

Management of Invasive Plants in Toronto Parks and Ravines

Steve Smith

Urban Forest Associates Inc.

www.ufora.ca

- **Invasive** species are *alien* species whose introduction or spread negatively impact native biodiversity, the economy and/or society, including human health.
- **Alien** species are plants, animals and micro-organisms that have been accidentally or deliberately introduced into areas beyond their native range. Synonyms may include *introduced*, *non-native* and *exotic*.

(Ontario Invasive Plant Council 2010)

- **Indigenous**, (meaning *locally native*) plants are simply those that grew in a particular place prior to settlement by Europeans.
(Society for Ecological Restoration, Ontario Chapter 2009)
- **Native** species, are those that evolved in a particular area.
(Tallamy 2007)



Dog-strangling vine in E.T. Seton Park

- Invasives can be difficult and expensive to control. It may take years of hard work. Herbicides and bio-controls are often the only practical long-term way to deal with many of them. Most are here to stay but we can reduce their impact.
- You have to prioritize control work to be effective within time and budget constraints.
- Prioritize which species are a concern and in what order to control them. Ask

- Is the species a problem on your site?
- Is it spreading or stable?
- Is it widespread in the surrounding area or just getting started?
- Is it controllable by you or with help?
- Will it be controlled by natural forces in time?
- What order should you do the work in?

- If the soil has been disturbed, it will be more difficult to return to the old conditions. Work on improving the soil too.



Cutting with a chainsaw and treating stumps with a spray bottle



Cutting shrubs with a brush cutter

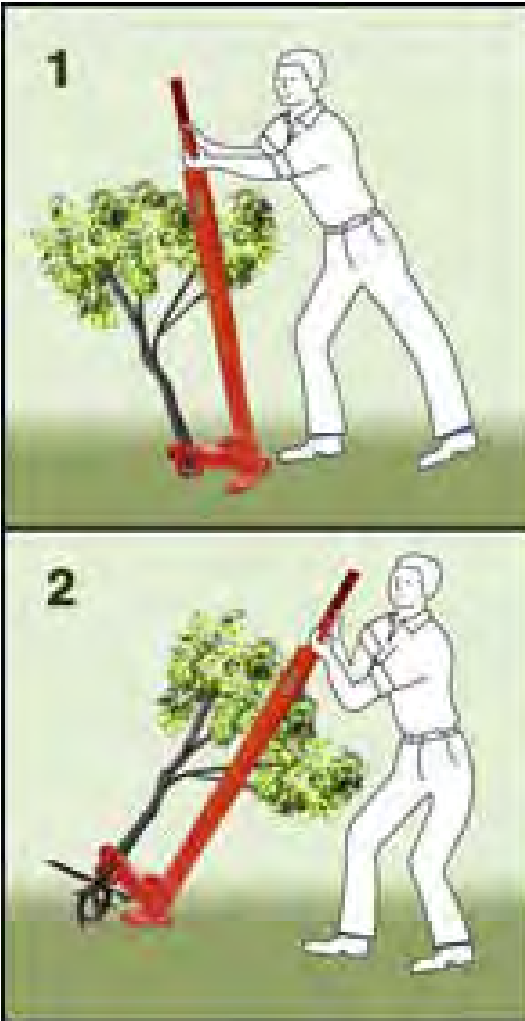


Chipping brush



Girdled Norway maple

The Weed Wrench



- We use Roundup (Glyphosate) for grasses, legumes, large infestations of herbs that spread by underground roots (sprayed on foliage). For trees and shrubs we apply it on cut stumps.



- We use Garlon (Triclopyr) for tree and shrub stumps. It doesn't work on honeysuckles, but is the best choice for buckthorns.

- Avoid desirable plants.
- You have to be licensed to apply any pesticide.





Applying herbicide with a wick (mop) applicator

Non-chemical Control

- Cover the area with plastic or papers and mulch (or plywood)
- Avoid desirable plants



- Hand-pull annuals, biennials and perennials without rhizomes. Pull when flowering.



- If they have rhizomes dig out all the roots and/or use herbicide
- Dispose of plants in compost



The Modified Bradley Method, as practiced by Todmorden Mills Wildflower Preserve volunteers

Find desirable plants within the matrix of invasives (like this fern surrounded by garlic mustard). Clear all invasives in a small area around each desirable plant and cover the bare area with leaves and mulch so the plant can grow into the cleared area. Repeat until the whole area is cleared of invasives.





- If you can't remove the plant, remove the seed heads to prevent reproduction



Can you have too many natives?



Red and white oaks, and white pines growing in a savanna area in High Park



Red oaks and staghorn sumacs near the greenhouse.
Prairie grasses and herbs are being shaded out.

- If we have too many invasive species or too many native trees in our savannas, we will lose some of the herb species we're trying to protect and the ecological functions they provide.
- We need to have goals for all vegetation and work toward them, not just remove invasives. Invasive control is just one part of stewardship.

Invasive Control Strategy

- Control early, control often
- Once you've started on an area keep going back until it's cleared
- Start with outlier populations, then go after the main colony
- At least stop reproduction if you can't kill them all (remove all seed heads, remove all young tree and shrub seedlings)
- Trees and shrubs are easier to eliminate than herbs and grasses
- Aquatic herbs have no registered herbicide available for control in Canada
- Mow to buy time to keep things the same for a while
- Keep the forest canopy dense (shaded) to keep things the same for a while
- Don't plant new native plants there right away, it'll be harder to control the invasives if there's a mix
- Use herbicides where needed. After spending years trying to do it the hard way you'll be happy to have them even if you don't like to use them
- Replant with aggressive natives to fill up the space, or cover the bare area with mulch to prevent new weeds
- Many invasive species will **never** be eliminated, only controlled. For some, biocontrol is the only long-term option.
- Each site is unique. Cookie-cutter approaches won't work. Do what is locally appropriate and use adaptive management.

Invasives in the Future

- Some species are expected to increase in abundance
- Oriental bittersweet and other vines
- What is native or desirable for restoration projects will be less clear eg. black locust





A forested property, thinned to remove invasive trees and replanted, after 10 years of new growth. Control of invasives is still necessary but greatly reduced.

“The care of the Earth is our most ancient and most worthy, and after all, our most pleasing responsibility. To cherish what remains of it, and to foster its renewal, is our only hope.”

Wendell Berry, *The Unsettling of America*, 1996