

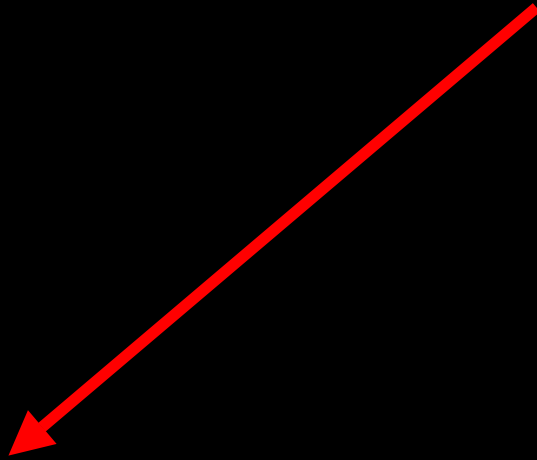
# Hunters Hole Restoration in the Limitrophe Division LCR



# Morelos Dam



x



# Hunters Hole



## Excellent Native Habitat Maintained In Limitrophe:

- Inadvertent Overruns
- Dam Seepage
- Ag. Returns
- Ground Water Inflows



# **Challenges facing Hunters Hole Restoration:**

- **Intense Illegal Activity**
- **Public Safety**
- **Water Needs**
- **Boundary Deliniation**
- **Ecological Degradation**
- **Protection of Existing Habitat**



# Hunter's Hole

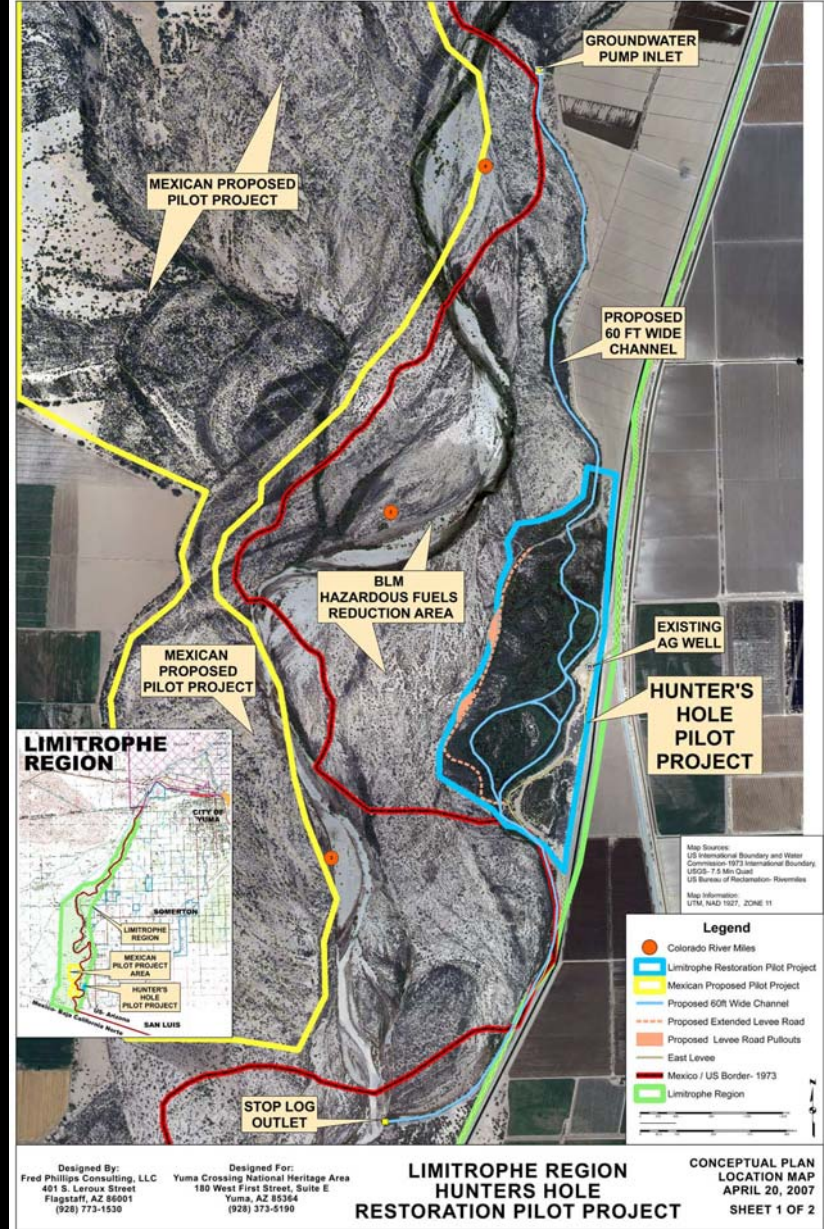
- Existing Wetlands
- Large Area of Native Habitat
- Federal Land
- AZGFD Plan
- Major Security Issues in Area





# **Restoration Plan**

- **Concept Design and Consensus**
- **Fundraising**
- **Design and Permits**
- **Implementation**
- **Combine dual goals**
  - **Security**
  - **Wildlife Habitat**



# Hunters Hole Pilot Project

**PILOT PROJECT NOTES:**

**SECURITY EXTENDED LEVEE ROADS- 3,542 LINEAR FEET**  
 Extended levee roads shall tie into the existing levee roads. The extended levee shall be 10 ft higher than the current levee grade. Extended levee roads shall be 20 ft wide at the top. The slope shall be 1/1 to native grade, armored with riprap.

**SECURITY CHANNELS- 8,403 LINEAR FEET**  
 Dredged channels shall be 60' ft wide.

**FLOODPLAIN AREAS- 20 ACRES**  
 Areas adjacent to the proposed channel shall be floodplain with wetland vegetation (rushes, sedges...). These areas shall be flooded by the use of stop log structures.

**MESQUITE REVEGETATION- 40 ACRES**  
 These areas, which are currently solid stands of tamarisk, shall be completely cleared mechanically with bulldozers/mulchers. The areas shall then be revegetated with Mesquites on 40' ft OC and seeded with alkalai sacton. There shall be a visual corridor with a 2 - 12ft height range maintained.

**COTTONWOOD / WILLOW AREAS- 30 ACRES**  
 All remaining areas shall be cleared with a combination of hand and mechanical clearing. These areas are mostly native cottonwood and willows. There shall be a visual corridor with a 2 - 12ft height range maintained.

ALL APPROVED AREAS OUTSIDE LEVEE SHALL BE COMPLETELY CLEARED FOR SURVEILLANCE

SECURITY LEVEE- 20 FT WIDE AT TOP. SLOPE SHALL BE 1/1 TO NATIVE GRADE. SLOPE SHALL BE ARMORED WITH RIP RAP

LEVEE PULLOUTS- AREAS SHALL BE RAISED 10 FT HIGHER THAN LEVEE (SECURITY OVERLOOK)

ALL APPROVED AREAS OUTSIDE LEVEE SHALL BE COMPLETELY CLEARED FOR SURVEILLANCE

EXTENDED LEVEE ROADS SHALL TIE INTO EXISTING LEVEE ROAD. THE EXTENDED LEVEES SHALL BE 10 FT HIGHER THAN CURRENT LEVEE GRADE.

STOP LOG STRUCTURE- TYPICAL

MESQUITE REVEGETATION- MECHANICAL CLEARING

PROPOSED SECURITY CHANNEL - 60 FT WIDE

EXISTING MODE CANAL SIPHON INLET

EXISTING AGRICULTURE WELL WITH PUMP  
 PROPOSED GROUNDWATER PIPE FROM PUMP TO CHANNEL

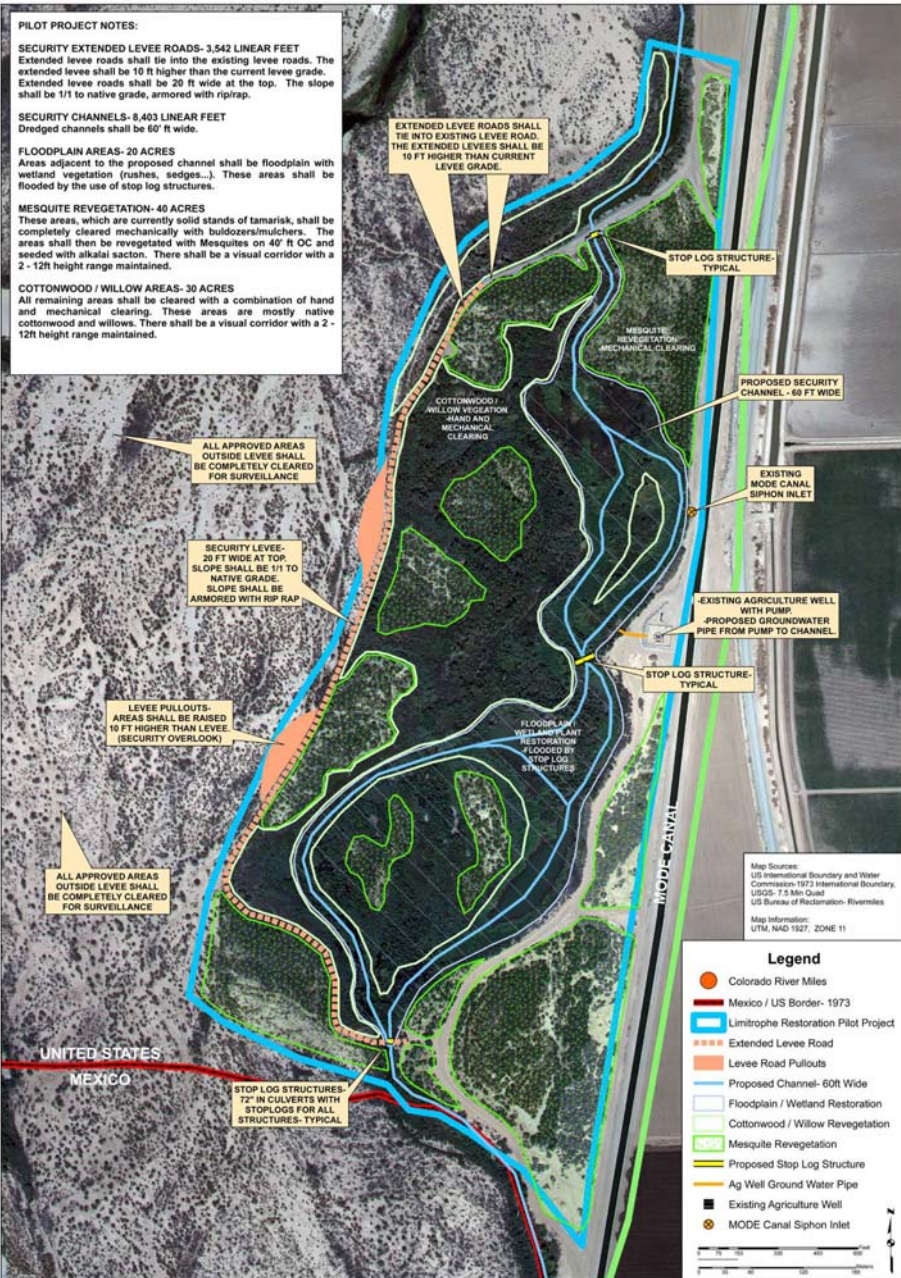
STOP LOG STRUCTURE- TYPICAL

FLOODPLAIN WETLAND RESTORATION FLOODED BY STOP LOG STRUCTURES

Map Sources:  
 US International Boundary and Water Commission 1973 International Boundary, USGS: 7.5 Min Quad  
 US Bureau of Reclamation- Rivermiles  
 Map Information:  
 UTM, NAD 1987, ZONE 11

**Legend**

- Colorado River Miles
- Mexico / US Border- 1973
- Limitrophe Restoration Pilot Project
- Extended Levee Road
- Levee Road Pullouts
- Proposed Channel- 60ft Wide
- Floodplain / Wetland Restoration
- Cottonwood / Willow Revegetation
- Mesquite Revegetation
- Proposed Stop Log Structure
- Ag Well Ground Water Pipe
- Existing Agriculture Well
- MODE Canal Siphon Inlet



Designed By:  
 Fred Phillips Consulting, LLC  
 401 S. Leroux Street  
 Flagstaff, AZ 86001  
 (928) 773-1530

Designed For:  
 Yuma Crossing National Heritage Area  
 180 West First Street, Suite E  
 Yuma, AZ 85364  
 (928) 373-5190

**LIMITROPHE REGION  
 HUNTERS HOLE  
 RESTORATION PILOT PROJECT**

**CONCEPTUAL PLAN  
 DESIGN MAP  
 APRIL 20, 2007  
 SHEET 2 OF 2**

# Hunter's Hole, Existing Conditions



# Yuma East Wetlands Serving as Pilot Project Following work completed in 3.5 Years











# South Channel Project Area, October 2005















































**YEW 6 am March 18**



**YEW 8am March 19**



















# YWW 2000



**YWW 2006**





Example of what Limitrophe dense areas can be restored to  
with Cottonwood/willow revegetation.



Native tree grove 6 years after planting. (Area dense tamarisk  
before restoration)

# YUMA EAST WETLANDS RESTORATION PROJECT



Shade Ramada Elevation



Trail and Observation Blind Perspective









# 7 Year Old Revegetation

## ‘Ahakhav Tribal Preserve



Restored wetlands and cottonwood forest 7 years after planting.  
(Area all exotic species before restoration)

## 'Ahakhav Tribal Preserve



Restored mesquite forest understory 7 years after planting.  
(Area all exotic species before restoration)

























