Multi-Benefit Floodplain Vegetation Management for the El Rio Reach of the Gila River, Maricopa County, AZ
PROJECT PURPOSE AND GOALS

• Reduce flood risk through saltcedar removal (and achieve other benefits)

• Maintain/enhance native habitats and wetland resources

• Account for future changes

• Be sustainable and as low-maintenance as possible

• Facilitate implementation
BIOPHYSICAL DATA COMPILATION AND COLLECTION

- LiDAR-derived topography and canopy height
- Climate
- Hydro-geomorphology
- Soils
- Groundwater
- Vegetation
- Wildlife habitat
- Land use
IMPLICATIONS

- River dynamics and risks from flood scour
- Soils mostly good for native plants
- Relative elevation as proxy for depth to groundwater
MORE IMPLICATIONS

• Little natural recruitment
• Native plant assemblages persist
• Relationships between relative elevation and native plants
• Important avian habitat
PRELIMINARY VEGETATION MANAGEMENT UNITS
1. NO ACTION UNITS
2. SALT CEDAR TREATMENT ONLY UNITS
3. SALTCEDAR TREATMENT & RIPARIAN ENHANCEMENT UNITS
3. SALTCEDAR TREATMENT & RIPARIAN ENHANCEMENT UNITS

Hydraulic Shield Example
- Conserved saltcedar as hydraulic shield
- Saltcedar removal and habitat enhancement protected by saltcedar hydraulic shield
- Flood flow direction (approx.) in primary channel

Imagery: USGS, 2005
4. SALTCEDAR TREATMENT & DESERT SHRUB ENHANCEMENT UNITS
5. SALTCEDAR TREATMENT & MESQUITE BOSQUE ENHANCEMENT UNITS
IMPLEMENTATION

1. Work with landowners to acquire permission to manage vegetation on their property

2. Conduct site-specific field evaluations and designs

3. Apply for and acquire funding for units with landowner permission and high priority

4. Apply for and acquire permits for units with landowner permission and high priority

5. Implement and conduct monitoring and maintenance

Repeat steps 2 through 5 as additional landowners and funding is secured
IMPLEMENTATION

- Site assessment and design
- Funding sources and cost estimates
- Permitting and regulatory compliance
- Site preparation activities
- Saltcedar removal and treatment methods
- Native plant propagation and planting
- Maintenance and monitoring
NEXT STEPS

• Incorporate Technical Advisory Committee (TAC) input
• Hydraulically model post-plan conditions
• Finalize plan
• Outreach to landowners...

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