

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

Background

Ecological restoration requires a well-planned, gradual course of action. Control of invasive trees is only a part of this process and must be done in stages, particularly in areas where these species are in high densities and provide most of the shade.

Pulling saplings and girdling the mature trees are methods for restoring native biodiversity that do not require heavy machinery, chainsaws, or herbicides and are appropriate for volunteer groups implementing a long-term restoration plan. Small saplings can easily be pulled from the ground by hand. A weed wrench can be used to pull larger saplings up to approximately 1" in diameter. For mature trees, the girdling technique can be used. It kills the targeted tree over time by preventing the flow of nutrients between the roots and the foliage. These techniques applied together create 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 invasive species. This type of restoration is especially valuable in areas where there are already some small, native saplings present that would quickly benefit from more sunlight and less competition.



Canopy gap

Removal of mature invasive trees should leave gaps 30' in diameter or smaller to avoid exposing soil to erosion. Planting native tree seedlings and/or enriching the native seed bank in these gaps are crucial to restoring the native plant community, especially in areas with very little growth of native seedlings. In addition, amending the

soil 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:

- Have an [approved restoration plan](#)
- Submit a volunteer proposal [form](#) to parksvolunteer@austintexas.gov **30 days prior to event.** Specify which trees you are targeting for removal (see lists below).
- Conduct a site visit with the Watershed Protection Department (WPD) and/or Park Manager. After submitting the form, a staff member from WPD will contact you and schedule a site visit, if needed.
- Post volunteer opportunities with your neighborhood group and volunteer partners (Keep Austin Beautiful or Austin Parks Foundation).
- Provide group leaders
- Coordinate information/training tasks
- Confirm attendance prior to event
- Gather liability waivers
- Provide supplies/tools (see below)
- Give safety orientation; demonstrate safe use of tools

Volunteer Requirements

- Hand-pulling small seedlings is an appropriate activity for kids 10 years of age and older. Weed wrench and girdling trees is appropriate for 15 years of age and older. All volunteers under 18 years require adult supervision.
- Volunteers must receive training on identifying the target species
- Volunteers must demonstrate the ability to safely handle a weed wrench. Provide this video in advance www.youtube.com/watch?v=S93fYS5tjy8 and a demonstration on-site.
- Follow appropriate safety guidelines, including wearing closed-toe shoes, bringing adequate amounts of drinking water, wearing sun protection, and taking measures to avoid contact with poison ivy (long sleeves and long pants recommended)

Supplies/Tools

- poison ivy block, sunscreen, water
- gloves
- weed wrenches
- hand pruners
- loppers
- pruning saws
- field knife for stripping bark (inexpensive linoleum knives and painters' tools work well)
- lawn refuse bags

Hand Pull/Weed Wrench Method (for saplings)

Target species (www.austintexas.gov/invasive) :

- Large-leaf privet (*Ligustrum lucidum*)
- 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 (*Photinia serratifolia*)
- Scarlet firethorn (*Pyracantha coccinea*)

1. Make sure that plants to be removed have been properly identified.
2. Hand-pull or weed-wrench invasive seedlings, making sure they are completely uprooted.
3. Shake root mass to remove soil from seedling and leave seedlings lying on the ground with roots exposed.
4. If seeds have **NOT** formed, removed plants can be laid distributed around on the ground as mulch. If seeds **are already formed**, even if green, bag seeds to minimize reseeding.
5. The method for removing debris and slash will be decided on a case-by-case basis by WPD staff.

Girdling Method (for mature invasive trees)

Target species (www.austintexas.gov/invasive) :

- Large-leaf privet (*Ligustrum lucidum*)
- Chinaberry (*Melia azedarach*)
- Chinese tallow (*Triadica sebifera*)
- Tree of Heaven (*Ailanthus altissima*)
- Paper mulberry (*Broussonetia papyrifera*)

Step 1: Make sure that the plants to be girdled have been properly identified.

Step 2: Make parallel cuts through the bark into the wood underneath.

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

Step 3: Peel the bark from each trunk.

- Using a field knife, peel away all of the bark between the two cuts, exposing the wood underneath.

Step 4: Scrape off any remains of the original bark layer.

- Make sure all small pieces of bark and other remaining tissue have been removed by scraping down to smooth wood all around the girdle.



Step 2

Step 3

Step 4

Follow-up Workdays for Girdled Trees

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

- Wearing a glove for protection, grab each sprout from the base and move it against the direction of growth until the stem breaks.
- Remove all sprouts produced under the girdled band. Persistence in returning every month or two to quickly remove any sprout regrowth is the key to success.
- With a field knife, scrape away any new scabs that appear. If you wait too long, this material will become thicker and harder to remove.

City of Austin Support

- The Parks and Recreation Department** will retrieve cuttings and woody debris. Locations for stockpiling removed plants **MUST** be agreed upon with the park manager **PRIOR** to the event day.
- The Watershed Protection Department** will conduct an initial site visit to help determine the extent and scope of the project and discuss follow-up activities.



The sprouts and scabs on the trunk of this invasive privet tree, girdled 4 months before, need to be removed monthly to prevent tree regrowth.