

## Work Task E14: Imperial Ponds Conservation Area

FY12 Estimate	FY12 Actual Obligations	Cumulative Expenditures Through FY12	FY13 Approved Estimate	FY14 Proposed Estimate	FY15 Proposed Estimate	FY16 Proposed Estimate
\$525,000	\$771,006.55	\$8,396,907.73	\$395,000	\$600,000	\$500,000	\$400,000

**Contact:** Gregg Garnett, (702) 293-8347 ggarnett@usbr.gov

**Start Date:** FY05

**Expected Duration:** FY55

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

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

**Location:** Reach 5, Imperial NWR, River Mile 59, Arizona.

**Purpose:** Create and manage a mosaic of native land cover types for LCR MSCP covered species.

**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:** 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 National Wildlife Refuge, an area of focused management for sensitive wildlife species including native fish, marsh birds, neo-tropical migratory birds, and migratory waterfowl.

### Previous Activities:

**Ponds.** Between FY05 and FY07, extensive site development was undertaken to excavate six isolated, independently managed backwater ponds, to create habitat primarily for razorback sucker and bonytail. Since that time, the ponds have been stocked and managed primarily for razorback sucker and bonytail, and secondarily for the benefit of marsh species. Six ponds have been constructed to provide approximately 80 surface acres of backwater habitat for endangered razorback sucker and bonytail, as well as provide marsh habitat for western least bittern and Yuma clapper rail. The ponds provide a diversity of depths and habitat features, including rip-rap for fish cover and hummocks on which to place native wetlands plants.

Colorado River water was supplied to the ponds by a pump that uses fish screening technology (wedge-wire screen). The screen was constructed to prevent the eggs and larvae of nonnative, predatory fish from entering into the ponds. The ponds are not

interlinked; each pond is independently managed. In FY09, through work task (G3) an evaluation of the wedge wire screen system on the 6,000 gallon per minute pump, supplying the ponds, was conducted. As mentioned in G3, the preliminary results found that eggs and larvae of the smallest size class of nonnative fishes (those with eggs less than 1 mm in diameter) were entrained through the screen in nearly all the samples taken, which raised concern over continued use of the screened pump to supply the ponds without additional filtering. Additionally, pH levels in two of the ponds during mid-summer exceeded 9.0; these levels were quickly resolved by pumping from the well (which has a consistently lower pH than the Colorado River). Since the summer of 2009, water supply to the ponds has been exclusively via the 750-1,200 gallon per minute well pump, to reduce the risk of introducing non-native fish larvae into the ponds, as well as to manage pH. When water is released from a pond, it enters a drainage ditch where native wetland and riparian vegetation has been planted.

**Riparian.** Using material excavated from the ponds, an existing 4 acre cottonwood nursery on the refuge will be expanded by 34 acres to develop cottonwood-willow land cover for the yellow-billed cuckoo. The pond material was spread over approximately 100 acres; the acreage not used for cottonwood-willow will be managed by the refuge for migratory waterfowl. Both the yellow-billed cuckoo and willow flycatchers have been sighted in the existing nursery. Field leveling and irrigation system installation for the area were completed in FY08. However, restoration and planting with native cottonwood and willow is not anticipated until FY15 due to the large planting effort at the Laguna Division Conservation Area.

**Marsh.** A 12-acre marsh unit was created at Field 18 in the southeast corner of Imperial NWR. This field was cleared in the winter of 2007-2008, and was converted into a bulrush-dominated marsh. Because the field is adjacent to several marsh units currently occupied by California black rail, the objective was to increase habitat acreage for this species and other species of concern.

#### **FY12 Accomplishments:**

**Maintenance/Restoration/Management.** Funding for onsite maintenance, utility payments, and water management for the site continued through FY12. E14 was also used to support the dewatering, evaluations, maintenance of each pond. Vegetation management is an ongoing action, which keeps the pond shorelines clear of excessive growth *Phragmites*.

**Ponds.** No Colorado River surface water was supplied to ponds 2-6. Water Surface Elevation (WSE) and water quality monitoring were conducted monthly on all ponds during this time, to answer questions regarding the similarity or contrast of the natural WSE and water quality parameters between the ponds, the LCR, and the south channel. Collected information will be used to develop and study methods to reduce or simplify water delivery to the ponds and enhance water quality. Overview of results from WSE and water quality monitoring are included below in the monitoring section.

*Riparian.* Major infrastructure failures occurred in FY12 on the irrigation supply canal at INWR. Temporary repairs were made to insure continued water delivery to both MSCP conservation areas and to refuge managed fields, however, these failures indicated defects in the water conveyance system. In particular these included improper soil compaction and construction of the irrigation canal. Efforts are underway to replace the existing irrigation supply canal to combat future emergency repairs and insure reliable water delivery for the future. Part of this effort included the obligation funds for contracted services to design and install the new canal system. This obligation explains the overage in budget for this conservation area in FY12.

No additional restoration or monitoring was performed on the 34 acres of the future cottonwood-willow field areas. Discussions about crop rotation continued and eliminated the use of alfalfa, due to its management intensity (need for cutting/bailing). A cover crop was established; however there are no immediate plans to establish cottonwood willow riparian cover type in this area until FY15 to allow planting efforts to be focused at the Laguna Division Conservation Area. When the irrigation canal is replaced, management of this area will be greatly facilitated and cultural practices such as winter flooding to push down salts can be employed which should increase survivorship.

*Marsh.* The 12-acre marsh created in Field 18 in the southeast corner of Imperial NWR will continue to be managed for marsh covered species.

### **Monitoring.**

*Ponds.* Preliminary data suggests that WSE in ponds are positively correlated to surface elevations in the adjacent Colorado River; this also suggests that there is some sub-surface connection between the ponds and the Colorado River. The WSE in ponds 2-6 did not meet the WSEs prescribed for management of the ponds without the addition of surface water. In general, average values for water quality in ponds 2-6 were within acceptable thresholds throughout most of the year and in some cases, better than the values for Pond 1 (except for pH) which was managed with the addition of surface water. Another year of baseline data will be collected before management actions are discussed or implemented.

*Riparian.* Surveys for willow flycatchers were conducted five times in the area immediately to the north of Pond 1 from May to July. Five birds were detected on 18 May and one bird was detected on 2 June. These birds were all considered migrants, and no signs of breeding SWFL were found. No small mammal or bat surveys were conducted in 2012. Yellow-billed cuckoo surveys were conducted at the area and 3 birds were detected on 2 July, 2 birds were detected on 16 July, and 1 bird was detected on 24 July. No nests were located.

*Marsh.* Marsh bird surveys were conducted at the Imperial Ponds and at Field 18 over three survey periods from March to late April. Black rails were detected in all 3 survey periods with a maximum of 3 birds detected in the last period in late April. In the second survey period in early April 1 clapper rail was detected.

### **FY13 Activities:**

**Maintenance/Restoration/Management.** Onsite maintenance, utility payments, and water management for the site will continue. Canal replacement will occur in FY14 to minimize impact on irrigated fields.

*Ponds.* Monitoring of ponds WSE and water quality will be conducted monthly to answer questions regarding the similarity or contrast of the natural WSE and water quality parameters between the ponds, the LCR, and the south channel. Methods to reduce or simplify water delivery to the ponds and enhance water quality will be implemented and monitored based on the results for the two-years of baseline data. These implementations are expected to be limited in FY13, however an adaptive management plan will be developed to aid and guide future management of the Imperial Ponds.

*Riparian.* Planning and design of the new canal system to replace the failing system at INWR will continue. Additional funds may be obligated in FY13 for the canal replacement, but installation is not expected to commence until late fall of 2013 (FY14) when water demands are low and temporary water outages will have lower impacts on refuge operations, vegetation, and wildlife.

*Marsh.* The 12-acre marsh created in Field 18 in the southeast corner of Imperial NWR will continue to be managed for marsh covered species.

**Monitoring.** Monitoring will continue in FY13, similar to previous efforts for fish, marsh birds, SWFL, and YBCU.

### **Proposed FY14 Activities:**

**Maintenance/Restoration/Management.** Onsite maintenance, utility payments, and water management for the site will continue. Modifications to water delivery system for the ponds will begin FY14, but are expected to be completed in FY15.

*Ponds.* Monitoring of ponds WSE and water quality will be conducted monthly to answer questions regarding the similarity or contrast of the natural WSE and water quality parameters between the ponds, the LCR, and the south channel. Methods to reduce or simplify water delivery to the ponds and enhance water quality will be implemented and monitored.

*Riparian.* A blend of cottonwood, willow, and other native plants are expected to be pre-purchased for planting in FY15 on the 34 acres.

*Marsh.* The 12-acre marsh created in Field 18 in the southeast corner of Imperial NWR will continue to be managed for marsh covered species.

**Monitoring.** Monitoring will continue in FY14, similar to previous efforts for fish, marsh birds, SWFL, and YBCU.

**Pertinent Reports** The *2012 Imperial Ponds Conservation Area Annual Report*, which summarizes any 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.