

Work Task E14: Imperial Ponds Conservation Area

FY15 Estimate	FY15 Actual Obligations	Cumulative Expenditures Through FY15	FY16 Approved Estimate	FY17 Proposed Estimate	FY18 Proposed Estimate	FY19 Proposed Estimate
\$800,000	\$328,870.83	\$9,669,214.32	\$1,500,000	\$1,450,000	\$450,000	\$350,000

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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 (Imperial NWR), River Mile 59, Arizona

Purpose: To create and manage a mosaic of native land cover types for LCR MSCP covered species

Connections with Other Work Tasks (Past and Future): Vegetation, species research, and monitoring is being conducted under Work Tasks C25, D9, and F1–F5. Fishery related research was conducted under Work Task C25.

Project Description: The Imperial Ponds Conservation Area is an integrated mosaic of native land cover types, including disconnected backwaters, cottonwood-willow, and marsh. It is situated within the Intensive Management Area of the Imperial NWR, an area of focused management for sensitive wildlife species, including native fishes, marsh birds, neotropical migratory birds, and migratory waterfowl.

Previous Activities:

Backwaters: Six backwaters have been constructed to provide approximately 80 surface acres of habitat for bonytail and razorback suckers. Lower Colorado River water was supplied to the backwaters by a pump fitted with a wedge wire screen system. The screen had a slot size of 0.05 millimeter that was designed to prevent passage of fish eggs and larvae into the backwaters. An in situ evaluation of the screen was completed under Work Task G3. The results indicated that fish eggs and larvae of multiple species were passing through the screen. In response to the results, the pump was shut off in the summer of 2009, and water was

supplied to all the backwaters using a single groundwater well. A water management study was initiated in May 2011 and was completed in 2013 to evaluate the water quality in Pond 1 (where regular water management was continued) and Ponds 2–6 (without a managed water supply). A trends analysis from the physico-chemical profiles indicated that the temperature was increasing over time in all six ponds; however, it appeared to be increasing at a slightly higher rate in Pond 1. The pH levels also appeared to increase over time, with differences being observed among ponds. The values of pH commonly exceeded a set standard of 9.0 in Ponds 2–6 in the summers of 2011 and 2012. The pH levels were lowest in Pond 1. Dissolved oxygen levels did not appear to be a cause for concern in an absence of water management. Specific conductivity levels showed a gradual increase over time in all ponds. A second well was installed onsite to supply water to the ponds in FY14. The new well both increased the volume of water that could be delivered to the ponds and provided redundancy in case one well became inoperable.

Annual maintenance and management of the ponds: From 2011 to 2016, a groundwater well supplied water, free from any life stages of fish, to Pond 1 as discussed in the water management study. Ponds 2–6 did not receive any water from the well. These ponds were sustained by groundwater and their hydrologic connections with the river. Annual costs included those for electricity for the well, maintenance of the pumps and valves to direct water delivery, and boat ramp maintenance.

Riparian: Yellow-billed cuckoos and southwestern willow flycatchers have been sighted adjacent to this conservation area in the cottonwood nursery. Field leveling and irrigation system installation for the area were completed in FY08.

Restoration and planting with native cottonwood and willow is not anticipated until FY17 but would not occur until the canal system has been replaced. In the interim, soil salinity in the fields is managed through irrigation of a cover crop.

Marsh: A 12-acre marsh unit was created at Field 18 in the southeast corner of the Imperial NWR. This field was cleared in the winter of 2007–08 and was converted into a bulrush-dominated marsh managed for rail species. The irrigation cycle is based on an adjacent field, Field 16, which was created and is managed for rail species. The marsh has been managed for LCR MSCP covered species since 2008, and both Yuma clapper rails and California black rails have been detected on Field 18.

Annual maintenance and management of marsh and cottonwood-willow: Irrigation water for both the riparian area, as well as the managed marsh complex, receive water from a pump platform, which is located in the Martinez Lake inlet canal. Annual costs associated with operation and maintenance of these areas

include costs associated with the electrical power utility bill, pump maintenance, invasive and non-native weed control, road maintenance, and the labor to open and close the gates along the canal.

FY15 Accomplishments:

Maintenance/restoration/management: Electrical upgrades to the pumping platforms and wells were completed. A leak in the new well line was repaired. The last major capital improvement, replacement of portions of the concrete-lined canal for the delivery of water into the fields, has been delayed until FY17; therefore, expenditures were less than approved.

Backwaters: Pond 5 was pumped down and held at an elevation of 180 feet for a 2-week period in preparation for a prescribed burn of the marsh area within the pond. All six ponds were renovated. Western mosquitofish were observed in Pond 5, and one was captured in a light trap.

A water management schedule has been established. Each pond will receive about 2.5 million gallons of water from January through June and October through December. The ponds will receive about 5.5 million gallons of water from July through September.

Riparian: Irrigation was supplied from February through September to maintain a cover crop to manage salinity. No additional restoration or monitoring was performed on the 34 acres of the future cottonwood-willow field.

Monitoring:

Backwaters: Bonytail and razorback suckers were removed from Pond 1 in preparation for the renovation efforts in FY15. One-hundred and forty-five bonytail were taken to the Lake Mead Fish Hatchery. None of the bonytail captured had a passive integrated transponder (PIT) tag, but based on their size, they were assumed to be the progeny from one or more recruitment events in Pond 1. Eighty-six razorback suckers were captured; 46 had previously been PIT tagged, and 40 had no tag data. All razorback suckers were stocked into the A-10 backwater in Ehrenberg, Arizona; any razorback suckers that did not have a tag received one prior to stocking.

Marsh: Marsh bird surveys were conducted by the U.S. Fish and Wildlife Service at the ponds and on Field 18. Yuma clapper rails were detected during each survey on Field 18, and western least bitterns were detected on Field 18 during the first survey in April. Black rails were not detected during the surveys. No covered marsh birds were detected at the ponds.

FY16 Activities:

Maintenance/restoration/management: Onsite maintenance, utility payments, and water management for the site will continue. Design and planning for the last major capital improvement, replacement of the entire concrete-lined canal for the delivery of water into the fields, will be drafted. A preliminary cost estimate and timeline to provide electrical power to the ponds is being prepared. The power, if feasible and cost effective, would allow for automation of valves, flow meters, water quality monitoring, and PIT tag scanning.

Backwaters: Water will be supplied to the ponds following the water management schedule. Electric will be run to each pond for the installation of permanent submersible PIT tag antenna. Post-renovation monitoring is being completed under Work Task C25.

Riparian: The fields will be irrigated to manage salinity in the soils. A Restoration, Development, and Monitoring Plan for the 34 acres of riparian habitat will be drafted, and trees will be purchased for planting following replacement of the irrigation canal.

Marsh: The 12-acre marsh created in Field 18 will continue to be managed for marsh covered species.

Monitoring: Monitoring will continue in FY16, similar to previous efforts for fish and marsh birds. MacNeill's sootywing surveys will be conducted in spring and summer if habitat is present.

Vegetation data will be collected in May 2016 using light detection and ranging remote sensing techniques.

Proposed FY17 Activities:

Maintenance/restoration/management: Onsite maintenance, utility payments, and water management for the site will continue. Replacement of the concrete-lined canal for the delivery of water into the riparian fields and marsh complex has been re-scheduled for FY17. Providing electrical power to the ponds, which appears feasible, would be completed.

Backwaters: Boat ramps and riprap shorelines will be maintained. An automated watering schedule for all six ponds will be developed and implemented.

Riparian: The fields will be planted if the irrigation canal is replaced before spring of FY17.

Marsh: The 12-acre marsh created in Field 18 will continue to be managed for marsh covered species.

Monitoring: Monitoring will continue in FY17, similar to previous efforts for fish and marsh birds. MacNeill's sootywing surveys will be conducted in spring and summer if habitat is present and none were detected in FY16.

Information from light detection and ranging vegetation data collected during FY16 will be used to determine the schedule for vegetation monitoring data collection for FY17 and beyond.

Pertinent Reports: The *2014 Imperial Ponds Conservation Area Annual Report* will be posted on the LCR MSCP Web site once integration of the data collected throughout the calendar year is complete.