Habitat Maintenance at LCR Marshes

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Created Marshes in LCR

Hart Mine Marsh

Beal Lake

Imperial Ponds
Importance of Habitat Maintenance

• Non-native invasive plant species can take over native habitat, to detriment of sensitive species for which habitat was developed or restored

• Habitat degradation can be a downward spiral: as vegetation conditions get bad, they continue to get worse unless checked
Importance of Habitat Maintenance

- Invasive species control
  - Salt cedar (*Tamarix ramosissima*)
  - Giant reed (*Arundo donax*)
  - Common reed (*Phragmites australis*)
  - Agricultural invasives (*Bassia spp.*)
Importance of Habitat Maintenance

- *Resistance* to Invasive species
  - Shoreline armoring
  - Seed elimination
Integrated Pest Management (IPM)

- Hand pulling whenever possible
- Foliar treatments of large quantities of small individuals to be efficient
- Cut stump treatments when neither of the former is possible
Methods: Invasive Species Control

• Hand Pulling
  – Most environmentally benign
  – Labor intensive
  – Most certain, if soil conditions are right
Methods: Invasive Species Control

• Chemical Treatment
  – Selection of chemical
    • Aquatic safe formulation
    • Specific (triclopyr, Garlon) kills broadleaf and save monocots like grasses; vs. non-specific (glyphosate, Rodeo) kills everything
    • What is permitted at the site
  – Development of a Pesticide Use Permit (PUP)
  – Environmental parameters
    • Wind < 10 mph
    • Precipitation: no rain predicted
    • Temperature: not too hot
  – Application must be under direction of licensed applicator (QAL)
Methods: Resistance to Invasive Species

• Shoreline Armoring
  – Saltgrass is a good line of defense
  – Other low-growing and dense emergent aquatic or emergent vegetation works
  – Develops over time
Methods: Resistance to Invasive Species

- Seed input limitation
  - Proper timing of treatment
  - Maintenance of water level especially at times of seed spreading
  - Management of neighboring parcels if possible
Timing

• Spring and summer can be key
• Work to eliminate BEFORE seed set
• For hand-pulling, choose a time of higher water
• For planting, choose a time of lower water
Adaptive Management
Respond to site needs at the time

• Modify effort and schedule over time
  – Infrequent, large crews
  – Frequent small crews

• Head ‘em off at the pass

• Introduce shoreline vegetation when possible
Payoffs for Vigilance
Some Special Cases
Islands Hart Mine Marsh

Clearing saltcedar from islands

Saltgrass Planting
Beal Lake Phragmites Treatment

Cut...

Kill....

Grow...

Re-cut...monitor...re-cut...
Watching Hart Mine Marsh grow
Enhancement opportunities Cell 1 Hart Mine Marsh

Planting upland native species (quailbush, mesquite) will armor against some invasions such as *Bassia*
Questions?