



**Garry Oak
Ecosystems
Recovery Team**

Canada



Best Practices for Invasive Species Management in Garry Oak and Associated Ecosystems: **English Ivy (*Hedera helix*)**

Assess the site characteristics and your available resources to help you decide where to take management action, what action to take, and when. These decisions should be made within the context of the overall restoration objectives (and restoration plan, if one exists).

a) Deciding where to take action

Follow the **Priority Principle: contain the invasive species first, then reduce its amount!** The highest priority is to prevent further spread of ivy. Only take action to reduce the "footprint" of the ivy invasion after it is contained. Therefore, for any invaded area you should start with the satellite patches on the periphery and move towards the middle. The following factors will help you decide which areas to focus on first.

Factor 1: Ivy maturity

Survey the areas in the GOE where ivy occurs, and identify patches where the ivy has reached its adult phase. The juvenile phase has a triangular, deeply lobed leaf, whereas the adult phase has ovate, unlobed leaves and fruit or flowers may also be visible. The adult phase usually (but not always!) occurs where ivy is spreading vertically (e.g. climbing a fence or tree trunk). Outline and label these areas "juvenile zones" and "adult zones" on your sketch map. Focus on the adult zones first, as the ability of this phase to produce seed increases the chances that it will spread to other areas. (Sometimes concerns about species at risk should override this zone prioritization. For example if a population of a species at risk is directly and imminently threatened by ivy this should be a top priority. Such decisions should be made in consultation with species at risk experts.)

Factor 2: Ecological quality

To help you prioritize areas within zones, consider GOE quality, presence of species of concern, and ivy vulnerability. First priority areas should be those of highest ecosystem quality, where species at risk are threatened by an ivy invasion. Within such areas, start in dry places where the conditions for ivy are marginal and their tolerance is lowest. Within adult zones, start by saving the biggest trees first.

Factor 3: Accessibility

Ivy management will require repeated efforts, due to the difficulty in removing all of the roots from the soil. Focus action first in areas that can practically be accessed for repeat treatments.

b) Deciding what action to take, and when

| Circumstances | Method | When | Caveats |
|--|--|-------------------------|--|
| Mats of ivy spreading horizontally (usually in juvenile phase) | Dig out roots (using paring knife, dandelion weed fork, or weed wrench) and roll into 2-person-manageable piles | Late fall (Nov) | <ul style="list-style-type: none"> • Lift gently, or roots will break and re-sprout • Lay planks down to work from, to minimize soil compaction • Be cautious of species that are emerging in fall (e.g. licorice fern) • Remind volunteers there are species we are trying to protect; avoid a "just get the ivy" mind set • With weed wrenches, use leverage pads when soils are wet |
| Steep area OR riparian area OR area where ivy provides important habitat (e.g. nesting site for birds) | Same as above | Same as above | <ul style="list-style-type: none"> • Remove ivy a bit at a time, rather than all at once, so that the "services" the ivy might be providing (e.g. cover, shade) are removed gradually in a manner that allows the ecological community to adjust |
| Ivy climbing trees (often in adult phase) | Remove a 1 m tall band at waist height all the way around the trunk (using folding saw, loppers, axe, weed wrench with a leverage pad to pry off of, or hand clippers) | Fall | <ul style="list-style-type: none"> • Ivy above the removed band can be left in place to die, but the band must be kept clear as old ivy makes a great ladder for the next invasion • If the tree is dead (a "snag") then pulling to remove ivy may cause it to topple. This presents a serious safety concern, and may also damage important habitat for wildlife. Ivy should be removed from snags by an experienced person who knows the risks and follows proper WCB safety procedures, and after a Hazardous Wildlife Tree Assessment. • Must ensure all contact between roots and upper parts of the ivy plant are severed |
| Ivy at base of tree following removal of ivy band from tree | Pry roots from base of trunk and soil, using grub hoe, or cable, winch and truck or come-along | Late fall (Nov) | <ul style="list-style-type: none"> • Is hard work; some roots may be over 10 feet long |
| Ivy at base of tree, following removal of ivy band from tree | Topical application of herbicide (Triclopyr) | When new growth appears | <ul style="list-style-type: none"> • Only with extreme caution, and by (or advised by) experts • May be restricted (legally) in some jurisdictions • Surface applications of Glyphosate and 2-4D may not work on ivy, due to their waxy leaves |
| Any ivy with a trunk thick enough to drill a ~3/8" hole into | Herbicide (Glyphosate) poured into a hole drilled in the ivy trunk | Spring or summer | <ul style="list-style-type: none"> • Only with extreme caution, and by (or advised by) experts • May be restricted (legally) in some jurisdictions • Drill hole on a downward angle, as far in possible without emerging on the other side • Use concentrated herbicide • Will also work in winter, but more slowly (results not seen until spring) |

In deciding which method(s) to choose, also consider:

- Your budget to acquire the necessary tools and equipment for the methods chosen (e.g. folding saws, come-along, clippers, axes),
- Your budget to acquire the necessary protective clothing and equipment (e.g. gloves, safety goggles),
- The need to comply with Workers Compensation Board regulations, and
- The number and skill level of the people that will be assisting you.

Consider following up on any of these control methods with a planting or seeding treatment in order to speed up re-establishment of native species. The need for this will depend on what bulbs and seeds already exist in the soil or in adjacent areas, light conditions, and how well they germinate and sprout when the ivy is removed. You may wish to first monitor the area after the control methods have been implemented, and then plant or seed later if the desired native plants do not appear or are sparse. If you are going to plant native species, consult with someone knowledgeable about this first, ensure that your plant and seed stock originate from sources that follow ethical guidelines, and take genetic issues into consideration.

c) Deciding how to dispose of dead plant material

If you choose any mechanical removal method, you must think about what to do with the plant material that you have cut or pulled. It is not acceptable to leave large piles of ivy on site, as it may re-sprout, or may smother native plants underneath. Consider the following options, based on the amount of dead ivy you expect to remove:

| Material | Removal | Disposal |
|--|---|---|
| Large amount of ivy, AND no seeds present | Move to disposal area on tarps or makeshift "stretchers" | <ul style="list-style-type: none"> • Pile on tarps, paved or concrete surface where plants can dry and decompose without re-sprouting, OR remove to composting facility |
| Any volume of dead ivy with seeds present | Move to disposal or transport area on tarps or makeshift "stretchers", being very careful to not spread seeds to other areas en route | <ul style="list-style-type: none"> • Burn on site, if permitted, OR cover and transport to a location where it can be safely burned • Ivy smoke may irritate lungs; keep people upwind • Consult BC government's <i>Open Burning Smoke Control Regulation</i>: www.toffan.com/clear/OBSCR.pdf • Composting is risky, as the seeds may not be destroyed by the composting process |
| Small amount of ivy without seeds | Not necessary | <ul style="list-style-type: none"> • Leave on site, draped over shrubs where the ivy will dry out without touching bare soil OR deposit in small piles on a path where it can dry and decompose without re-sprouting |

d) Recognizing uncertainty

In making these decisions, there will be things you are unsure about. This is normal, and should not cause undue concern. The important thing is to be *aware* of the things you are most uncertain about, document them, and plan your actions in a manner that will help you learn and reduce this uncertainty.

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