Keeping Hill Country Creeks Healthy

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alliance

Why Our Hill Country Creeks are Special

- Spring fed systems
- Can be partly under ground
- Cool clear waters
- Habitat for threatened and endangered species
- Headwaters for many major rivers
- Important aquatic resource for wildlife
- Beautiful!



What Healthy Creeks Can Do

- Reduce sediment and pollutant accumulation down stream
- Habitat for aquatic insects and native fish
- Decrease erosion from flood waters
- Store/slowly release flood waters helping recharge ground water/maintain base flow
- Keep air/water temperatures stable/cooler



Creeks Need Healthy Riparian Zones

- Health Riparian Zone have:
 - Diversity in NATIVE plant life
 - Stable banks and low erosion – even in floods
 - Ability to trap sediment and pollutants
 - Overhanging canopy keeps water temperatures cool and stable
 - Woody debris traps sediment, build banks, good instream habitat



When Riparian Zones Suffer, Creeks Get Sick

- Degradation of Riparian
 Zone can lead to:
 - Erosion from flood waters
 - Siltation/sedimentatio n of headwaters and watershed
 - Poor water quality
 - Decrease in habitat for aquatic life (fish and aquatic invertebrates)
 - Loss of ability to retain flood waters for recharge



How to be Good to Our Creeks

- Just let them be. Here's how:
 - Add cross-fencing to keep livestock out of sensitive riparian areas
 - Do not drive in streams or flood plain
 - Leave native vegetation intact
 - If a tree falls in the creek let it be
 - Don't introduce non-native plants
 - NO mowing/paving in the riparian areas
 - Access points help focus impacts



How Landowners Can Help

- If you live close to a creek or stream avoid planting known problematic invasive plants like:
 - Ligustrum
 - Chinaberry
 - Nandina
 - Elephant ears
 - Pampas grass
 - Japanese honeysuckle
- Manage invasive plants to reduce negative impacts



Impacts from Riparian Zone Invaders: Chinaberry

- Grows in disturbed areas
- Spreads by seeds and vegetatively
- Crowds out native plants
- "Junk food" for birds and wildlife





Impacts from Riparian Zone Invaders: Ligustrum

- Grows in disturbed areas
- Spreads by seeds and vegetatively
- Crowds out native plants
- Forms dense thickets



Have you seen me?



Impacts from Riparian Zone Invaders: Elephant Ears

- Grows in disturbed areas
- Spreads
 vegetatively by
 rhizomes and
 fragments
- Crowds out native plants
- Can be toxic to livestock







Impacts from Riparian Zone Invaders: Arundo (Giant reed)

- Grows in disturbed areas
- Spreads by fragments and rhizomes
- Crowds out native plants
- Impedes flood channel function
- Alters water quality and quantity
- Alters stream flow/discharge rates
- Decreases habitat for wildlife
- Degrades instream habitat







Management Options for Arundo

- Chemical Treatment with herbicides labeled for aquatic use/approved by EPA
 - Least environmental impact
- Biological Controls
 - Not very effective
 - Gall making insects
 - Scale bug
- Mechanical Removal
 - DO NOT MOW THIS PLANT!!
 - Removal can be damaging to bank stability



Arundo Management Efforts: Nueces River Basin

- Nueces River Authority (NRA) partnered with state and nongovernment agencies
- Worked with landowners on Nueces, Frio, Dry Frio, and Sabinal Rivers for help and access
- Treated Arundo with herbicide
- Physically removed some smaller Arundo plants
- NRA treated Arundo at no cost to participating landowners



Arundo Management Efforts: Nueces River Basin

- Project started in 2010 and is ongoing
- Over 57 river miles and over 250 acres of Arundo have been treated
- Healthy creek functions are returning (flow is stabilizing/coming back)
- Native plants reestablishing
- Follow-up treatments ongoing



Arundo Management Efforts: Blanco River

- Landowner workshops planned
- Arundo scoured by 2015 flood, still present throughout watershed/ scattered
- Arundo can quickly become dominant in areas scoured of vegetation by recent flood
- Sponsored treatment program to help land owners treat Arundo



Arundo Management Efforts: Pedernales River

- Landowner workshops planned
- Arundo coverage is EXTREMELY high in some areas to the point of monoculture
- Arundo dominating plant community/ impacting water quality and quantity
- Sponsored treatment program to help land owners treat Arundo



Arundo Management Efforts: Pedernales River

- Demonstration area in Frantzen Park showcases different chemical treatments:
 - Treatments with different aquatic approved/EPA tested herbicides
 - COMBINATION cut/herbicide treatment (NOT MOWED)
 - Biological controls present but ineffective
- Look for information kiosk coming soon!
- May 5th Workshop for more info



The Healthy Creeks Initiative

- Vision: To develop common understanding to manage riparian areas to provide healthy habitats for aquatic life and restore and protect beauty of hill country creeks
- Partnership with The Nature Conservancy, Hill Country Alliance and Texas Parks and Wildlife Dept.
- Provide funded services to treat Arundo donax in the Pedernales and Blanco headwaters



Help Keep YOUR Hill Country Creeks Healthy: Join the Healthy Creeks Initiative

- We can't do it without help from riparian landowners!
- Take the next step to get your creeks healthy again let us help
- At no cost to you, for access to your property you get:
 - Expert evaluation and input on how to manage Arundo
 - Professional herbicide treatment of Arundo by licensed contractors
 - Monitor treatment success with follow-up treatment,
 - Monitoring plant community response and aquatic community health in some sites

For More Information:

Sign up for our mailing list at: <u>healthycreeks@tpwd.texas.gov</u>

- Come by our booth!
- Contact us at: