Palo Verde Ecological Reserve

FY16 Estimate	FY16 Actual Obligations	Cumulative Expenditures Through FY16	FY17 Approved Estimate	FY18 Proposed Estimate	FY19 Proposed Estimate	FY20 Proposed Estimate
\$500,000	\$449,393.91	\$9,745,551.58	\$600,000	\$600,000	\$500,000	\$500,000

Contact: Andrea Finnegan, (702) 293-8203, afinnegan@usbr.gov

Start Date: FY05

Expected Duration: FY55

Long-Term Goal: Habitat creation

Conservation Measures: BEVI1, ELOW1, GIFL1, GIWO1, MNSW2, SUTA1, VEFL1, WIFL1, WRBA2, WYBA3, YBCU1, and YWAR1

Location: Reach 4, River Miles 129–133, California

Purpose: To create and manage a mosaic of native land cover types for LCR MSCP covered species

Connections with Other Work Tasks (Past and Future): Vegetation and species monitoring are being addressed under Section C and Section F work tasks.

Project Description: The Palo Verde Ecological Reserve (PVER) encompasses more than 1,300 acres. This property has been made available for LCR MSCP habitat restoration activities by the California Department of Fish and Wildlife. Development of the project is intended to satisfy both the LCR MSCP Habitat Conservation Plan requirements and California Endangered Species Act Incidental Take Permit No. 2081-2005-008-06.

The eastern boundary of the property (more than 4 miles) is adjacent to the Colorado River; the western boundary is adjacent to active agricultural fields. The PVER has an extensive infrastructure consisting of miles of lined irrigation ditches, roads, and a pump. Each year, a portion of the active crop acreage was taken out of production to develop the next phase of native habitat. The intent was to create as much riparian habitat as practical. Generally, all phases at the PVER are targeted for southwestern willow flycatchers (*Empidonax traillii extimus*), yellow-billed cuckoos (*Coccyzus americanus occidentalis*), and other covered species. The final phase was planted in FY13. The Palo Verde Irrigation District (PVID) provides water to the PVER. Since the California Department of

Fish and Wildlife manages a portion of the PVER for their purposes, the costs associated with irrigation, electricity, and water is proportional to the amount of acreage that has been converted to habitat.

Riparian planting has resulted in the establishment of 945 acres of cottonwood-willow (*Populus fremontii-Salix gooddingii*) and 78 acres of honey mesquite (*Prosopis glandulosa*), which are both managed for LCR MSCP covered species.

Annual Maintenance and Management: A local farmer diverts and irrigates the various phases based on site conditions and species planted. This provides local knowledge of weather and farming practices, which are applied to the management of the conservation area. The farmer and his employees are an onsite presence and provide early recognition of issues or concerns. The farmer is also responsible for assessing the water needs of the trees and, in coordination with the PVID and the LCR MSCP, orders and delivers the water. Removal of vegetation along the roadside and ditches is typically performed quarterly to reduce the potential of wildfires in conjunction with maintenance of the irrigation canals, gates, and roads.

The annual costs associated with operating the PVER within the PVID, such as water taxes, water tolls, electrical power utility bills, and assessments for district operation, are included in the annual maintenance costs.

Riparian Fields: Water is ordered through and provided by the PVID. At the PVER, two pump platforms deliver water to individual phases through J and K Canals. Checks, which are small borders placed within a given field, allow for flooding of only a portion of a field and provide additional flexibility to create and maintain standing water or saturated soil areas for covered species. Irrigation occurs throughout the year and is expected throughout the life of the LCR MSCP.

Previous Activities: Over 1.8 million native trees and shrubs have been established on 1,023 acres at the PVER. Native trees have been irrigated and managed since 2006. The replacement of an existing pump with two 30-cubic-foot-per-second electric irrigation pumps, installation of delivery pipes and a pump stand, and an electrical upgrade were completed in January 2015

FY16 Accomplishments:

Maintenance/Restoration/Management: The PVER is fully developed and has transitioned from development into maintenance and monitoring. Annual management and maintenance was conducted through the year as described above.

Monitoring: Monitoring was conducted at the PVER for vegetation, birds, bats, small mammals, and MacNeill's sootywing skippers (*Pholisora graciellae* = *Hesperopsis graciellae* [MacNeill]).

Vegetation data were collected in FY16 using light detection and ranging (LiDAR) remote sensing techniques.

Riparian bird surveys were conducted at the PVER from April 15 to June 15, 2016, using the LCR MSCP double sampling protocol. Sonoran yellow warblers (*Dendroica petechia sonorana* = *Setophaga petechia sonorana*), summer tanagers (*Piranga rubra*), and Arizona Bell's vireos (*Vireo bellii arizonae*) were detected breeding at the site. Southwestern willow flycatcher surveys were conducted, and a resident southwestern willow flycatcher was detected in Phase 2 between June 5 and June 14, but there was no evidence of breeding. Yellow-billed cuckoo surveys were conducted between late June and early August. Yellow-billed cuckoos were detected in Phases 1–7, and nesting was confirmed in Phases 4–7.

The PVER was mist netted for bats once per month in June, July, and August. Western red bats (*Lasiurus blossevilli*), western yellow bats (*Lasiurus xanthinus*), and California leaf-nosed bats (*Macrotus californicus*) were captured. In conjunction with the bat capture surveys, the two established long-term acoustic bat stations were used to help detect LCR MSCP bat species. These data are still being analyzed.

Small mammal trapping was conducted in fall and spring. Colorado River cotton rats (*Sigmodon arizonae plenus*) were captured.

Surveys were conducted for MacNeill's sootywing skippers in FY16. Individuals were detected in March in Phases 1, 4, and 6.

FY17 Activities:

Maintenance/Restoration/Management: Annual management and maintenance of the created habitat is ongoing.

The methods used to report irrigation quantities at the PVER did not provide an accurate representation of water usage. The PVID will be providing water order data monthly to the LCR MSCP; using these data will increase the accuracy of water usage at each phase of the site.

Irrigation at the PVER was discontinued from November 2016 through January 2017 because the trees were dormant and irrigation was not needed for salinity management. This change brings the PVER in line with other conservation areas, as the PVER was the only conservation area that received irrigation during winter months. In addition to this winter outage, all checks planted with honey mesquite will no longer receive irrigation, as their roots have reached groundwater, unless future conditions dictate watering should be resumed. The exception is the honey mesquite habitat in Phase 8 where volunteer

cottonwoods have become established. An irrigation management study plan will be developed to determine how cottonwood health and productivity will be affected by a decrease in applied water with an eventual cessation of all irrigation.

Monitoring: Vegetation data will be collected using LiDAR remote sensing techniques. General bird surveys will be conducted from mid-April to mid-June. Single species surveys for southwestern willow flycatchers and yellow-billed cuckoos will be conducted during their respective breeding seasons. Bat capture surveys and acoustic monitoring will be conducted during summer. Small mammal monitoring will be conducted in fall and spring.

Proposed FY18 Activities:

Maintenance/Restoration/Management: Irrigation and management of the PVER will continue on the same schedule until data become available that indicate adjustments are needed. The LCR MSCP will implement the irrigation management study plan.

Monitoring: Information from LiDAR vegetation data collected during FY14–17 will be used to determine the schedule for vegetation monitoring data collection for FY18 and beyond. General bird surveys will be conducted from mid-April to mid-June. Single species surveys for southwestern willow flycatchers and yellow-billed cuckoos will be conducted during their respective breeding seasons. Bat monitoring will be conducted during summer. Small mammal monitoring will be conducted in fall and spring.

Pertinent Reports: The *2016 Palo Verde Ecological Reserve Annual Report* will be posted on the LCR MSCP Web site upon completion.