



Meadow Knapweed

(*Centaurea jacea x nigra*)

Description:

Meadow knapweed (*Centaurea jacea x nigra*) is a perennial plant that grows from a woody root crown. It is a fully fertile hybrid of brown knapweed (*C. jacea*) and black knapweed (*C. nigra*), and individuals can closely resemble either parent or may combine the characteristics randomly. The upright stems range from 20 to 40 inches tall, branching near the middle. Leaves grow to 6 inches long and 1½ inches wide, edges are highly variable, ranging from smooth and entire to having lobes or teeth. Flowers are rose-purple, rising from round heads about the size of a nickel. Distinctive bracts surround the flower base, papery and rounded or dark and fringed, usually with both characteristics. In Thurston County, flowering can begin as early as May, with peaks in June and July. Flowering can continue into fall, especially on plants that have been mowed or damaged.



Impacts:

Meadow knapweed out-competes grasses and other pasture species and has the potential to invade native prairie and oak savannah. It is commonly found along roadsides, sand or gravel bars, river banks, irrigated pastures, moist meadows, and forest openings. It also can invade industrial sites, tree farms, and grasslands. Meadow knapweed is better adapted to Western Washington growing conditions than other knapweeds and forms large, thick stands where it excludes nearly all other vegetation.

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

The most effective control of meadow knapweed is prevention. Above all, prevent plants from going to seed. Meadow knapweed has been grown for winter forage intentionally in the past and is still sometimes grown as an ornamental garden plant and is sometimes introduced as a component in wildflower seed mixtures. Review the ingredients of wildflower mixes to avoid accidental introduction, and avoid using wildflower mixes with unidentified seed components entirely. To prevent plants from spreading from known infestations, carefully clean vehicles, boots, clothing, and pets after visiting infested areas.



► Manual / Mechanical

Small, isolated infestations (5 or 6 plants) can be dug out if the soil is loose or sandy and plants are not well established. Large, woody root crowns make meadow knapweed difficult to remove manually. Even a small piece of woody root can form a new plant. Be careful to collect and dispose of all the pieces of roots and crown to prevent them from re-establishing.

► Biological

Though some biocontrol agents have been released on a trial basis, it is not yet known if these populations can become established. Biocontrols depend on heavy densities of host plants to survive and they are sensitive to adverse climatic conditions.

► **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 meadow knapweed. 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 knapweed 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 knapweed plants in 1,000 sq. ft. area, then continue lightly spraying the knapweed 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:

Meadow Knapweed Invasion in the Pacific Northwest, U.S.A, and B.C., Canada, Northwest Science, Vol. 65, No. 1, 1991;
 Biological Control Of Weeds In The West; PNW0566, June 2003
 Written Findings of the Washington State Noxious Weed Control Board: http://www.nwcb.wa.gov/weed_info/Written_findings/Centaurea_pratensis.html



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