Work Task E14: Imperial Ponds

FY05 Estimate	FY05 Actual	Cumulative Accomplishment Through FY05	FY06 Approved Estimate	FY07 Proposed Estimate	FY08 Projected Estimate	FY09 Projected Estimate
$105,000	$104,309	$104,309	$595,000*	$2,070,000*	$462,000	$150,000

* Consistent with the April 2006 Steering Committee briefing on this project, the total expenditures for FY06 and FY07 are anticipated to be an estimated $4.1 million. However, due to the acceleration of the project, the FY06 costs have increased to $2 million and the FY07 have decreased to $2.1 million.

Contact: Nathan Lenon, (702) 293-8015

Start Date: FY05 **Expected Duration:** FY55

Long-term Goal: Habitat creation

Conservation Measures: CLRA1, BONY2, RASU2, LEBI1, and BLRA1

Location: Reach 5, Imperial National Wildlife Refuge, River Mile 59, AZ.

Purpose: Expansion of the existing ponds to satisfy the backwater requirements of the 2001 SIA.

Connections with Other Work Tasks (past and future): Work Task Vegetation and species monitoring is being conducted under F1, F2, F3, F4, F5, and D9.

Project Description: In December 2004, an interdisciplinary group of subject matter experts, including members of the NFWG, developed recommendations for how to best manage the site. The group's guidance was to redesign and expand the site to address water quality concerns while providing additional backwater acreage in support of the LCR MSCP. Under the new design, the existing ponds would be deepened and enlarged by approximately 50 surface acres. The ponds would be deepened and divided into six ponds, each with their own independent water delivery and drainage system.

Soils excavated from the ponds during expansion will be incorporated into 104 acres of existing adjacent farm fields, raising them an average of 3-5 feet. This feature of the project was added during the post-conceptual design phase to provide a location to place approximately 500,000 cubic yards of fill. The existing field irrigation system will then be retrofitted and the fields will be re-leveled. This will result in an additional 34 acres of flood irrigated fields which will be planted for cottonwood-willow habitat. In addition, a 12-acre marsh field is planned for BLRA. This field is adjacent to a currently functional BLRA marsh field, and is anticipated to require minimal costs for design and construction.

Previous Activities: Located on Imperial NWR, the Imperial Ponds, previously referred to as the DU2 Ponds, were originally constructed to provide a mixture of habitat types, including isolated backwater for native fish, marsh, and riparian land cover types. The site consists of four

ponds which are connected by a single channel that supplies fish-free water from a dedicated well. The ponds were originally renovated in the fall of 2002, and stocked with RASU in the spring of 2003.

FY05 Accomplishment: An interdisciplinary group of 13 subject matter experts from four agencies collaboratively prepared a conceptual design for the re-construction and expansion of the ponds. Subject matter experts in the fields of fisheries, hydrology, wetland science/botany, and engineering participated. This report was finalized in July 2005. Reclamation initiated detailed planning and engineering for the site in FY05.

The design will provide a superior water management system from the existing system. Each of the ponds will have an independent supply and drain, which will allow for greater management control over water quality, as well as reduce the potential for cross-contamination of any introduced non-native fish species from establishing in the entire system. All drainage culverts, which connected the adjacent fields to the ponds, will be severed, to greatly enhance habitat management at the site.

The new design duplicates many physical properties of Cibola High Levee Pond, while using groundwater as the source for fresh water delivery, rather than passive subsurface flow. The ponds will increase the maximum depth of the ponds from approximately 6 feet to 12 feet, which is anticipated to improve water quality conditions, reduce nuisance aquatic weeds, as well as provide greater protection for native fish against predation by birds.

The new design will also provide complex, diverse habitat conditions. Planting beds for bulrush and cattails, called hummocks, have been incorporated, based on their success at other wetland creation projects. These features are anticipated to provide shade and cover, as well as reduce mosquito levels by providing habitat for mosquito-predator insects. Additional features include gravel spawning beds, rip-rap (cover for bonytail, as well as structural support for artificial "cut banks"), fish collection kettles (to facilitate fish harvesting), and boat access ramps (to facilitate fisheries management and water quality monitoring).

FY06 Activities: Construction was originally scheduled for FY07. However, the opportunity arose to start construction in June 2006, which would allow excavation activities to be conducted and completed in the winter, during low-flow river conditions. As a result, significantly higher costs are being incurred in FY06 than originally estimated, however, the total cost of the project has not changed. To date, Reclamation has completed all environmental compliance activities for this project, conducted a harvest of the remaining razorback suckers, and dewatered the ponds. Imperial NWR has conducted a prescribed burn, which reduced the volume of vegetation around the ponds. Engineering design drawings were completed, construction rental equipment procured. Construction on the ponds was initiated in June 2006. Funding for FY06 is anticipated to be an estimated $2 million.

Proposed FY07 Activities: Excavation of the ponds is scheduled to be completed early in FY07. After excavation, the water delivery and drainage system for each pond can be completed. Leveling of the fill areas and replacement of the existing irrigation system will

follow. Establishment of the 12 acres of marsh habitat for BLRA is targeted for the spring 2007. Ground preparation and mass transplanting of cottonwood-willow is targeted for FY08.

Pertinent Reports: *Imperial National Wildlife Refuge, Imperial Native Fish Habitat Reconstruction, Design Workshop Final Report, Clean Water Act, Section 404 Permit - Final Site Plan* have been posted to LCR MSCP website.

Figure E-14a: The pre-construction DU pond configuration.

Figure E-14b: The proposed configuration, per the conceptual design plan.