



Garlic Mustard (*Alliaria petiolata*)

Since its arrival in North America in the early 1800's, Garlic Mustard has escaped into the wild and is now one of Ontario's most aggressive forest invaders.

- Your control efforts should focus on preventing the spread of this invasive species. **Focus on edges first, reversing the invasion front.**
- When removing any invasive plant, NEVER dump them anywhere other than garbage or in designated soil treatment areas at landfills. Special care needs to be taken when the homeowner lives in an area where garbage is dumped in a local bin. Please consult your municipality if in doubt.
- Any plants removed should be kept in heavy, dark garbage bags.
- Property lines: Removal along a fence or property line is most effective when neighbours work together.
- Soil: Take care when sharing any plants from the area in your garden that has Garlic Mustard in case you inadvertently spread the plant to the gardens of friends or neighbours.
- Replant the area or cover as soon as you're sure the area is free of Garlic Mustard. This will stop other invasive plants from taking hold. *Replanting with native plants is highly recommended.*

Understanding Garlic Mustard

- Garlic Mustard has two distinct life stages:
 - First year: grows only a cluster of leaves shaped like a rosette, while a strong root system develops.
 - Second year: produces flowers and hundreds of seeds. Seeds are easily spread by humans and animals.
- Because it **spreads only by seed, removing it before or as it is flowering will reduce the seed bank in the soil and is key to controlling it.** Seed can remain viable in the soil for 5 years or more.
- Soil disturbance will stimulate seed bank germination, so it is important to replant areas to stop further growth.
- If Garlic Mustard roots are damaged but not removed, there are small buds (called axillary buds) on the roots which will sprout additional stems. If the plants are damaged, they are able to produce replacement flowers, as late as July and August.
- Control small, younger, satellite populations first by targeting the invasion front.

Removal Strategies

How you decide to remove Garlic Mustard will depend on the extent of the infestation and your physical ability to deal with it. You will likely need a multi-year plan and will have to inspect the area regularly, adjusting strategies according to your progress. Even after removal, plants can reappear from seeds dispersed by animals. Here are some options:

Digging, Cutting & Removal (smaller areas)

- Most effective when the soil is moist, after a rain, especially in clay soils.
- **Removal is most effective in spring as plants emerge and then again in the fall when new plants sprout from seeds.**
- Work on one section of the garden at a time, e.g. a square meter, sq foot. Set yourself a schedule to do this daily or at least a few times a week.
- Focus on plants that have the small white flowers to start.
- Hand pull or cut plants down to the ground with a hoe or sharp spade. Dispose of plants in the garbage as the flowers can still produce seeds even after being cut.
- Continue to remove and discard Garlic Mustard, focusing on flowering plants first, then moving on to smaller non-flowering plants.
- Repeat inspection and removal REGULARLY (ideally once a week) until there are no longer any Garlic Mustard plants.
- Continue to monitor the area even after the plant is eradicated.
- Replant the area with native plants to stop it from being invaded again.
- This process will likely take several years or more with vigilant monitoring.

Smothering (medium to large areas)

- Care should be taken if there are trees or large shrubs in the area as their roots can be addected.
- Can be started any time of year
- Cut the Garlic Mustard at or just below ground level (if it is growing season), using a hoe or sharp spade. Remove plants.
- Cover the cleared area with heavy black plastic or tarps to block sunlight and starve plants of water.
- Weigh the heavy plastic/tarps to keep in place, e.g. rocks, branches, bricks, tent pegs.
- Leave in place and check progress each season. Continue to smother as needed. Smothering can take up to 2 years. Keep in mind that viable seeds may remain in the soil.
- If area is very large, work in sections, covering with tarp/dark plastic as you clear an area.
- Replant the area with native plants when Garlic Mustard has been eliminated and tarp removed.

- A thick layer of cardboard or leaf bags/mulch may also be used to smother, especially if in the vicinity of trees or shrubs. See link about "The "Cover and Smother" Approach to Goutweed Control" below for more information

Solarizing (medium to large areas)

- Should only be used if there are no trees or large shrubs in area.
- Best started in late spring when plants emerge
- Not recommended in low light areas
- Cut the Garlic Mustard at or just below ground level using a hoe or sharp spade.
- Water the soil deeply until it is wet.
- Cover the cleared area with CLEAR plastic (such as 1 to 4 mil painter's plastic) to allow sun to "cook" plants. Clear polyethylene sheets or rolls are available from places like Lowes or Home Depot.
- Bury the plastic edges in the soil to trap the heat.
- Leave the plastic in place for at least 4 to 6 weeks in the hottest part of the summer.
- If area is very large, work in sections, covering with plastic as you clear an area.
- Remove the plastic and inspect. Continue to solarize as needed.
- Replant the area when Garlic Mustard has been eliminated and plastic removed.
- See link about "Solarizing" below for more information

References

- Best Management Practices - Garlic Mustard http://www.ontarioinvasiveplants.ca/wp-content/uploads/2016/07/OIPC_BMP_GarlicMustard.pdf
- Garlic Mustard Factsheet - <file:///C:/Users/User/Downloads/Garlic.Mustard-Fact.Sheet.pdf>
- Ontario Invasive Species Council Garlic Mustard <http://www.invadingspecies.com/garlic-mustard/>
- How to Solarize Invasive Plants http://www.capitalmohawkprism.org/uploads/8/1/4/0/81407728/solarization_brochure.pdf?fbclid=IwAR0GYtUBkgJ-Xx_Mfj9CAbpfrFW0e4LxtMbkGNZiDDTICBG_R4SYbOBhrO8
- "Cover and Smother" Approach to Goutweed Control <https://www.youtube.com/watch?v=VS5uyk9f2kE>
- HOW TO FIGHT PLANTS WITH PLANTS <https://www.humanegardener.com/how-to-fight-plants-with-plants/>
- Controlling and Disposing of Non-native and Invasive Species <https://www.ontarioparks.com/documents/content/10/172>