Work Task E24: Cibola NWR Unit #1

FY09 Estimates	FY09 Actual	Cumulative Accomplishment Through FY09	FY10 Approved Estimate	FY11 Proposed Estimate	FY12 Proposed Estimate	FY13 Proposed Estimate
$1,072,000	$689,711.29	$1,821,090.37	$600,000	$636,000.00	$1,700,000	$1,500,000

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Start Date: FY07

Expected Duration: FY55

Long-term Goal: Habitat creation

Conservation Measures: WIFL1, WRBA2, WYBA3, YBCU1, ELOW1, GIFL1, GIWO1, VEFL1, BEVI1, YWAR1, SUTA1, CLNB2, PTBB2

Location: Reach 4, Cibola National Wildlife Refuge, one-half mile east of River Mile 97, 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): This work task incorporates Cottonwood Genetics Study (E6), Mass Transplanting Demonstration (E7), and upon completion, the Seed Feasibility Study (E8) with additional adjacent acreage on Unit #1 of Cibola NWR. After completion of the research projects in FY07, operation and maintenance of these work tasks will be tracked under E24.

Project Description: Reclamation currently has a number of established projects at Unit #1, which includes restoration research and demonstration projects that began as a pre-cursor to the LCR MSCP. In 1999, the USFWS and Reclamation planted the Cibola Nature Trail and established 34 acres of cottonwood-willow and mesquite land cover type within Unit #1. In 2002, the USFWS and Reclamation planted another approximately 18 acres of cottonwood-willow in Unit #1 north of the Nature Trail. Four additional fields of approximately 20 acres each in Unit #1 are occupied by three projects that have been fully or partially funded by the LCR MSCP. These include Cottonwood Genetics Study (E6), Mass Transplanting Demonstration (E7), and Seed Feasibility Study (E8). To the east of these projects are an additional two agricultural fields. A 50-year land use agreement with the USFWS to develop and maintain land covers on Unit #1 has been signed.

Work task E24 incorporates the aforementioned existing projects and agricultural land as well as substantial additional adjacent acreage into a single conservation area. The land included in Unit #1 (E24) encompasses approximately 950 acres and ranges in cover and use from agricultural fields, to partially improved land, to undeveloped land. The acreage in Unit #1 is targeted primarily for cottonwood-willow cover type development for SWFL, but will also likely include a mosaic of native habitats including riparian, wetland, and riparian-upland interface areas.

The acreage in Unit #1 (E24) has been categorized into five areas. Area #1 (193 acres) includes active agricultural fields, existing (converted agriculture) cottonwood-willow cover type, and ongoing LCR MSCP research and demonstration projects. Area #2 (Hippy Fire) includes 338 acres that have been cleared as a result of the Hippy Fire. Cibola NWR has performed substantial capital improvements to this area over the past few years including clearing, laser-leveling, field construction, and irrigation and drainage infrastructure installation. The area is currently planted in a cover crop and is being conditioned to improve soil salinity. Areas #3 (Baseline 90) and #4 (North 160) are 107 and 158 acres of undeveloped land and fallowed agricultural land, respectively. The areas will require clearing, leveling, installation of irrigation infrastructure, and soil conditioning before development for native riparian species. Area #5 (Crane Roost, 154 acres) has been cleared and leveled and is currently irrigable. A portion of this area has been planted with cottonwood, willow, and mesquite species. The area will require upgrades to the irrigation system and needs further soil conditioning to continue development.

Previous Activities: A land use agreement and exhibit specific to this conservation area have been signed. Several research and development projects are underway or completed and are currently being managed as land cover types for various LCR MSCP covered species.

FY09 Accomplishments:

Maintenance/Restoration/Management. Regular water delivery, invasive plant control, cover crop establishment, and site maintenance continued through FY09 in the Cibola NWR Unit #1 Conservation Area. Additional major expenditures associated with this work task in FY09 included the clearing of approximately 158 acres and the installation of irrigation turnouts in the North 160 in preparation for leveling and cover crop establishment in FY10. During FY09, over 200,000 trees were mass-transplanted planted in the Crane Roost, resulting in an additional 154 acres of land managed for LCR MSCP covered species at the Cibola NWR Unit #1 Conservation Area.

Monitoring. Soil samples were taken at the Crane Roost area as well as the Nature Trail. Fertilizer was added as necessary. Post-development vegetation monitoring was conducted at Nature Trail and the mass transplanting site. Canopy closure ranged from 0 to 100% with an average of 75%. Average height and DBH for the overstory were 10.4 m and 25.2 cm, respectively. Average height and DBH for the intermediate and shrub layer

were 8.22 m and 9.99 cm, respectively. Land cover type classification includes cottonwood-willow types I-III, and honey mesquite type III.

Small mammal trapping was conducted at the Nature Trail for a habitat characteristic study that was initiated in 2009. Cotton rats are still found in relatively high numbers within the mesquite area due to the dense Johnsongrass areas.

Anabat bat detectors were deployed quarterly across the site in different habitat types to determine bat activity. The western red bat, western yellow bat, California leaf-nosed bat, and Townsend's big-eared bat were all detected in 2009, although in low numbers. Capture surveys were conducted once per month from May to September. The California leaf-nosed bat was the only LCR MSCP species captured.

General avian species were surveyed to determine breeding status at the Nature Trail and Mass Transplanting areas using area search and spot mapping techniques. The Sonoran yellow warbler was the only LCR MSCP covered avian species found breeding within the conservation area.

Willow flycatchers were surveyed five times at the Nature Trail using standard taped playback methods. One willow flycatcher was detected on May 16, two on May 27, and one on June 10. Due to the dates the birds were present, they were considered migrants.

The Nature Trail was visited 17 times between June 17 and August 20 to survey for yellow-billed cuckoos. As many as two cuckoos were detected during these visits. Breeding was not confirmed.

FY10 Activities: Ongoing infrastructure improvements, including additional drain construction and repair and road-building, will also occur during this fiscal year. This may also include the addition of irrigation infrastructure upgrades to improve water delivery to fields within the conservation area.

Based on preliminary observations, tree establishment in the Crane Roost appears to be variable in some locations, suggesting areas of heavy and persistently saline soils. In most cases, these are small areas and this effect will likely result in providing a more diverse mosaic across the Crane Roost Fields; however, in a few areas these variable soil conditions are more pronounced and have resulted in reduced establishment of native trees and dominance of weedy species. Depending on results of the next growing season, these areas may be cleared and replanted with appropriate native vegetation. To minimize similar situations in future planting phases at the Cibola NWR Unit #1 Conservation Area, cover crops will be maintained for longer periods to better condition soils. In addition, less salt-tolerant cover crops have been established in these future phases in order to indicate potential soil problem areas.

An additional season of soil conditioning is projected for fields in the next phase of development (Hippy Fire). No tree purchases will be made and no riparian tree planting will occur on the Cibola NWR Unit #1 Conservation Area for FY10.

Pre- and post-development monitoring will continue at Cibola NWR Unit #1 Conservation Area. Habitat, avian, small mammal, and bat monitoring will continue.

Proposed FY11 Activities: The decision has been made to delay the purchase of trees for 100 acres of fields available in the Hippy Fire Area until FY12. These riparian trees would then be planted in FY13. The reduction in effort is reflected in the reduced budget in FY11.

Overall, site maintenance will continue including regular watering and field maintenance of all the established fields within the Conservation Area's portion of Unit #1. Pre- and post-development monitoring will continue at Cibola NWR Unit #1 Conservation Area. Habitat, avian, small mammal, and bat monitoring will continue.

Pertinent Reports: *Cibola NWR Unit #1 Conservation Area Annual Report, 2009* will be posted to the LCR MSCP Web site.