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VEGETATION MANAGEMENT GUIDELINE

Wild Parsnip (*Pastinaca sativa* L.)



SPECIES CHARACTER

Description

The thick taproot of the wild parsnip is long, conic, and fleshy. Branching from the fleshy root is the light green, hollow, deeply-grooved stem that stands erect at 2-5 feet (0.6-1.5 meters) tall. Leaves are alternate, pinnately compound, and branched with saw-toothed edges. Each leaf has 5-15 ovate to oblong leaflets with variably toothed edges and deep lobes. The petiolate lower leaves are often 1.5 inches (3.8 cm) long, while upper leaves are sessile and much reduced. The small, 5-petaled, yellow flowers are arranged in 2-6 inch (5-15 cm) broad umbels at the top of slender stems and branches. Each compound flat umbel has 15-25 primary rays that contain yellow blossoms during the June-September flowering season. The blossoms give rise to a fruit termed a schizocarp that is broadly oval and 0.25 inch (6 mm) long. The abundant 0.25 inch (6 mm) mericarps (segments of the fruit) of this parsnip are flat, round, smooth, straw-colored, and have low ribs across them.

Similar Species

Wild parsnip is distinguished from other species in the parsley family by its yellow flowers and its pinnately compound leaves that are divided once into more than five leaflets. Wild parsnip should be accurately identified before attempting any control measures. If identification of wild parsnip is in doubt, the plant's identity should be confirmed by a knowledgeable individual and/or by consulting appropriate books.

Distribution

This member of the parsnip or umbel family has escaped from cultivation and is common throughout the northern United States and Canada, from British Columbia to California and Vermont, and south to Florida. In Illinois, wild parsnip has become a serious problem in some mesic prairies, and it has been recorded from every county.

Habitat

Although this Eurasian native thrives when growing in rich, alkaline, moist soils, it can survive under almost any conditions. Wild parsnip commonly can be found along roadsides, in pastures, and in fields.

Life History

Wild parsnip is a perennial that exists as a basal rosette for at least one year and then flowers and dies. Like its relative the carrot, wild parsnip produces a rosette of large, grooved, upright leaves and stores reserves in a large, fleshy taproot during the first year. A hollow flowering stem whose leaves are much smaller is sent up from the center of the rosette in a subsequent growth season. Wild parsnip often flowers and sets seed during its second year, although it may not flower until subsequent years. The edible roots of wild parsnip were consumed in ancient Greece and Rome and cultivars are still grown for food today. The root develops its sweet taste after being exposed to cold. Some people are sensitive to the touch of the leaves and soon develop a rash if their skin contacts the leaves or plant sap in the presence of sunlight. A very painful rash can develop that in some people leaves scars that can persist for several months or longer. Wild parsnip is most irritating at the time of flowering.

Effects Upon Natural Areas

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. Once established at the edges, parsnip can spread into adjacent high-quality areas.

CONTROL RECOMMENDATIONS

Warning-- Care should be taken to avoid skin contact with the toxic sap of the plant tissues by wearing gloves, sleeves, and long pants.

Although eradication of this exotic is desirable from a human safety as well as ecological standpoint, in some situations the best control measure is to do nothing. In high-quality prairies, aggressive growth by other species sometimes can outcompete and eventually displace the parsnip.

Mechanical

The best control is achieved mainly through hand-pulling. Plants should be pulled and removed so that seeds do not develop and plants do not resprout. Wild parsnip is easiest to pull right after a good rain or during a drought when the root shrinks. Another effective practice involves cutting the plant below the root crown before seed set during spring of the second year. The best time is as soon as blooms show, but have not matured. Since the plants do not all flower at once, the area should be rechecked several weeks after the first cutting and the following 2-3 years for newly flowering plants. After a spring burn, wild parsnip rosettes are among the first plants to emerge and may be detected easily and dug out to control its abundance along prairie edges. Seeds do not remain viable if dormant in the ground more than 4 years, so the species can be controlled if there is no outside seed source. Although the practices of hand-pulling, cutting, and digging have been successful in small areas with scattered plants, these practices can become difficult and time-consuming if patches containing hundreds of plants have been allowed to spread unchecked.

Mowing or cutting the base of the stem with a scythe can be effective if it takes place after flowering the second year when the plant is mature and blooming, but before seed set. Parsnip must be removed or recut often and checked later for small bloom shoots near the ground. Poorly timed mowing, as is likely along roadsides, may increase both number of seedlings and percentage surviving to maturity. Mowing probably favors parsnip maturation by allowing more sunlight to reach immature parsnip plants, which are too low to be damaged by the mower. Mowing also reduces the density, height, and flowering of other species that are potentially good competitors against parsnip, such as common goldenrod.

Chemical

If mechanical methods have failed to control wild parsnip or are not feasible, a 2% spot application of the herbicide Roundup (glyphosate) to basal rosettes is a recommended treatment. Roundup should be applied to individual plants with a hand sprayer in late fall after most native vegetation is dormant. Late fall application minimizes the potential harm to nontarget species. It may be necessary to treat the same area again annually until missed plants and plants originating from the seed bank are eliminated. Roundup is a nonselective herbicide (kills all vegetation) and should not be used in high-quality natural communities during the growing season because of the possibility of harming nontarget plants. The herbicide 2,4-D (available under a variety of trade names) mixed according to label directions and applied to individual parsnip basal rosettes between March-May or August- October is effective. This herbicide should only be used on buffer or severely disturbed sites, and not in high-quality natural communities if it is applied during the growing season. Repeated early spring applications of this chemical before the flower stalk begins to elongate will reduce infestation of wild parsnip. Care should be used to avoid contacting nontarget plants when applying either herbicide. **Do not spray so heavily that herbicide drips off the target species.** Native nontarget species will be important in recolonizing the site once the parsnip dies. The herbicide should be applied while backing away from the treated area to avoid contact with wet herbicide. By law, herbicides only may be applied according to label instructions and by licensed herbicide applicators or operators when working on public properties.

FAILED OR INEFFECTIVE PRACTICES

Burning does not successfully control parsnip because it removes litter and taller plants, providing favorable conditions for parsnip rosettes to develop. However, periodic burning maintains the vigor of native plants, allowing them to compete with parsnip. The parsnip webworm damages some individual plants severely, but is not known to eradicate whole patches and is not likely to be useful as a biocontrol agent.

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