Work Task E9: Hart Mine Marsh

FY09 Estimates	FY09 Actual	Cumulative Accomplishment Through FY09	FY10 Approved Estimate	FY11 Proposed Estimate	FY12 Proposed Estimate	FY13 Proposed Estimate
$3,125,000	$2,285,834.49	$2,724,171.68	$2,380,000	$500,000	$300,000	$200,000

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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 is a decadent marsh located on Cibola NWR. Currently, drainage water from the refuge's agricultural fields enters Hart Mine Marsh through gated structures in the Arnett Ditch. Previous management practices have not allowed any outflow from the marsh; therefore, the drain water terminates in the marsh to evaporate and stagnate. The result is poor water quality, limited marsh habitat, and saline upland areas, some completely devoid of vegetation or dominated by saltcedar.

Habitat requirements for marsh-covered species include areas of permanent open water and larger areas of adjacent emergent marsh vegetation with water depths ranging from 1 to12 inches. At least 80 acres adjacent to deep areas will be re-graded to provide more suitable marsh areas, adjacent permanent open water, and controllable water levels. This would provide permanent open water adjacent to emergent vegetation. By managing water levels and providing appropriate vegetation, suitable habitat for covered marsh species can be created. Water, diverted by gravity from the Arnett Ditch, would be used to flood-leveled fields and create marsh habitat conditions. Water levels would be managed by a series of small water control structures such as culverts or stop logs.

Previous Activities: Through 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.

FY09 Accomplishments: The first phase of construction was completed at Hart Mine Marsh (HMM). This included the clearing of over 100 acres of saltcedar, the installation of new outlet works and control structures (seven in FY09) for the marsh, and the dredging and contouring of cell 2 in the southern portion of the conservation area. Upland vegetation was planted along the perimeter of the newly constructed cell to stabilize the ground and to reduce invasion of weedy species. This included approximately 325,000 saltgrass plugs and approximately 150 honey mesquites trees. Marsh vegetation was not planted in cell 2 due to rapid and abundant natural regeneration of emergent vegetation (primarily cattails). Supplemental planting to enhance species diversity may be warranted at a later date. This will depend on an assessment of amount and locations of future natural regeneration of cattails within cell 2.

Phase I of HMM construction was completed at a savings of over $1,000,000 from the projected FY09 budget. The majority of these savings are attributed to efficient work crews and production rates coupled with more favorable site conditions than were anticipated. The budget for FY10 activities was adjusted according to similar projections for Phase II construction.

FY10 Activities: The second phase of construction will be completed in FY10. This will include the removal of over 200 acres of saltcedar, the dredging of channels and contouring of cell 1, and the installation of additional control structures for marsh water level management. When these cells are complete, native vegetation will be planted as needed according to its particular requirements. Plants and planting services will be obtained through commercial sources. Maintenance of the site, including water level management and nonnative vegetation control, will be accomplished through a combination of resources from the USFWS staff and commercially procured sources.

During FY10, biotic and abiotic monitoring protocols will be established for HMM. These include marsh vegetation monitoring protocols, and water quality parameters and monitoring protocols. Marsh bird surveys will continue based on current established protocols.

Proposed FY11 Activities: The third and final phase of construction at Hart Mine Marsh will be completed in FY11. This will include the construction of two additional fresh water inputs in the constructed marsh cells. Additional water control structures for these inputs will also be installed. Based on feedback from operations in FY10, any additional repair or refinement of the infrastructure will be accomplished during FY11, including any additional road construction and maintenance and any refinement of water control devices such as the addition of stoplog structures or automated water control features. If any additional stabilization or marsh vegetation planting is required, it will be performed in FY10 and FY11. Site maintenance will continue in FY11.

Pertinent Reports: *Hart Mine Marsh, Existing Conditions Report*, and *Comprehensive Conceptual Restoration Plan, Hart Mine Marsh Conservation Area Development Plan* are posted on the LCR MSCP Web site.