

QSA Water Transfer Mitigation Program

December 2009

**Presented to
International Boundary Water Commission**



QSA Water Transfer Mitigation Program

Covered Area and Activities

- **Permit Area**

- Approximately 500,000 acre IID Water Service Area
 - AAC downstream of diversion at Imperial Dam
 - Salton Sea and submerged lands

- **Covered Activities**

- Water conservation activities (IID or farmer)
 - Implementation of permit conditions
 - Activities relating to diversion, delivery or drainage of Colorado River water (O&M activities)

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Permits/Authorizations

- **2081 (CESA Incidental Take Permit)**
<http://www.iid.com/Media/California-Endangered-Species-Act.pdf>
<http://www.iid.com/Media/LCR-MSCP-CESA-2081-Permit-Final.pdf>
- **State Water Resources Control Board (SWRCB)**
<http://www.iid.com/Media/SWRCB-Order-WRP-2002-13-Revised.pdf>
- **Draft Habitat Conservation Plan (HCP)**
<http://www.iid.com/Water/CEQACompliancefortheIIDTransferProject>
<http://www.iid.com/Water/DraftEIREIS> (scroll to Volume 2 Appendices)
- **EIR/EIS – Mitigation Monitoring and Reporting Program**
http://www.iid.com/Media/Exhibit-B---MMC_MMRP_Complete_6-12-08.pdf (June 2008 version)
- **Biological Opinion (BO)**
<http://www.iid.com/Media/In-Valley-BO.pdf>
- **Natural Community Conservation Plan (NCCP) in progress**
http://www.iid.com/Water_Index.php?pid=635

QSA Water Transfer Mitigation Program

QSA Joint Powers Authority (JPA)

- **Funds mitigation measures**
- **Members**
 - Water Agencies – CVWD, SDCWA & IID
 - Regulatory Agencies - CDFG

Implementation Team (IT)

- **Manages mitigation process**
- **Members**
 - Voting members - USFWS, CDFG and IID
 - Advisors

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Mitigation Categories

- **Species Specific**

- Burrowing owl
 - Desert pupfish
 - Brown pelican

- **Guild/Habitat Specific**

- Drain vegetation
 - Tamarix scrub
 - Desert scrub

- **Resource Specific**

- Air quality mitigation
 - Water quality mitigation

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Burrowing Owl

- **Population study**

 - Two year survey completed

 - Developed sub-sampling protocol

- **Habitat Model**

- **Focused studies**

- **Burrow creation program**

 - Passive relocation

- **Education program**

 - IID team and farmers

- **Burrow conservation program**

 - Identification, marking and avoidance



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**Burrows are
flagged for
avoidance by IID
Operation and
Maintenance
crews**



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**Species
Training!!**



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**Burrow after
maintenance
activity has
been completed**



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Desert Pupfish

- **USGS Toxicity Study**
Laboratory Se dosing study
- **USGS Drain Study/Trapping**
Four year survey completed
- **Population Monitoring Surveys**
Cooperation with CDFG
- **Drain Connectivity Protocol**
IID team and wildlife agencies
- **Pupfish Refugium**
Draft plans under review



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Other Species

- **Razorback Sucker**
 - Presence surveys
 - Relocation plan
- **Desert Tortoise**
 - Presence surveys
 - Avoidance protocol and relocation plan
- **Rails and Marsh Birds**
 - Presence surveys and monitoring requirements
- **Brown Pelican**
 - Develop nesting/roosting sites



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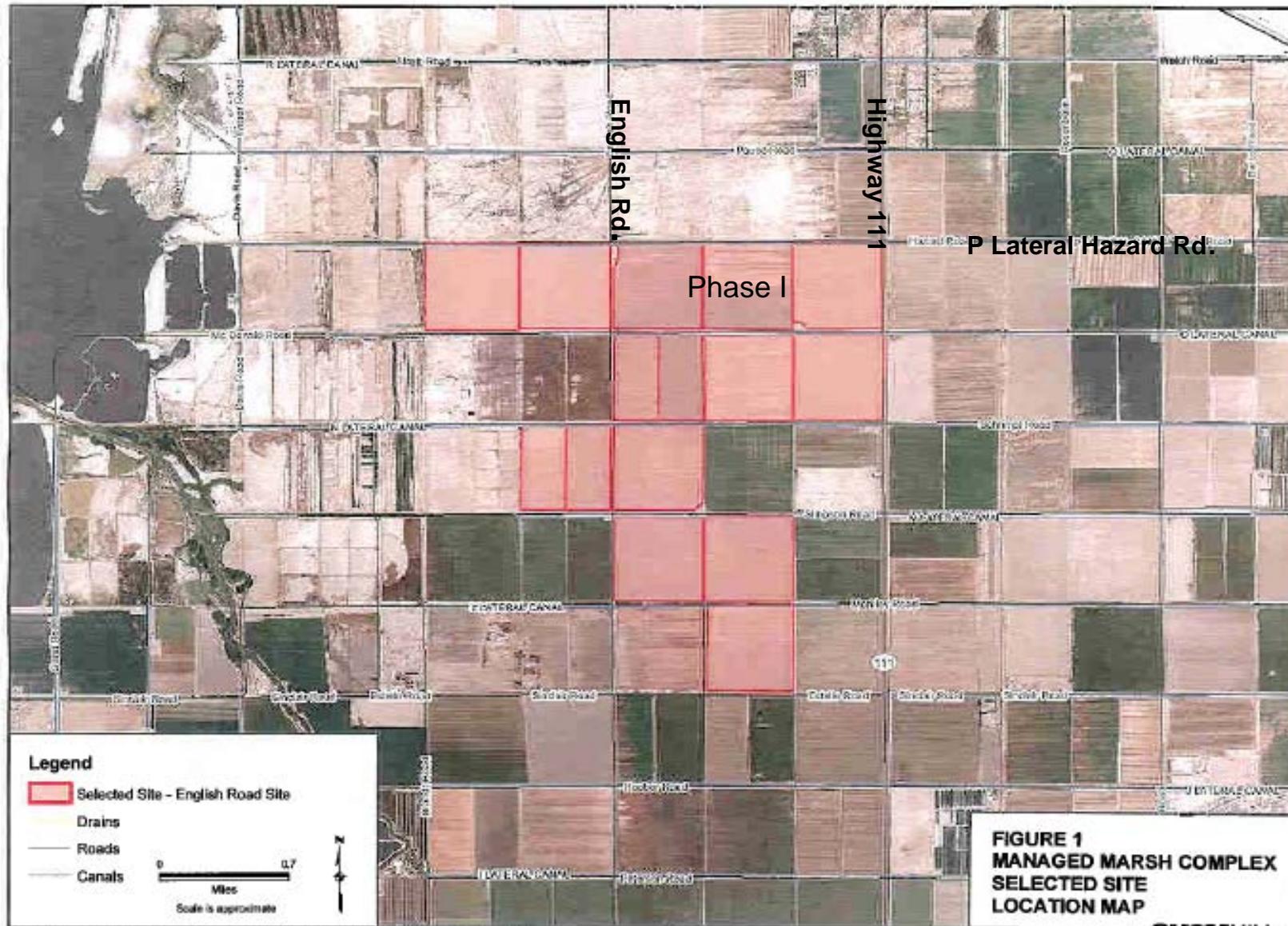
Habitat Types

- **Desert Habitat**
 - Vegetation community survey
 - Revegetation plan
 - Create/enhance desert habitat

- **Tamarisk Scrub**
 - Revegetation plan
 - Seasonal limitations
 - Create native tree habitat for mitigation

- **Drain Habitat**
 - Vegetation community survey
 - Seasonal limitations
 - Creation of Managed Marsh

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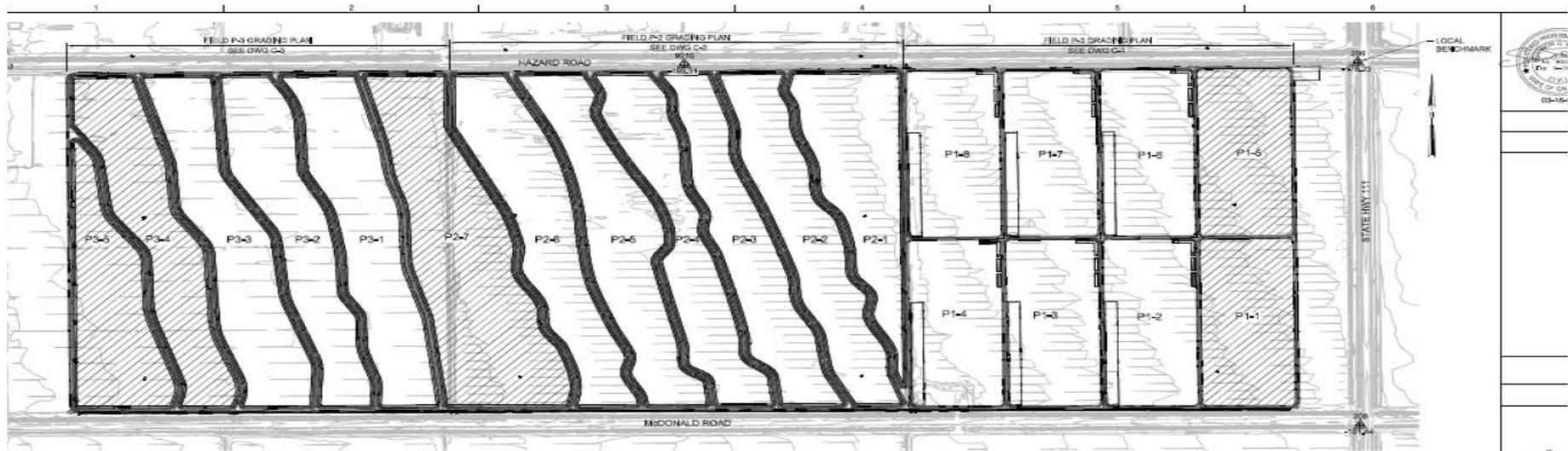


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Managed Marsh – Phase I

- **Habitat Type**
Mimic marsh bird and riparian habitat
- **Cell Design**
Field P1 – rectangular N/S axis
Field P2 – irregular shaped NW/SE axis
- **Hydrology**
Flow through system
P1 flow across cell east to west to outlet
P2 and 3 floods from west moat across to east moat
- **Vegetation**
Emergent herbaceous and woody species
Combination of container species and seed

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CH2MHILL AECOM
GENERAL

DATE	M.
PROJ.	
DWG.	
SHEET	

SURVEY CONTROL

- DATUM
- HORIZONTAL SURVEY DATUM: CA STATE PLANE 1983 ZONE 9
- VERTICAL SURVEY DATUM: NAVD 1988
- LOCAL BENCHMARK: ELEV -178.228 N 2021815.832 E 8785196.692
POINT 209-3" BRASS DISK STAMPED "DONALD AZ 1987"

LEGEND

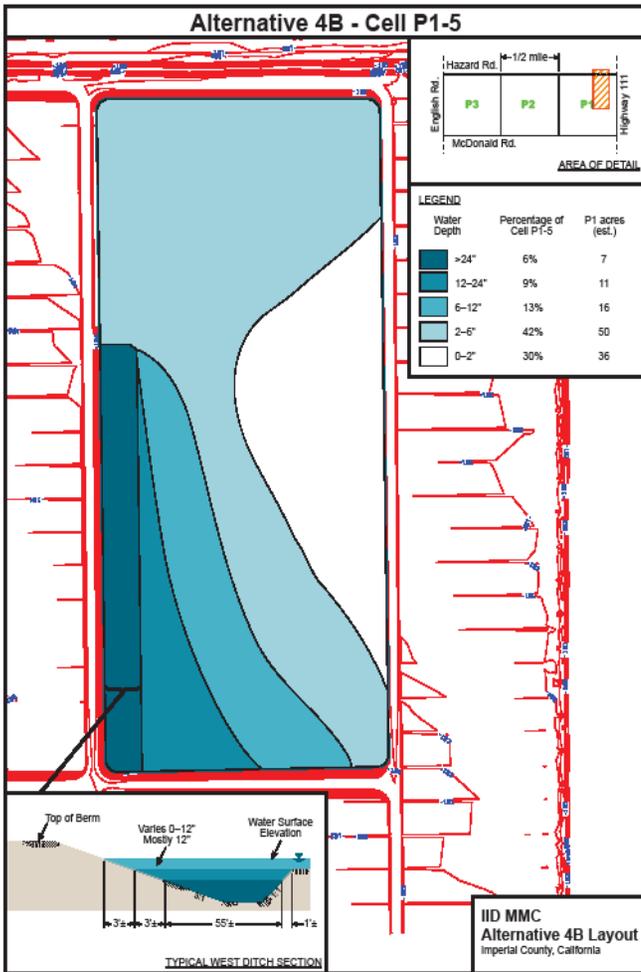
- NON-EMERGENT VEGETATION CELLS
- ALL OTHER CELLS ARE EMERGENT VEGETATION

SURVEY CONTROL TABLE

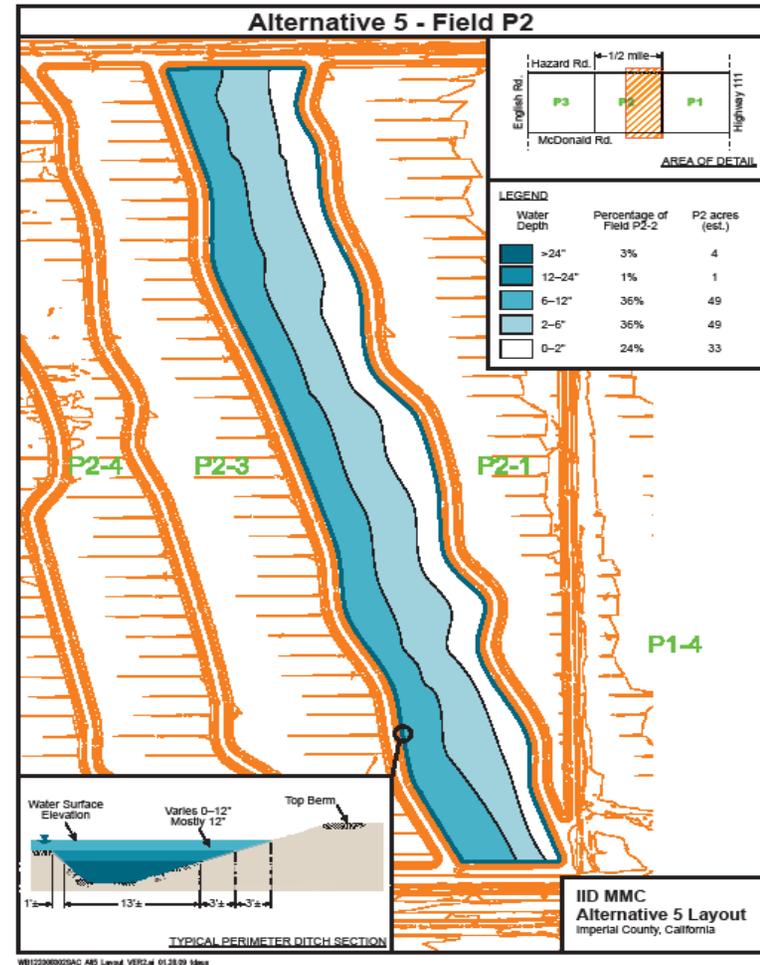
POINT NUMBER	NORTHING	EASTING	ELEVATION	POINT DESCRIPTION
209.20	2019170.65	6788210.34	-181.44	Fd 3" brass disk "DONALD 1987"
209.00	2021815.832	6785196.692	-178.23	Fd 3" brass disk "DONALD AZ 1987"
9013.00	2021800.07	6781284.82	-189.21	Photogram 9010
9011.00	2021834.74	6777328.82	-201.43	Photogram 9011 (9003a)

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Field P1 Modeled water levels



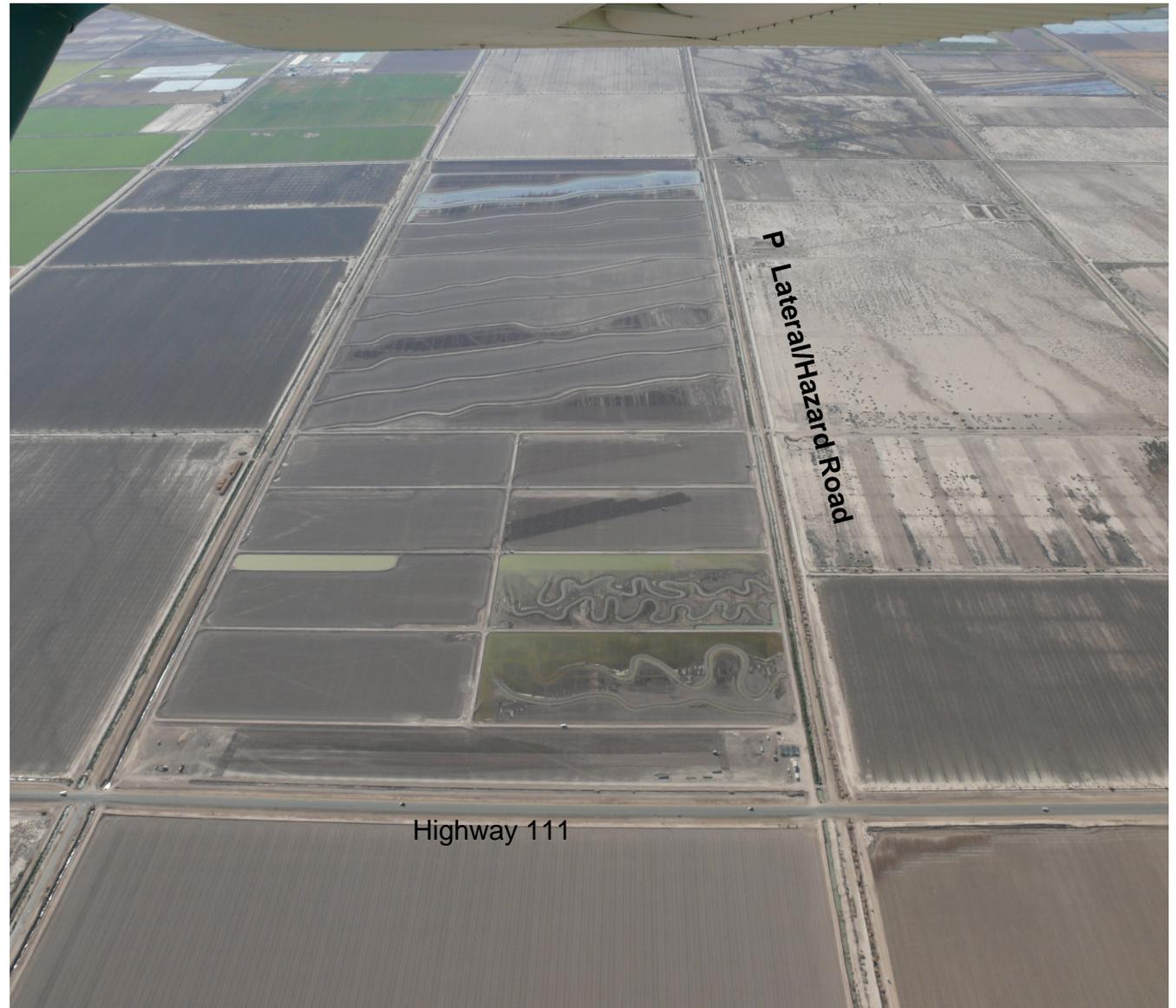
Fields P2 and P3 Modeled water levels



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Managed Marsh

Planting Phase
Sept/Oct. 2009



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Riparian Habitat

Cells P1-5 and P1-6

Shallow channels with woody vegetation along the banks.

Scattered emergent herbaceous vegetation in channel bottoms.

Upland species planted in areas between the channels

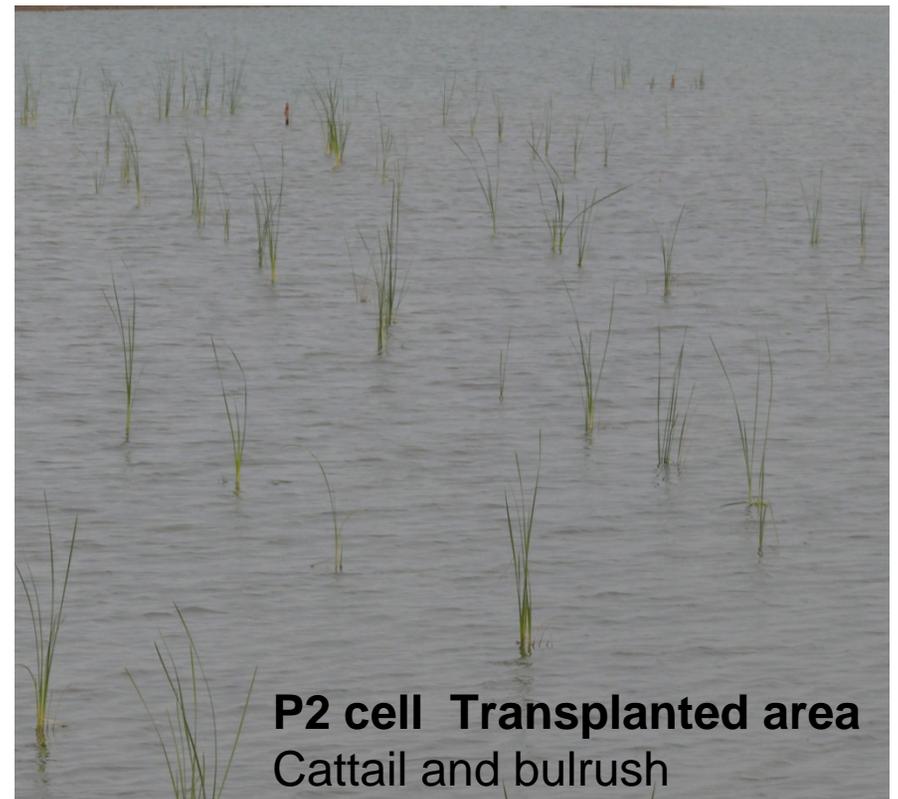


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November, 2009

EMERGENT CELLS



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November, 2009

RIPARIAN CELLS



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Wildlife



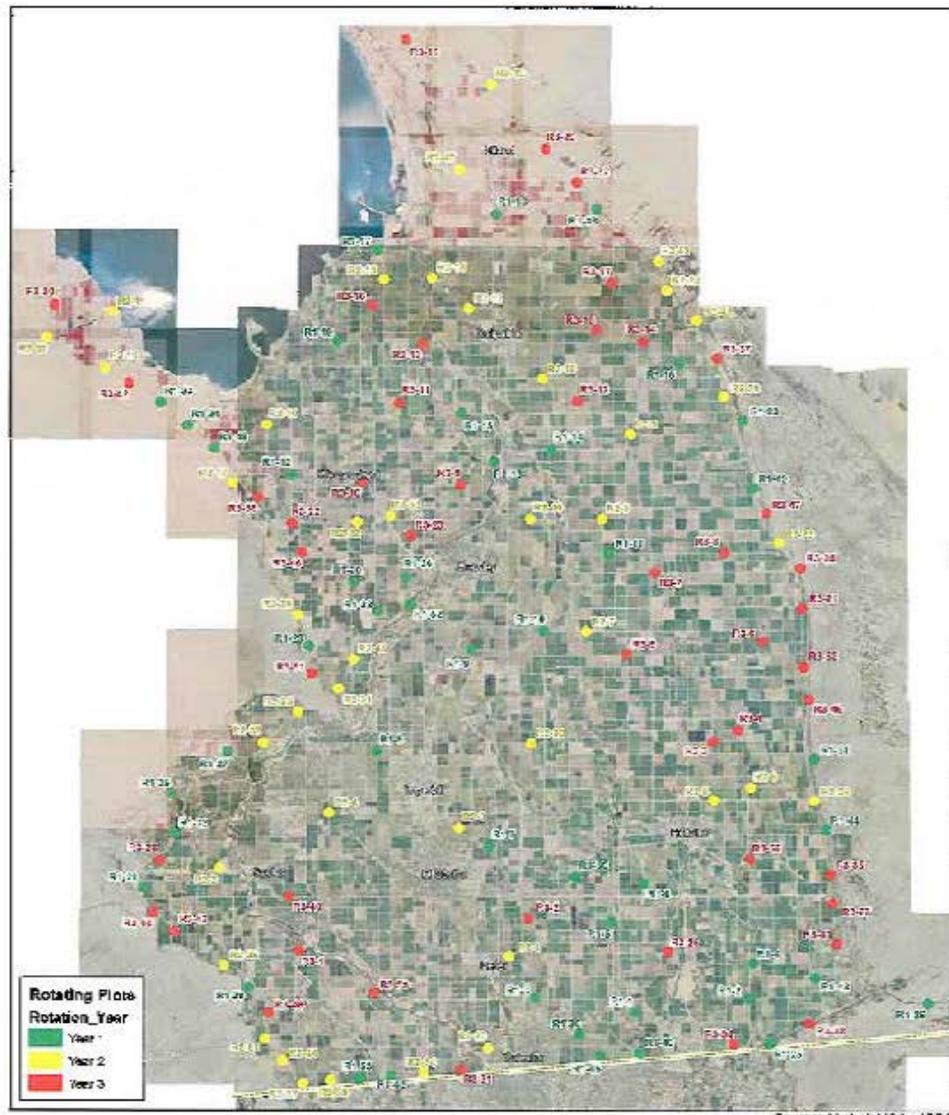
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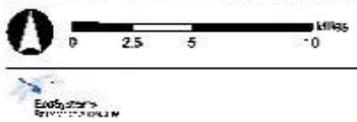
Baseline Survey

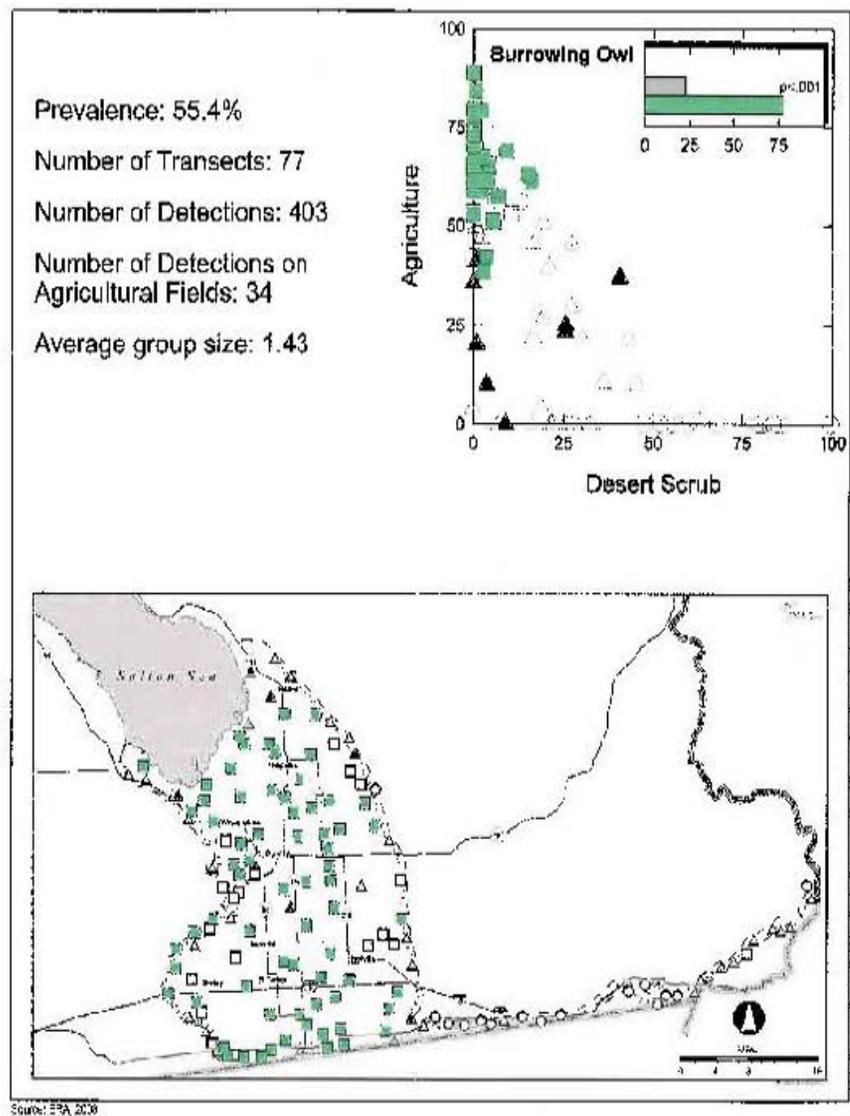
- **Three Year Effort**
 - Field work completed in January, 2010
 - Database operational by July, 2010
- **Protocol**
 - Rotating Plots
 - Sentinel Plots
 - Transects
- **Data**
 - Species sighted and activity
 - Surrounding habitat
 - Site Conditions
 - Agricultural field classification
- **GIS Database**



Source: AirphotoUSA, JGS
 Rotating Plot Locations
 Imperial Valley

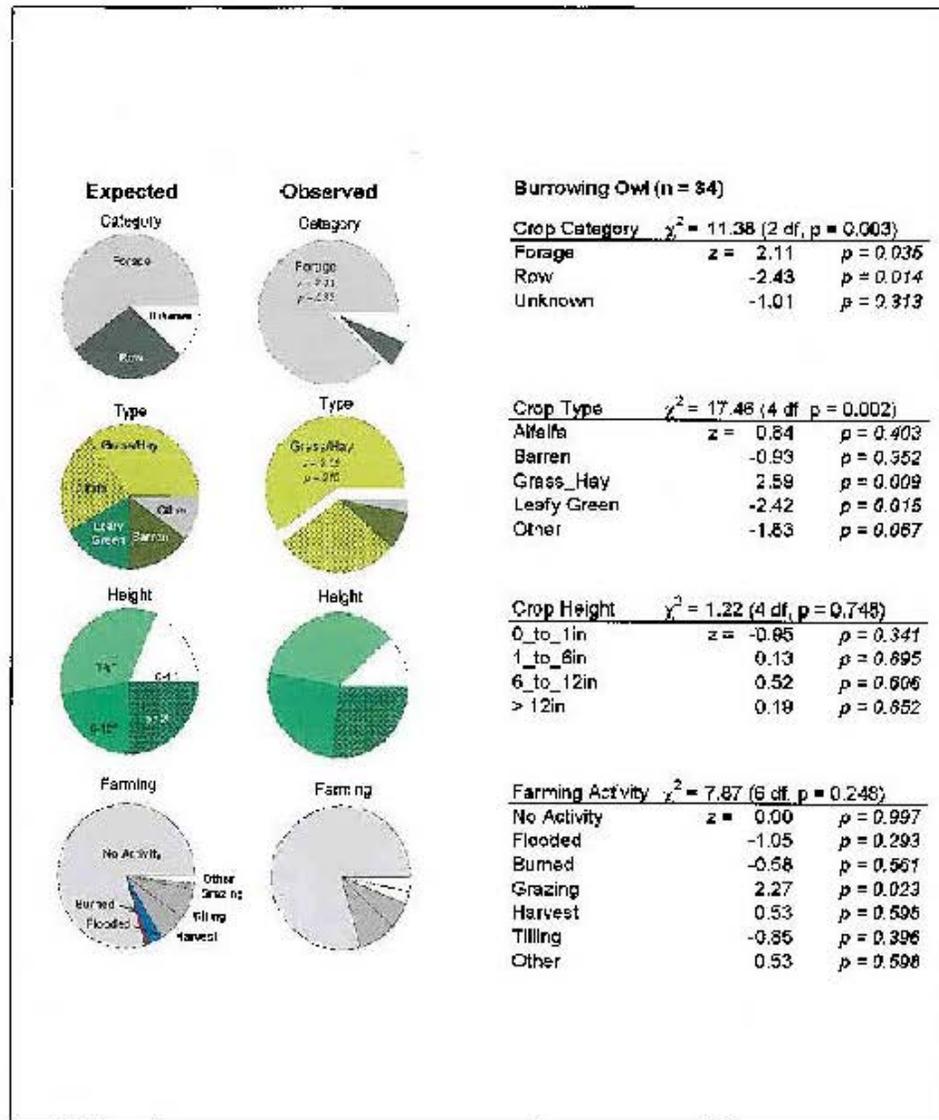
Figure 3





Burrowing Owl Habitat Associations and Distribution

Figure 15



Source: ERA, 2006

Burrowing Owl Agricultural Habitat Associations

Figure 29



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Resource Specific

- **Water Quality**

- USGS agricultural drain water quality assessment

- Selenium fate and transport study

- Develop Best Management Practices for O&M

- **Air Quality**

- EIR/EIS four step program

- Access control

- Playa exposure model

- Monitoring system

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<http://63.253.106.170/iidmap/iid.php>

The screenshot displays the 'Draft IID Map Tool' web application in a Mozilla Firefox browser. The browser's address bar shows the URL <http://63.253.106.170/iidmap/iid.php>. The application header features the 'NEWFIELDS' logo and the date 'Thursday, January 29, 2009'. Below the header is a navigation bar with 'Reference Map' and 'About' links, and a toolbar with various map navigation icons.

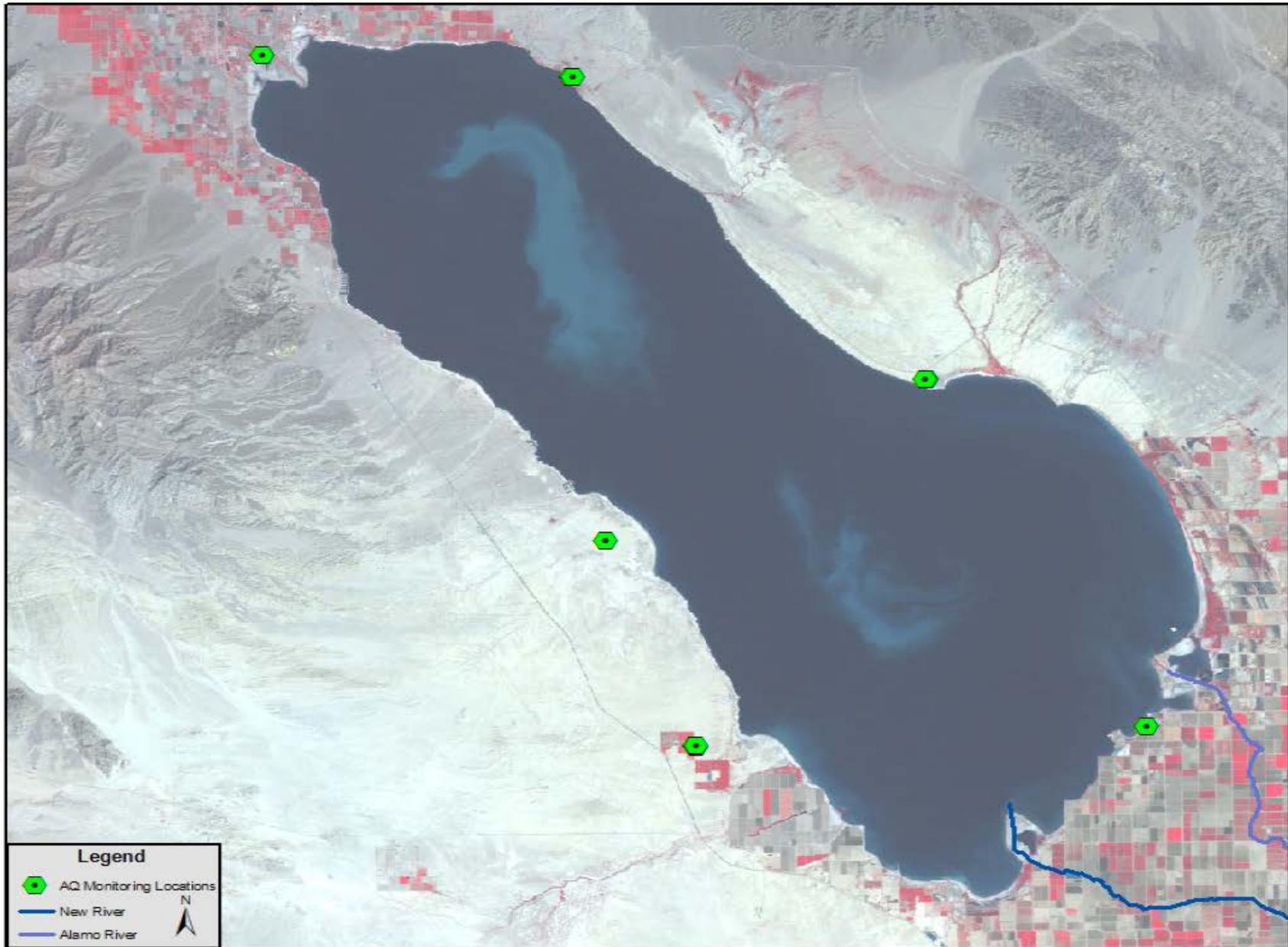
The main map area shows a satellite-style view of a large reservoir. The shoreline is highlighted with colored overlays: red for areas that have shrunk, blue for areas with little change, and green for areas that have expanded. A scale bar and a north arrow are visible on the left side of the map. A small inset map in the bottom right corner shows the location of the reservoir within a larger regional context.

On the right side of the map, there is a 'MAP LAYERS' panel. It includes a 'Jump To' dropdown menu, a 'Map Layers' tab, and an 'Information' tab. The 'MAP LAYERS' list includes:

- Urban Areas
- Roads
- Miscellaneous
- Base Layers
- Hydrology
- Shoreline Differences
 - 2 Colors (Shrink/Expand)
 - 2000-01-28 to 2005-05-25 (AB)
 - 2000-01-28 to 2005-11-17 (AC)
 - 2000-01-28 to 2006-06-13 (AD)
 - 2000-01-28 to 2007-09-04 (AE)
 - 2000-01-28 to 2008-03-14 (AF)
 - 2000-01-28 to 2008-09-22 (AG)
 - Shrink (more than 50m)
 - Little Change (+/- 50m)
 - Expand (more than 50m)
- Distance Shading (Shrink/Expand)
- Points (Shrink/Expand)
- Landsat Groups
- Background Imagery

At the bottom of the map, the coordinates are displayed as 'ID Map Tool X,Y: 591120 27.3712778 43 Lat, Long: 33 5507, -116.0194'. The scale is set to 210,116. The bottom status bar shows the Windows taskbar with various application icons and the system clock at 4:03 PM.

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Typical Monitoring Station

- **Metrological Data**
 - Temperature
 - Wind speed/direction
 - Humidity
 - Solar radiation
- **Particulate Matter**
- **Expansion**



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Mitigation Team

- **IID Board of Directors**
- **General Manager's office & Water Dept.**
- **Wildlife Agencies and Water Agencies**
- **Consultants and Contractors**
- **Farmers and Valley Residents**
- **Specific IID Team Members**

Alexia DeJoannis

Jessica Lovecchio

Tommy Mills



THANK YOU !!
QUESTIONS AND COMMENTS