Healthy Creeks Initiative to Combat Invasive Arundo and Elephant Ear Plants in the Texas Hill Country

The Healthy Creeks Initiative is a partnership to improve habitat health along rivers and creeks in the headwaters of the Blanco, Guadalupe, Llano, Medina, and Pedernales watersheds by providing control of invasive riparian plants at no cost to landowners.

WHAT IS ARUNDO? Arundo (*Arundo donax*) is a large, invasive grass that has increasingly become a problem in Texas. It is sometimes also called Giant Reed or Carrizo Cane. This non-native invader has the potential to significantly impact the health of our creeks and rivers.

HOW DOES ARUNDO IMPACT ME? Arundo consumes large quantities of water, reducing river flow, and worsens flooding by causing floodwaters to back up and lessening the floodplain's ability to dissipate flood energy. Arundo's comparatively shallow, weak roots can increase bank erosion, reducing water quality and causing damage to private property. Arundo stands may harbor pests such as cattle ticks, feral hogs, and nutria. Arundo is highly flammable, which increases wildfire danger, intensity, and frequency.

HOW DOES ARUNDO IMPACT CREEK HEALTH? Arundo is a game changer for sensitive riparian areas (extremely important habitats alongside our creeks and rivers). It reduces water quantity and quality and degrades the quality of instream habitats for native aquatic life. It also crowds out the diverse, native riparian plants that are important for wildlife.

WHAT IS THE PROBLEM WITH ELEPHANT EARS? Elephant ear plants, common in the ornamental plant trade, can escape cultivation and become invasive when they are planted alongside rivers and creeks. *Colocasia esculenta*, also known as Taro, is the most common, although *Xanthosoma sagittifolium*, also known as Arrow-leaf Elephant Ear, has been found in some Hill Country areas. Both can form dense infestations that crowd out native plants near our waterways and can degrade instream habitat for aquatic life.

WHY MANAGE THEM? Invasive plants threaten our natural heritage by harming the function of creeks and the associated riparian areas that are vital to both creek and human health. Native vegetation helps the riparian soil absorb water like a sponge, which reduces runoff of pollutants and bacteria into our waterways. Native plants dissipate the energy of floodwater, and their roots stabilize banks, which reduces erosion that can reduce water quality and damage property. Healthy diverse riparian areas also act as a natural firebreak.

HOW CAN I PARTICIPATE? As part of the Healthy Creeks Initiative, **we are offering management of these species at no cost for landowner partners in our project areas.** To participate, you'll need to sign a landowner permission form to grant access for treatment and monitoring. You can terminate the agreement any time by email or letter, and you'll always receive advance notice before our staff, partners, or contractors access your property. To learn more, email **healthycreeks@tpwd.texas.gov** or reach out to your local contact.

- **Blanco River (Blanco, Kendall, & Hays Counties):** Ryan McGillicuddy, ryan.mcgillicuddy@tpwd.texas.gov, 512-552-3713
- **Guadalupe River (Kerr County):** Travis Linscomb, tlinscomb@ugra.org, 830-896-5445
- **Guadalupe River (Kendall County):** Lauro Martinez, lauro@hillcountryalliance.org, 956-251-5044
- **Guadalupe River (Comal County upstream of New Braunfels):** Emily Jackson, emily@wordcc.com, 830-907-2300
- **Guadalupe River (City of New Braunfels):** Phillip Quast, pquast@newbraunfels.gov, 830-221-4651
- **Llano River (Kimble & Sutton Counties):** Linda Fawcett, lrwatx@gmail.com, 325-665-4165
- **Medina River (Bandera County):** Clint Carter, ccarter@bcragd.org, 830-796-7260
- **Pedernales River (Gillespie, Blanco, & Hays Counties):** Lauro Martinez, lauro@hillcountryalliance.org, 956-251-5044, or Alexa Salinas, alexa.salinas@tpwd.texas.gov, 512-239-8714
- **Project Manager (all regions):** Angela England, angela.england@tpwd.texas.gov, 512-289-2740

HOW ARE THESE PLANTS CONTROLLED? Chemical treatment is the most effective method of managing these species and can minimize the impact of control efforts on the riparian habitat. Treated plants are left in place for at least two years after they appear completely dead. This provides stability to the soil and helps reduce erosion while native plants regrow. The dead plant material creates a nursery area to protect young, native plants. Adding young native plants or seeds within large, dead patches can also help to restore the habitat. Achieving full control will typically require multiple years of treatment.

WHAT ABOUT OTHER METHODS? Mechanical treatment such as cutting, mowing, or tilling typically makes problems worse because these species thrive on disturbance - the fragments often take root downstream, or anywhere they end up. Although hand-pulling small Arundo can be effective if all root material is removed, physical removal of larger patches is expensive and labor-intensive. Digging elephant ear roots out is also problematic because the roots can go several feet deep into the soil, and any parts left behind will resprout. Mechanical removal can destabilize stream banks, leading to erosion and damage to private property. Heavy machinery can also compact soils, which hinders native plant regrowth. Burning in riparian areas is not recommended, because fire rarely kills Arundo roots, and afterward the Arundo grows back faster than native plants do.

Hand pull new sprouts to keep them from taking root.

WHICH HERBICIDES ARE USED FOR THESE PLANTS? We use only aquatic-labeled, EPA approved herbicides and adjuvants that have been rigorously tested to ensure minimal risk of harm to aquatic life, in addition to the standard testing required for all pesticides to ensure they won't harm humans or other wildlife, including honeybees, birds, and mammals. The active ingredient in the main herbicide mix we use is imazapyr, which has adequate soil residual activity to kill Arundo roots. Our backup mixture of imazamox and glyphosate is available for use around sensitive vegetation. Although many people have concerns about the use of glyphosate, a recent EPA risk assessment found that it is not likely to cause cancer in humans when used according to label requirements. Additionally, we apply these herbicides to the plants only once per year (i.e., no potential for chronic exposure) and we use very low concentrations of herbicide to further reduce risks. These herbicides have low toxicity (except for plants) and low tendency to run off into surface waters. They also have a high affinity for binding with soil, so that they break down in the soil and are unlikely to move into ground water.

Our contractors are licensed pesticide applicators who specifically target the invasives and take precautions to minimize drift and overspray onto the water or nearby plants. They often wade into the creek to spray to reduce overspray onto the water, only spray during low-wind conditions, and may adjust droplet size to prevent drift by using different pressure and nozzle combinations. They also use adjuvants that help the herbicide spray to penetrate the dense Arundo and elephant ear canopy, stick to the leaves, and speed up drying, which further reduces the risk of runoff.

HOW CAN I LEARN MORE ABOUT THE HEALTHY CREEKS INITIATIVE? This partnership provides coordination, outreach, funding, and efforts to manage Arundo and other invasive species in priority areas. We're also working to increase awareness of best management practices for creek health—with your help! Visit http://tpwd.texas.gov/healthycreeks.

AQUATIC INVASIVE SPECIES HAVE SIGNIFICANT ECONOMIC IMPACTS IN TEXAS. The annual economic impact of aquatic invasive species in the US is estimated at more than $219 billion. Texas Parks and Wildlife Department estimates that effective management of aquatic invasive species in Texas would require $45 million annually. Learn more about invasive species in Texas at www.TexasInvasives.org and consider signing up for the Texas Invasives iWire newsletter. Please also check out the Arundo Control Man prevention program at http://tpwd.texas.gov/ArundoControlMan and help spread the word!

REMEMBER—NEVER CUT, MOW, TILL, OR BULLDOZE ARUNDO!

Healthy Creeks Initiative: What to Expect

PERSONAL SITE VISIT

Once we receive your signed permission form, we will contact you to schedule a site visit to map any Arundo, elephant ear, or other invasive plants on your property. You do not need to be present unless you want to be. We can also talk with you about riparian health and management options, discuss specific concerns related to your property, and answer any questions about treatment.

TARGETED HERBICIDE APPLICATION (NO COST)

Licensed, professional herbicide applicators will carefully apply aquatic-labeled herbicides to the Arundo and/or elephant ear on your property during the summer or early fall. You will be notified in advance of the application date, though the exact date/time may change with weather and contractor schedule.

WHAT TO EXPECT AFTER TREATMENT

- **Brown dying canes:** After treatment, Arundo canes will begin to turn brown in a matter of weeks. They need to remain in place, and will look like they do during the winter. **DO NOT MOW OR TILL!**
- **Leave it alone!** After herbicide treatment, it can be tempting to cut or mow the canes, or to weed whack the elephant ear. Leaving them in place creates a nursery area for native plants to grow and helps keep them from re-sprouting or spreading. It's best to wait to cut treated plants until the plant has shown no signs of life for two years—otherwise it may be reinvigorated and resprout! Once Arundo canes decay and break off on their own, they can be removed if necessary.
- **Possible non-target damage to other plants:** We take care to minimize non-target damage, but some damage to desirable plants may be unavoidable. Grasses are especially susceptible but will usually regrow quickly. Trees with brown leaves on a few branches will also usually recover quickly. Take photos of damage and email them to us if you have questions.
- **Regrowth:** The initial herbicide treatment may not completely kill the roots, especially for large patches. We'll visit your property the next year to determine if retreatment is needed. Multiple years of treatment may be needed to gain control of the infestation.
- **Native/invasive plant emergence:** Soon, native plant seedlings will sprout among the canes. Unfortunately, we'll also need to watch for other invasive plants such as privets, Chinaberry, and Chinese tallow. Take photos and email us if you have questions.

REVEGETATION

Revegetation, whether natural or through seeding/planting, is an important part of riparian restoration. In most cases, native plants will naturally recolonize the area. We may offer to re-seed large patches with Riparian Recovery Seed mix from Native American Seed—a blend of grasses and wildflowers selected for their ability to stabilize stream banks. For extreme infestations, planting native trees after treatment may be advised.

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(Last updated May 2026)

LANDOWNER PERMISSION FOR INVASIVE PLANT MANAGEMENT & RESEARCH

(Pursuant to Section 12.103 of the Texas Parks and Wildlife Code)

By my signature below, I hereby authorize Texas Parks and Wildlife Department (Department) employees, or persons working on behalf of the Department, to enter private property I own or manage for the purpose of managing invasive species (i.e., herbicide application, biological control agent introduction, or mechanical treatment/removal) or conducting scientific research and investigation regarding invasive species and natural resources, to record and use site specific information from the property for scientific research and investigation, and to allow public access to the information to the degree authorized below.

Authorized scientific research, investigation, management practice, or other associated activity: Management of Giant Reed (*Arundo donax*) and other invasive plants (e.g., privet, Chinaberry, Chinese tallow) using herbicide or other treatments; site visits for monitoring of treatment effectiveness.

Landowner(s) or Authorized Agents will be notified in advance of each herbicide application and/or monitoring visit if we need to enter the property. Exact dates/times may change with weather and contractor schedule.

◯ **OPTION 1: Release of Information (Location Specific)**

I hereby further authorize the Department and project partners to use the information collected in reports, maps, publications, or presentations or otherwise make the information available to the public in a manner that could identify the specific location of the private property I own or manage but does not reveal my name or exact address.

◯ **OPTION 2: Release of Information (Non-Location Specific)**

I hereby further authorize the Department and project partners to use the information collected in reports, maps, publications, or presentations or otherwise make the information available to the public only in a manner that is generalized to a level that does not identify the specific location of private property I own or manage and does not reveal my name or exact address.

Signature (Landowner or authorized agent)	Date

Name and address: (Please print legibly)

Name of Landowner or Authorized Agent			
Property, Ranch, or Tract Name (if applicable)			
Property Address	City	State	Zip
Mailing Address (if different)	City	State	Zip
Home Phone	Mobile Phone		
Email Address			

You can return the completed form one of the following ways:

Email: healthycreeks@tpwd.texas.gov

Mail: Healthy Creeks Initiative
Texas Parks & Wildlife Dept.
505 Staples Rd., Bldg. 1
San Marcos, TX 78666

Fax: 512-389-4405

Texas Parks and Wildlife Department maintains the information collected through this form. With few exceptions, you are entitled to be informed about the information we collect. Under Sections 552.021 and 553.023 of the Texas Government Code, you are also entitled to receive and review the information. Under Section 559.004, you are also entitled to have this information corrected. For assistance call 512-389-4444.