

# Garlic Mustard

(*Alliaria petiolata*)

## Best Management Practice Technical Document for Land Managers

March 2017

### - DISCLAIMER -

The intent of this document is to relay specific information relating to invasive plant control practices that have been advised by leading professionals across Ontario. This document contains the most up-to-date research and knowledge available at the time of publication and reflects current provincial and federal legislation regarding pesticide usage. It is subject to change as legislation is updated or new research findings emerge and is not intended to provide legal advice. The timing suggested will differ throughout Ontario and should be tailored to your region.

**Use this document after** you have performed monitoring, assessed your priority areas and made sure that the control options listed in this document are allowed and appropriate on your site. For more information, please refer to the Ontario Invasive Plant Council's Best Management Practices document for garlic mustard.

## Strategy and Cautions

- Garlic mustard reproduces via seeds, making seed reduction and prevention an important factor in control. Focus on controlling the seed-producing, 2nd year plants.
- Remove the outlying populations (isolated plants or satellite populations) first to prevent further spread.
- Pulling plants before or while they are in flower, but before they set seed, is the most effective control method for all populations sizes.
- If garlic mustard roots are damaged but not entirely removed, small buds (called axillary buds) on the roots will sprout additional stems.
- Even if the plants are damaged they can produce replacement flowers as late as September.

**Caution:** Make sure that all equipment, boots, clothing, etc. are cleaned at the site to ensure seeds are not transported from the site. See the Ontario Invasive Plant Council's Clean Equipment Protocol for more details.

## Management of Small and Large Populations

Pulling works best for infestations. The entire "s" shaped root must be removed to prevent re-sprouting. Pulling is easiest when the soil is soft and pliable (in early spring (April/May) and after a rain) but must be done continuously throughout the growing season to ensure all stems are removed. Stop all control activities when garlic mustard starts to produce seed to prevent spreading seeds. If pulling is not an option (for example, in areas where erosion is an issue) cut the stem of the plants at soil level.

## Disposal

Do not compost viable plant material (seeds and roots) at home or send to landfill. Pulled plants which have flowered are still able to produce seeds, so viable plant pieces should be removed and solarized. If your municipality has a high-heat compost program, plants can be sent there. Alternatively, solarize viable plant material by placing it in sealed black plastic bags and leaving them in direct sunlight for 1-3 weeks. Alternatively, place in yard waste bags, cover with a dark-coloured tarp and leave in the sun for 1-3 weeks. Allow stems and roots to dry out thoroughly before burning or disposing of them.

## Rehabilitation and Monitoring

Garlic mustard invades disturbed areas readily and soil disturbances, such as pulling out plants, stimulates seed germination. Rehabilitation of disturbed areas is therefore vital for long-term control. Because garlic mustard roots produce chemicals that change the soil chemistry and prevent other species from growing nearby, soil rehabilitation may be required before re-planting. See the Ontario Invasive Plant Council's Best Management Practices document for details. Experts estimate that garlic mustard seeds are viable for at least 7 years. Follow-up monitoring and removal of new growth during this time period is necessary for complete control.