

## Work Task E9: Hart Mine Marsh

FY05 Estimate	FY05 Actual	Cumulative Accomplishment Through FY05	FY06 Approved Estimate	FY07 Proposed Estimate	FY08 Proposed Estimate	FY09 Proposed Estimate
\$100,000	\$53,320	\$53,320	\$100,000	\$125,000	\$200,000	\$1,000,000*

\*The estimated cost of will be revised upon completion of final design.

**Contact:** Gregg Garnett, (702) 293-8644

**Start Date:** FY05 **Expected Duration:** FY07 decision point

**Long-Term Goal:** Habitat creation

**Conservation Measures:** CLRA1 and LEBI1

**Location:** Reach 4, Cibola National Wildlife Refuge, River Mile 92, AZ

**Purpose:** Create and manage marsh habitat for Yuma clapper rail and least bittern.

**Connections with other Work Tasks (past and future):** This Work Task was previously included in the Draft FY05 Work Tasks as Hart Mine Marsh, Cibola National Wildlife Refuge (E7). Species monitoring is being addressed under Work Task F2-F3 and D1.

**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.

In general, 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 to 12”. Approximately 20 acres of the marsh will be deepened by dredging or excavating. At least 40 acres adjacent to the deepened 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.

To refine the cost estimates and project the quantity of created habitat, a detailed topographic survey will be necessary. The survey will allow estimates of the amount of material to be excavated and determine the acreage that can be flooded and managed for rail species. The cost

of these improvements, estimated from the topographic survey and conceptual design, would then be used to decide if habitat creation is cost effective.

To determine the long-term water commitment from the FWS, information is needed to understand how the site currently functions hydraulically and the amount of additional water that will be required for maintaining successful marsh habitat.

Upon completion of the final design, a restoration development plan will be prepared and posted on the website. The cost of construction and expected acreage of created habitat will be refined in FY07 and included in the FY08 Workplan, prior to implementation. In addition and prior to beginning construction, a land use agreement between FWS and Reclamation securing interest in land and water will be prepared.

**FY05 Accomplishments:** The conceptual design for marsh restoration was completed. Preliminary consultation with Refuge Manager and FWS regulatory personnel occurred in September 2005. Topographic surveys were initiated to provide data for engineering designs, but could not be completed due to areas of dense vegetation; they have been rescheduled for FY06. To gain access and allow the topographic survey to be completed, transects will need to be cut with heavy equipment. The need to cut transects to gather data will require additional environmental compliance prior to the clearing of transects. Cultural surveys will be conducted in conjunction with the topographic surveys to minimize any damage, and to document any areas of cultural significance that may be found. Expenditures in FY05 were less than anticipated due to these access issues.

**FY06 Activities:** NEPA compliance, cultural surveys, topographic surveys, and marsh bird surveys have been completed. Using the data from the surveys, an interagency agreement (IA) with FWS has been developed. Under the conditions in the IA, the FWS will prepare a report detailing relative water balance estimates, hydrology, baseline hydraulic conditions, and requirements for restoration and habitat creation at Hart Mine Marsh. These baseline conditions will assist in setting limits for restoration design. Initially, the IA required the preparation of an engineering design for construction at Hart Mine Marsh. However, recent modifications and operational changes made to Hart Mine Marsh, as well as policy mandates from the FWS, indicated that a more thorough analysis of baseline conditions and longer-term data collection were necessary to properly evaluate the feasibility of habitat creation at Hart Mine Marsh, with respect to physical constraints and availability of the water resources. In order to meet these needs, the IA was modified to include this expansion of work scope; however, no significant changes in the FY06 budget are expected. The FWS intends to contribute matching funds and/or in-kind services to assist in this modification and will prepare a Comprehensive Conceptual Restoration Plan that details options for habitat creation at Hart Mine Marsh. This document is expected in March FY07.

**Proposed FY07 Activities:** A workshop will be conducted shortly after an initial review of the options in the Comprehensive Conceptual Restoration Plan, and will be used as a decision point for project continuation. The project time-line will be affected by these changes. FY07, FY08, and FY09 budgets and activities will be adjusted accordingly to reflect these changes. Based on

review of the Comprehensive Conceptual Restoration Plan and preliminary projected costs for design and construction, a decision will be made to continue the project into design or to cancel the project. If a decision is made to proceed, Reclamation will finalize the restoration design for marsh habitat early in FY08. Using the final design, a *Restoration Development Plan* and appropriate section 404 permit application would be prepared, and posted on the website. In addition, during FY08 and prior to beginning construction, agreements outlining party responsibilities and securing interest in land and water will developed. Completion of these activities would allow construction to begin early in FY09.



Figure E9: Aerial view of Hart Mine Marsh during flooded conditions.