GILA WATERSHED PARTNERSHIP OF ARIZONA

Rehabilitating Habitat on the Upper Gila River

Bethany Drahota
Habitat Restoration Manager
Gila Watershed Partnership of Arizona

Restoration & Rehabilitation Goals

Organization Goals

- Conserve Natural Resources
- Enhance the Environment


Southwest Willow Flycatcher


Yellow-Billed Cuckoo

Rehabilitation Goals

- Create Islands of Native Tree Species Along the Gila River
- Enhance Wildlife Habitat, Especially for T & E Species
- Prepare for the Tamarisk Leaf Beetle's Arrival
- Reduce Wildfire Risk
- Conserve Water through Establishing Native Vegetation

Site Locations

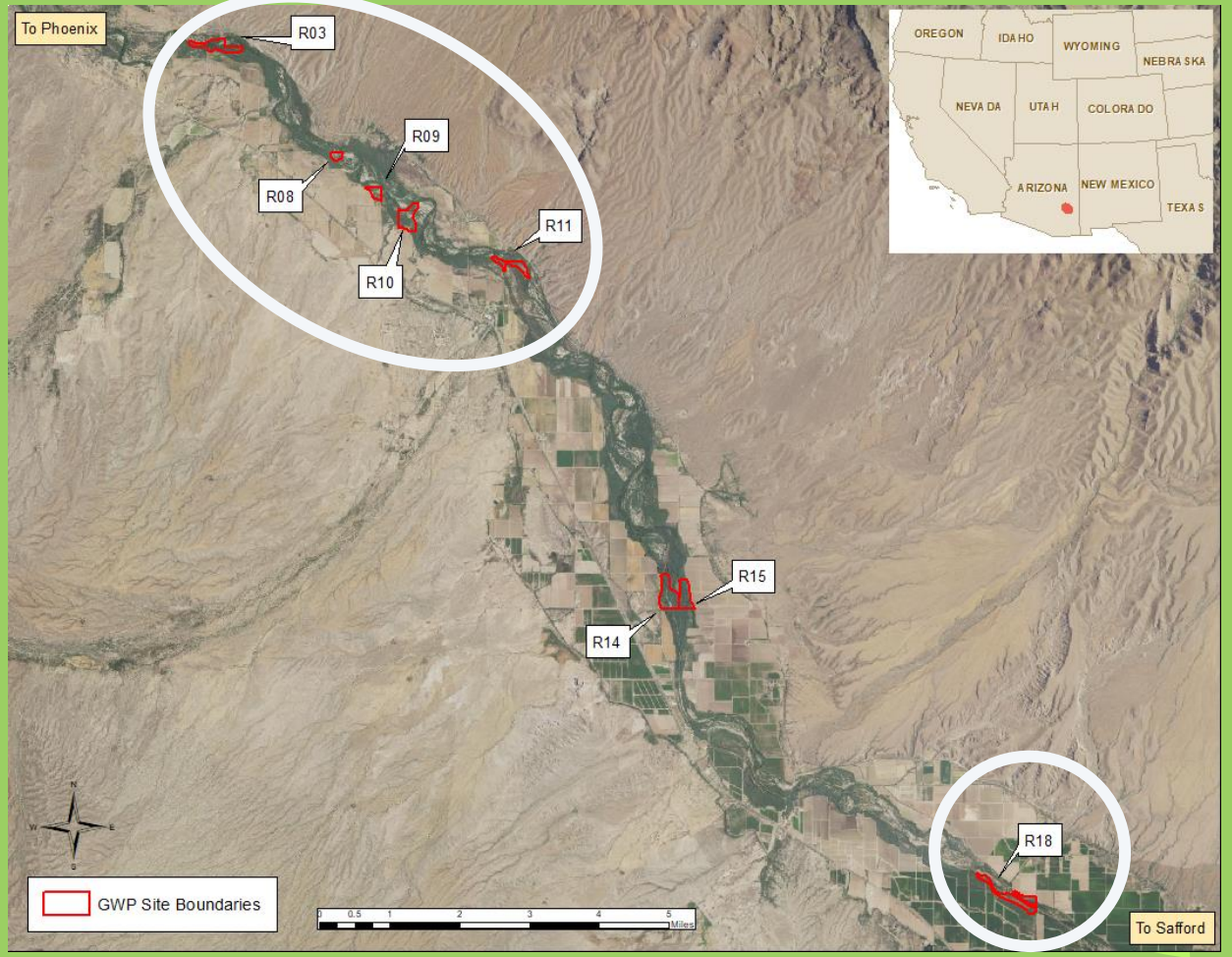
Highlights

- Sites Spread Along 25-River Miles
- About 3000-ft Elevation
- Monoculture of Salt Cedar/Tamarisk
- Priority Nesting Area for SWFL

Site Locations

2019 Sites

- **R03: 46.0-acres**
- **R08: 9.9-acres**
- **R09: 17.4-acres**
- **R10: 47.0-acres**
- **R11: 27.0-acres**
- R14: 61.7-acres
- R15: 39.6-acres
- **R18: 56.2-acres**



Partners in Success

- Arizona Conservation Corps (AZCC)
- National Civilian Community Corps (NCCC)
- San Carlos Apache Tribe
- Fort Grant Prison Crew
- Volunteers

From 2014 to 2019

209.86-Acres

Tamarisk Removal

117.64-Acres

Tamarisk Retreatment

89.87-Acres

Native Revegetation

2019 Review

30.3-Acres

Tamarisk Removal

55.5-Acres

Retreatment

35.8-Acres

Native Revegetation

2,970 Plants in the Ground

Key Challenges

Water!

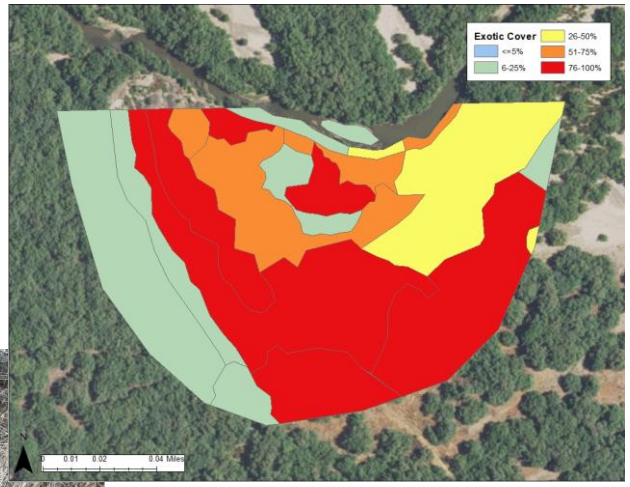
- Groundwater can Exceed **20-ft**
- **No** Rights to River Water
  - All Water Must be Trucked in
- Hotter & Drier Trends
  - Drier Monsoons
  - Earlier Snow Melt

Herbivory!

- Roosevelt Elk
- Deer
- Beaver
- Javelina
- Ground Squirrels
- Rodents
- Birds
- Ants
- Rabbits

Weeds & Debris!

- Extreme Densities of Exotic Herbaceous Cover Following Tamarisk Removal
- Over 100-acres of Tamarisk Cut Piles & Debris



Soil!

- Plant Available Water as low as 10%
- Salinity as high as 10 dS/m
- Excess of Some Nutrients & Deficiencies of Others

Adaptive Solutions

Prescribed Burns

Plant Protection

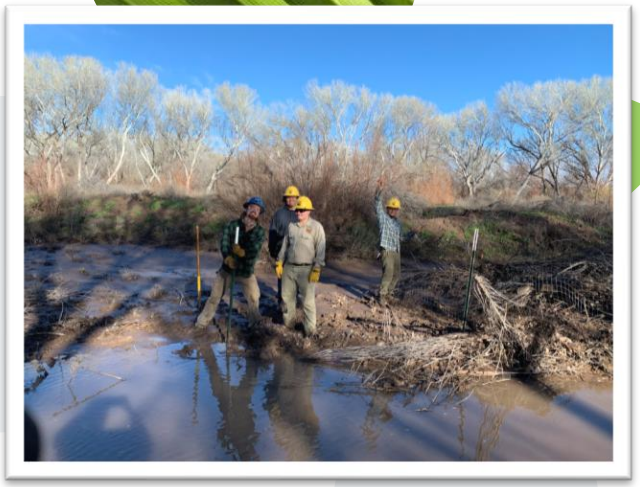
Irrigation

- Over 20-acres of Plants were Irrigated
- 1,978 Individual Plants
- Each Hole was Augered by a Skid Steer

Changes in Survival!

From survival rates averaging 10% in past years to **81%** in 2019!

Volunteers & Extended Crew Seasons



Year Round Crews

- Tamarisk Removal in the Fall/Winter
- Retreatment & Secondary Weeds in the Spring/Summer
- Watering & Revegetation Maintenance in the Summer

NCCC

- National Civilian Community Corps
- Capacity Building
- Leveraging Available Resources

EAC

- Partnering with an Environmental Biology Class at Eastern Arizona College
- Promote Community Engagement

Experimental Approaches

Potential Approaches

- Mycorrhizae Inoculation Experiments in the Field
  - **This Season!**
- Sheep or Other Grazing Animals
- Wolf Urine
- Sound Emitters

Longer Term Plans for Rehabilitation

Switching to a Maintenance Mind Set & Loving Adaptive Management

- Revegetate with 2000 to 3000 Plants, Grasses, & Seeds Annually
- Continue Testing Experimental Approaches (Mycorrhizae Inoculation in the Field)
- Intensive Secondary Weed Management

Thank-You!

- National Fish & Wildlife Foundation
- Stillwater Sciences
- Army Corps of Engineers
- Arizona Department of Forestry & Fire Management
- Graham County
- City of Safford
- Walton Family Foundation
- Rivers Edge West
- National Civilian Community Corps
- Arizona Conservation Corps
- Eastern Arizona College
- Freeport McMoRan
- U.S. Fish & Wildlife Service
- U.S. Forest Service
- Bureau of Land Management
- Southwest Conservation Corps
- San Carlos Apache Tribe
- Fort Grant Prison Crews
- Hewlett Foundation
- Northern Arizona University
- U.S. Geological Survey
- United Way