



Lower Colorado River Multi-Species Conservation Program

Balancing Resource Use and Conservation

Backwater Selection Site Process

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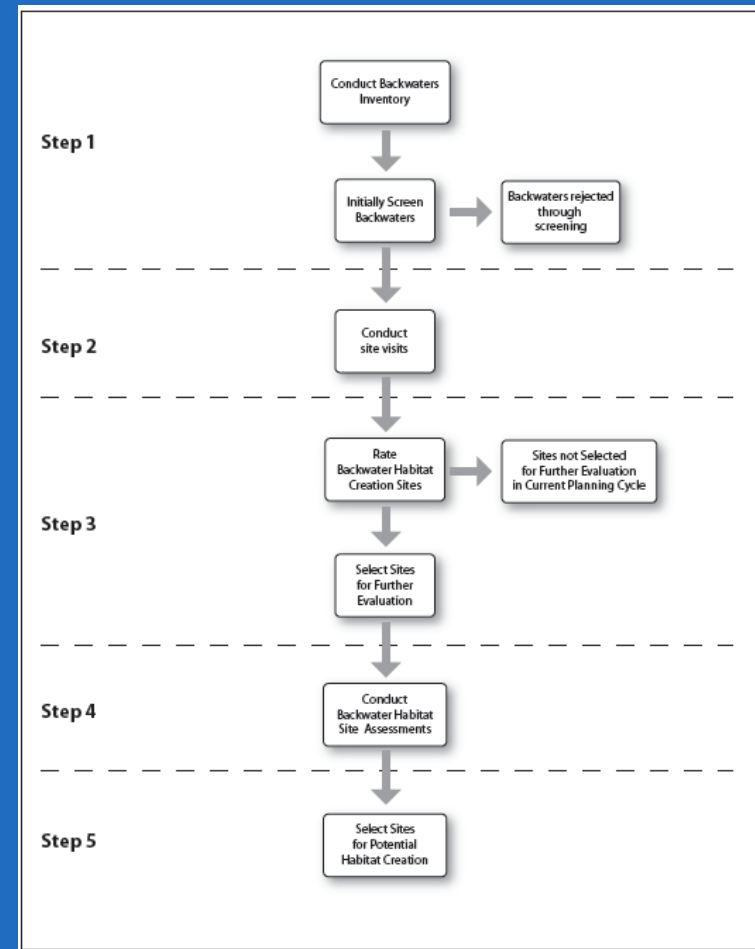
Backwater Habitat

- **The LCR MSCP (Reclamation) is tasked with creating 360 acres of backwater habitat along the LCR for:**
 - **Razorback Sucker**
 - **Bonytail**
 - **Flannelmouth Sucker**
- **What is backwater habitat?**
 - **Razorback sucker & Bonytail**
 - **Isolated from main river channel**
 - **Free of non-native fish (i.e. largemouth and striped bass)**
 - **Flannelmouth sucker**
 - **In channel habitat**
 - **Connected backwater**

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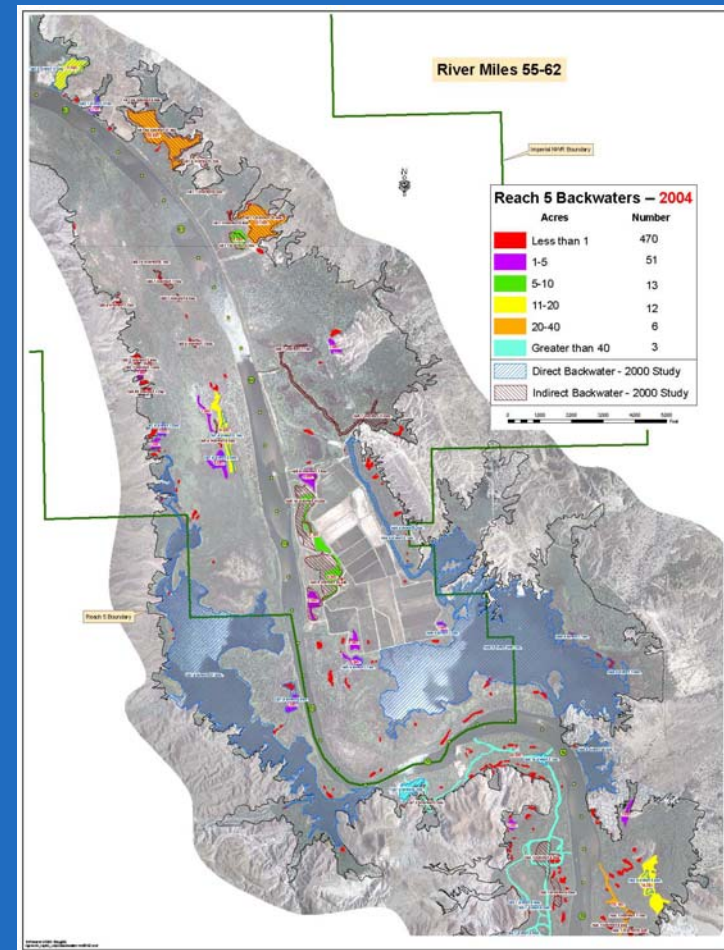
5-Step Backwater Site Selection Process

- **Systematic, repeatable method for identifying & prioritizing backwater sites**
- **Starting with all identified sites, lower potential sites are systematically rejected at each step**
- **Coordination with cooperating agencies and public outreach happens throughout the process**



Step 1 - Identify Backwaters

- Review GIS data and aerial video footage to identify potential sites
- Consideration of current land use patterns and discussions with appropriate land managers



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Step 1 – Identify Backwaters



- **Conduct aerial surveys during low flow cycles to assess:**
 - permanence of open water
 - approximate percentage of emergent vegetation
 - site access
- **At the conclusion of step 1, approximately 25 sites are selected for further evaluation**

Step 2 - Initial Site Visit

- Candidate sites are visited during the summer when conditions are presumed to be most stressful to fish.



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Step 2 - Initial Site Visit

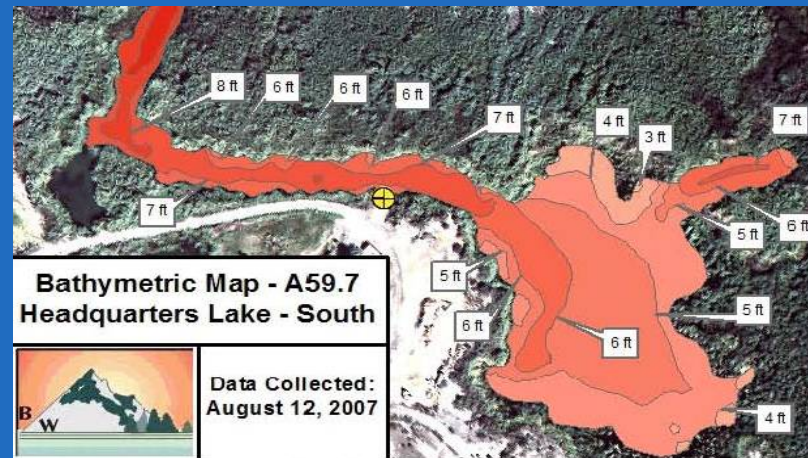
- **Biological parameters sampled:**
 - **Water quality**
 - (temp, DO, pH, salinity)
 - Chlorophyll a
 - Cyanobacteria
 - **Larval food sources**
 - **Fishery surveys**
 - **Submerged aquatic vegetation**



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Step 2 - Initial Site Visit

- **Biological and Physical parameters sampled:**
 - Cover (vegetation, turbidity, rip-rap, depth)
 - Bathymetry
 - Gravel Substrate (spawning habitat)



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Step 3 – Rate Backwaters for further Evaluation

- Site visit data used to input “Biological Suitability Rating Worksheet”
- Scores are grouped into simple “Habitat Creation Opportunity Ratings”
 - Low
 - Moderate
 - High
 - Excellent
- 4-5 sites are then selected for further evaluation based on a combination of biological and other program considerations.

Step 3 - Habitat Creation Opportunity Ratings Based on Backwater Biological Suitability Criteria Scores

<i>Habitat Creation Opportunity Rating</i>	<i>Biological Suitability Criteria Score</i>	<i>Rationale</i>
Excellent	60 - 75	Existing backwater conditions provide the highest probability for establishment of habitat.
High	52 – 59.9	Existing backwater conditions provide a high probability for establishment of habitat, but the effort required to establish habitat is likely to be more complex than for higher scoring sites.
Moderate	45 – 51.99	Backwaters score low in at least three biological parameters indicating that actions required to establish and maintain habitat are likely to be more complex and costly than for higher scoring sites.
Low	Less than 45	Backwaters with scores of 5-8.9 have multiple deficiencies as habitat and would likely require substantial effort to establish habitat relative to scoring rated sites.

Step 4 - Backwater Site Assessment

- Quarterly site visits
 - 4 site visits (Fall, Winter, Spring, Summer)
 - Collect data same as during the initial summer site visit with addition of:
 - Water elevation data
 - Sediment samples
 - Macro-inverts
 - Nutrients



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Step 4 - Backwater Site Assessment

- Create Conceptual Habitat Creation Plan
- Develop Preliminary Cost Estimate



Step 5 – Select Backwater for Habitat Creation

- Based on habitat creation opportunity rating and preliminary cost estimates site are selected for habitat creation.



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Accomplishments to date

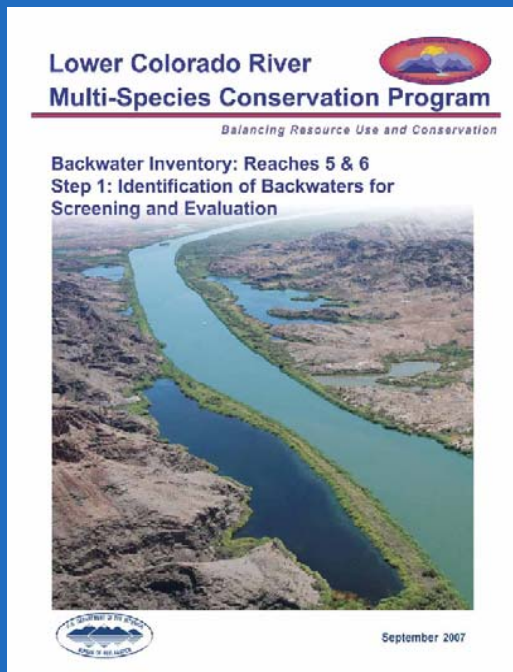
- Reach 5 & 6
 - Completed Step 1 to Step 3
 - Currently working on Step 4
- Reach 3 & 4
 - Started Step 1



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Reach 5 & 6 Step 1

- Completed aerial survey
December 2006
- Selected 25 sites with 5
alternates
- Reach 5 & 6 Step 1 Report



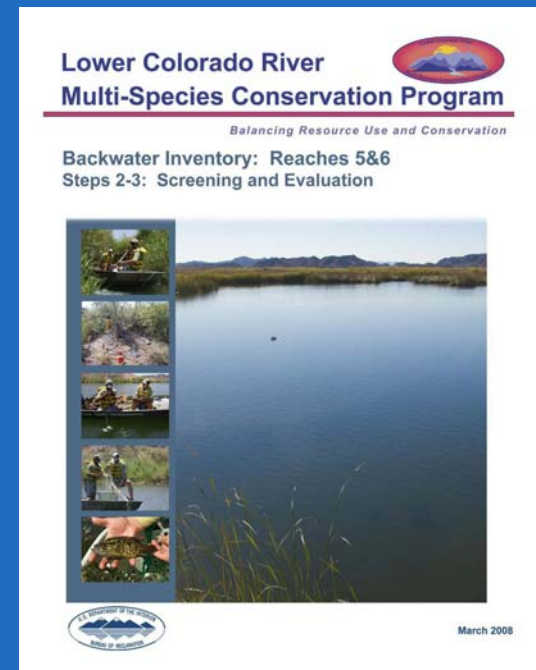
Size (acres)	Reach 5 (acres)	Reach 6 (acres)
<1	470	202
1-4.99	51	10
5-9.99	13	1
10-19.99	12	0
20.00-39.99	6	0
40+	3	0
Total	555	213

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Reach 5 & 6 Step 2 & Step 3

- Step 2 Summer 2007 (June - August)
- Step 3 Fall 2007

Rating	Number of Sites
Excellent	9
High	11
Moderate	2
Low	3



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Reach 5 & 6 Step 4

- **Step 4 process near completion 2 candidate sites**
 - Headquarters and Secret Lake
 - “Backwater Site Assessment” draft report completed, will be posted to MSCP website late January
 - February 2009 meeting with MSCP steering committee to determine the direction of Headquarters
- **In the process of selecting 3 more sites**
 - Working with AZGF and CAFG for public input on site selection

Reach 3 & 4 Step 1

- Completed aerial survey in December 2007
- Currently planning more public outreach to inform stakeholders prior to site selection for the Step 2 process



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All Reports Posted to MSCP website

www.lcrmscp.gov