



# Lower Colorado River Multi-Species Conservation Program

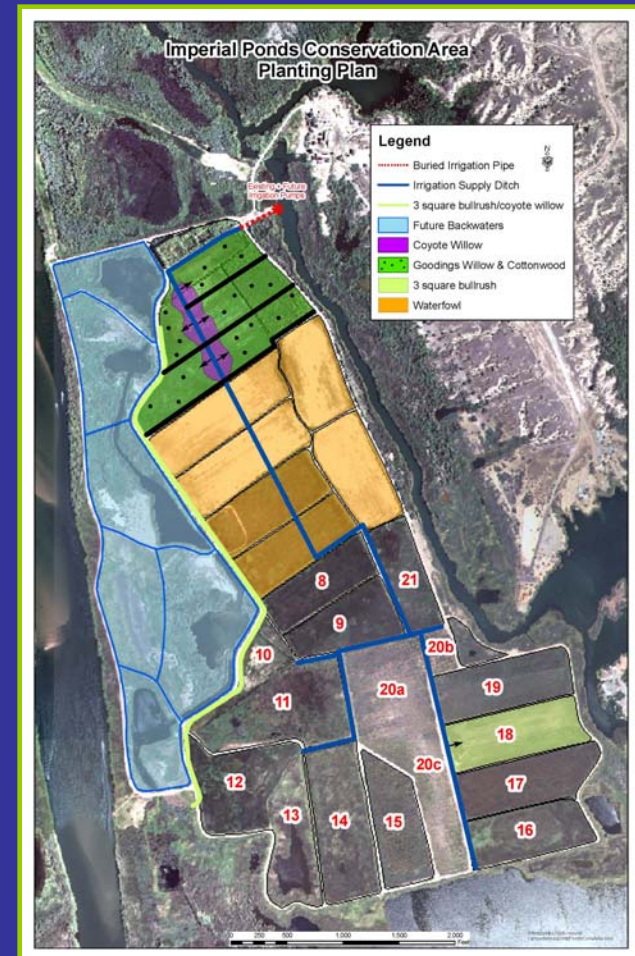
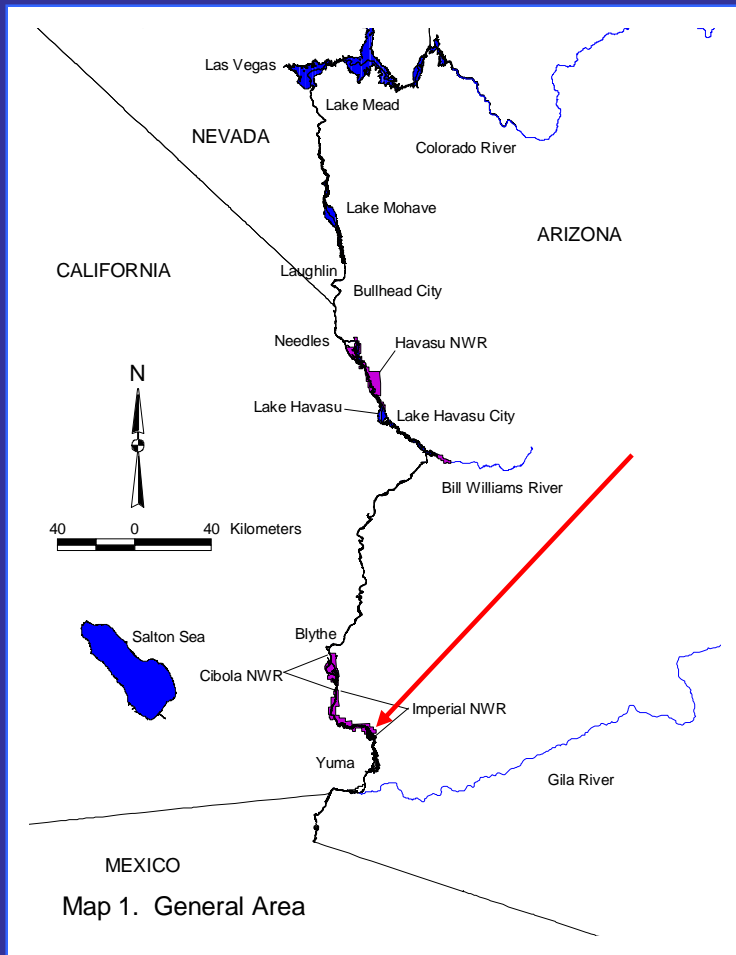
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*Balancing Resource Use and Conservation*

## Restoration of Managed Marsh Units to Benefit California Black Rails and Other Marsh Birds: An Adaptive Management Approach



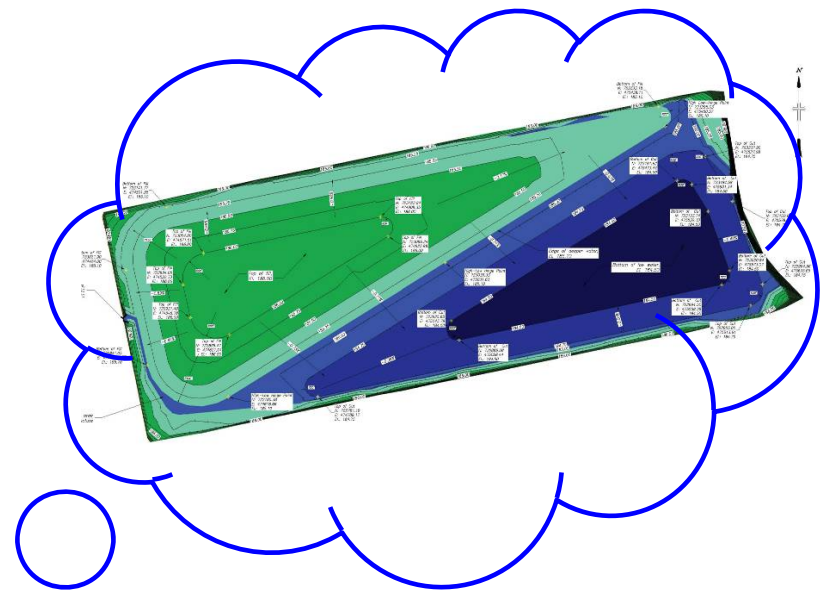
# Project Location







**Field 18**



**Field 18**



**Fields 16-19, Oct 2006**



**Fields 17-19, July 2008**

**1 Month Post-Planting**

**19**

**18**

**17**

**16**



# Marsh Planting

## June 2008

- Common Three Square  
(*Schoenoplectus pungens*)
- *Schoenoplectus americanus*
- Creeping Spikerush  
(*Eleocharis palustris*)
- Hardstem bulrush  
(*Schoenoplectus acutus*)





**Cooperative Ecosystems Studies Unit (CESU)  
Agreement:  
Reclamation- Univ AZ/  
USGS Cooperative Fish and Wildlife Research Unit  
Courtney Conway  
Chris Nadeau**



# Objectives

- Document range of hydrologic conditions and plant associations preferred by black rails, clapper rails, and least bitterns for 2 years in Fields 16 & 18
- Summarize observations
- Recommend parameters to help design future marsh restoration efforts

# Methods

- Survey for breeding black rails and other marsh birds for 2 seasons in Fields 16 and 18
- Document growth of vegetation and its use throughout Fields 16 and 18
- Document ground and surface water depths throughout Fields 16 and 18



# Progress- Hydrology

- Wells Installed in 30 m Grid
  - Field 16 - 46 Wells
  - Field 18 - 69 Wells
- Water Level data collected automatically  
6x/day

# Monitoring Wells and Veg Survey Routes, Fields 18 and 16, INWR



Figure 1. Monitoring well and trail locations in Imperial NWR field 18 (A) and field 16 (B).

# Progress-Vegetation

- Field 18 - 5 Veg Surveys completed, 1 June-13 Dec 08; Field 16- to be surveyed during breeding season
- # Live/Dead Stems, min/max/mean ht per spp. within a 0.25m<sup>2</sup> area adjacent to each well
- Est./Map % cover within 15m of each well



# Progress-Vegetation

- California bulrush dominates
- Common threesquare, southern cattail, river/alkali bulrush common or co-dominant
- Phragmites is sparse throughout, but dominant in some areas
- Saltcedar has been removed from borders

# Progress - Marsh Birds

- 2 permanent survey routes around perimeter, points 50 m apart
- Call-broadcast methods (N. Am. Marsh Bird Monitoring Protocol, Conway 2008)
- Each bird location estimated and mapped (for correlation with veg and hydro.)

# Marsh Birds - Progress

- Field 16 – 4 surveys (25 May – 22 June)  
Clapper Rail, Least Bittern, Black Rail
- Field 18 – 2 surveys (27 May & 27 June): No marsh bird spp. detected during surveys
  - Least Bittern, American Bittern (Oct), American Coot, Green Heron- incidentals
- Next survey mid-February





**3 August 2008**