

Kicking Arundo out of Texas Roadways and Waterways



TEXAS A&M
AGRILIFE
EXTENSION



What is an “invasive species”?

“...nonnative (or alien) to the ecosystem under consideration and whose introduction causes or is likely to cause economic or environmental harm or harm to human health.”

National Invasive Species Council, 1999

- Crowd out natives
- Lower biodiversity
- Impair resiliency
- Reduce ecosystem services

Riparian Ecosystem Services

Healthy creeks and rivers...

- Dissipate flood energy
- Absorb rainwater
- Recharge ground water
- Maintain base flow
- Stabilize banks
- Trap sediments
- Filter out pollutants
- Reduce air & water temperatures
- Provide habitat for aquatic life
- Improve hunting and fishing



Arundo (*Arundo donax*)

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



Arundo ID

- Grass, not a cane
- Thick stalks similar to corn
- Leaves 1-2" wide and 1' long
- Leaves attach to stem (unlike bamboo)
- Stiff, showy flower plumes in late summer-fall
- Dormant in winter



Arundo ID



Arundo Biology

- Large root mats ~4 inches deep -> weak straw-like roots
- Reproduces by fragmentation
- +2 inches per day
- Patches can grow to 30'





Arundo Impacts

- High water usage
- Worsens flooding
- Leads to erosion and loss of land
- Encroaches into waterways



Arundo Impacts

- Impedes recreational access
- Degrades habitat diversity
- Harbors non-native animals
 - Cattle ticks
 - Feral hogs
 - Nutria



Arundo Impacts

- High wax content, extremely flammable
- Prevents river from acting as a firebreak
- Increases wildfire intensity



Arundo fragments



Root mass



Sprouting stalk



Sprouting stalk

- Tube-like mass of large roots (each 2-3 inches wide)
- Plants can sprout at nodes on the stalks

Arundo sprouts



- Bright green, upright stems
- Leaf sheaths clasp tightly
- Narrow leaves emerge alternately
- Look around for dead stems or rhizomes

“Lessons from Arundo Control Man”

An Arundo Prevention Program for Texas

- Developed by TPWD, Nueces River Authority, TxDOT, Texas A&M AgriLife Extension
- Training program:
 - Narrated PowerPoint
 - Brochures
- Target audiences:
 - Road & park maintenance
 - Mowers & landscapers
 - Construction workers
 - Aggregate & fill dirt suppliers
 - Anyone who can prevent the spread of Arundo



Arundo Introduction & Spread Pathways



Mowing

- Spread by mowing, shredding, tilling and bulldozing
- Fragments can create new plants
- Pieces caught in mowers spread it along roadsides and waterways

Arundo Introduction & Spread Pathways



Construction

- Root and stem fragments in construction fill materials
- Introduced to waterways during bridge, road, or home construction
- Small fragment can lead to infestation of an entire waterway



Arundo Management

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



Arundo Management

- Mechanical Control
 - Pull small sprouts
 - Remove, dry, dispose
 - DON'T grub, till, or mow!

Issues include:

- Bank destabilization
- Increased erosion
- Equipment can cause soil compaction



Arundo Management

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



Arundo Management

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



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

 Parks Hunting Fishing Boating Game Warden Activities Wildlife Land Water Media Calendar Regulations Education Volunteer More...

Fighting Aquatic Invaders Overview List of Projects



Lessons from Arundo Control Man

Arundo donax, also known as giant reed or Carrizo cane, is a highly invasive, non-native, dominating plant that grows up to 30 feet tall in dense stands. It causes erosion, increases risk of fire and worsens flooding, and harms native aquatic life. When you know about the harm this plant can do, you'll want to help with statewide efforts to control it.

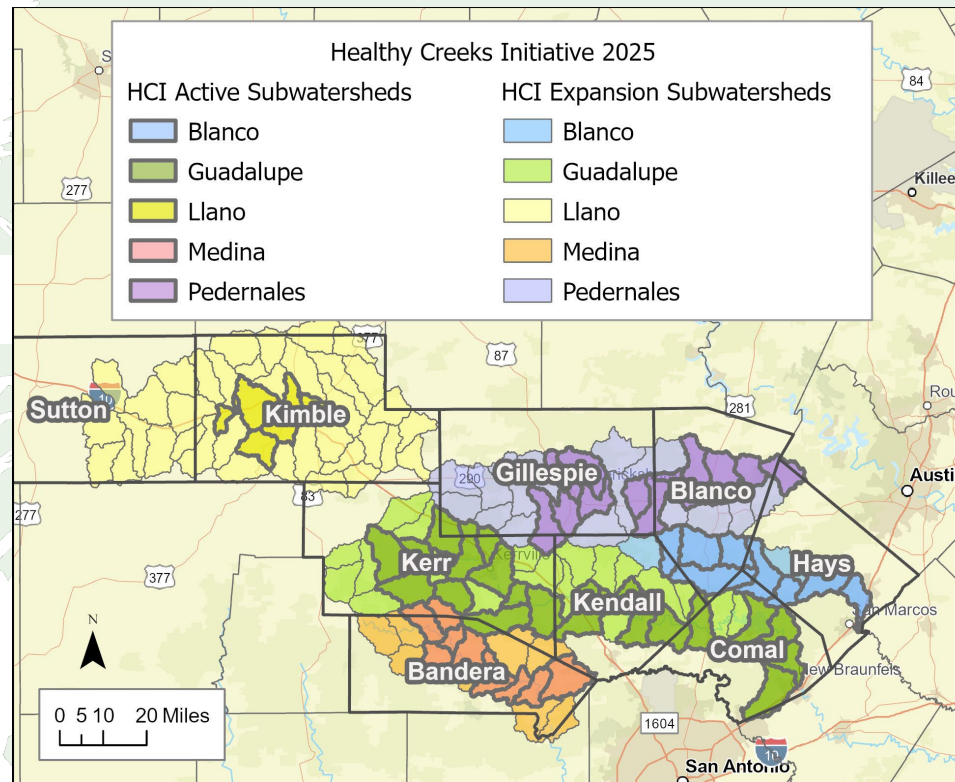
What You Can Do to Kick A(rundo) Out of Texas Waterways

- **Know the enemy.** Learn to recognize mature Arundo plants, roots, and fragments
- **Sound the alarm.** Spread the facts about Arundo and speak up when you see it being mismanaged
- **Be aware.** On construction projects, especially near creeks and rivers, check fill dirt and other aggregate materials for fragments of Arundo. Remove them

Healthy Creeks Initiative

- Hill Country Rivers

- Blanco, Guadalupe, Medina, Pedernales River basins, upstream focus
- TPWD offering no-cost Arundo treatment to cooperating landowners
- HealthyCreeks@tpwd.texas.gov



Questions?

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Lessons from Arundo Control Man

