

## *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 goal of Thurston County's pesticide use policy is to minimize the use of pesticides by utilizing and providing information about the most effective control options that are available and practical.



### ► 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 un-infested 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

Effective manual control of Perennial Sowthistle should be limited to removal of small, isolated plants or seedlings. Dig as deep as you can and remove as much of the roots and rhizomes as possible. Also, the 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

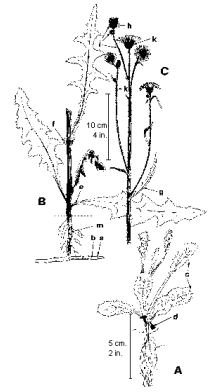
Because biological control agents are dependent on large, undisturbed infestations of host plants, it is not an appropriate control method in Thurston County where there are only a handful of relatively small populations of Perennial Sowthistle. In areas of North America, sheep and cattle have been used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



Michael Rasy, University of Alaska, Bugwood.org

► **Chemical**

Spot spraying with **glyphosate** (example: Roundup Pro®, Glyphos®, etc.) is effective in controlling Perennial Sowthistle. Glyphosate products can be used to treat individual plants or small patches. Currently, products containing the active ingredient glyphosate are the only herbicides for the control of Perennial Sowthistle considered “low in hazard” by Thurston County’s pesticide review process for the potential for chemical mobility and persistence.



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 41% glyphosate 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 glyphosate (ROUNDUP PRO™):**

- Spot applications with glyphosate products are effective. 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.
- Glyphosate is non-selective, and will injure any plants that it comes in contact with, including grass.
- Keep people and pets off treated areas until spray solution has dried.
- Remove livestock before application; wait 14 days after spot application before grazing livestock or harvesting.
- Do not enter or allow worker entry into treated areas during the restricted entry interval of 12 hours. Keep people and pets off treated areas until spray solution has dried.

**Foliar applications of aminopyralid (Milestone®)**

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 agricultural herbicides that are to be used only in areas listed on the label, and are available in farm supply stores. Aminopyralid is considered moderate in hazard by Thurston County’s review process for the potential for chemical mobility and persistence.

Herbicide & Method	Product Rates	Mix
RoundUp Pro™ Spot/Foliar	2%	To 1 gallon of water add 2.66 oz. RoundUp Pro™, apply to foliage at or beyond bud stage.
Milestone™ Spot/Foliar	1 tsp per 1000 ft <sup>2</sup>	<b>To treat a 1,000 sq. ft. area:</b> 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 thistle plants in 1,000 sq. ft. area, then continue lightly spraying the thistle 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.

**Timing:** Applications should be made in the spring, when plants are actively growing, up to when the flowering stem elongates. Plants sprayed after buds develop are harder to kill and have a high likelihood of producing viable seeds, despite damage to the plant. Applications of aminopyralid are also effective in the fall before a killing frost.

**READ AND FOLLOW ALL LABEL DIRECTIONS AND RESTRICTIONS.** Obey all label precautions and safety measures. Always use personal protective equipment that includes coveralls, waterproof 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 and product names and formulations may vary from year to year

**References:**

- PNW 476; BC Agdex 640; PNW Weed Control Handbook; Gilkey's Weeds of the PNW;
- Written Findings of the Washington State Noxious Weed Control Board;
- 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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