



**BUGWOOD**Wiki  
wiki.bugwood.org

[Main Page](#)  
[Help](#)  
[Recent changes](#)

▼ [Projects](#)

[Legume and Onion PIPE](#)  
[High Plains IPM Guide](#)  
[Northern Plains IPM Guide](#)  
[IPED Pest Protocol](#)  
[First Detector Entomology](#)  
[NPDN First Detector Materials](#)  
[Diagnostician's Cookbook](#)  
[Diagnostic resources](#)  
[Invasipedia](#)  
[Funding Credits](#)

► [Participation](#)

► [Other Bugwood Resources](#)

► [Export Current Page](#)

► [Toolbox](#)

Page [Discussion](#) [Read](#) [View source](#) [View history](#)



# Pastinaca sativa

*Authors: Nancy Eckardt, Global Invasive Species Team, The Nature Conservancy*

## Contents [hide]

- [1 Overview](#)
- [2 STEWARDSHIP SUMMARY](#)
- [3 NATURAL HISTORY](#)
  - [3.1 Range:](#)
  - [3.2 Ecology:](#)
  - [3.3 Reproduction:](#)
  - [3.4 Impacts:](#)
- [4 MANAGEMENT/MONITORING](#)
  - [4.1 Management Requirements:](#)
  - [4.2 Management Programs:](#)
  - [4.3 Monitoring Requirements:](#)
- [5 RESEARCH](#)
  - [5.1 Management Research Needs](#)
- [6 Resources](#)
- [7 INFORMATION SOURCES](#)
  - [7.1 Original Document](#)
- [8 Images from Bugwood.org](#)

## Overview

### Appearance

*Pastinaca sativa* is a biennial/perennial herb that looks and smells similar to cultivated parsnip and can grow up to 4 ft. (1.2 m) in height.

### Foliage

Leaves are alternate, compound and branched with jagged teeth. Leaflets are yellowish-green, shiny, oblong, coarsely-toothed, and diamond-shaped.

### Flowers

Flowering occurs from May to June, when hundreds of yellow flowers develop. Flowers are arranged in an umbel.

### Fruit

Fruits are dry, smooth, slightly winged and flattened on back. Fruits each contain two seeds, which are dispersed in the fall.

### Ecological Threat

*Pastinaca sativa* is native to Eurasia and occurs in sunny



### Taxonomy

Kingdom: *Plantae*  
Phylum: *Magnoliophyta*  
Class: *Magnoliopsida*  
Order: *Apiales*  
Family: *Apiaceae*  
Genus: *Pastinaca*

areas with varying degrees of soil moisture. Contact with this plant can cause skin to become photosensitive; exposure to sunlight can cause severe blistering. Be aware, poison hemlock and water hemlock are close in appearance and are often confused with *Pastinaca sativa*. Poison hemlock has a mouse-like odor while *Pastinaca sativa* has a parsnip-like odor. Water hemlock prefers wet habitats whereas *Pastinaca sativa* prefers dry soils.

**General Description:** *Pastinaca sativa* is a tall, stout monocarpic perennial of the parsley family.

Species: *P. sativa*

#### Scientific Name

*Pastinaca sativa*

L.

#### Common Names

wild parsnip, wild parship

## STEWARDSHIP SUMMARY

*Pastinaca sativa* can be controlled by hand-digging along paths, roadsides, and other bare areas, and prairie edges. Flowering plants should be chopped off below the ground before seed set. Where it occurs on recovering prairies the best management may be simply to encourage good prairie growth. After a spring burn, parsnip is among the first plants to emerge and may be easily detected and dug out to control abundance along prairie edges. Mowing decreases competitive ability of companion species and increases density of flowering parsnip stems.

## NATURAL HISTORY

### Range:

Found in open places along roadsides and in waste places throughout the northern United States and Canada, from British Columbia to California and Vermont south to Florida. It endures a wide range of edaphic conditions, usually dry to mesic soils, but occasionally will be found in wet meadows. Grows best on calcareous, alkaline soils.

### Ecology:

The lepidopteran *Depressaria pastinacella* (parsnip webworm) is the dominant herbivore on *Pastinaca* (Gorder and Mertens 1984, Thompson 1978). The adult webworm lays eggs on unopened umbels from mid-May to early June. The larva then builds a web on the umbel and feeds on the flowers and developing seeds. The mature larva bores into a large stem at the base of the plant to pupate over winter, and the adults emerge the following July (Gorder and Mertens 1984).

### Reproduction:

The following life history information is from Baskin and Baskin (1979). Seedlings emerge from February through April, form rosettes and grow vegetatively for one or more years before they form an aerial shoot ("bolt") and flower. During vegetative growth the plant continuously produces and loses leaves; over winter the above ground tissues dies back leaving only one or two partially expanded leaves on each plant. Rosettes must reach a critical size before vernalization will effect flowering. Flowering occurs from mid-May to mid-June and seeds are mature by early July. The primary umbel on the main stem begins to develop and produce seed one to two weeks before the secondary umbels on lateral branches. The plant dies as the seeds mature, leaving the dead shoot standing through the winter. Seed dispersal normally occurs in autumn through late November, but many areas with *P. sativa* are mowed in late summer and seeds are often released as the shoots are cut. Newly mature seeds are inhibited from germination by summer temperatures. Stratification over winter increases germination ability and seeds germinate in early spring. Seedling mortality is high with less than 1% of newly emerged seedlings surviving to reproduce.

## Impacts:

*Pastinaca sativa* invades disturbed bare areas, especially those with calcareous soils. It is an undesirable exotic weed and produces a compound that causes severe blistering and discoloration on contact with the skin on sunny days, a condition known as photodermatitis. In infested areas it regularly occurs along paths and roadsides where eradication is desirable from a human safety as well as ecological standpoint. Well-established prairies are not likely to be invaded by parsnip, but it can become quite abundant on prairie edges and in disturbed patches within otherwise high quality prairies. It is also highly persistent on sites that remain disturbed or bare such as rocky areas, paths, or roadsides.

## MANAGEMENT/MONITORING

---

### Management Requirements:

Wild parsnip can become abundant along roadsides that are regularly mowed as mowing seems to encourage the production of flowering plants. If mowing occurs too early (in June or early July), the plants may resprout and still have time to flower and set seed; if too late in July, the primary umbel may have mature seeds that will germinate after cutting. Mowing also stresses other species that have the potential to be good competitors against parsnip, such as *Solidago* spp. Kline (1986) tested annual mowing of parsnip in July before seed set over a six- year period and observed increases in the abundance of flowering plants in the mowed plots, but a steady decline in parsnip density in the unmowed control plot. The common goldenrod, *Solidago altissima*, was abundant in all plots at the start of the experiment. The July mowing reduced density, height, and flowering of the goldenrod, allowing more sunlight to reach immature parsnip seedlings. The steady decline in parsnip density in the unmowed plot suggested that in situations where other plants are able to offer competition, the best parsnip control measure is to do nothing (Kline 1986).

Where *P. sativa* occurs on a recovering prairie, the best treatment may be to simply encourage good prairie growth. For example, prescribed burning encourages the growth of native grasses, which in turn outcompete and eventually displace the wild parsnip (Kline 1987).

For small patches, weeding with a shovel is the best control measure. Flowering plants should be chopped off just below ground level before seed set. Care should be taken to avoid contact with the plant tissues. Wear gloves, long pants, and sleeves. Since the plants do not all flower at once, the area should be rechecked several weeks after the first cutting. The vegetative rosettes can also be dug up if enough labor is available, otherwise, the area should be revisited the following year to remove any newly flowering plants.

Burning removes litter and taller plants allowing parsnip rosettes to develop rapidly. When present, wild parsnip rosettes are among the first plants to green up after an early spring burn and they become easy to detect and dig up with a shovel.

The parsnip webworm damages some individual plants severely, but is not known to devastate whole patches and is not likely to be useful as a biocontrol agent (Martin 1987).

### Management Programs:

The following individuals are familiar with wild parsnip. Control is achieved mainly by hand-pulling.

- Virginia Kline, University of Wisconsin Arboretum, 1207 Seminole Hwy., Madison, WI 53711. 608-263-7344.
- Mark Martin, Natural Areas Management Specialist, Wisconsin DNR, Box 7921, Madison, WI 53707. 608-266-8916.

### Monitoring Requirements:

Monitoring may be necessary when parsnip occurs on highly disturbed areas where other species are not likely to become established and offer competition (railroad right-of-ways, rocky calcareous areas, paths and roadsides). Control is labor-intensive (usually hand-pulling) and can be difficult and time consuming if patches are allowed to build unchecked.

Monitoring is usually accomplished through simple qualitative observations of known infestations.

## RESEARCH

### Management Research Needs

Research is not considered a priority since parsnip does not invade high quality natural areas.

## Resources

- [University of California, Jepson Flora Project](#) ↗
- [Ohio Perennial & Biennial Weed Guide](#) ↗
- [University of Florida IFAS Extension](#) ↗
- [Flora of China, www.eFloras.org](#) ↗
- [USDA NRCS PLANTS](#) ↗
- [USDA ARS GRIN](#) ↗

## INFORMATION SOURCES

### Original Document

[Element Stewardship Abstracts; Nancy Eckardt, 1987.](#) 📄

Articles in Archived Publications

- [Main Version](#)
- [Element Stewardship Abstracts](#)

## Images from Bugwood.org



This page has been accessed 10,809 times.

This page was last modified 09:46, 20 February 2014 by [Kaylee Tillery](#). Based on work by [Michasia Harris](#) and [Lily Connor](#) and [others](#).

Content is available for non-profit, educational use under our [Copyright Agreement](#).  
Developed by the [Center for Invasive Species and Ecosystem Health](#) at the University of Georgia.

[Privacy policy](#) [About Bugwoodwiki](#) [Disclaimers](#)

