



Overview of Riparian Plant Control Efforts in Texas



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Arundo Infestation – Hill Country

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Arundo Infestation – Hill Country

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Arundo Impacts

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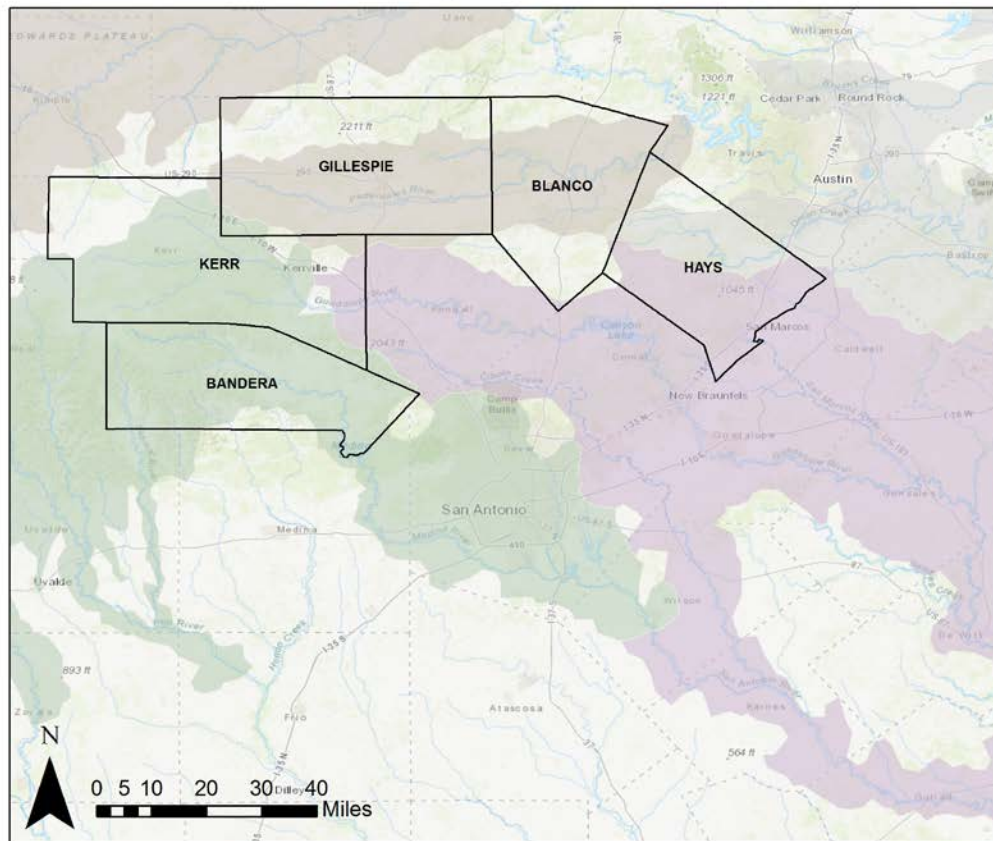


Arundo Impacts

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About the Healthy Creeks Initiative: Where We Work and Why



Map Key

Healthy Creeks Initiative

Priority Counties

Native Fish Conservation Areas

Colorado - Hill Country

Guadalupe - Blanco - San Antonio (Lower)

Nueces - Guadalupe - San Antonio

Other NFCAs



Healthy Creeks Initiative Goals:

- Reduce dominance and impacts of Arundo on our creeks
- Enhance habitat for fish and wildlife in important areas for conservation
- Engage private landowners in conservation efforts



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Bandera County
River Authority & Groundwater District
Assessing & Preserving our Natural Resources

hill country alliance

The Nature Conservancy
Protecting nature. Preserving life.

SARP

Arundo Management



- Integrated Pest Management
 - Biological
 - Cultural
 - Mechanical
 - Chemical
- “Nuisance Aquatic Vegetation”



Arundo Management

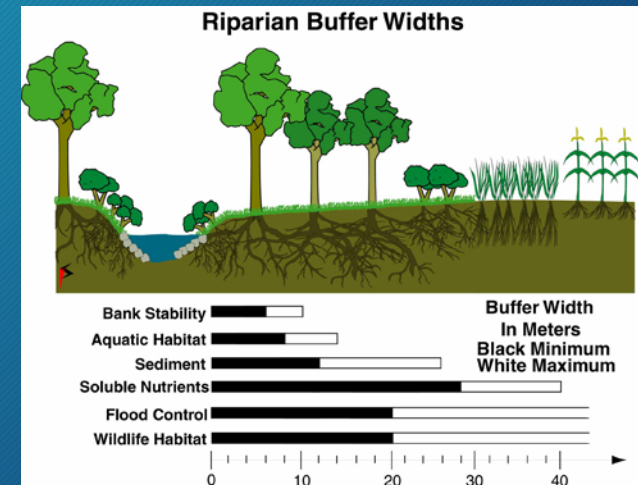
- Chemical Control Methods
 - Imazapyr
 - Imazamox
 - Glyphosate
 - Combination treatment
- Foliar application
 - May cut first and treat regrowth
 - Cut stump treatment is ineffective
- Dead canes not removed



Arundo Management

• Cultural Control Methods

- Create a grow zone—aim for 30-50 feet width
- Go native—plant diverse species with high stability rating
- Spread the word—community effort is essential!



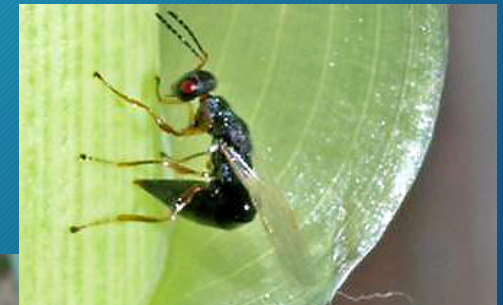
Arundo Management

- Mechanical Control Methods
 - Pull small sprouts
 - Advising NO grubbing/tilling/mowing
- Prevention Campaign (just launched)



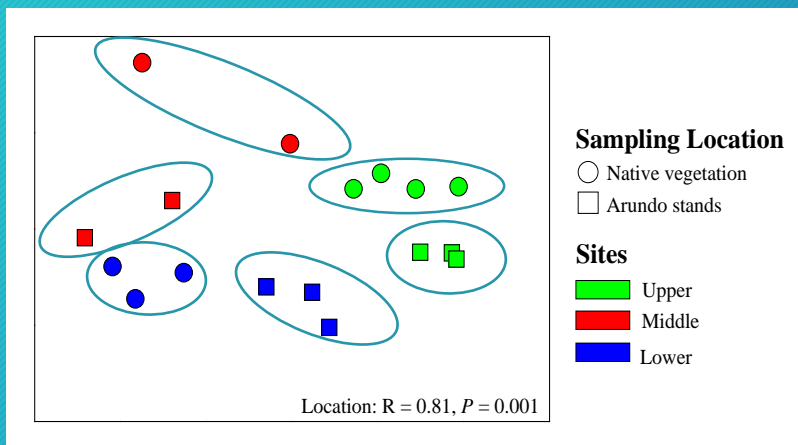
Arundo Management

- Biological Control
 - Arundo wasp - *Tetramesa romana*
 - Attacks side shoots
 - May reduce apical dominance (height)
 - Does NOT kill Arundo
 - Scale and Leaf Miner
 - Under testing by USDA
 - Reduce biomass
 - Do NOT kill Arundo



Biological Monitoring

- Invertebrates, Fish, Plants
- Arundo vs. Native Plants
- Pre/Post Herbicide



Arundo Management



- Before



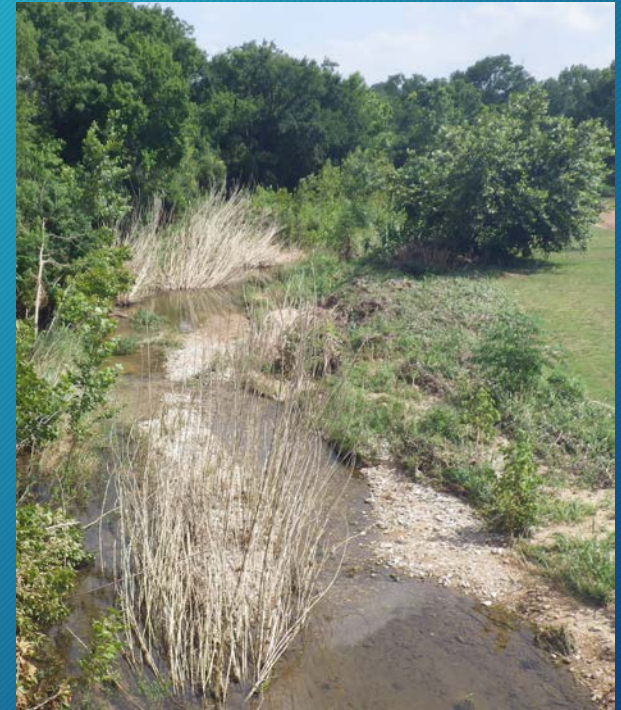
- 3 weeks



- 3 months

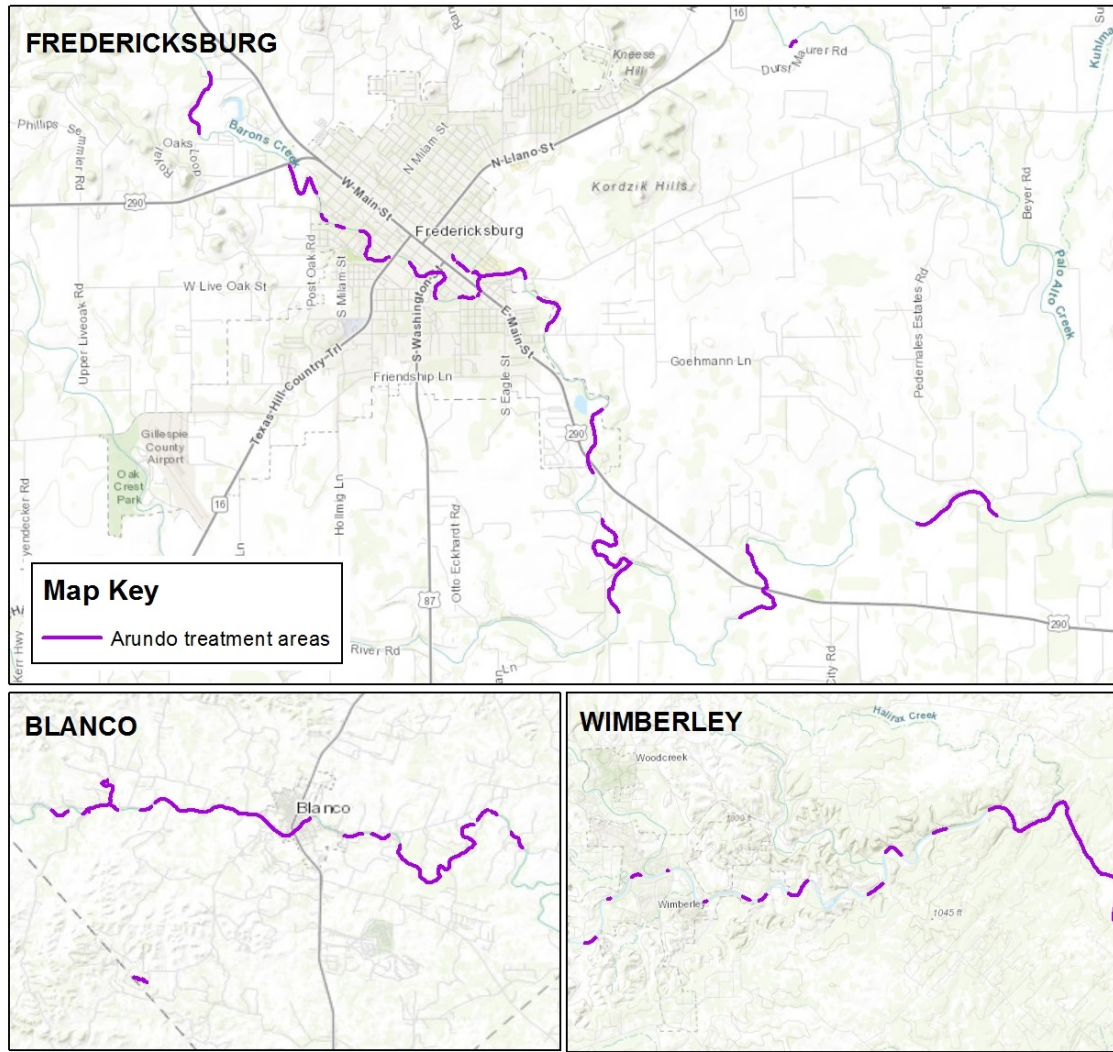
Arundo Management

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Healthy Creeks Initiative - Spring 2018 Progress Update (Fredericksburg, Blanco, and Wimberley Areas Maps)

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<http://tpwd.texas.gov/healthycreeks>

2018 Arundo Management



- TPWD supporting continuation in Nueces River Basin
- Treatment continuing in Pedernales & Blanco
- Expanding to two new basins - Medina & Guadalupe
- Focus on prevention and seeding/planting
- Herbicide research with TxDOT



Saltcedar Management



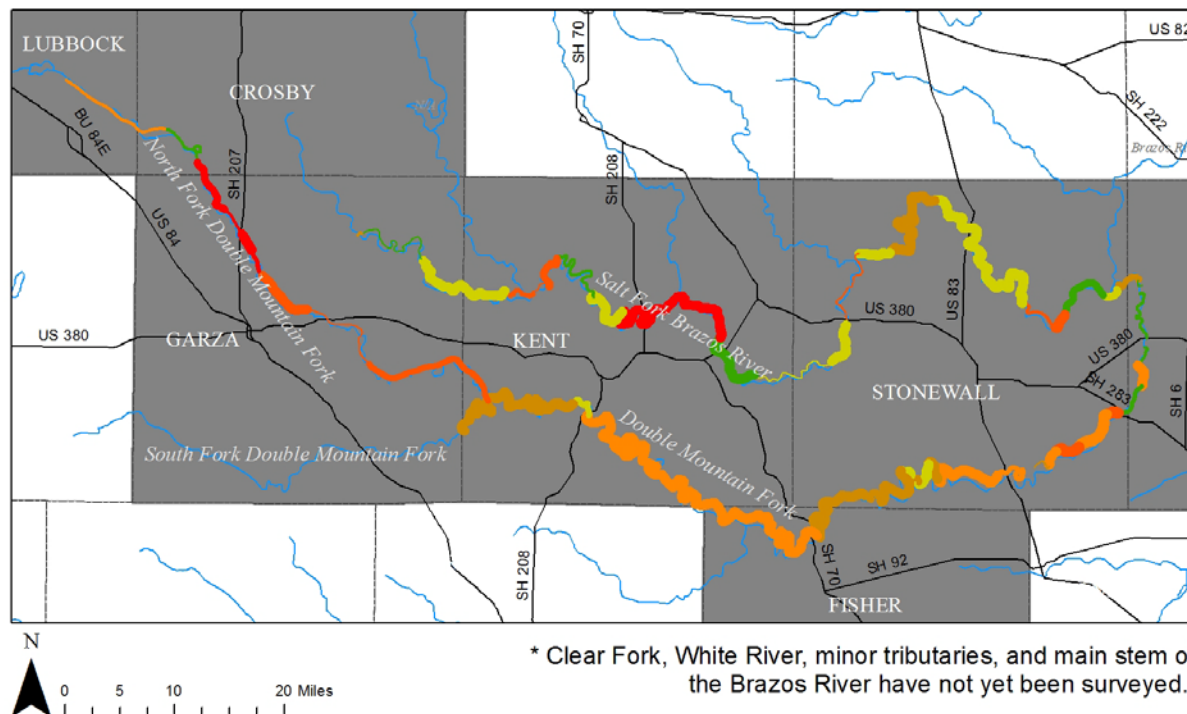
- Upper Brazos River
 - Hydrological alterations
 - Critical habitat for Smalleye and Sharpnose Shiners
- 2016-2017 - Focus on Double Mountain Forks



Saltcedar Management

Invasive Saltcedar in the Upper Brazos* - density is shown as a range from green (lowest) through yellow and orange to dark red (highest), with the width of the line showing relative width of saltcedar infestation.

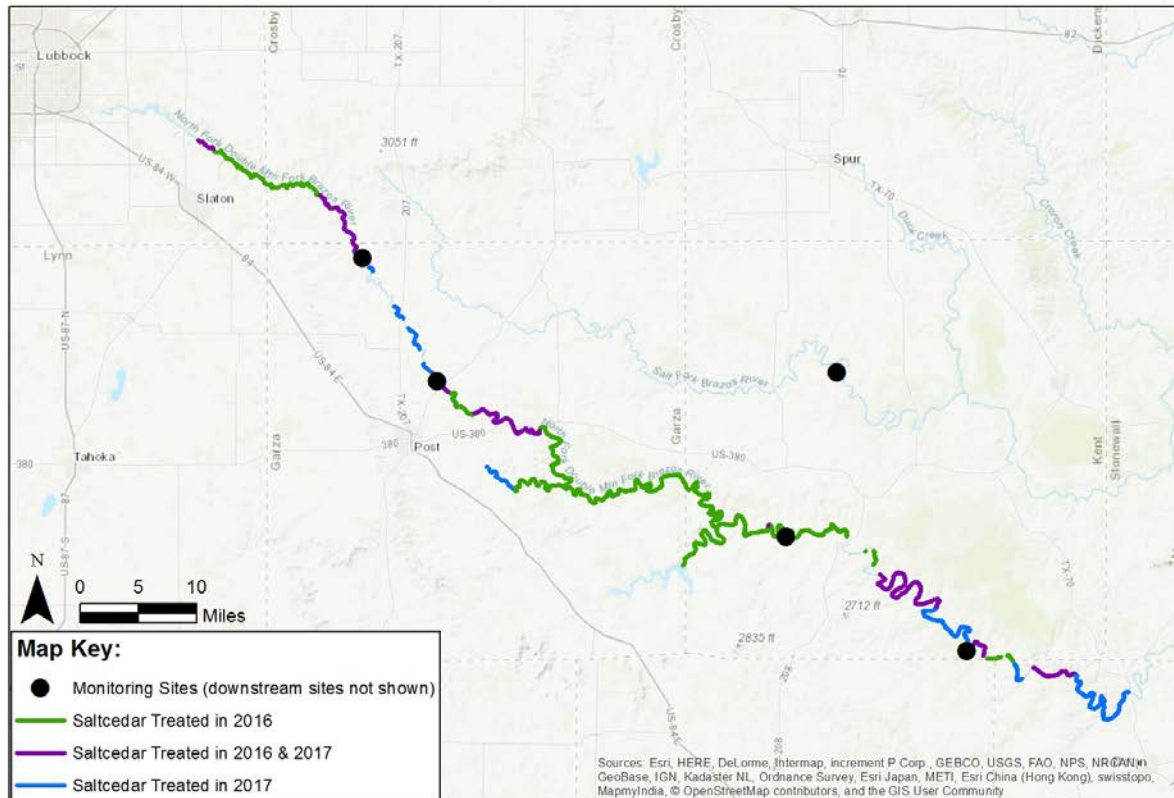
Highest priority for Saltcedar treatment: North Fork Double Mountain Fork, South Fork Double Mountain Fork, and Double Mountain Fork



Saltcedar Management

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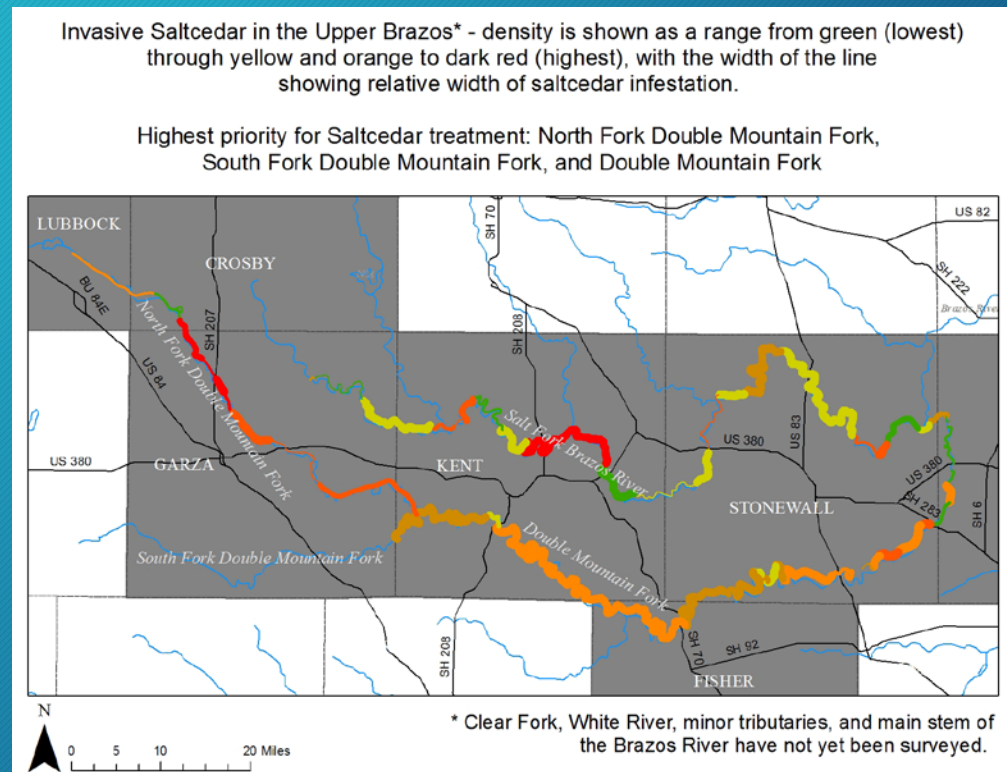
Saltcedar Management in the Upper Brazos River: 2016 - 2017 Overview Map



Note: Some areas treated in 2016 were re-treated in 2017 or additional acreage was treated. Due to the scale of this map, some small gaps in saltcedar treatment areas may not be shown.

Saltcedar Management

- 2016 – 2017 Efforts
 - Finished aerial surveys
 - 6,700 acres treated
 - 50+ landowners
 - Hydrological monitoring
 - Biological monitoring
 - Saltcedar beetle (*Diorhabda* sp.) refuges
 - small tributaries



Saltcedar Management

- 2018 Efforts
 - Treatment & monitoring continue - fill gaps
 - Expand to Salt Fork
 - UTV - based treatment
 - Drone re-surveys
 - Cottonwood plantings

