

Perennial Sowthistle *(Sonchus arvensis ssp. arvensis)*

Description: Perennial sowthistle is a vigorous, deep-rooted perennial, spreading by seeds and creeping roots. The plant contains a bitter, milky juice. Stems branch only near the top of the plant. Lower leaves grow up to a foot long and are deeply lobed. Upper leaves are smaller, often unlobed, clasp the stem, and are slightly toothed. The smooth, erect flowering stems can grow up to 4-6 feet tall. Perennial sowthistle rhizomes (horizontal underground stems) can spread more than 6 feet in one growing season and in established stands, the roots can reach up to 10 feet deep. New plant shoots can emerge from rhizomes buried up to 2 feet deep. Flowers, stalks, and bracts are covered with gland-tipped hairs. The flowers open two to three hours after sunrise and close around noon. A flowering stalk may have 20 seed heads during the flowering season, which lasts from June to September, though usually only a few flower at the same time. The plant may produce nearly 10,000 seeds per year.



Impacts: Sowthistle can have a negative impact on rangelands, pastures, wastelands, roadsides, cultivated fields, and disturbed areas. This species can cause economic losses in cropland due to reduced crop yields, increased cultivation, and herbicide costs. These economic losses can reduce land value; therefore, sowthistle is considered a noxious weed in many states.

Control Options: Thurston County's Integrated Pest Management emphasizes cultural, biological, and manual control methods to keep pests and vegetation problems low enough to prevent damage. The strategy of Thurston County's IPM policy is to minimize the use of pesticides.

► Cultural / Habitat

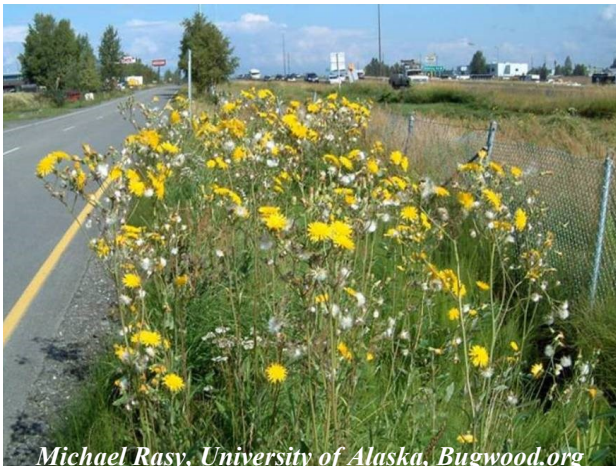
Preventing the establishment of populations of perennial sowthistle is the most time and cost effective way of controlling this species. Vehicles, farm, outdoor recreation and construction equipment can transport seeds and fragments of rhizomes, and should be cleaned thoroughly before moving from infested areas to uninfested areas. Livestock and agricultural products such as hay and straw can also transport seeds. Revegetating areas where control work has been done is critical to reducing perennial sowthistle numbers in subsequent seasons, and also to prevention of infestation by other weed species in these disturbed areas. Perennial sowthistle rarely thrives where competing species are well established and maintained.

► Manual / Mechanical

Manual control of perennial sowthistle should be limited to small, isolated populations of seedlings or small plants (6 to 8 or more if plants are very small). Dig as deep as you can, remove, collect and bag as much of the root and rhizome material as possible. Rhizomes remaining in the soil will likely regenerate and produce new plants in subsequent seasons. Removal, careful bagging and disposal of plant tops before an herbicide application can be a very effective way of preventing seed production. In hot or dry climates, frequent and repeated cultivation is used to control perennial sowthistle, as root and rhizome fragments come to the surface, dry out and die. This technique is ineffective, and can actually be counter-productive in Thurston County due to the moderate climate and high soil moisture.

► Biological

Because biological control agents are dependent on large, undisturbed infestations of host plants, it is not an appropriate control method in Thurston County where there are only a handful of relatively small populations of perennial sowthistle. In areas of North America, sheep and cattle have been used to reduce infestations to manageable levels.



Michael Rasy, University of Alaska, Bugwood.org

► Chemical

Spot spraying with **triclopyr** (examples: Lilly Miller’s liquid concentrate “Blackberry and Brush Killer” and Ortho’s “Brush-B-Gon Poison Ivy Killer Concentrate”) is effective in controlling perennial sowthistle. Triclopyr is a selective herbicide that will not kill grass when used according to label instructions, but may damage or kill other broadleaf plants. Triclopyr products are rated as “moderate in hazard” by Thurston County’s pesticide review process because broadcast applications of triclopyr at greater than 2 lbs of active ingredient per acre can result in contaminating the food supply for birds and small animals. Since this prescription recommends only spraying individual plants or small patches, the risk to birds and small animals is greatly reduced.

Thurston County has observed that most ready-to-use, pre-mixed products do not contain sufficient active ingredients to be as effective as concentrated products that are then mixed with water to create a specific finished concentration. The following instructions are for products containing 8% triclopyr (be sure the product you choose lists triclopyr as the only active ingredient) which will be mixed down to a specified dilution rate. Be sure to read your label carefully, and make adjustments to rates accordingly.

Foliar applications of triclopyr:

- Spot application means the herbicide is applied only to the plants and not on the surrounding plants or soil. Spray each plant thoroughly on the stems and leaves enough to be wet but not dripping.
- Triclopyr is a selective, broadleaf weed killer and can injure any plants that it comes in contact with, except for grass. Care should be used to avoid contact with ornamentals and other desirable plants.
- Keep people and pets off treated areas until spray solution has dried.



For selective control of perennial sowthistle in agricultural settings (pastures, hayfields, etc.): an herbicide containing the active ingredient **aminopyralid** (example: Milestone™, Milestone VM™, etc.) may be a preferred choice. Aminopyralid products will not harm grass and can be used around livestock (provided all label precautions are followed). **Do not use plant material or hay from treated areas for mulch. Likewise, do not use manure from animals that have grazed or eaten hay from treated areas.**

Aminopyralid is currently sold in farm supply stores as an agricultural herbicide that is only to be used in areas listed on the label and **may not be used in urban lawns or landscapes.** Aminopyralid products are considered “moderate in hazard” by Thurston County’s review process for the potential for chemical mobility and persistence.

Timing: Apply either triclopyr or aminopyralid in the spring when plants are actively growing and in the pre-bud to early bud growth stage—the goal is to insure all plants have emerged, but are treated before they reproduce.

Pollinator Protection: To minimize negative impacts to bees and other pollinators, treatment prior to blooming is recommended. Removal of flowers before treatment can be an option in some situations. If treatment must occur during the blooming period, try to spray early or late in the day or on cloudy, cool days when pollinators are least active.

Product/Method	Rates	Mix
Triclopyr Lilly Miller® “Blackberry & Brush Killer” or Ortho® “Brush-B-Gon Poison Ivy Killer Concentrate”	4 oz. (1/2 cup) per 500 ft ²	To determine the amount of mix needed, first measure the area to be treated, then measure the amount of plain water needed to spray the area using a backpack or tank sprayer. Allow sufficient time for the area to dry completely before treatment. Then add 4 oz. (1/2 cup) of product to enough water for each 500 sq. ft of area that needs to be treated. Spray plants until they are wet but not dripping.
Aminopyralid Milestone® Spot/Foliar	1 tsp per 1000 ft ²	To treat a 1,000 sq. ft. area: Using a 2 to 4 gallon backpack or tank sprayer, add half of the water needed to cover all plants with one teaspoon Milestone™, agitate, then add water to reach desired amount (0.5 - 2.5 gallons total volume, depending on quantity and size of plants). Lightly spray all perennial sowthistle plants in 1,000 sq. ft. area, then continue lightly spraying the sowthistle until the tank is empty and all plants have been thoroughly covered. The addition of a non-ionic surfactant (at least 80% active ingredient) is recommended to enhance herbicide activity.

READ AND FOLLOW ALL LABEL DIRECTIONS AND RESTRICTIONS. Obey all label precautions including site specific and safety measures. Always use personal protective equipment that includes coveralls, chemical resistant gloves, shoes plus socks, and protective eyewear. Use of brand names does not connote endorsement and is for reference only; other formulations of the same herbicides may be available under other names. Information provided is current as of the date of the fact sheet. Pesticide product registration is renewed annually. Product names and formulations may vary from year to year.

REFERENCES:

- Written Findings of the Washington State Noxious Weed Control Board; PNW 476; BC Agdex 640; PNW Weed Control Handbook; Gilkey’s Weeds of the PNW;
- North Dakota State University Extension Fact Sheet “Weeds of Concern: Perennial Sowthistle”
- California Department of Food and Agriculture, Noxious Weed Information, *Sonchus arvensis*

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