

Work Task E5: Cibola Valley Conservation Area

FY10 Estimates	FY10 Actual	Cumulative Accomplishment Through FY10	FY11 Approved Estimate	FY12 Proposed Estimate	FY13 Proposed Estimate	FY14 Proposed Estimate
\$900,000	\$770,765.54	\$9,980,630.20	\$1,100,000	\$650,000	\$650,000	\$700,000

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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, BEVI1, YWAR1, SUTA1, MNSW2, CLMB2, PTBB2.

Location: Reach 4, AGFD, river miles 99-104, Arizona.

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 and species monitoring are being addressed under F1-F4, and F6. Insect populations may be investigated as described in C5.

Project Description: In 2007, Reclamation secured 1,309 acres of land serviced by the Cibola Valley Irrigation and Drainage District and established the Cibola Valley Conservation Area (CVCA). The Arizona Game and Fish Department (AGFD) acquired the CVCA in September 2007 through a multi-organizational agreement involving the AGFD, Reclamation, the Mohave County Water Authority, The Conservation Fund, and the Hopi Tribe. Through these agreements, AGFD acquired CVCA fee title and water entitlements and agreed to manage the site.

Cibola Valley Conservation Area is located in southwestern La Paz County, Arizona, about 15 miles south of Blythe, California. The valley encompasses the land inside an engineered bend of the lower Colorado River and a remnant oxbow on the west side of the river (Palo Verde Oxbow). It is currently farmed for cotton and alfalfa. The area is bordered to the south by Cibola NWR and on the east by unimproved land under the jurisdiction of the Bureau of Land Management. The river forms the north and west boundaries, except for the Palo Verde Oxbow, from river miles 98.8 to 104.9.

Reclamation has secured 1,300 acre feet of irrigation water per year for the AGFD and 1,419 acre feet per year of the Hopi Tribe's fourth priority Colorado River water

entitlement. In addition, Reclamation already maintains a fourth-priority entitlement of 118.94 ac-ft per year at CVCA. The irrigation water will be used for establishment and maintenance of land cover types throughout the life of the program. 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 saturated soil areas for covered species.

Previous Activities: Through FY09, 547 acres of cottonwood-willow, honey mesquite, and buffer-stabilized ground have been established in phases 1-4 and are being managed for LCR MSCP covered species. Phase 4 actually consists of two locations; one site (58 acres) is located north of Phase 3. The other site consisting of 187 acres is located west of Phases 1 and 2. Approximately 80 acres of this site was planted with a mix of native seeds and irrigated in an effort to eliminate blowing dust and stabilize the ground. This seed mixture consisted of quailbush, needle grama, curly mesquite, desert bluebells, and desert Indian wheat. A sprinkler system was rented for four months to provide irrigation water for initial plant germination.

A Memorandum of Understanding was signed in September 2008 between Reclamation and AGFD that assures availability of land and water resources for the 50-year term of the program. Additionally, 1,419 acre-feet of water was purchased from the Hopi Tribe for the site. Reclamation and AGFD continued joint planning for development and creation of habitat on CVCA.

Ivyleaf morning-glory is present at various levels throughout all of CVCA. Working with the local Farm Advisory Board and CVCA's contract farmer, many different techniques were used to control or minimize the spread of this invasive non-native species. Through this successful partnership, morning-glory, although still present, is not significantly affecting growth or survivorship of planted native land cover types.

FY10 Accomplishments:

Maintenance/Restoration/Management: Phase 5, consisting of 71 acres, was planted in March 2010 in accordance with the restoration development plan. This planting effort established approximately 10,000 honey mesquite trees and 7,500 *Atriplex*. Phase 5 was planted in furrows approximately 2-feet deep with a 20-foot separation between the rows. This wide furrow spacing saves irrigation water and provides adequate room for mechanical disking of invasive saltcedar and volunteer cotton, which grows between the planted furrows. The fields are still flood irrigated; however the water only travels in the furrows, saving as much as 2/3 of the water applied to a level field.

Limited ivyleaf morning-glory was present in the phases. The shade from the tree canopies helped to prevent the morning glory establishing a foothold. No chemicals were applied in an attempt to control the morning glory. However, field crews were utilized to remove some morning glory which appeared in more open areas.

Maintenance activities included using a piece of farm equipment (stalk cutter), in November 2009, to cut tumbleweeds in the 80 acre ground stabilization area of Phase 4. Barley was planted here to augment the native seeds previously planted and to aid in reducing the effects of blowing sand. Field crews continued to control morning-glory, volunteer cotton, and saltcedar as necessary, with hand tools, throughout all the phases. This method of using crews proved to be an effective method of controlling invasive plants as they germinate. The crews remove invasive plants from the fields twice a year, in the spring and in the fall.

Mechanical disking occurred between the mesquite-planted furrows in Phases 4 and 5. The invasive grasses/weeds and volunteer cotton created a dense presence. This disking practice between the furrows may occur every 6 months or as required, until the plants establish a strong foothold.

Vegetation growing near concrete-lined canals was mechanically cleared several times to keep the tree roots from damaging or blocking the irrigation canals. Chemical spraying is also used to control plants and invasives from growing along the canals.

Pole cutting in the nursery was undertaken during the winter months by the LCR MSCP and the BLM. Collection of poles from a LCR MSCP Conservation Area by other entities involved in restoration of the lower Colorado River requires submitting a written request and receiving approval from the LCR MSCP.

Soil samples used for recommending fertilizer applications and providing soil moisture monitoring information were taken. An agronomist conducted inspections focusing on general plant health, evidence of disease, over-irrigation, under-irrigation, water drainage, general nutrition, and insect problems. All reports were forwarded to Reclamation with recommendations for treatment.

The Cibola Valley Irrigation and Drainage District hosts monthly meetings with its water users. MSCP is represented at each meeting. All topics are discussed ranging from irrigation issues, to maintenance, to upcoming events and activities.

A document titled, *Cibola Valley Conservation Area Restoration Development Plan: Phase 6*, was drafted that includes the design and planting plan for Phase 6, which would be established in FY11. Approximately 89 acres of honey mesquite will be planted. Also included will be the fallowing of Phase 7. This will be disked and planted with a winter wheat cover crop.

Monitoring: Post-development vegetation monitoring was conducted at Phases 1, 2, 3, 4 west, and 5. A new monitoring protocol was implemented this year and included rapid plots for quick estimates of density and intensive plots for assessing density, vegetation structure and community composition. The number of plots per phase is dependent on the size of the phase being monitored. Each phase will have a proportional amount of intensive plots distributed within the phase depending on the total managed acreage.

MacNeill's sootywings were monitored every 2-3 weeks during April-September 2010. Sootywing numbers ranged from 0 adults to over 200 adults with the largest population at Phase 4 (west). Sootywing populations collapsed in late August, possibly due to a lack of rainfall that caused nectar-producing plants to die-back.

Rodent surveys were conducted at CVCA during 2010 and Colorado River cotton rats have been documented at the site on Phase 3.

Anabat bat detectors were deployed quarterly across the site in different habitat types to determine bat activity. The western red bat, western yellow bat, and California leaf-nosed bat were all recorded acoustically, with a large increase in red and yellow bat activity in 2010. Capture surveys were conducted once per month from May to September and one winter survey was conducted in February. The western red bat, western yellow bat, and California leaf-nosed bat were all captured, and acoustic voucher calls were obtained.

Avian species were surveyed at phases 1, 2, and 3 using an intensive area search method during 2010. The Sonoran yellow warbler, a LCR MSCP covered species, was confirmed breeding. Non-breeding yellow warblers were also detected at the site. A yellow warbler also was captured and color banded at CVCA (Phase 1) in June. This is part of the color banding of target species at restoration sites.

No breeding southwestern willow flycatchers were detected at CVCA, and all birds were detected before June 16th when birds are considered to be residents. Phases 1, 2, and 3 were surveyed and 19 birds were detected in Phase 1, 18 birds were detected in Phase 2, and 4 birds were detected in Phase 3. Each phase was surveyed five separate times.

Three nests of yellow-billed cuckoos were found in CVCA Phase 1 and all were successful. The nest found on July 18 fledged 3 young; the nest found on July 23 fledged 2 young and the nest found on Aug 2 also fledged 3 young. Three nests were also found in CVCA Phase 2 and two successful nests fledged 5 young.

FY11 Activities: Planting and field preparation of Phase 6 is intended to create approximately 89 acres of honey mesquite land cover, which in coordination with earlier and later planting phases, is designed to create a native vegetation mosaic. Phase 6 consists of four large fields, or checks, that will be planted in east-west rows. The rows will be planted in curved rows to provide a less crop-like appearance.

The ground will be prepared for planting by disking, laser leveling, and creating furrows in preparation for hand planting of 1-gallon potted mesquites (14,000). Soil samples may be taken prior to planting to provide nutrient availability information. *Atriplex* plants will be added in the third year after planting, to allow the slower-growing mesquites to mature without competition from the *Atriplex*. These plants will be planted in furrows with a plant in-line spacing of 15 feet and a furrow row spacing of 20 feet. This wide furrow spacing saves irrigation water and allows for a tractor to disk invasive saltcedar and volunteer cotton that grow between the planted furrows.

Monitoring activities conducted in 2010 will continue in 2011. Locations of surveys will be adjusted based on the growth and development of the planted phases.

Phase 7 will be planted in a low water usage crop, such as wheat, until FY2015. Arizona Game and Fish has been notified that we do not intend on restoring or stabilizing fields within Phases 8-11 until 2015. At that time, all phases will begin management under the program and either be converted to cottonwood-willow, honey mesquite, or upland buffer depending on water availability. The delay will allow us to fully assess long-term water requirements of phases currently planted and identify any options for obtaining additional water.

A small portion of Phase 5, honey mesquite, appears to have suffered mortality over the winter. Based on laboratory results, the cause appears to be a canker caused by a fungus. Fortunately, this can be controlled with an aerial application of a fungicide and is underway.

Proposed FY12 Activities: Irrigation and on-site maintenance will continue on Phase 1-7. No additional planting or site development is scheduled until 2015. Monitoring activities will continue in 2012. Locations of surveys will be adjusted based on the growth and development of the planted phases.

Pertinent Reports: *Soil-Plant-Water-Nutrient Relationships of Populus fremontii, Salix gooddingii, and Salix exigua During Native Habitat Restoration*, the study plan from the Department of Soil, Water, and Environmental Science, University of Arizona, is available upon request. *Cibola Valley Conservation Area Restoration Development Plan: Overview*; *Cibola Valley Conservation Area Annual Report, 2007*; and *Cibola Valley Conservation Area Annual Report 2008* are posted on the LCR MSCP website.