

Wild parsnip Identification & Reporting

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Overview

This kit—part of the Rochester (MN) Public Library collection—is available to all Minnesotans and residents of the Midwest through statewide regional library networks. The purpose of this kit on reporting wild parsnip (WP) is to build surveillance, identification, reporting and management capacity in natural resource professionals, educators, and volunteers such as Master Naturalists and Master Gardeners. The kit will use text, photos, plant specimens and practice exercises.

After using and practicing with this kit, users will possess:

- skills to identify suspicious looking seedlings, rosettes, mature plants, and flowers that may be wild parsnip plants;
- knowledge of significant indicators and habitat features for confident identification;
- understanding of which tools to use for reporting invasive plants and how to report;
- safety information to protect self and others from skin irritation (phytophotodermatitis).

After completion, participants will confidently:

- recognize look-alikes to better manage limited resources and protect native species;
- report suspected prohibited plants (e.g., WP) to the Great Lakes Early Detection Network (GLEDN) app, EDDMapS online or *Arrest the Pest* and
- understand the strategies behind best practices in wild parsnip management.

Public Library Cataloging information:

TITLE: Wild parsnip Identification and Reporting Kit

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PURPOSE: To prepare Minnesotans to quickly detect and report wild parsnip in any stage of development, during any season and at any location in Minnesota. This kit is intended for self-instruction, small group or facilitated workshop instruction settings. Recommended for adults and teens.

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Reporting suspected wild parsnip

When wild parsnip is suspected, there are several ways to report it so that natural resource professionals can verify it for tracking, management and research.

1. Use a Smartphone or data-enabled tablet

The **best way** to report suspected wild parsnip (WP) is by using the Great Lakes Early Detection Network (GLEDN) app, an invasive species reporting tool. Download the free GLEDN app from your device's app store.

2. Use a Computer or Tablet

To use a computer or tablet go to the EDDMapS website (www.eddmaps.org/midwest) to report the infestation.

Participants can set up an EDDMapS account at the EDDMapS website.

3. Use email or make a phone call

Reports can be emailed to arrest.the.pest@state.mn.us or call 888-545-6684.

How to accurately report the plant location:

- GPS enabled smartphone or GPS data-enabled tablets will load the GPS location when uploading the photos of the plant using the GLEDN app.
- When using the EDDMapS website, enter the location by using GPS (if this information is available) or by locating it on a map at the website.
- If reporting by email or phone, provide detailed directions to the location where the plant was observed.
- If unable to take photos, please provide a short description of what was seen and include it with directions to the infested site.

Take photos for reporting

- Be sure the photo is in focus. Use a hand, or common objects for size comparison.
- **Take *at least two types of the photos:***
 - A top-down view of the entire rosette.
 - A view of a single leaf or leaves with all leaflets in focus.
 - A picture of the entire plant.



These are actual examples of what works in GLEDN. Once the uploaded photos are received, a specialist will verify the plant species and you will be emailed the result.

What is wild parsnip?

Wild parsnip (WP) (*Pastinaca sativa*) is a member of the carrot family, also known as the umbel family due to the characteristically umbrella shaped flowers. In North America, umbel family members include golden Alexander, cow parsnip, water hemlock and yellow meadow parsnip, among others. These species share characteristics in appearance and all the have umbel shaped flowers.

Wild parsnip, introduced by early settlers as a cultivated food source, is a classic biennial meaning within two years the plant completes its life cycle (germination, flowering, seed production) before dying. Year one produces a leafy rosette that supplies the underground root with energy. The root expends most of its stored energy in the second year to complete the plant's reproductive life cycle. Wild parsnip is a monocarpic perennial meaning it dies after flowering.

This plant is noticeable due to its unusual green-yellow color (a great example of chartreuse). Multiple umbel flowers ranging from 3 to 8 inches in width are lacy with a yellow-green color. In June and July, this yellow-chartreuse is an indicator of an individual wild parsnip plant or a monoculture.

During year one, solar energy is collected by the rosette, then stored in the carrot-like root for next year's flowering and seed production, before dying.



From https://www.prairiehaven.com/?page_id=9686

Why does wild parsnip get special attention?

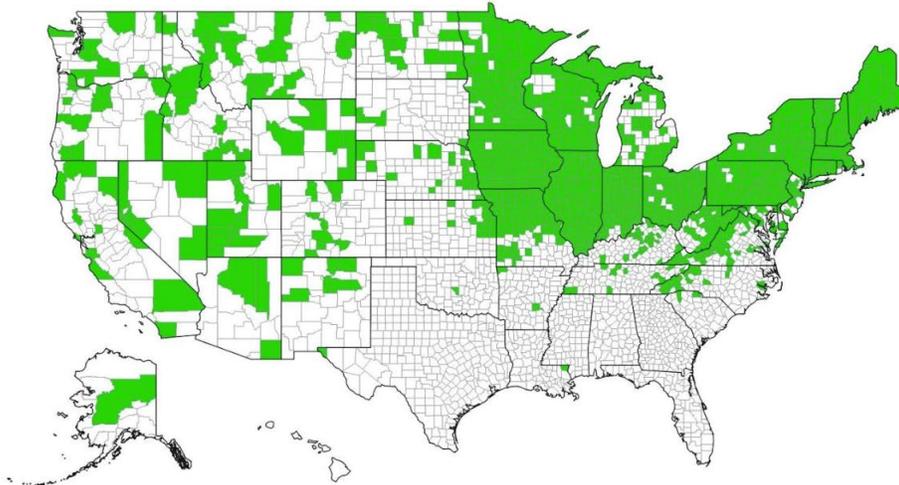
Wild parsnip poses significant danger to human health. When parsnip stems or leaves are broken, a sap containing furocoumarin will adhere to unprotected skin, causing phytophotodermatitis.

Direct sunlight activates furocoumarin and increases the severity of skin burns under UV light. Phytophotodermatitis can require hospitalization and the affected area may never fully recover. Phytophotodermatitis is easily avoided by wearing closed toe shoes, socks, long pants, long sleeves and gloves. People who control wild parsnip often work at dusk to avoid activating the toxins. They wash off the sap with soap and water before being in sunlight the next day.

Wild parsnip causes extensive habitat loss for nesting birds and other wildlife across the country. Below are reports of wild parsnip across the country as of March 2019.

wild parsnip (*Pastinaca sativa*)

EDDMapS
Early Detection & Distribution Mapping System



Legend
 □ No Data
 ■ Species Reported

Map created : 5/30/2019

EDDMapS. 2019. Early Detection & Distribution Mapping System.

The University of Georgia - Center for Invasive Species and Ecosystem Health.

Available online at <http://www.eddmaps.org/>; last accessed June 5, 2019.

Where do I look for wild parsnip?

Wild parsnip grows in sunny or shady areas, near roadsides, in ditches, pastures, fallow fields, trails and many other places with disturbed ground. Monocultures are observed in June and July when acres of invaded habitat are identifiable by a monochromatic yellow-chartreuse haze.

Detecting and Discerning wild parsnip

Wild parsnip is a biennial, meaning it completes germination, reproduction and senescence within two-years. This kit helps identifiers to learn about the indicators of wild parsnip at all development stages. Ideally the kit will enable faster identification when faced with confusing look-alike plants. Look-alikes are plants that at first glance only appear to be a member of the target species. When observers report and manage selected target invasive species, (and avoiding managing look-alikes) limited resources such as time, funds, labor and materials are more efficiently used.

Look-alikes can be any kind of plant that, for some period of time, appears to be almost identical to the target species. Look-alikes frequently include native species already in decline due to habitat loss. Learning to discern several nuances between the target species and look-alikes should enable faster achievement of restoration or ecosystem goals.

YEAR ONE: Seedlings & Rosettes

Each seedling consists of a serrated, slightly lobed leaf about an inch across. The chartreuse color of the seedlings below is more noticeable when contrasted with nearby green grass leaves. Chartreuse is a yellow greenish hue and the signature color of wild parsnip throughout.



The seedlings grow to form a rosette of leaves converting sunlight to energy in the first year.



Photo from Ohio State Weed Lab



Photo from Ohio State Weed Lab

The ability of wild parsnip to store energy during the first year is critical for reproductive success in the plant's second and final year. Roots are cream colored, and often tapered like a carrot.



Photo from https://www.prairiehaven.com/?page_id=9686

WILD PARSNIP, YEAR ONE: Optimizing Control



Image from the MDA

In the first year seedlings and rosettes of any size population can be sprayed with herbicide. Small populations can be dug out of the ground when non-chemical methods are preferred or required.

YEAR TWO: Bolting & Flowering

In mid-May during the second year, wild parsnip rosettes produce a chartreuse and deeply furrowed stem.



Within a few weeks the stem produces the primary inflorescence, often observed as a yellow-green flower head (also called an umbel) that is more than 4 inches across. This is often, for a short time, the tallest flower of the plant. During the secondary inflorescence stage, a smaller set of umbels grow to the side and above the primary inflorescence thereby increasing the height of the plant. The diameter of the primary inflorescence is used as benchmark in discerning wild parsnip from its look-alikes.

Rapid elongation of the stem and fast flower head production is fueled by year one energy stored in the root.



Photo from: https://www.prairiehaven.com/?page_id=9686

Identifying wild parsnip during the **flowering stage** (June and July):

Yellow-green umbels in **June or July**, are likely from wild parsnip if:

- The **largest umbel is wider than 4 inches** in diameter.
- The triangular leaves consist of 5 to 15 leaflets; and wider near the base.
- The leaves are chartreuse.
- The **tallest part of the plant is 3 to 5 feet** from the ground.
- The stem has deep vertical ridges.
- A yellow-green haze of flowers is visible in a monoculture.





Photo by Jodie Colon, i-Naturalist

WILD PARSNIP YEAR TWO: Optimizing Control Method

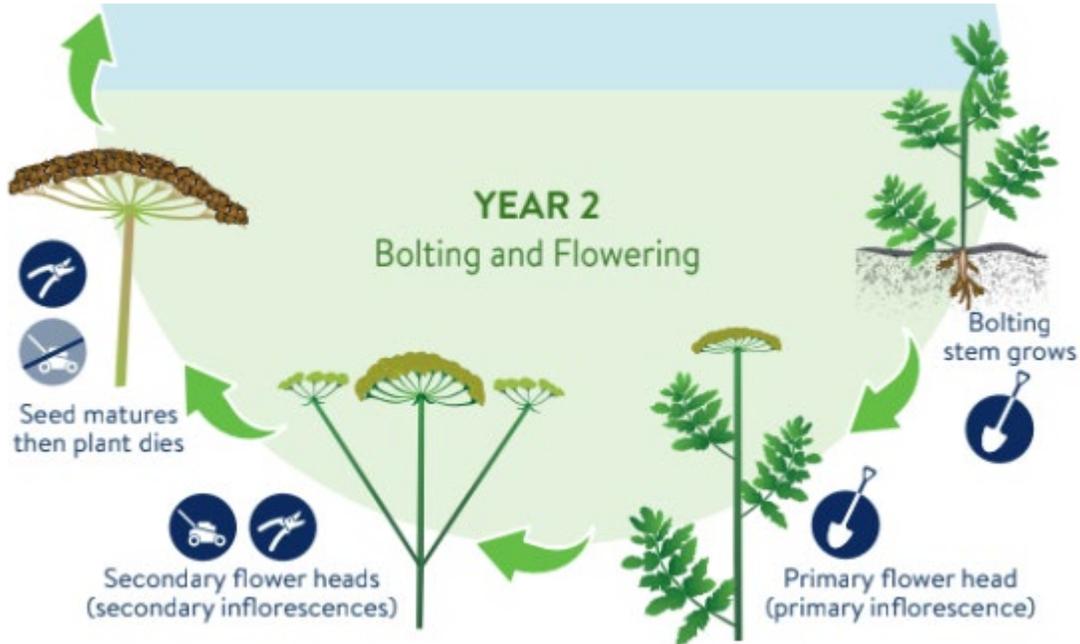


Image from the MDA

During bolting and primary inflorescence stages wild parsnip can be easily killed by severing the top of the root (underground) from the rest of the root. Once severed, the stem and root can be left in place. Specially designed tools have been developed for this strategy. Some, called parsnip predators, are available for sale.



Photo credit John McNerny

Secondary flower head stage, known as secondary inflorescence stage, is the optimal time for mowing wild parsnip. Mowing at this stage terminates energy flow so that additional flower production is suppressed while seed development from pollinated flowers also stops developing seeds from becoming viable. Mowing after this stage, (and including through the fall and winter) will lead to a worsening infestation as the seeds will be viable, and the equipment will spread them.



The secondary inflorescence occurs when the primary inflorescence is no longer the tallest flower

Image from the MDA

Yellow flower look-alikes

Both golden and heart-leaved Alexanders are easily confused with wild parsnip. All three species have a yellow flower head. Native Alexander species flower from May to July, resulting in a potentially confusing eight week overlap with wild parsnip, which flowers in June and July.

Golden Alexander

- The largest flower head is smaller than 4 inches in diameter.
- Plants are less than 30 inches tall.
- Flowers are a purer yellow than the yellow-green of wild parsnip.
- Leaves are triangular, created by three components displaying three leaflets.



G D Bebeau *Zizia aurea* (L.) W.D.J. Koch

Sharply tripinnate leaves of Golden Alexander

Heart Leaved Alexander



Rounded flowers and three-part leaves of Heart-Leaved Alexander

Wild parsnip (left) and golden Alexander

When viewed from afar the pattern of wild parsnip in a monoculture may appear to be a consistently lacy yellow-green haze (below left). Alexander flower heads, may appear as a splotchy yellow pattern (below right).

Wild Parsnip



golden Alexander



Photo iNaturalist by lexiseubert

Leaf look-alikes

Tall Cinquefoil Leaves

Tall cinquefoil and wild parsnip leaves are easily confused. These two species share similarities in their leaves and leaflets and are both found across Minnesota. Young leaves on both plants show considerable hairiness, mature leaves on both plants may show various degrees of hairiness. The most salient factor for identifying wild parsnip plants not blooming is the widest leaflets are near the leaf base; tall cinquefoil leaves are widest nearer the leaf tip.

Wild Parsnip

Widest point of the overall leaf is near the base,



Tall Cinquefoil

Widest point of leaf is in the upper half,



Photo iNaturalist brookemichell

Managing wild parsnip

The spread of wild parsnip occurs unintentionally, as it is easily transported by wind, tractors, mowers and other equipment that has moved through contaminated areas. Humans frequently transport seeds on their cars, clothes and shoes. Pets and wildlife enable transportation via seed in their fur, paws and hooves.

Limited time and resources support best practices and optimal use of labor and other resources. This chart (detailed in years one and two) provides an easy reference for planning wild parsnip management at each stage of the lifecycle:

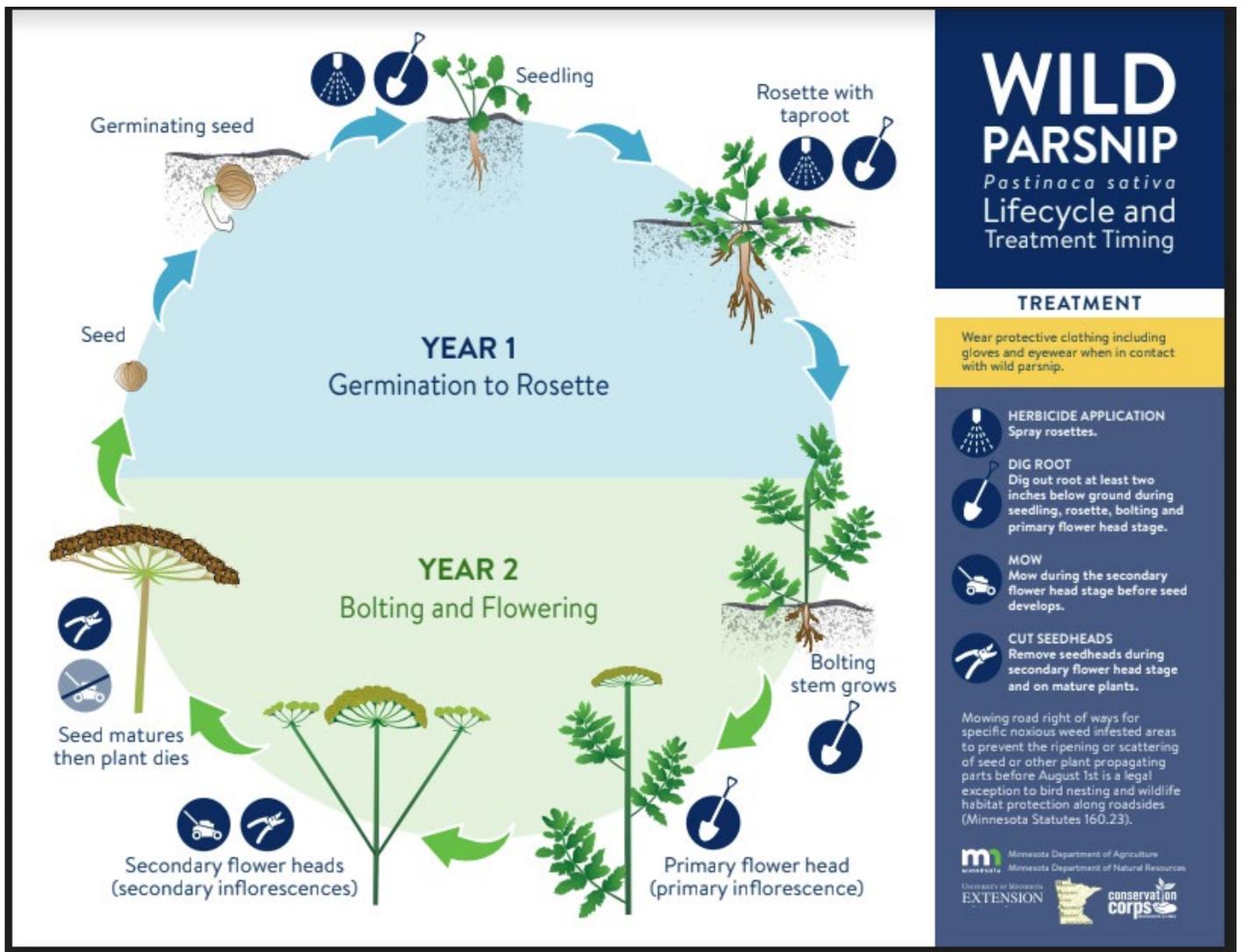


Image from the MDA

Wild parsnip at the secondary inflorescent stage is a great time to mow!



References and Sources of Additional Information

Minnesota Noxious Weeds: Minnesota Department of Transportation

<https://www.dot.state.mn.us/roadsides/vegetation/pdf/noxiousweeds.pdf>

Prairie Haven: Native Habitat Restoration in Western Wisconsin:

Wild Parsnip (*Pastinaca sativa*)

https://www.prairiehaven.com/?page_id=9686

Dr. Power Equipment

<https://www.drpowerblog.com/wild-parsnip-identification-control/>

Friends of the Eloise Butler Wildflower garden

<https://www.friendsofthewildflowergarden.org/pages/gardeninfoa.html>

iNaturalist

<https://www.inaturalist.org/home>

Minnesota Wildflowers.

<https://www.minnesotawildflowers.info/>

EDDMaps:

<https://www.eddmaps.org/>

Great Lakes Early Detection Network

<https://apps.bugwood.org/apps/gledn/>

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For more information: <https://extension.umn.edu/identify-invasive-species/wild-parsnip>.