

## Work Task E4: Palo Verde Ecological Reserve

FY13 Estimate	FY13 Actual Obligations	Cumulative Expenditures Through FY13	FY14 Approved Estimate	FY15 Proposed Estimate	FY16 Proposed Estimate	FY17 Proposed Estimate
\$990,000	\$620,712.27	\$8,110,914.62	\$725,000	\$500,000	\$500,000	\$500,000

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**Start Date:** FY05

**Expected Duration:** FY55

**Long-term Goal:** Habitat creation.

**Conservation Measures:** WIFL1, WRBA2, WYBA3, YBCU1, ELOW1, GIFL1, GIWO1, VEFL1, BEV11, YWAR1, SUTA1, MNSW2, CLMB2, PTBB2.

**Location:** Reach 4, CDFW, river miles 129-133, California.

**Purpose:** Create and manage a mosaic of native land cover types for LCR MSCP covered species.

**Connections with Other Work Tasks (past and future):** Vegetation is being addressed under F1-F4, Wildlife under D2, D6, D7, D9, D10, and insect populations are being evaluated under C5 and C6.

**Project Description:** The Palo Verde Ecological Reserve (PVER) encompasses more than 1,300 acres. This property (formerly known as the Travis Ranch) has been made available to the LCR MSCP for habitat restoration activities by CDFW. Development of the project is intended to satisfy both the LCR MSCP and a portion of the California Endangered Species Act (CESA) 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 PVER are targeted for SWFL, YBCU, and other covered species. The final phase was planted in FY13. Palo Verde Irrigation District provides water to PVER. The costs associated with irrigation, electricity, and water is proportional to the amount of acreage that has been converted to habitat.

It is our intent to create a mosaic of habitats that contain areas of riparian species (including mesquite), and ground covers or open areas. Ground cover is an effective method of controlling non-native species and provides another layer of vegetation for habitat. Ground covers are planted with transplants or by seed; costs vary with the

methods of planting used. Mesquite trees are generally planted by a tree planter or auger. Typically, mesquite costs are based on a 1-gallon planted tree.

Agricultural areas have irrigation systems in place that are conducive for water management of riparian species. Checks, which are small borders placed within a given field, allow for flooding of only a portion of a field. This provides additional flexibility to create and maintain standing water or saturated soil areas for covered species.

**Previous Activities:** Through FY12, almost 1,000 acres of cottonwood-willow and mesquite land cover types have been established in phases 1-7 and are being managed for the LCR MSCP covered species.

**FY13 Accomplishments:**

**Maintenance/Restoration/Management.** At PVER, 38 acres of honey mesquite, along with alkali sacaton plants were planted in Phase 8. Checks 1-5 were hand planted with 4,563 honey mesquite trees and 154,000 plants of alkali sacaton were planting using the mass transplanting technique. All checks were planted within a 4-day period, and planted according to the design (*Palo Verde Ecological Reserve: Restoration Development Plan Phase 8, 2012*). This completes the scheduled planting phases for PVER. Approximately 1,023 acres of cottonwood-willow and honey mesquite have been developed.

*The Palo Verde Ecological Reserve Development & Monitoring Plan: Phase 8* document was reviewed and approved by CDFW.

Two electric 30 (cfs) cubic feet per second pumps and material (pipe, steel, etc.) for the pump stand and connection pipe were purchased in 2012. The existing pump failed in January, at that time one of the new pumps was installed on the existing pump stand location. The second pump and a new pump stand will be installed for redundancy at heading J02 during the Palo Verde Irrigation shut down. Expenditures were less than anticipated due to the delay in pump installation and minor maintenance was deferred to transfer funding to the Laguna Division Conservation Area.

**Monitoring.** Vegetation monitoring for FY13 was conducted between September and December 2013. Plots were surveyed at full intensity at the following sites: PVER1 (8 plots), PVER2 (17 plots), PVER3 (22 plots), PVER4 (20 plots), and PVER5 (28 plots). The remaining sites were monitored at a reduced effort including PVER6 (40 plots), PVER7 (40 plots), and PVER 8 (6 plots).

MacNeill's sootywing were surveyed in June, July, August and September 2013. A total of 98 sootywing detections were documented using habitat in PVER 4, 5, and 6.

Cotton rats were surveyed on March 28 and November 2013 at PVER 4, 5, and 6, with 60 traps placed in each phase. In PVER 4, surveys were conducted in the mesquite areas with *Atriplex* shrubs comprising the under-story and Bermuda grass the groundcover. At PVER 5 and 6, mesquite areas with sacaton and Bermuda grass comprising the ground cover were surveyed. Two Colorado River cotton rats were captured in PVER 4 and two

in Phase 5 in the spring. In the fall, two Colorado River cotton rats were captured in PVER6.

In March 2013, a second AnaBat™ acoustic station was installed in Phase 7 for long-term monitoring. Three LCR MSCP species were captured at PVER: western yellow bat, western red bat and California leaf-nosed bat.

General bird surveys detected 265 pairs of birds breeding within the habitat at PVER. Covered species included the following: 1 summer tanager pair and two yellow warbler pairs breeding in Phase 4; yellow warblers present in Phases 1-5, and summer tanagers present in Phases 1 and 6, but neither species was confirmed breeding.

Yellow billed cuckoos were surveyed 5 times throughout the breeding season using taped-playback recordings. Based on the timing, location, persistence, and behavior of all cuckoos detected at PVER, a minimum of 13 and a maximum of 34 territories were established during the 2013 breeding season. Thirteen nests were found; all but one fledged at least one young. This included a nest found in a Phase 7 (planted in 2012) in a cottonwood already over 20ft in height.

Surveys for SWFL were conducted five times in phases 2 and 3. No breeding or resident SWFL were detected, but migrants were detected in May and June. Willow flycatchers were also surveyed according to a five visit protocol. All willow flycatchers at PVER were detected too early in the season to be breeding birds and were therefore categorized as migrants.

#### **FY14 Activities:**

**Maintenance/Restoration/Management.** The contract farmer will continue to manage the irrigation cycles and water orders through PVID. Maintenance of the irrigation canals, gates and roads will continue. Removal of vegetation along the roadside and ditches will be performed quarterly or as needed.

The (30 cfs) electric fixed irrigation pumps, delivery pipes, electrical upgrade, and pump stand is expected to be installed in 2014. Irrigation will continue on the same schedule until data become available that indicate adjustments are needed.

Since development will now be complete, the management plan for the entire Conservation Area will be drafted in 2014.

**Monitoring.** Vegetation monitoring for FY14 will be conducted starting in September 2014.

Southwestern willow flycatchers and yellow-billed cuckoos will be surveyed in appropriate habitat. All other monitoring conducted in FY13 will be continued in FY14.

## **Proposed FY15 Activities:**

**Maintenance/Restoration/Management.** With the final planting of Phase 8 in 2013, the entire Conservation Area is now fully developed and is transitioning from the development stage and into the maintenance and monitoring stage. Water for irrigation of the trees and to simulate historical river flooding is provided by Palo Verde Irrigation District. A local farmer is utilized to divert and irrigate the various phases based on site conditions and species planted. The farmer provides local knowledge of weather and farming practices, which are applied to the maintenance of the Conservation Area. The farmer and his employees are an on-site 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 district and the LCR MSCP, orders and delivers the water. Maintenance activities include grading access roads, maintaining field borders, irrigation canals, invasive plant control including hand removal and application of herbicides, and physically opening and closing irrigation gates for over 1,000 acres of established land cover types. Annual costs associated with operating within the district, such as water tax, water tolls, electrical power utility bills, and assessments for district operation are included in the annual maintenance costs.

**Monitoring.** Vegetation and species monitoring will continue.

**Pertinent Reports:** *The Palo Verde Ecological Reserve Restoration Development and Monitoring Plan: Phase 8*, which described the restoration activities planned for FY13, is posted on the LCR MSCP website. The *2012 Palo Verde Ecological Reserve Annual Report*, which summarizes any planting conducted, site management, results of monitoring, and any recommendations for future adaptive management will be posted after integration of data collected throughout the calendar year.