



Slenderflower Thistle (*Carduus tenuiflorus*)

Description: Slenderflower thistle is a biennial or winter annual plant that grows upright from 1-5 feet tall, depending on moisture and soil nutrients. Some plants germinate in the fall, develop into rosettes and remain in the rosette stage overwinter, while others germinate in early spring. Slenderflower thistle stems are single or multiple from the base, strongly ribbed and slightly woolly. The stems are winged, having a thin, spiny tissue attached like a ribbon along the sides of the stalks. Leaves are typically 6-12 inches long, occasionally larger, growing smaller as they progress up the flowering stalks. The leaves are deeply lobed with long, needle-like spines along the margins. Small pink to lavender flowers are surrounded by numerous spiny bracts and are bunched in small clusters at the ends of the stalks and from leaf axils. Slenderflower thistle blooms from May through July. A single plant can produce up to 20,000 seeds.



Impacts: Slenderflower thistle dominates sites and excludes native species, crowding out forage plants in meadows and pastures. This species is a nitrate accumulator; ingestion by grazing animals may cause nitrate poisoning, which can be lethal to cattle and sheep. It can rapidly invade farmland, roadsides, waste areas, pastures and rangeland. Large infestations can exclude livestock from accessing water, and plants can discourage livestock from grazing on neighboring forage because of the sharp spines. Slenderflower thistle is listed as a Class A Noxious Weed in Washington State, with very limited populations in the state, including Thurston County.

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 slenderflower thistle is the most time and cost effective way of controlling this species. Vehicles, farm, outdoor recreation and construction equipment can transport seeds, and should be cleaned thoroughly before moving from infested areas to un-infested areas. Livestock can also transport seeds. Revegetating areas where control work has been done is critical to reducing Slenderflower Thistle numbers in subsequent seasons, and also to prevention of infestation by other weed species in these disturbed areas.

► **Manual / Mechanical**

Hand pulling or digging can be effective for isolated plants or small patches (20 plants or more, depending on size and how easily they can be pulled), especially if done in the seedling stage. Larger patches or plants at or near the blooming stage can be difficult to control manually because of the needle-like thorns on the leaves, stems and flower heads. Mowing is usually not effective as it simply delays the blooming process, and plants will still produce seed. Any plants with flower heads or buds should be disposed of carefully as there is usually enough reserve in the removed plants to produce viable seeds.



► **Biological**

Because bio-control agents are dependent on large, undisturbed populations of host plants, and because Class A Noxious Weeds such as slenderflower thistle must be eradicated entirely whenever they are found, biological control is not a viable option for use in Thurston County.

► **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 slenderflower thistle. 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 slenderflower thistle in agricultural settings (pastures, hay-fields, 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.

READ AND FOLLOW ALL LABEL DIRECTIONS AND RESTRICTIONS. Obey all label precautions including site specific

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 Slenderflower thistle plants in 1,000 sq. ft. area, then continue lightly spraying 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.

ic 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; *Problem Thistles of Oregon*, OR Dept. of Agriculture, EC Bulletin 1288;
- Cal-IPC: <http://www.cal-ipc.org/ip/management/ipcw/pages/detailreport.cfm?usernumber=24&surveynumber=182.php>
- CA Dept. of Food & Agriculture, Noxious Weed Information, *Carduus* spp.
- State of Victoria, Department of Primary Industries, Landcare Notes, “*Slender Thistles*”



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