Lower Colorado River Multi-Species Conservation Program

Habitat Restoration Along the Lower Colorado River:

Challenges & Opportunities

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LCR Multi-Species Conservation Program

Program Area:

Lake Mead to SIB (historic floodplain)

Key Program Elements

- Creation and restoration of native wetland, riparian, and aquatic habitats;
- Implementation of measures to maintain and enhance existing habitats;
- Implementation of species-specific conservation measures;
- Implementation of avoidance and minimization measures
- Implementation of long-term monitoring & research activities; and
- Use principles of adaptive management

Key LCR MSCP Species

Total of 26 Species

- Aquatic – Razorback sucker; Bonytail
- Marsh – Yuma clapper rail; Black rail
- Riparian – Southwestern willow flycatcher; Arizona Bell's vireo; and Yellow-billed cuckoo

Program Costs
(in 2003 dollars)

$626 million over 50 years

Habitat creation	$267 million
Habitat protection	$113 million
Fish augmentation	$ 34 million
Monitoring and research	$212 million

Restoration Challenges

- Acquiring interest in land parcels & water supplies
- Created habitats need to function
- Managing human uses/interactions
- Manage non-native species & wildfire
- Monitoring & research data needs to cycle into Adaptive Management

Restoration Opportunities

- Significant opportunities on federal, state, and tribal lands within planning area
- Opportunities on private lands within the planning area
- Over 35,000 acres identified with high restoration potential
- Mainstream Colorado River water is typically available
- Opportunity to create isolated "predator-free" aquatic environments in relict sloughs and channel features in the floodplain

Potential Restoration Opportunities

Palo Verde Oxbow, southern-portion of PVID, northern end of Cibola NWR

Restoration Opportunities (cont.)

- Habitat creation technologies have evolved significantly and are much more effective
- Improvements in aquaculture and maintenance of genetic diversity of endangered native fishes
- Development of an integrated, comprehensive and cooperative LCR wildfire management and suppression plan is proceeding

Conservation Area Site Design

- Habitat will be created with optimal patch sizes
- Create an "integrated mosaic," to approximate historical conditions
- Conversion of agricultural lands to native riparian and marsh habitats
- As necessary, incorporate buffer areas
- Minimize construction of new infrastructure

Habitat Creation Schedule
(Total of 8,132 acres)

	Habitat Creation Types (ac)			
Years	CW-W	Mesquite	Marsh	BW
1-5	250	100	50	60
6-10	750	200	100	60
11-15	1,500	400	200	60
16-20	1,500	400	162	60
21-25	1,500	220	-	60
26-30	440	-	-	60
Total	5,940	1,320	512	360

Riparian Habitat Restoration

Riparian Habitat Restoration Challenges

Saltcedar control within restoration sites

Wildfire Mgt.

Riparian Habitat Restoration

Planting CW saplings

Mosaic of habitat restoration at Cibola NWR (CW-W, HM)


Pratt Farm
CW-W Parcel
Laguna Division

Riparian Species Benefited

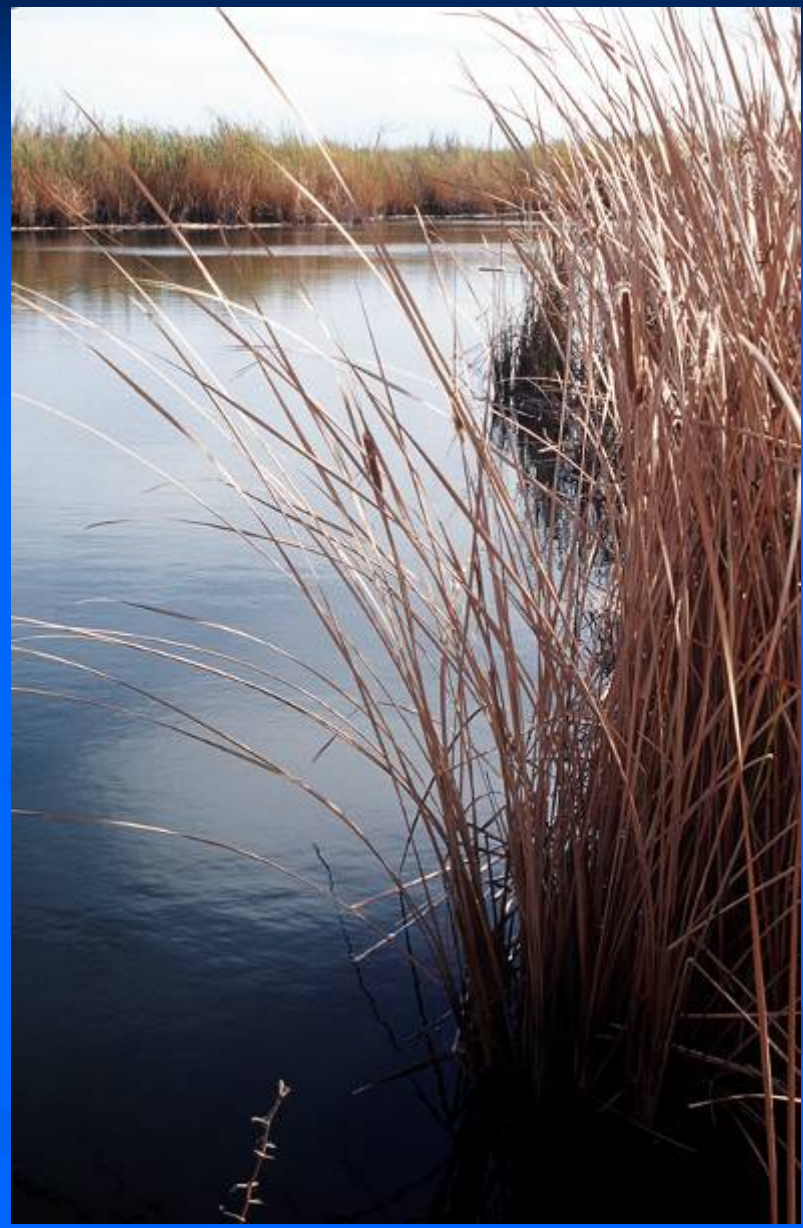
Southwestern willow flycatcher

Yellow-billed cuckoo

Arizona Bell's vireo

Marsh Restoration

Amphibious excavator restoring marsh function



Restored Marsh

Marsh Species Benefited

California black rail

Least bittern

Yuma clapper rail

Backwater Restoration

California backwater south of Blythe, Calif.

Backwater Creation/Restoration

Excavation of new backwaters

Backwaters could be connected or disconnected to the mainstream

Dredging and restoring backwater function

Aquatic Species Benefited

Bonytail

Razorback sucker

Native Fish Proposal

SPECIES	ACTIVITY
Razorback Sucker	660,000 fish Over 50-year period
Bonytail	620,000 fish Over 50-year period
Humpback Chub	$10,000/year to GCDAMP For 50 years
Flannelmouth Sucker	$80,000/5 years + 85 acres of backwaters

Hatchery Production

Arizona Game & Fish Dept. Bubbling Ponds Hatchery

Razorback sucker, Senator Wash Reservoir, Calif.

Mainstream Water Use

- Site preparation, habitat establishment, and maintenance irrigation requirements
- Managed flooding to promote moist-soil conditions, and flying insect production
- Restoration of relict backwaters or sloughs, and creation of new backwater features
- Restoration and rehabilitation of existing marsh, and creation of new marsh habitats
- Water uses associated with native fish rearing facilities located within the floodplain
- Estimated annual mainstream water use requirement for 8,132 acres – 40,000 to 50,000 acre-feet

Maintenance of Existing Habitat

- $25,000,000 Fund – Used to fund actions to avoid impacts to existing habitats
- Available to Land Managers with consent of Reclamation, USFWS, and State participants

Monitoring, Research, and Adaptive Management,

- Monitoring & Research Activities
  - System monitoring
  - Species & Restoration technology research
  - Post-development monitoring
- Adaptive Management
  - Monitoring & research leads to new knowledge
  - Data influences decision-making
  - Influences implementation & funding
  - Cycle starts anew…

Summary

- Creation and maintenance of 8,132 acres of native habitats will benefit LCR species over the 50-year period
- Implementation of the long-term Program will benefit water and power users in Arizona, California, and Nevada, as well as several agencies within the Department of the Interior
- The Program ensures long-term compliance with applicable federal and state environmental laws, while permitting the continued utilization of LCR water and power resources

Yellow warbler

Summer tanager

www.lcrmscp.org

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