



Lower Colorado River Multi-Species Conservation Program

Balancing Resource Use and Conservation

**LCR MSCP Program Goals and preliminary design
for Restoration of
Hart Mine Marsh**



U.S. Department of the Interior
Bureau of Reclamation

Hart Mine Marsh

Located on Cibola National Wildlife Refuge

Partnership with the USFWS Cibola NWR and Reclamation's LCR MSCP office

Restoration will fulfill a portion of the LCR MSCP's habitat creation requirements while meeting goals identified in the USFWS's management plan for the lower Colorado River refuges

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LCR MSCP Marsh Goals

- 512 acres of marsh total
- Creation of habitat for LCR MSCP covered species
- Reach 4
 - Yuma clapper rail
 - Western least bittern
 - Colorado River cotton rat

Yuma Clapper Rail

- Patches of bulrush and cattails with water depths of no greater than 12 inches
- Integrated mosaic of wetland vegetation types, water depths, and open water
- Creation of these habitats will also benefit Western least bittern and Colorado River cotton rat, as well as, California Black rail

Hart Mine Marsh Goals

- **Expansion of covered species habitat**
 - **minimum of 100 acres**
 - **maximum?**

Fish and Wildlife Service Wetland Review Process

- **Multidisciplinary Team of Wetland Scientists, Geologists, Ecologists, Hydrologists, Regulators, and Managers**
 - **Historical processes**
 - **Existing physical and biological features**
 - **Current management**

Fish and Wildlife Service Wetland Review Process

- Utilize existing geomorphological features
- Attempt to approximate historical conditions and some processes
- Have the ability to independently manage and control water levels in multiple management units

The Balancing Act

- **Incorporation of Wetland Review suggestions, but still meeting LCR MSCP program goals for habitat creation**
- **Determine what is possible based on site conditions, infrastructure, available water, and budget**

Hart Mine Marsh Goals

- **Using existing geomorphology and topography in design**
 - Reducing cut and fill
- **Independently managed units constructed in a phased approach**
 - Clearing/Excavation/Contouring
 - Control structures
 - Vegetation establishment
- **Water management**
 - System flow management
 - Water level management

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LEGEND

- CELL 1 - 41 ACRES IMPROVED WETLAND
- CELL 2 - 45 ACRES IMPROVED WETLAND
- OPEN WATER CHANNEL, 3.5 FT SOFT FLOORS, 6-12 FT DEEP, 15-12.7 BOTTOM WIDTH
- ROADS
- EXISTING BUNDLES



Elevation Table			
Number	Minimum Elevation	Maximum Elevation	Color
1	213.00	213.00	Blue
2	213.00	214.00	Blue
3	212.00	214.00	Green
4	214.00	214.00	Green
5	214.00	222.00	Orange
6	222.00	222.00	Orange

NOTES

1. Contour interval is 0.5 feet.
2. Plans are preliminary, not for construction.
3. Proposed high water elevation = 214.0'
4. Approximate total soil volume = 75,000 cu yd.
5. Approximate total fill volume = 45,000 cu yd.
6. Wet cell volume to place air subdrainage drains = 25,000 cu yd.
7. Cells may change size dependent on final elevations from survey data and the need to protect cells/ris.

ALWAYS THINK SAFETY

STATE OF MONTANA
DEPARTMENT OF LAND AND WATER RESOURCES
BUREAU OF RECLAMATION

**CIBOLA NATIONAL WILDLIFE REFUGE
HART MINE MARSH
WETLAND RESTORATION
SITE PLAN**

PROJECT NO. 1000-1000

DATE: 08/14/2013

APPROVED: [Signature]

DATE: 08/14/2013

0Axx-418-xx
SHEET NUMBER

Monitoring at Hart Mine Marsh

- **Physical site characterization**
 - Existing conditions report
 - Hydrology, soils, water quality, and vegetation
 - Available online:
<http://www.lcrmsep.gov/worktasks/conservationareas/E9/HartMineconditions.pdf>
- **Pre-development marsh bird surveys**

Pre-development Monitoring

- Marsh bird surveys using tape playback method
- Call sequence of black rail, least bittern, Virginia rail, and Yuma clapper rail were played using a CD player and amplified speakers.
- Eight survey points were placed adjacent to patches of marsh vegetation
- Most survey points were reached by kayak or by foot where water levels were low

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Results

2006 surveys

- March 21
- April 19
- May 23

2007 surveys

- April 6
- April 27
- May 11

Species	2006	2007
Yuma Clapper Rail	4 (2 pair)*	0
Least Bittern	2	3

*Clapper rails were detected at two different survey points on different survey days

Questions?



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