



Volunteer Guide to Management of Woody Debris and Slash

1. Overview

In an effort to manage woody debris and slash from removal of invasive plants, the Watershed Protection Department has developed guidelines to minimize the adverse impacts (i.e. fire risk, soil erosion and surface runoff) from the buildup of this type of vegetation to the riparian zones and/or urban forests in the City of Austin. These guidelines are intended to benefit the ecological health of the riparian forest, primarily, but with an effort to limit safety risks (fire and flood). These management practices are not intended to replace long-term management goals and objectives, which would address build-up of woody material over time, prioritization of treatment locations/species, etc. It is strongly recommended that any larger parcel or management unit have a management plan that is supported by PARD, WPD and AFD.

2. Ecological Considerations:

The following are best practices for working in these areas:

- Leave all vegetative and woody material on the site after removing targeted invasive plant species around established native plant species.
- To maintain healthy riparian cover:
 - do not remove greater than 30% of the total canopy
 - limit gaps to maximum size of 15'x15' (~5x5m)
 - leave a buffer of at least 15' between gaps.
- To enhance the establishment and growth of native cover in the understory, focus on the removal of invasive trees around seedlings/saplings of natives.
- To minimize propagation of the invasive species, the fruits and seeds of the target invasive species will be bagged and removed from the site.
- Replace each extracted invasive sapling with a native sapling, if possible in the same hole.
- To establish ground cover and diversity, native seed mix should be applied at the rate of thirty pounds per acre (~1 ounce per square yard) in all areas of disturbed soil. Seed mix should be selected based on light (full sun/shade) and expected soil moisture conditions.

3. Preferred Methods*

The WPD recommends the following descending tiered approach (Figure 1) depending on fire risk, slope and access issues, which are to be determined on a case-by-case basis by relevant staff and stakeholders:

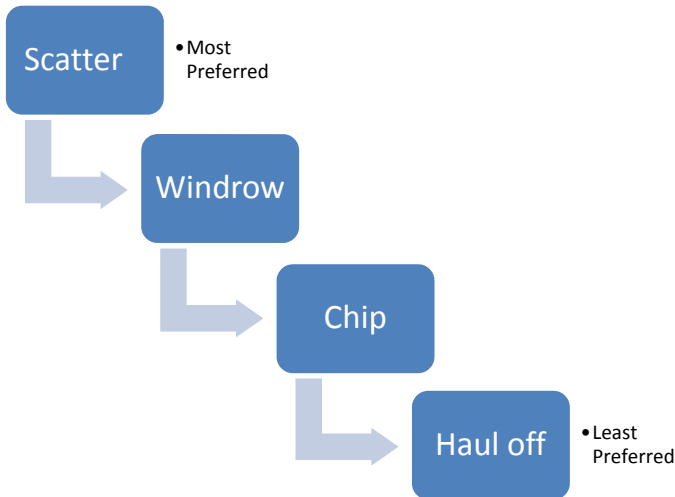


Figure 1 Management of woody invasive species debris and slash material prioritized in order of descending preference.

*Some areas or locations may require a combination of methods, which can be determined during project proposal review.

Scatter vegetation (preferred):

- Break slash material or cut into smaller pieces of non-branching lengths (<2’).
- Scatter material uniformly in a thin layer (<3” thick) around the disturbed area initially and then in the larger vicinity as quantity of material dictates.
- Do not scatter material on steep slopes adjacent to waterways, inside the ordinary high-water mark of a waterway, within 10’ of the edge of the waterway, or inside a drainage channel (including dry, intermittent channels).
- Fire Concerns: broadcast burning should be a management objective. If not, this method may not be appropriate.

Windrow:

If the accumulation of the woody debris is too abundant or the work area precludes the scatter approach, then windrow the material in rows along the grade of the land as shown in the following photograph (Figure 2).



Figure 2: Example of a Ligustrum slash windrow.

- Arrange slash in horizontal layers and compress manually to reduce void space.
- Follow the contour of the land so that windrows function to detain sheet flow and trap soil and debris.
- Rows should not exceed 2 feet wide or 2 feet tall, and should be between 10 and 20 feet apart.
- Decrease distance between windrows on steep slopes, if feasible.
- Do not place windrows on steep slopes adjacent to waterways, inside the ordinary high-water mark of a waterway, within 10' of the edge of a waterway, or inside a drainage channel (including dry, intermittent channels).
- Fire Concerns: Windrows can result in a “jackpot” of fuel, so location and placement in relation to urban interface is critical. Make sure there is a 30' gap between windrows and active trails or infrastructure.

Chip:

If there are safety or aesthetic reasons that slash cannot be scattered or windrowed, and the area is accessible for machinery (i.e. wood chipper, shredder or mulcher), the material can be chipped or shredded into small pieces and distributed on-site. Chipped vegetation can retain moisture, provide protection for the soil and seedlings, and reduce fire risk if the chips are uniformly spread. As a safety precaution, **only authorized city personnel or contractors will operate equipment** during chipping and other vegetative debris management activities.

Requirements for vegetative debris chipping include:

- Do not leave chipped material in layers deeper than 1 inch.
- Do not chip fruits/seeds of invasive plant species, as they are often still viable after chipping, and these actions could further propagate target species. Fruits/seeds of target species need to be bagged and removed from the site.



- Fire Concerns: chipped material must be thinly distributed and in appropriate locations (away from other fuel sources).

Haul-off:

Generally if the area is easily accessible, and the location precludes the approaches detailed above for fire, safety or aesthetic reasons, material can be manually carried off the site. Authorized city vehicles or approved contract trucks will deliver and recycle or dispose of the material at an appropriate location. This is often the most desirable option from a fuel/fire perspective, since it is the only one that actually reduces fuel load.

4. Project Review Process:

Submit Volunteer Project Form:

To organize a workday in a riparian area on PARD property, submit a completed volunteer project [form](#) for review **30 days prior to the event date** to parksvolunteer@austintexas.gov. These forms can be obtained online: (link to project form).

Review by City staff may include a site visit to identify the specific work locations and need for invasive tree management. On the form, specify which exotic invasive plant species you are targeting for management/removal:

- 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*)

Responsibilities of the Volunteer Project Leader:

- Submit a completed Volunteer Project Form;
- Conduct a site visit, if necessary with the Watershed Protection Department, Austin Fire Department and/or Park Manager;
- Estimate volunteer needs (suggested 2 units minimum; 1 unit = 2 hours with 15 volunteers);
- Advertise volunteer opportunities and registration;
- Retain group leaders;
- Coordinate information/training tasks;
- Confirm volunteer attendance prior to event;
- Gather liability waiver signatures;
- Provide equipment such as work gloves, weed wrenches, etc.;
- Demonstrate the use of appropriate equipment;
- Conduct a post-work site visit to verify that best practices were followed. Provide feedback/corrective actions as needed.



Volunteer Requirements:

- Volunteers under 18 years old require adult supervision.
 - Appropriate activities for volunteers between 10 and 15 years old include: hand-pulling small seedlings and using loppers.
 - Appropriate activities for volunteers above 15 years old include: pulling larger seedlings with a weed wrench and using hand saws and girdling tools.
- Prior to performing on-site work, volunteers must:
 - Receive training on applicable vegetative debris management guidelines contained herein;
 - Receive training on identifying the target invasive plant species; and
 - Demonstrate the ability to safely use a weed wrench and other vegetation management tools. A video demonstrating how to properly use a weed wrench can be found at <http://www.youtube.com/watch?v=S93fYS5tjy8>.

City of Austin Assistance and Oversight:

As applicable, staff from WPD, PARD, and/or the Austin Fire Department will review proposed volunteer projects. If necessary, City staff may assist with the initial site visit to help determine area extent and project scope. City staff may conduct a follow-up site visit and provide feedback/corrective actions to the Volunteer Project Leader as necessary.