

## Work Task E9: Hart Mine Marsh

FY13 Estimate	FY13 Actual Obligations	Cumulative Expenditures Through FY13	FY14 Approved Estimate	FY15 Proposed Estimate	FY16 Proposed Estimate	FY17 Proposed Estimate
\$750,000	\$533,086.04	\$6,434,417.98	\$250,000	\$250,000	\$250,000	\$250,000

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**Start Date:** FY05

**Expected Duration:** FY55

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

**Conservation Measures:** CLRA1, LEBI1, and CRCR2.

**Location:** Reach 4, Cibola NWR, River Mile 92, Arizona.

**Purpose:** Create and manage marsh habitat for Yuma clapper rail, least bittern, and Colorado River cotton rat.

**Connections with Other Work Tasks (past and future):** Vegetation and species monitoring are being addressed under F1-F4.

**Project Description:** Hart Mine Marsh was a decadent marsh located on Cibola NWR that was restored and expanded to create functional habitat for covered species. This was accomplished by the installation of control structures to manage water levels, providing sources of higher quality surface water flows, making physical changes to the site's topography, and by planting and supporting native wetland and marsh vegetation. The basic approach was to remove a substantial amount of existing saltcedar from the site, deepen areas of existing open water and contour areas adjacent to those deeper areas, and manage water at the higher elevations to promote and sustain marsh cover type vegetation and wetland functions. The creation of habitat included both the establishment of native plants and management of water levels to meet performance standards for integrating emergent vegetation and open water at varying depths into a mosaic of marsh habitats.

**Previous Activities:** In FY08, NEPA compliance activities, cultural surveys, topographic surveys, and pre-development surveys for marsh birds and riparian obligate birds were conducted. Engineering designs were finalized, and all regulatory permitting required for construction was completed including NEPA, ESA, sections 401 and 404 of the CWA, and Section 106 of the NHPA. In FY09, the first phase of construction was completed and resulted in 92 acres of marsh. In FY10, phase 2 of construction created an additional 163 acres of marsh.

## **FY13 Accomplishments:**

**Maintenance/Restoration/Management.** The majority of the activities that occurred in FY13 were for management, maintenance, and monitoring of the established marsh. Water management, including water delivery to maintain static water levels during marsh bird nesting season, were performed. Invasive and nonnative vegetation control continued. Monitoring of abiotic and biotic parameters was also conducted.

Minor construction activities occurred in FY13. These included improving access to one of the large islands in cell 1 to permit more efficient vegetation management and, the expansion of one of the parking areas in the north east corner of cell 1. Vegetation maintenance included controlling weedy species on the islands in HMM. Up to this point, little attention was paid to the islands, mainly due to accessibility issues. Controlling invasive and nonnative species on these islands was considered extremely important to reduce nonnative seed sources throughout the marsh and to keep nonnative invaders from completely colonizing the islands within the marsh. Although weed management was increased the overall budget for construction was less than expected and resulted in less expenditures in FY 13.

Major construction included installation of two water supply lines from the Unit 2 pump and provided a dedicated line to HMM. The water delivery infrastructure for the Unit 2 management area on Cibola NWR (that also supplies HMM) will now handle the water demands of HMM and the water volume generated by the newly installed 40 cfs pump. Construction was completed in March of 2013.

In August of FY 2013, the new HMM 40cfs pump failed due to sedimentation around the pump intake, causing the pump shaft to break and damage to the motor. This required the MSCP to remove, rebuild and re-install the 40cfs pump/motor as quickly as possible to prevent the water level in the marsh from falling below the required water level threshold for a successful marsh habitat. This re-installation was completed in September 2013 and the 40-cfs pump is continuing to work properly at this time. The CNWR Unit 2, 20-cfs pump has also suffered damage from the intake of river sedimentation and has been removed for repairs and re-installation by USFWS and the refuge cooperative farmer in FY 2014. The river water level, the depth of water from both pump intakes to the river sandbars and the water flow from both pumps through the two new water supply lines will continue to be monitored.

**Monitoring.** Marshbird surveys were conducted four times between March and May. Four Yuma clapper rails were detected during the April 2 survey, seven were detected on the April 18 surveys and one was detected during the May 6 survey. At least one least bittern was detected during all four surveys, with a maximum of 9 detected during the April 2 survey.

**FY14 Activities:** Regular management and monitoring activities will continue in FY14. Minor construction activities planned for FY14 are limited to the installation of a security fence enclosure and sump pump for the valve and meter vault area installed during the FY13 infrastructure upgrades. This work is scheduled to be completed in February 2014.

Water management, including the maintenance of water levels and water delivery activities on the site will continue. Invasive and nonnative vegetation control will continue. Monitoring of marsh vegetation and marshbirds will be conducted. The LCR MSCP is working with the USFWS to identify major infrastructure improvements at shared locations, such as Hart Mine Marsh, to pool resources and ensure upgrades are made in a proactive manner.

**Proposed FY15 Activities:** No major construction or repairs are planned for FY15. The planning and design process for a new pump platform (for HMM) will likely be included in the activity schedule and budget for FY15. Other activities are expected to be limited to marsh management, maintenance of access roads, invasive plant control, and monitoring. To maintain relatively static water levels for marsh birds during the nesting season and to mitigate salinity in the marsh, a combination of drainage water from the Arnett Ditch and pumped Colorado River water is used. Annual maintenance costs include electrical utility bills associated with pumping, labor to turn on the pumps and adjust water control structures, invasive and nonnative vegetation control, water quality sampling, and road grading. Monitoring of marsh vegetation and marshbirds will also continue.

**Pertinent Reports:** The *2013 Hart Mine Marsh Conservation Area Annual Report*, which summarizes any construction, 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.