

Guide to Volunteer Organizations Removal of Invasive Trees-Wrenching and Girdling

Background

Ecological restoration is a long-term process. Control of invasive species is only a part of this process and must be done gradually, particularly in areas with high densities of mature invasive trees where most of the shade is provided by these species. Girdling is an alternative method for restoring native biodiversity that does not require heavy machinery, chainsaws, or herbicides and is appropriate for volunteer groups implementing a long term restoration plan. The girdling technique kills the targeted tree over time by preventing the flow of nutrients between the roots and the foliage. Girdling creates small gaps in the forest canopy that mimic the openings created when large trees fall, allowing light to reach the lower layers of the forest. These canopy gaps allow native species more sunlight and less competition from the invasive species. The best time to girdle mature trees is shortly after leaf-out has completed in deciduous trees, like Chinaberry, because the tree had to use some reserves from the roots to produce the new



Canopy gap

leaves. This type of restoration is especially valuable in areas where there are already some small, native saplings present that could quickly benefit from a bit more sunlight and a bit less competition.

Removal of mature invasive trees should leave gaps 15' in diameter or smaller to avoid exposing soil to erosion. Tree seedling planting and/or seed bank enrichment of these gaps are crucial to restore the native plant community, especially in areas with very little growth of native seedlings. In addition, soil amendment and seeding with native grasses and wildflowers are important components of the restoration process.



Native saplings and large seedlings such as this Boxelder (left) and Texas Red Oak (right) will benefit from getting some extra sunlight from a new canopy gap.

Your responsibilities

- Check Event-Brite Calendar
- Submit [form](#) to parksvolunteer@austintexas.gov 30 days prior to event. Specify which trees you are targeting for removal (see list below)
- Conduct site visit with the Watershed Protection Department and/or Park Manager. After submitting the form, a staff member from WPD will contact you to determine if a site visit is needed and schedule one.
- Estimate volunteer needs (2 units minimum suggested in 2-hour shifts; 1 unit = 2 hours with 15 volunteers)
- Post volunteer opportunities and registration
- Provide group leaders
- Coordinate information/training tasks
- Confirm attendance prior to event
- Gather liability waivers
- Provide work gloves, insect repellent, poison-ivy block, tools
- Give safety orientation; demonstrate safe use of tools

Volunteer profile, age range

Activity appropriate for 10+ years old for hand-pulling small seedlings and for 15+ years old for using weed wrench and girdling trees (volunteers under 18 years require adult supervision).

Volunteers must have received training on identifying the target species.

Volunteers must demonstrate the ability to safely handle/use weed wrench

<http://www.youtube.com/watch?v=S93fYS5tjy8> (training on site also OK)

Participant clothes and safety

Closed toed shoes, adequate drinking water and sun protection

Supplies/Tools

poison ivy block, sunscreen, water

gloves

weed wrenches

hand pruners

loppers

pruning saws

pocket knives

lawn refuse bags

Day of event

Removing invasive tree/shrub seedlings

Target species:

Large-leaf privet (*Ligustrum lucidum*, *L. vulgare*, *L. japonicum*)

Small-leaf privets (*Ligustrum sinense*, *L. quihoui*)

Chinaberry (*Melia azedarach*)

Chinese tallow (*Triadica sebifera*)

Tree of Heaven (*Ailanthus altissima*)

Paper mulberry (*Broussonetia papyrifera*)

Chinese pistache (*Pistacia chinensis*)

Heavenly bamboo (*Nandina domestica*)

Photinia, many species (*Photinia spp*)

Scarlet firethorn (*Pyracantha coccinea*)

Hand Pull/Weed Wrench Method

- Hand-pull or weed-wrench seedlings, making sure they are uprooted.
- Shake root mass to remove soil from seedling and leave seedlings lying on the ground with roots exposed.
- If seeds have **NOT** formed, removed plants can be laid on the ground as mulch. If seeds **are already formed**, even if green, bag seeds to minimize reseeding.
- The selected method for removing debris and slash will be decided on a case-by-case basis by WPD staff (refer to guide to management of debris and slash)

Girdling Method (for mature trees)

Target species:

Large-leaf privet (*Ligustrum lucidum*, *L. vulgare*, *L. japonicum*)

Chinaberry (*Melia azedarach*)

Chinese tallow (*Triadica sebifera*)

Tree of Heaven (*Ailanthus altissima*)

Paper mulberry (*Broussonetia papyrifera*)

Step 1: Make parallel cuts through the bark into the wood below.

- Using a pruning saw, make ¼" deep cut into the bark around the tree at about 4' height off the ground.
- Make a second cut 6-12" below the first cut.

Step 2: Peel away the bark all the way around each trunk.

- Using a field knife, peel the bark between the two cuts all the way to the wood underneath.

Step 3: Scrape off any remains of the original bark layer.

- Make sure all tissue between bark and wood is removed.



Tree girdling steps

Follow up workdays

In response to the girdling, trees will produce sprouts under the girdling band and may show some ‘scabbing’ within the girdling band trying to reconnect the canopy with the roots. The vigor and number of sprouts and scabbing, and how fast they grow, depends on the species, age, and health of the tree. As a rule of thumb, the larger the diameter of the tree, the more sprouts will be produced. These sprouts are often very superficial and easy to remove. Return periodically (ideally every month or two for the first year) to scrape away any scabbing and prune any re-sprouts from the trunk below the girdle. This prevents the carbohydrates created in the leaves from traveling down to the roots, where it would normally be stored. It may take a year or two, but eventually, the roots will starve, and the tree will die.

- Using your gloved hand, grab each sprout from the base and move it against the direction of growth until the stem breaks.
- Remove all sprouts produced under girdling band. Persistence in returning every month or two to quickly remove any sprout regrowth is the key to success.

These resprouting stems from a privet girdled 4 months before need to be cut immediately. Note that this girdle was not cut and scraped cleanly, so there’s lots of “scabbing” where the tree is attempting to reconnect bottom to top bark. The bark regrowth is harder to remove now than if it had been scraped off sooner.



Provided by Parks and Recreation Department

Retrieval of cuttings and woody debris. Location for piling removed plants **MUST** be agreed upon with Park manager **PRIOR** to event day.

Provided by Watershed Protection Department

Assist with initial site visit to help determine area extent, scope, and potential follow-ups of the project.