



BEST MANAGEMENT PRACTICES CUTTING, REMOVING and TREATING of INVASIVE BRUSH and TREES

Invasive species are one of the greatest threats to our Forest Preserves. Invasive species degrade natural areas and lead to reduced biodiversity in our natural communities. The Forest Preserves of Cook County (FPCC) is committed to managing and eradicating invasive species in our natural areas using the most practical and effective means possible while optimizing the use of our available resources in a way that is compatible with effective resource management.

One of the most effective methods of managing invasive woody species is cutting, removing and treating stumps with herbicide. This document focuses on the best management practices associated with this particular method.

Best management practices and implementation guidelines have been developed collaboratively by FPCC staff and volunteers; and align with the practices of other natural resource agencies. These guidelines are introduced in Group Leadership, Managing Invasives and Brush Pile Building and Burning manuals prepared for staff and volunteer training.

When ideal conditions and resources are available, FPCC recommends the following best management practices:

- cut and remove woody material when ground is dry or frozen
- cut using chainsaws, brushcutters, bowsaws, loppers or mowers
- cut and burn brush on the same day
- apply herbicide to cut stumps within an hour of cutting or as soon as practical (refer to herbicide label).

Like most restoration work, brush cutting causes some disturbance. The FPCC recognizes that long-term benefits and improvements at a site may incur short-term negative impacts. Available resources (people and time) and site conditions do not always match up to ideal conditions.

The following guidelines are not intended to prevent work but to increase awareness of considerations, minimize impacts, and improve outcomes prior to completing the work.



For planning purposes, the best time to remove brush is late fall through early spring. Cutting in April through June is the least preferred, because of many considerations: birds, herps, wet soil, emergence of plants, and seedlings. Nature Preserve properties because of their Nature Preserve status have more protections, and these are incorporated into their Land Management Schedules. As part of the land management schedule process working with FPCC staff, Site Stewards can identify and demarcate lower quality areas where brush control work can be conducted under non-preferred conditions.

Site knowledge

To make the best decisions at a site, it is important that the work leader (Steward, Workday Leader, Resource Management Crew Boss, Intern Crew Leader, or Contractor) have the necessary information. For crews unfamiliar with the details of the site, this information can be found in Resource Management Work Orders.

At volunteer stewardship sites, consult the management schedule or contact the Regional Ecologist and/or the Site Steward. For other FPCC managed sites, the Regional Ecologist is the primary source of information about the site.

It is important that the leader has an awareness of:

- land use history or at least its previous use
- likelihood of any seed bank potential (related to above statement)
- potential to impact protected, endangered or rare species of flora and fauna, i.e. nesting birds, herps, rare plants/spring ephemerals
- best access routes to work area that do the least damage when bringing crews and equipment through sensitive areas.

Available Resources

Assess the resources and options available to accomplish the work safely and effectively. Making an assessment before the workday may also guide work to a different area or switch to an alternative task.

Things to consider for your workday are:

- number of individuals in the volunteer group or work crew (Too many people for too small an area? Enough to accomplish the day's task?)
- skill level of group (expertise and experience)
- tools, supplies, apparel and equipment (enough equipment to accomplish the task?).



Ground and Weather Conditions

Prior to the start of work, the leader should evaluate the ground and weather conditions in relation to work productivity, the site, and safety.

Some work area (and traffic patterns) considerations are:

- How wet is the area? – Wet areas can become extremely muddy or slippery – (can the work be shifted to a drier area or a wet area that is of lesser quality?)
- How much new growth is emerging? Is there vulnerable flora that can be trampled?
- Is this a high quality area that needs extra care? Is it sensitive to soil erosion?
- Is the size of the group appropriate for the size of the work area? Can large groups be spread out over a larger area?
- What is the safest and least damaging traffic pattern route in and out?
- Where is the best area to place your brush pile? Are there areas of lesser quality and further away from valuable species?

Snow

Snow depth can require additional work to finish brush cutting and removal because the deep snow may make cutting close to the ground impractical (see Stumps section for more guidance).

Although working with snow on the ground implies frozen ground, it is best to cut brush when snow is packed. Snow insulates the ground, and soil can be unfrozen or wet underneath. Also, snow can melt during the day or around a brush pile fire and can cause unsafe conditions.

Temperature

Work and safety conditions are impacted by temperature as well.

- extreme high or low temperatures are safety concerns and the well-being of people should be monitored during these events
- some herbicides have both a low and high temperature where they are ineffective and/or unsafe to use such as water based herbicide solutions that can freeze in cold weather
- low temperature implies frozen ground which is less subject to damage.

Wildlife

The overarching long-term goal is to improve native ecosystems for diverse native plant and animal species. Therefore, we take care to minimize harm to individuals within the native



species. Awareness of what wildlife is present at the site is important. Information can be obtained from your own observations and from the Regional Ecologist.

Birds

The Leader of the workday should make an effort to know which species are typical for the site, when and where (ground, live tree, dead wood, etc.) these species nest, if there have been any recent sightings, etc. Information can be obtained from the Regional Ecologist as well as other resources like the Bird Conservation Network.

During the nesting season all native birds, especially threatened and endangered are protected by law (refer to Illinois Wildlife Code for state guidance and the Federal Migratory Bird Treaty Act). Non-native species such as starlings, pigeons and house sparrows are not protected. Generally April – June is recognized as nesting season in northern Illinois, although this varies by species.

As such, it is important to scout the work area before starting work during bird nesting season. If an active nest is found where it will be disturbed by planned work, activity should be shifted to another area to avoid intrusion.

Life Cycle of Target Species

The best time to treat woody invasives with herbicide is in fall when the sap flow is headed towards the roots. When target species enter the growing season, the specimen is pushing sap flow up from roots to leaves so movement of herbicide is impeded. If cut under these conditions, consider:

- higher concentrations of herbicide may be needed but stay within label guidelines
- higher percentage of re-sprouts can be expected
- a follow-up plan for addressing re-sprouts should be developed
- residual herbicide can more easily impact non-target species during the growing season

Brush Pile Considerations

It is best to burn brush the same day as it is cut, preferably in a lesser quality area and away from sensitive specimens. Safe weather conditions are required for all fires. (See Brush Pile Building and Burning text for more detail on brush pile placement).

A brush pile burn may not be completed for several reasons, many of them safety related – weather conditions, number of leaders, nature of group, available time, etc. - that are all good



decisions to leave a brush pile and not burn it. Brush left at the end of a workday should be scattered, stacked in a feeder pile, or with some seasonal exceptions, assembled into a well-made brush pile.

A standing brush pile can become wildlife habitat so depending on the time of year and temperature fluctuations, there are things to do to limit or prevent any wildlife impact.

- Herps conserve energy when dormant and cannot move from places of warmth or protection until conditions improve. Saved brush piles act as habitat where herps would be vulnerable in mid to late fall and through the spring. See Brush Pile section for guidelines and more information.
- If brush pile is left during a period of transitional temperatures (typically when seasons change, in late fall or spring), herp and mammal movement in and out of piles is a possibility. To help mitigate these impacts the following methods should be used:
 - Construct an “altar” brush pile to keep brush off the ground and unavailable for animal shelter. Position several larger logs at the bottom of the pile to create a raised platform (altar). This can also help reduce damage to soil or seed bank from burn scarring.
 - Create a feeder pile and use the already cut brush to feed into a new brush pile. Brush that is resting directly on the ground should be moved so that animals, particularly herps, are not accidentally burned.
- If brush pile is left piled when ground was already frozen and temperatures have stayed below 50°, usually only mammal movement needs to be considered as herps are hibernating underground. Mammals may seek temporary shelter in brush piles but are more mobile and able to move.
 - Rustling the pile or starting fire at one end will encourage any residents to retreat from the pile and moving the brush off a well-made brush pile left from a prior workday is not needed.
- If a brush pile is left anytime (even during warm months), wildlife such as small mammals may be hiding or nesting in the brush pile so be aware for your own safety.
- Be aware of the aesthetics of standing brush piles that are left at any time of the year, particularly in areas visible to the public. It is important to minimize the number of standing brush piles and the length of time that they are saved. Alternatives are:



- Plan ahead and schedule a brush pile burn day soon after the cutting and treatment if you know that the brush will not be burned the same day.
- Arrange for a Brush Pile Burn Boss and one other volunteer to burn remaining piles during the week if leaving the brush was not planned.
- Making arrangements with Resource Management to assist and this should be coordinated through Volunteer Resources.

Stumps

The Land Management Guidelines calls for stumps to be left in a safe condition as close to the ground as practical. For both safety and aesthetic reasons, there should be a plan in place to get the stumps cut flat and close to the ground (two inches is preferred or no higher than four inches). FPCC recognizes that snow depth, availability of a chainsawyer and also the type of group that is cutting may make that difficult to achieve immediately. Assistance may be available through Volunteer Resources or Resource Management.

Non-snow situations:

- cut anything 1" dbh and smaller (lopper size cut), flat and close to the ground
- if the group is unable to cut close to the ground, cut target species greater than 1" dbh or a multistem clump at waist height (30-36") as they are less of a tripping or impaling hazard. Apply herbicide when re-cutting at the appropriate height occurs.

Snow conditions:

- select a site away from trails or other highly trafficked areas where high stumps could be a concern to the general public
- select a site with larger specimens rather than areas with many small specimens
- cut at waist height (30-36") – unless snow can be removed around stumps to cut them flat and as close to the ground as possible
- monitor snow depth at work area
- if leaving waist high stumps, schedule chainsaw crew as soon as snow and ground conditions permit
- extra care is needed with herbicide bark treatment so that herbicide doesn't discolor snow or seep into ground.

Personal Safety

Applying herbicide while grade school students (youth) are nearby during a workday is not a good practice.



Safety around a brush fire is discussed at length in Brush Pile Building and Burning but a few key points are:

- Always position fire so smoke does not move towards public areas or work areas
- Always inform people to work upwind from the fire, and feed fire gently to minimize exposure
- People who are sensitive to smoke should not work near the fire; as a general guideline efforts should be made to avoid inhaling smoke
- Heat from fire can make snowy or wet ground conditions muddy and slippery.

This document complements Group Leadership, Managing Invasives, and Brush Pile Building and Burning manuals. Refer to those manuals for the complete overview on these topics.

For additional resources refer to:

Volunteer Resource's Webpage - <http://fpdcc.com/volunteer/resources/>

Illinois Wildlife Code - <http://www.ilga.gov/legislation/ilcs/ilcs3.asp?ActID=1729&ChapterID=43>

Federal Migratory Bird Treaty Act - <https://www.fws.gov/laws/lawsdigest/migtrea.html>