

Arundo Control Man: Targeting Outreach for Preventing the Spread of *Arundo donax* in Urban and Rural Settings



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Arundo (*Arundo donax*)

a.k.a. giant reed, Georgia cane, carrizo cane



Arundo Identification

- Arundo is a grass!
- Large stalks similar to corn or cane
- Leaves 1-2 inches wide, 1-3 feet long
- Leaves attach directly to stem (not like bamboo)
- Large, showy flower plumes late summer-fall
- Dormant in winter

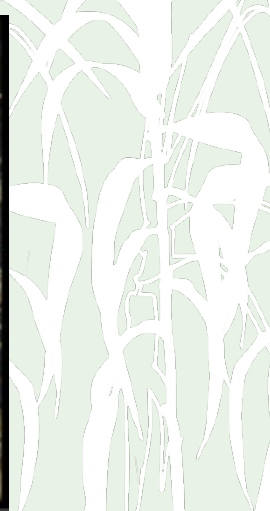


Bamboo –
different
leaves!



Arundo Biology

- Large root mats ~4 inches deep; weak roots beneath
- Reproduces by fragmentation, not seeds
- Grows up to 2 inches per day
- Patches grow to 30+ feet tall





Arundo Impacts

- Consumes a lot of water
- Traps sediment, changes the channel shape
- Worsens flooding by 10%
- Leads to erosion and loss of land



Arundo Impacts

- Extremely flammable, major fire hazard
- Prevents river from acting as a firebreak
- Threatens border security



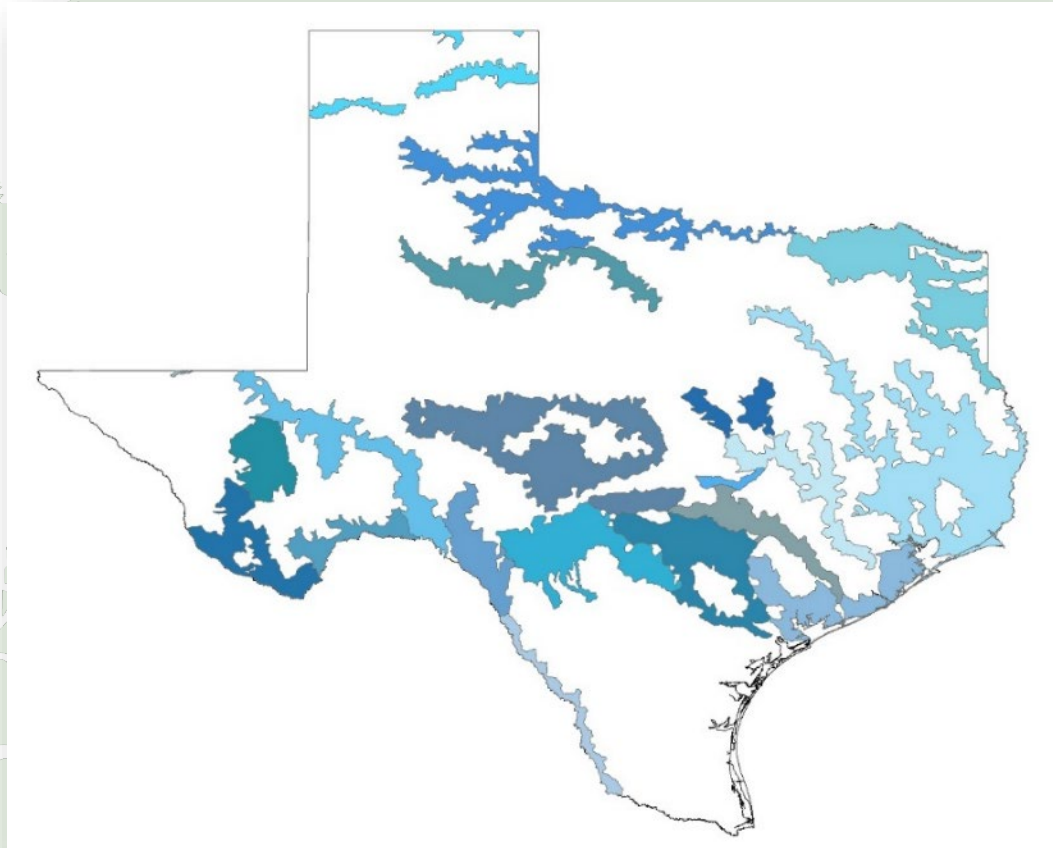
Arundo Impacts

- Impedes access for fishing, recreation, and other uses
- Degrades riparian and instream habitat diversity
- Low wildlife value
 - Poor habitat quality and nutritional value
 - Harbors invasive species (e.g., feral hogs, nutria)
 - Favors pests (e.g., cattle ticks)

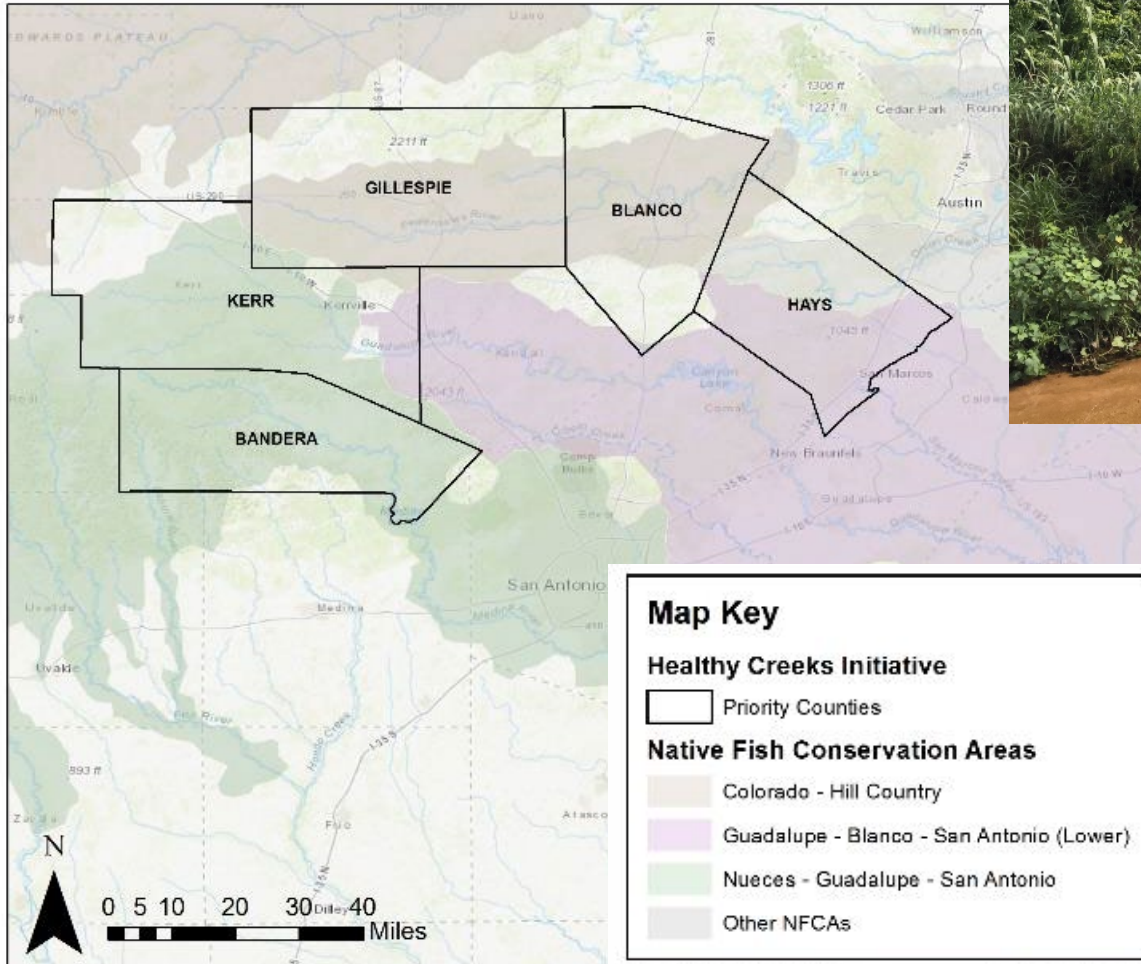


Texas Native Fish Conservation Areas

- Areas where conservation efforts have the most benefits
- Invasive species as a threat



Healthy Creeks Initiative



No-cost Arundo treatment to cooperating landowners

HealthyCreeks@tpwd.texas.gov

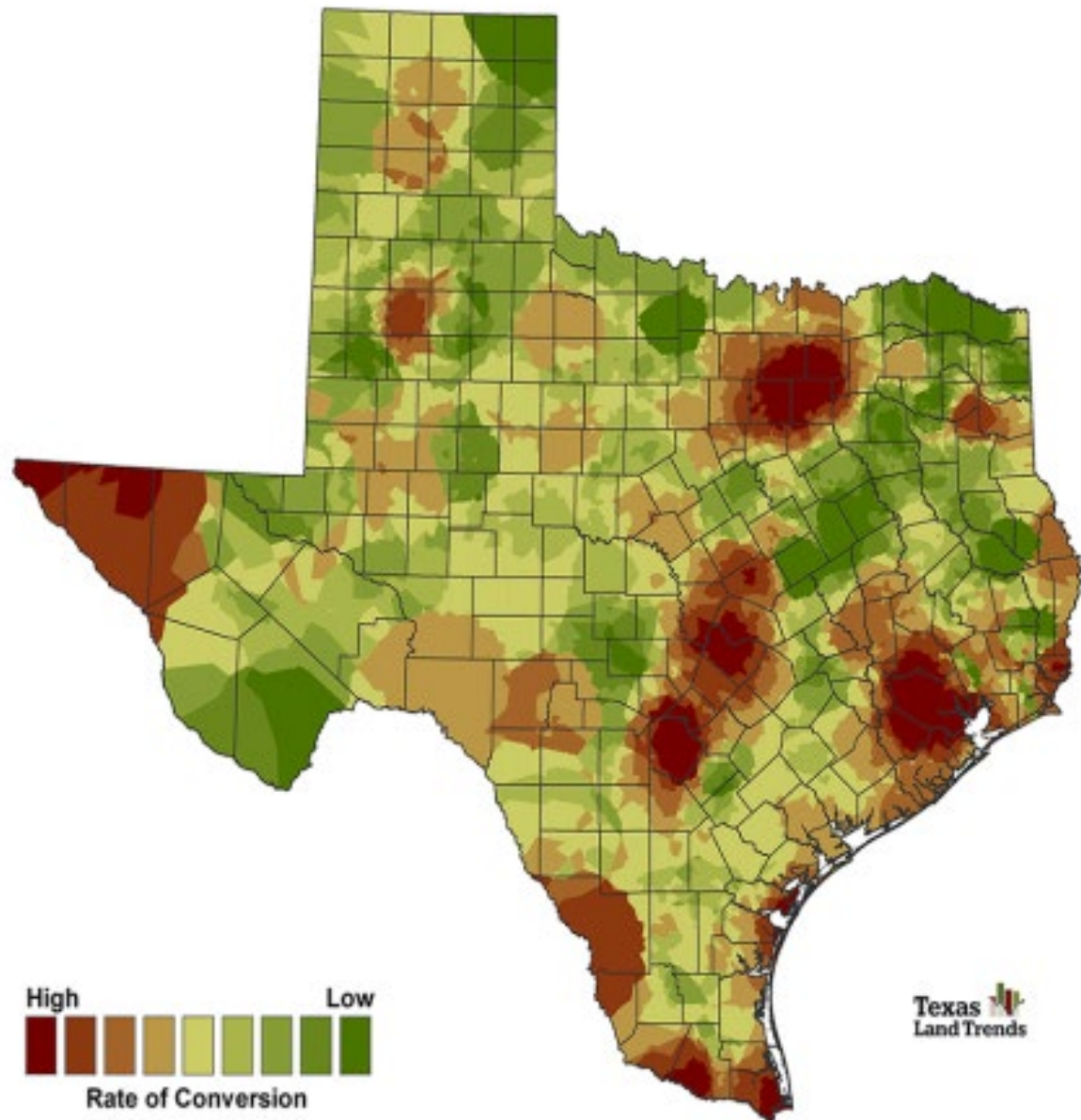
Broad public outreach

Management of established populations

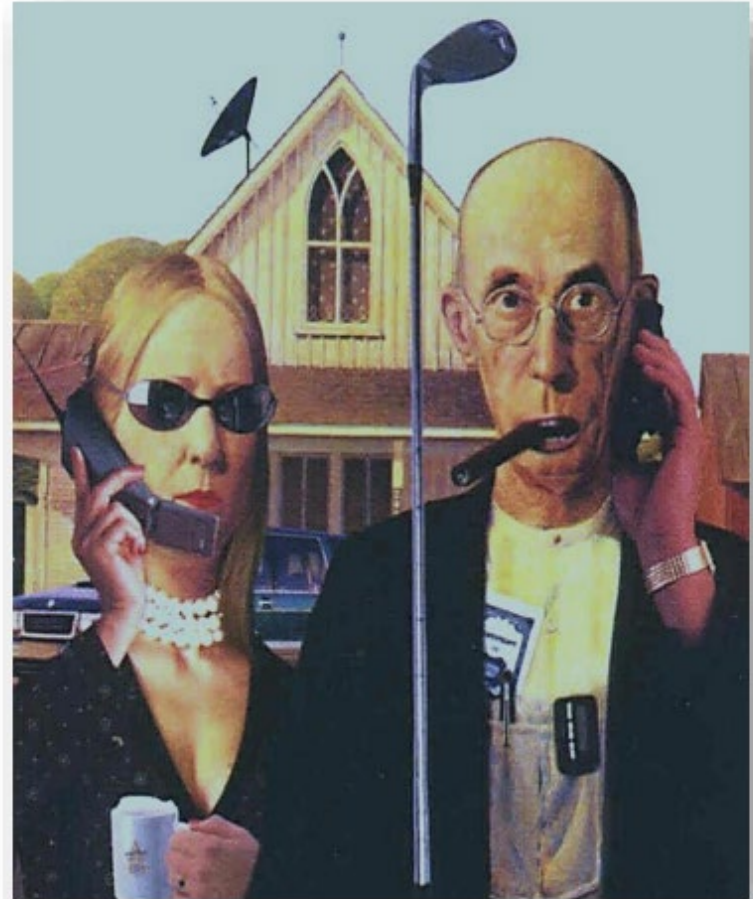
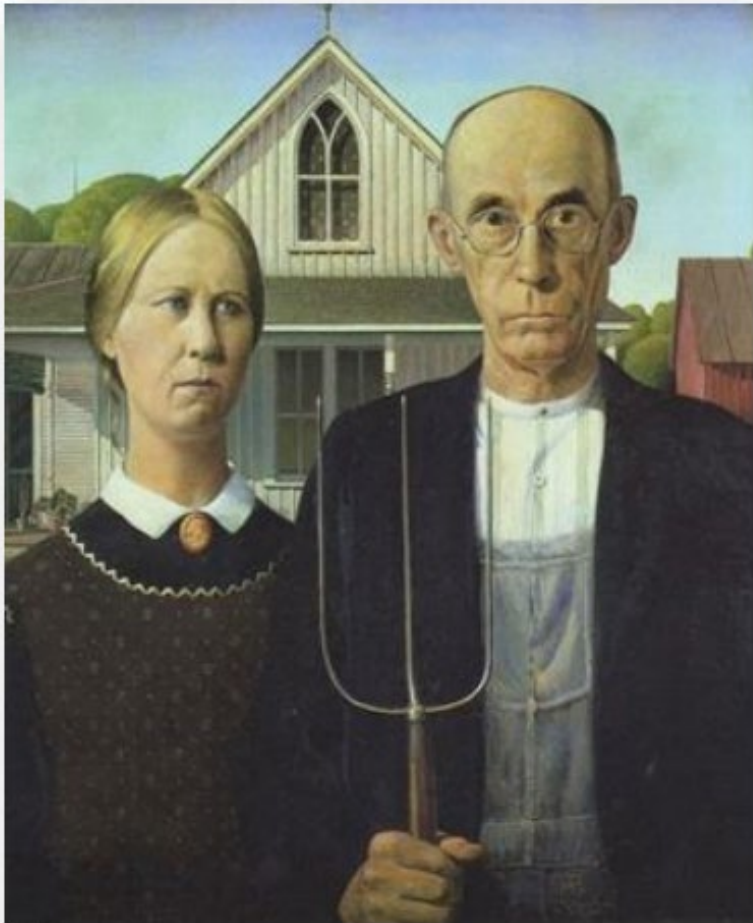


- Decrease in Working Lands
 - farms
 - ranches
 - family forests
 - wildlife

1997-2012



Landowners

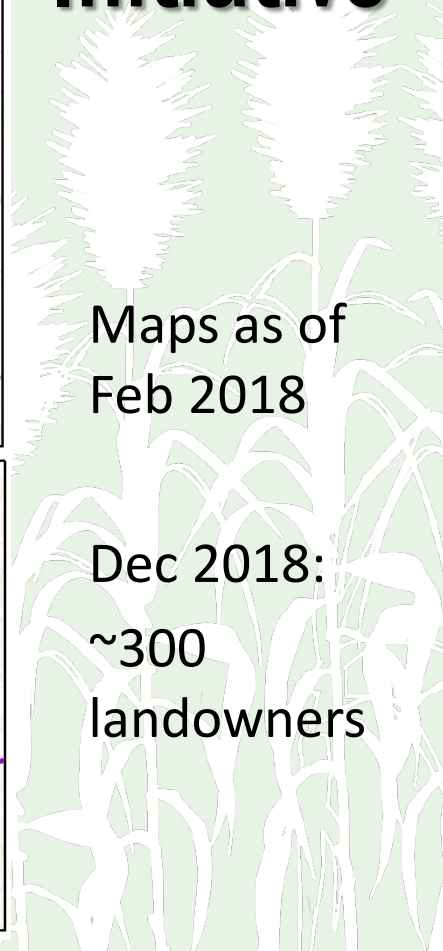


Healthy Creeks Initiative

- Workshops
- Yard signs
- Demonstration areas

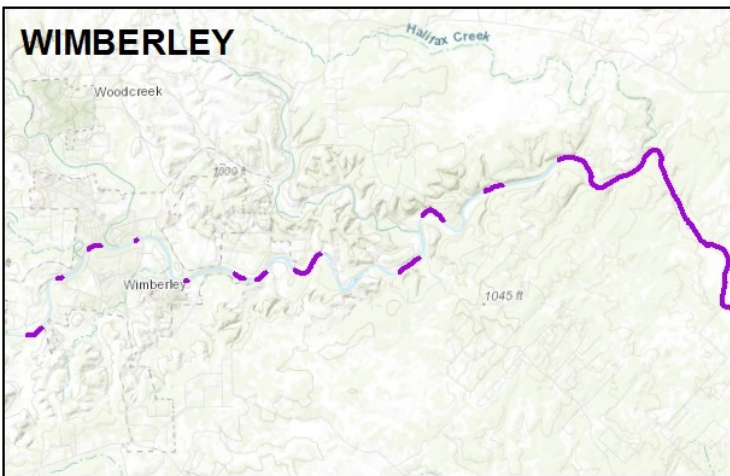
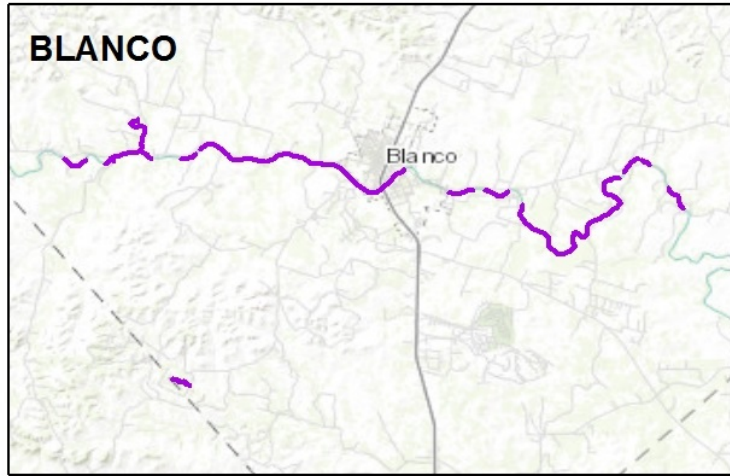
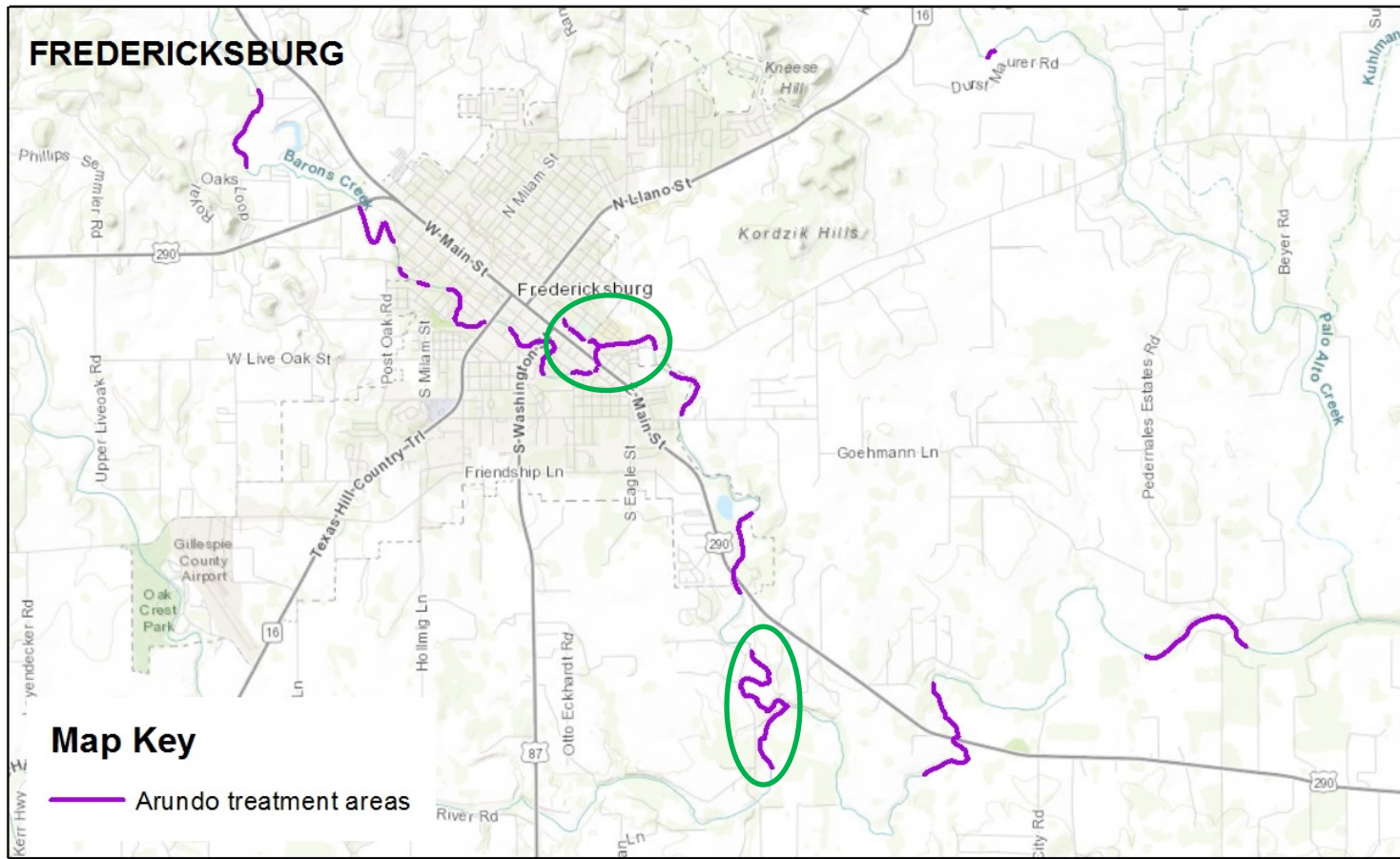


Healthy Creeks Initiative



Maps as of
Feb 2018

Dec 2018:
~300
landowners



“Lessons from Arundo Control Man”

Kicking Arundo out of Texas Roadways and Waterways



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



TEXAS A&M
AGRI LIFE
EXTENSION



“Lessons from Arundo Control Man”

An Arundo Prevention Program for Texas

- Easy-to-use training program
 - Narrated PowerPoint on YouTube
 - Brochures
 - In-person trainings
- Target audiences
 - Road & bridge crews
 - Mowing & landscaping crews
 - Construction crews
 - Fill dirt suppliers



Arundo Introduction & Spread Pathways

STOP!



Mowing

- Mowing, shredding, tilling, and bulldozing create fragments
- Pieces can catch in mower decks, spread along roads and into waterways
- Fragments sprout to create new patches

Arundo Introduction & Spread Pathways



- **Construction**

- Root and stem fragments in construction fill materials
- Frequently introduced to waterways during bridge, road, or home construction and repairs
- One small fragment can lead to infestation of an entire waterway

Arundo Management

- Integrated Pest Management
 - Combination of techniques
 - Biological, Cultural, Mechanical, Chemical
- Biological Control Methods
 - Arundo wasp (stingless) – *Tetramesa romana*
 - Scale and Leaf Miner
 - **These insects do NOT kill Arundo**



Arundo Management

- Mechanical
 - Pull small sprouts
 - DON'T grub, till, or mow!
 - Ineffective
 - Spreads Arundo
 - Destabilizes banks
 - Leads to erosion
 - Equipment compacts the soil



Arundo Management

- **Chemical Control Methods**

- Most effective treatment method, least environmental impact
- If near water, aquatic labeled herbicides ONLY!
 - Imazamox
 - Imazapyr
 - Glyphosate
 - Combination treatment
- Late summer foliar application
 - May cut first and treat regrowth
 - Repeat applications usually required
- Cut stump treatment is ineffective

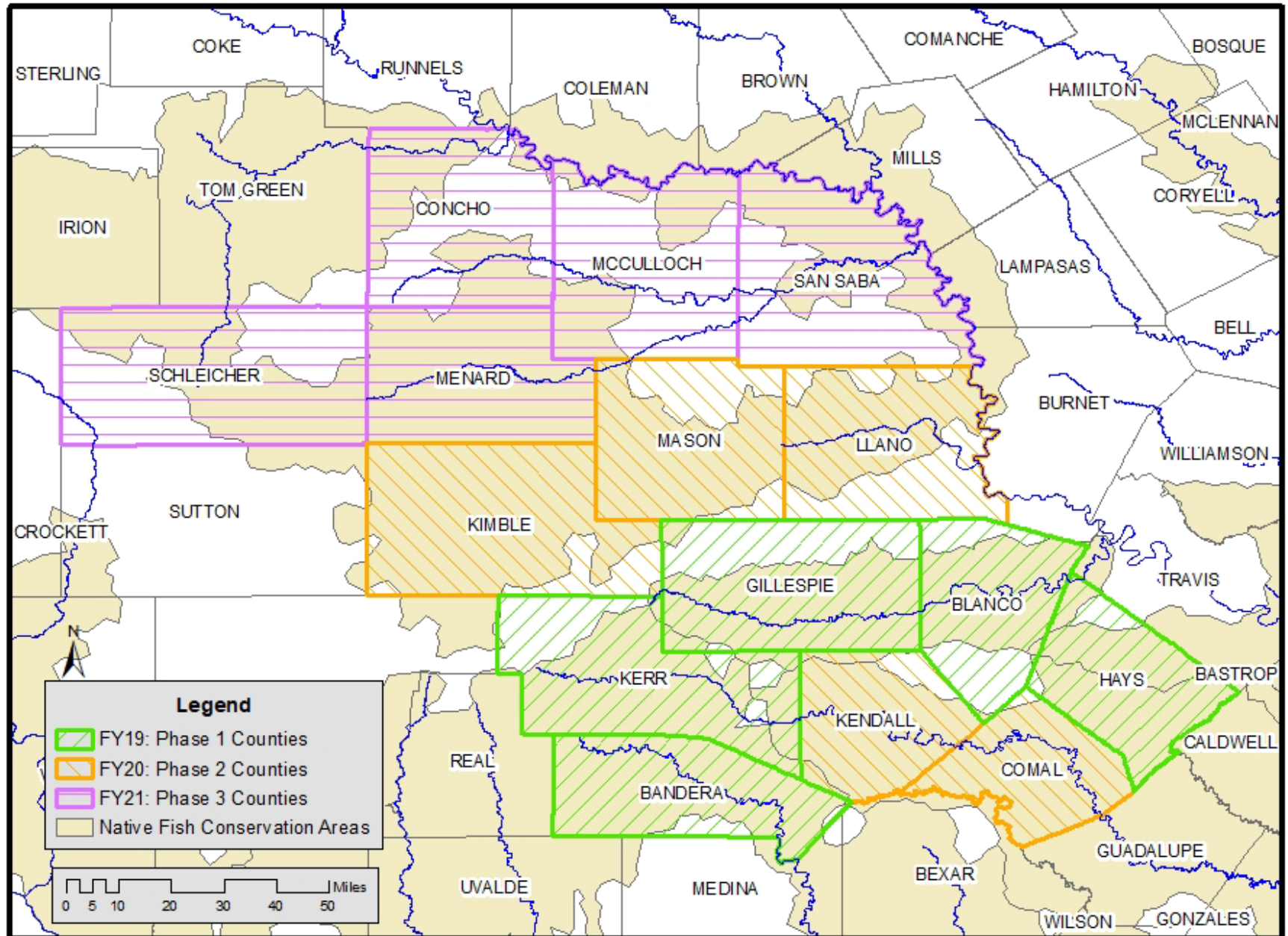


Arundo Management

- After chemical treatment
 - Do not cut/mow “dead” canes for at least 2 years
 - Ongoing monitoring essential
 - Seeding is desirable; planting may also be recommended along creeks or rivers



Arundo Control Man - Outreach Phases



Target Audience

Street Department



- Crews
 - Construction
 - Vegetation management
 - Vehicle & equipment maintenance
- Projects
 - Roads
 - Bridges
 - Drainage ditches
 - Detention ponds

Responsibilities

- Maintenance of approximately 100 centerline miles of streets, rights-of-way vegetation management, alleyways, bridges, drainage ways and detention ponds, and traffic signs and pavement markings
- Construction of minor street reconstruction and drainage projects
- Vehicle maintenance of approximately 170 fleet vehicles and 300 pieces of heavy and small equipment

Recent Projects & Activities

- Annual Paving Project
- Orange Street Reconstruction Project
- Vegetation Management Program

Target Audience

- Railroads



Target Audience

- Electric Utilities





Target Audience

- Pipelines

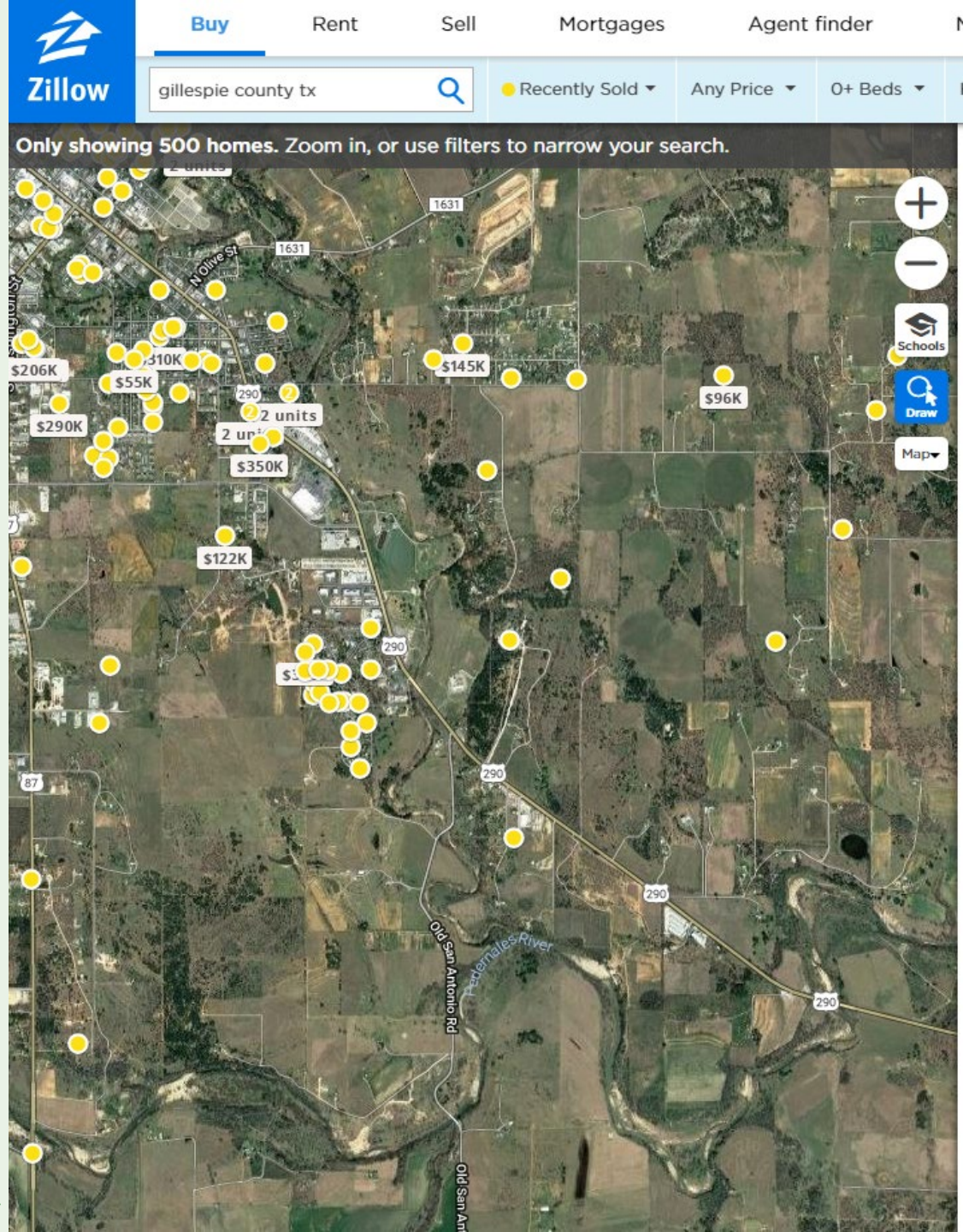


Urban vs. Rural: Parcels

- Ownership changes



<https://www.zillow.com/>



Target Audience

- Building contractors



Target Audience

- Fill dirt
 - producers
 - transporters
 - buyers



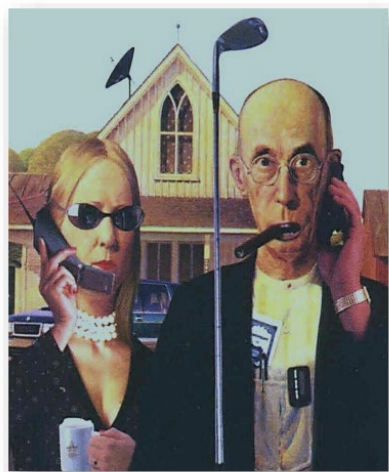
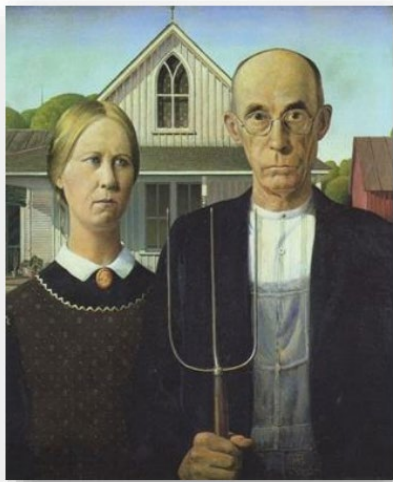
Target Audience

- Brush clearing companies
- Mulch producers



Summary

- Healthy Creeks Initiative
 - Manage existing
 - General outreach
 - Landowners
 - Public opinion
- Arundo Control Man
 - Prevent spread
 - Targeted outreach
 - Professionals



Questions?

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<https://tpwd.texas.gov/arundo>

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