

“T” designated weed – Species from either the A or B lists that are targeted (T) to be the focus for prevention and control within the county. T-designated noxious weeds are determined by the Board and are the focus of the herbicide cost-share program.

- **Biddy biddy** *Acaena novae-zelandiae*
- **Blackberry, Himalayan** *Rubus bifrons (R. armeniacus, discolor)*
- **Broom**
 - **Broom, French** *Genista monspessulana*
 - **Broom, Scotch** *Cytisus scoparius*
- **Ivy**
 - **English ivy** *Hedera helix*
 - **Atlantic ivy** *H. Hibernica*
- **Jubata Grass** *Cortaderia jubata*
(purple pampas grass)
- **Knapweeds**
 - **Diffuse knapweed** *Centaurea iberica Trevir, ex Spreng.*
 - **Meadow knapweed** *Centaurea pratensis Thuill., non Salisb., nom. illeg*
- **Knotweeds**
 - **Knotweed, Bohemian** *Polygonum bohemicum*
 - **Knotweed, Giant** *Polygonum sa chalinesis (Fallopia sachalinesis)*
 - **Knotweed, Himalayan** *Polygonum polystachyum*
 - **Knotweed, Japanese** *Polygonum cuspidatum (Fallopia)*
- **Thistle**
 - **Thistle, bull** *Cirsium vulgare*
 - **Thistle, Canada** *Cirsium arvense*
 - **Thistle, Italian** *Carduus tenuiflorus*
 - **Thistle, milk** *Silybum marianum*
- **Tansy ragwort** *Senecio jacobaea*
- **Yellow flag iris** *Iris psuedacorus*
- **Yellow nutsedge (T)** *Cyperus esculentus*

Common name
Biddy biddy (T)

Scientific name
Acaena novae-zelandiae

Information provided by Oregon Department of Agriculture – For full credits and information please click the following link: [BiddybiddyProfile.pdf \(oregon.gov\)](#) and Pacific Northwest Weed Management Handbook – For full credits and information please click the following link: [Biddy-biddy \(Acaena novae-zelandiae\) | Pacific Northwest Pest Management Handbooks \(pnwhandbooks.org\)](#)

“B” Rated Weeds

A weed of economic importance which is regionally abundant, but may have limited distribution in some counties

Biddy biddy
Acaena novae-zelandiae

Other common names: bidibid, bidgee-widgee, piri-piri bur

USDA symbol: ACNO4
ODA rating: B



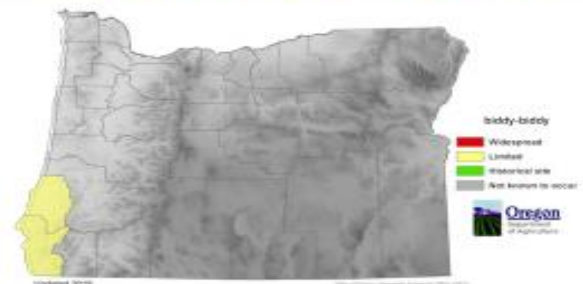
Introduction: Biddy-biddy is native to New Zealand. It is believed that the plant first spread to the U.S. and other countries in the wool of imported sheep.

Distribution in Oregon: The first official record of biddy-biddy in Oregon dates from 1951 in Curry County. Currently only Coos and Curry Counties contain infestations near the coastline.

Description: This low growing perennial forb stands only four to eight inches tall. Biddy-biddy spreads by stolons that root at the nodes creating dense vegetative mats in pastures and lawns. Leaves are alternate and finely dissected, with mature plants having 5 to 11 leaflets 1/4-2/3 inches long. Flower heads are spherical, and turn into a round bur that disperses as a unit when mature.

Impacts: The species prefers open, disturbed, well-drained sites, including stable dunes, open scrub, grassy areas, and high traffic locations in coastal habitats where some summer moisture is available and frosts are infrequent. Plants thrive on poor soils and compete with native plants on coastal bluffs and in lawns where it forms dense mats.

Biological controls: No biocontrol agents are available.



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<https://oda.direct/NWP>

Photos by Ken French, ODA
and Joseph M. DiTomaso,
UCDavis, Bugwood.org

Biddy-biddy (*Acaena novae-zelandiae*)

Remarks Control is unknown. No herbicides are currently recommended.

Peachey, E., editor. 2021 Pacific Northwest Weed Management Handbook.

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Use pesticides safely!

- Wear protective clothing and safety devices as recommended on the label. Bathe or shower after each use.
- Read the pesticide label—even if you've used the pesticide before. Follow closely the instructions on the label (and any other directions you have).
- Be cautious when you apply pesticides. Know your legal responsibility as a pesticide applicator. You may be liable for injury or damage resulting from pesticide use.

Trade-name products and services are mentioned as illustrations only. This does not mean that the participating Extension Services endorse these products and services or that they intend to discriminate against products and services not mentioned.

Common name
Blackberry, Himalayan (T)

Scientific name
Rubus bifrons (R. armeniacus, discolor)

Information provided by Oregon Department of Agriculture – For full credits and information please click the following link: [ArmeniaBlackberryProfile.pdf \(oregon.gov\)](#)

Pacific Northwest Weed Management Handbook – For full credits and information please click the following link: [Blackberry vines, wild \(Rubus spp.\) | Pacific Northwest Pest Management Handbooks \(pnwhandbooks.org\)](#)

“B” Rated Weeds

A weed of economic importance which is regionally abundant, but may have limited distribution in some counties

Armenian blackberry
Rubus armeniacus

Other common names: Himalayan blackberry

USDA symbol: RUD12
ODA rating: B



Distribution in Oregon: Armenian blackberry is widely distributed throughout Western Oregon. Populations in Eastern Oregon are on the increase in Hells Canyon and along most other river systems.

Introduction: Armenian blackberry was first noted in Oregon in 1922 in Marion County. Originally named Himalayan blackberry after its place of origin, it was introduced by Luther Burbank for berry breeding in the Willamette Valley.

Description: It grows as a robust, well-armored, perennial vine producing large impenetrable thickets especially along valley floors. Deep-growing woody roots yearly produce spine covered, reddish stems often extending more than 20 feet per season. Leaves are alternate, palmate and compound with serrate margins. Flowers are five petaled, white to light pink blooming in early summer. Fruit production is heavy and well favored by robins and other songbirds. There are other non-native blackberry species in Oregon. Armenian is the most robust.

Impacts: It is the most widespread and economically disruptive of all the noxious weeds in western Oregon. It aggressively displaces native plant species, dominates most riparian habitats, and poses a significant economic impact on right-of-way maintenance, agriculture, park, and forest production. It is a significant impediment in riparian restoration projects and physically inhibits access to wild lands. Reproduction occurs through rooting at cane apices (tips), by root fragments or by seeds, which are dispersed by birds and animals. These reproductive strategies allow it to expand rapidly across a landscape. Any control strategy can be considered short-lived if it does not take into consideration soil seed stocks and potential future land disturbance.

Biological controls: At this time no approved biological agent is available for release in Oregon. In March of 2005, rust was found severely impacting Armenian blackberry along a 100-mile stretch of the Oregon Coast. The rust has been confirmed as *Phragmidium violaceum* (Schultz), which has been used as a biocontrol agent for blackberry in parts of Australia, New Zealand and Chile.



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Photos by Eric Coombs, Tim Butler and Dan Sharratt, ODA

Blackberry vines, wild (*Rubus* spp.)

aminocyclopyrachlor + metsulfuron methyl (Streamline)

Rate 3.8 to 4.5 oz/a aminocyclopyrachlor + 1.2 to 1.4 oz/a metsulfuron (9.5 to 11.5 oz/a of product)

Time Apply to actively growing woody plants.

Remarks Adjuvants can be used; these include methylated seed oils 0.5 to 1% v/v, nonionic surfactants at 0.25 to 1% v/v, and crop oil concentrates at 1% v/v. Can be applied using an invert emulsion rather than water. There are several application methods that dictate the amount of product to be mixed with the carrier, so consult the label. Controls many herbaceous species, in addition to woody species.

Caution Even low rates can kill nontarget tree and shrub species, so avoid application within a distance equal to the tree height of the sensitive species. Conifers can be injured, these include ponderosa pine, Douglas fir, Norway spruce, and white pine. Other trees that can be injured include aspen, Chinese tallow, cottonwoods, honey locust, magnolia, poplars, redbud, silver maple, and willow. Applications to stressed plants may reduce control. Do not allow spray to drift off target.

Site of action Group 4 synthetic auxin (aminocyclopyrachlor) Group 2: ALS inhibitor (metsulfuron methyl)

Chemical family (aminocyclopyrachlor) Pyrimidine carboxylic acid; (metsulfuron methyl) Sulfonylurea

glyphosate

Rate Broadcast: use 2.25 to 3 lb ae/a. Spot treat: use 1% to 1.5% solutions.

Time Apply in September to October when canes are actively growing and after berries are formed. Fall treatments must be made before a killing frost.

Remarks Fall spray treatment symptoms may not show before frost. Re-treatment may be necessary for complete control. Trailing blackberry is more difficult to control.

Caution Glyphosate controls grasses in the treated area as well as other vegetation.

Site of action Group 9: inhibits EPSP synthase



Himalaya blackberry



Himalaya blackberry

Chemical family None generally accepted

metsulfuron (Escort and others)

Rate 0.3 to 0.6 oz ai/a (0.5 to 1 oz/a)

Time Apply to fully leafed-out vegetation before fall leaf coloration.

Remarks Constantly agitate while mixing product in water. Add 0.25% by volume of nonionic or silicone surfactant to spray mixture. Good coverage is essential. Application sites differ between products; consult labels.

Caution Avoid contacting sensitive crops. Apply only to pasture, rangeland, and non-crop sites.

Site of action Group 2: acetolactate synthase (ALS) inhibitor

Chemical family Sulfonylurea

picloram (Tordon)

Rate 1 lb ae with 50 gal of water for spot treatment sprays

Time Apply in late spring after leaves are fully developed.

Remarks Foliage must be thoroughly wet. Reapplication will be required as regrowth occurs.

Caution Most formulations are restricted-use herbicides. Do not contaminate water. Potatoes, beans, and many other broadleaf crops are sensitive to picloram. Do not use picloram in diversified cropping areas.

Site of action Group 4: synthetic auxin

Chemical family Pyridine

triclopyr ester (Garlon 4) or triclopyr amine (Garlon 3A) or triclopyr + 2,4-D (Crossbow)

Rate Spot treatment: mix 3 lb ae Garlon 4 or 3.75 lb ae Garlon 3A with 100 gal water, or 1 pint Crossbow in 12 gal water. Broadcast: use 1 to 4 lb ae/a Garlon 4, or 1.5 to 4.5 lb ae/a Garlon 3A, or 1 to 2 gal/a Crossbow.

Time Apply when plants are actively growing. For dormant application, mix Garlon 4 in diesel oil or in water with 3% of an oil substitute.

Remarks Foliage must be thoroughly wet.

Caution Use on rights-of-way, industrial sites, and for forestry (release and site preparation). Crossbow can be used on permanent pasture and rangeland, up to 1.5 lb ae/a. Observe all grazing and harvesting restrictions.

Site of action (all) Group 4: synthetic auxin

Chemical family (triclopyr) pyridine; (2,4-D) phenoxy acetic acid

Related Links

- [EC 1594 Invasive Weeds in Forestland: Himalayan & Evergreen Blackberry](#)

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Common name
Broom, French (T)
Broom, Scotch (T)

Scientific name
Genista monspessulana
Cytisus scoparius

Information provided by Oregon Department of Agriculture – For full credits and information please click the following link: [FrenchBroomProfile.pdf \(oregon.gov\)](#) and [Scotchbroom profile \(oregon.gov\)](#)

Pacific Northwest Weed Management Handbook – For full credits and information please click the following link: [Broom, Scotch \(Cytisus scoparius\), French \(Genista monspessulana\), Portuguese \(Cytisus striatus\), and Spanish \(Spartium junceum\) | Pacific Northwest Pest Management Handbooks \(pnwhandbooks.org\)](#)

“B” Rated Weeds

A weed of economic importance which is regionally abundant,
but may have limited distribution in some counties

French broom
Genista monspessulana

Other common names: Cape broom,
Montpellier broom

USDA symbol: GEMO2
ODA rating: B



Introduction: French broom originated from throughout Mediterranean Europe and northwest Africa, the Azores, and the Canary Islands. It is common in warmer, moister, lower elevation areas. It was introduced into the U.S. as an ornamental.

Distribution in Oregon: The first documented site of French broom in Oregon was found in Curry County in 1924. It is common in the southern coastal counties with smaller populations north of there. Lane County hosts a population that spans several thousand gross acres.

Description: French broom is a leafy perennial shrub growing three to ten feet tall. It is in the legume family. It is similar in appearance to scotch broom except plants do not grow as erect, leaves are larger, trifoliate, numerous and are retained the entire year. Its yellow flowers emerge April through June. They are smaller, but still distinctly pea-like.

Impacts: This plant is an aggressive pioneer species, taking advantage of land disturbances to establish and spread. In California, large infestations significantly increase the costs of reforestation in commercial timberlands. During the dry season, thick broom stands create a severe fire hazard. Annual costs for broom removal on road shoulders, power line corridors, and commercial or non-commercial property reach millions of dollars yearly.

Biological controls: The scotch broom seed beetle and weevil *Bruchidius villosus* and *Exapion fuscirostre* do not appear to feed or reproduce on French broom. There are no available species at this time specific to French broom.



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Photos by Ken French, ODA
and Joseph M. DiTomasso,
UCDavis, Bugwood.org

"B" Rated Weeds

A weed of economic importance which is regionally abundant,
but may have limited distribution in some counties

Scotch broom
Cytisus scoparius

Other common names: English broom, scot's
broom

USDA symbol: CYSC4
ODA rating: B



Introduction: Scotch broom is one of Western Oregon's most widespread and costliest weeds. Scotch broom was widely planted in Western Oregon for dune stabilization and as an ornamental along highway corridors. It is now the most extensive forest weed species and a significant source of pollen effecting allergy sufferers.

Distribution in Oregon: Scotch broom is endemic throughout Western Oregon with the occasional isolated population appearing in the pine forests of eastern Oregon.



Description: Scotch broom is an attractive evergreen shrub with many slender, erect, dark-green branches. It can grow up to 8 feet tall. In May it is adorned with a profusion of yellow flowers maturing to flattened pods with up to a dozen seeds each. Mature dried pods will crackle and pop in mid summer ejecting the seeds a short distance. It can be confused with the less common Spanish broom, Spanish broom has fewer round stems, very few leaves, and larger yellow flowers.

Impacts: Scotch broom is a pioneer species known to displace native plants and smother tree transplants increasing tree death or slowing growth in the early years. It readily invades disturbed sites, natural areas, dunes, and forestlands. Broom control costs on right-of-ways, public facilities, parkland and private property are in the millions of dollars each year due to its rapid growth and persistent nature. Scotch broom is a prolific seed producer of long-lived (10 years plus) seeds. Broom stands establish persistent soil-seed banks requiring long-term commitment to exhaust. The costs attributed to Scotch broom come from labor and chemical inputs needed to control infestations (\$47 million annually) in timberlands and from lost productivity. Pollen production during bloom time also can be quite an allergen source for allergy sufferers.

Biological controls: Three biological control agents, a beetle, a seed weevil and a twig miner are approved for release and have been established in Oregon: *Bruchidius villosus*, *Exapion fuscirostre*, *Leucoptera spartifoliella*. They can significantly reduce seed production and can shorten a broom's life span.



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Photos by Eric Coombs, ODA

Broom, Scotch (*Cytisus scoparius*), French (*Genista monspessulana*), Portuguese (*Cytisus striatus*), and Spanish (*Spartium junceum*)

glyphosate

Rate 1.5 to 3 lb ae/a or 1.5 to 2% solution for handgun sprayer application.

Time Apply to actively growing plants in the spring.

Remarks See Forestry section of this handbook for information on control in conifers. Adding a recommended surfactant improves results.

Caution Also controls grasses and other plants needed to compete with Scotch broom seedlings.

Site of action Group 9: inhibits EPSP synthase

Chemical family None generally accepted

triclopyr ester (Garlon 4) or triclopyr amine (Garlon 3A) or triclopyr + 2,4-D LV ester (Crossbow)

Rate 0.5 to 1.5% concentration of Garlon 4 or Crossbow, or 1 to 1.5% concentration of Garlon 3A

Time Apply any time plants are actively growing. Garlon 4 and Crossbow can be used for basal bark applications any time of year.

Remarks Foliage must be thoroughly wet. For Garlon 3A, it is especially important to use a high volume of water (100 gal/a or more).

Caution Garlon products are registered for use on rights-of-way, industrial sites, and forestry (release and site preparation). Crossbow can be used on permanent pastures and rangeland up to 1.5 lb ae/a. Observe all grazing and harvesting restrictions.

Site of action (all) Group 4: synthetic auxin

Chemical family (triclopyr) pyridine; (2,4-D) phenoxy acetic acid



Scotch broom



Scotch broom

Related Links

- [PNW 103 Scotch Broom](#)
- [EC 1598 Invasive Weeds in Forestland: French, Portuguese, Scotch, and Spanish Broom](#)

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Common name
Gorse

Scientific name
Ulex europaeus

Information provided by Oregon Department of Agriculture – For full credits and information please click the following link: [GorseProfile.pdf \(oregon.gov\)](#)

Pacific Northwest Weed Management Handbook – For full credits and information please click the following link: <https://pnwhandbooks.org/weed/problem-weeds/gorse-ulex-europaeus>

Gorse Action Group: [Gorse Action Group - Collaborative action for gorse management](#)

“B” Rated Weeds

A weed of economic importance which is regionally abundant, but may have limited distribution in some counties

Gorse
Ulex europaeus

Other common names: Furze, whin, common gorse

USDA symbol: ULEU
ODA rating: B and T



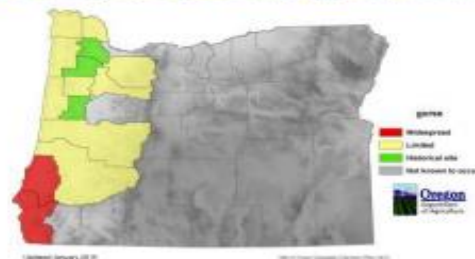
Introduction: Gorse was introduced from Europe in the 1890's at Bandon as an ornamental and living fence. Worldwide, European settlers brought the plant with them to more than 15 countries or islands where it has escaped causing significant economic harm. Currently Oregon has at least 55,000 acres at some level of infestation.

Distribution in Oregon. Gorse can be found predominantly along the coast in Coos, Curry and Lane Counties. Scattered infestations exist inland and are subjected to periodic treatments to reduce their impact.

Description: Gorse is a perennial, heavily armored evergreen shrub growing from 3 to over 10 feet tall. Gorse plants are shrubby with stout and erect spreading branches covered in terminal thorns frequently forming dense thickets. Clusters of yellow pea-like flowers can be found on the plant throughout the year but peak bloom occurs March through May. Seedpods are hairy 1/2 to 3/4 inch long, and brown when ripe. Mature pods burst, scattering seeds for several feet.

Impacts: Few invasive exotic species persist like gorse, making it one of the most difficult to manage weeds in the world. Plant growth and stand density increase at a rapid rate, crowding out native plants, impacting forest production, invading parklands, pastures, and rendering infested land unusable. Control costs are high and reinfestation is a constant problem. Gorse stands develop a long-lived persistent seed bank requiring long-term commitment to control. High levels of natural oils in the spines make this plant highly flammable and an extreme fire hazard. Gorse roots fix nitrogen enabling it to thrive in low nutrient soils such as sand dunes.

Biological controls: Two biological control agents, *Exapion ulicis*, a seed weevil and *Tetranychus lintearius*, a spider mite, are established in Oregon, however, they have not been effective at controlling gorse.



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Photos by Glenn Miller, ODA

Gorse (*Ulex europaeus*)

Control gorse in two stages. First, control established plants. Second, control new plants emerging from seeds that may have been resting in the soil for as long as 30 years. The most effective control program usually combines herbicides, burning, and cultivation or mowing. Establishing competitive pasture species, forest trees, or other crops helps resist gorse invasion as well as other weeds. A publication on the biology and control of gorse (*Gorse*, PNW 379, revised July 2001) is available from the Extension Service. When using herbicides, it is crucial to thoroughly wet foliage. Best timing is after bloom drop, but applications at other times usually give good control also.

2,4-D LV ester (several products)

Rate 0.75 to 1.5 lb ae/a or 0.5 to 1% concentration for handgun sprayer application.

Time Apply to actively growing plants after bloom drop in the spring.

Caution Do not let spray drift onto agricultural crops. Do not graze dairy animals within 7 days after application.

Site of action Group 4: synthetic auxin

Chemical family Phenoxy acetic acid

aminocyclopyrachlor + metsulfuron methyl (Streamline)

Rate 3.8 to 4.5 oz/a aminocyclopyrachlor + 1.2 to 1.4 oz/a metsulfuron (9.5 to 11.5 oz/a of product)

Time Apply to actively growing woody plants.

Remarks Adjuvants can be used; these include methylated seed oils 0.5 to 1% v/v, nonionic surfactants at 0.25 to 1% v/v, and crop oil concentrates at 1% v/v. Can be applied using an invert emulsion rather than water. There are several application methods that dictate the amount of product to be mixed with the carrier, so consult the label. In addition to woody species, controls many herbaceous species.

Caution Even low rates can kill nontarget tree and shrub species, so avoid application within a distance equal to the tree height of the sensitive species. Conifers can be injured, these include ponderosa pine, Douglas fir, Norway spruce, and white pine. Other trees that can be injured include aspen, Chinese tallow, cottonwoods, honey locust, magnolia, poplars, redbud, silver maple, and willow. Applications to stressed plants may reduce control. Do not allow spray to drift off target.

Site of action Group 4 synthetic auxin (aminocyclopyrachlor) Group 2: ALS inhibitor (metsulfuron methyl)



Gorse



Gorse

Chemical family Phenoxy acetic acid (aminocyclopyrachlor); sulfonyleurea (metsulfuron methyl)

dicamba (Banvel, Rifle, or Clarity)

Rate 0.75 to 1.5 lb ae/a or 0.5% to 1% concentration for handgun sprayer application.

Time Apply to actively growing plants after bloom drop in the spring.

Caution No waiting period between treatment and grazing for nonlactating animals (see label for restrictions on dairy animals). Remove meat animals from treated areas 30 days before slaughter. Rates above 2 lb ai/a may temporarily injure many grass species. Newly seeded grass (see label) may be injured at rates above 0.75 lb ai/a. Do not exceed 8 lb ai/a per season. Kills legumes.

Site of action Group 4: synthetic auxin

Chemical family Benzoic acid

glyphosate

Rate 1.5 to 3 lb ae/a or 1.5 to 2% solution for handgun sprayer application.

Time Apply to actively growing plants after bloom drop in the spring.

Remarks Adding a recommended surfactant improves results.

Caution Glyphosate kills grasses and most other desirable species needed to compete with new gorse plants.

Site of action Group 9: inhibits EPSP synthase

Chemical family None generally accepted

metsulfuron (Escort and others)

Rate Escort: use 0.6 oz ai/a (1 oz/a)

Time Apply to actively growing plants after bloom drop in spring.

Remarks Include a silicon-based surfactant. Application sites differ among products; consult labels.

Caution Do not let spray drift onto agricultural crops. Apply only to pasture, rangeland, and non-crop sites.

Site of action Group 2: acetolactate synthase (ALS) inhibitor

Chemical family Sulfonylurea

picloram (Tordon)

Rate 0.5% concentration for application with a handgun sprayer.

Time Apply to actively growing plants after bloom drop in the spring.

Remarks Adding a suitable surfactant at 0.25 to 0.5% will improve results.

Caution Most formulations are restricted-use. Refer to labels for grazing restrictions. Avoid drift to sensitive crops.

Site of action Group 4: synthetic auxin

Chemical family Pyridine

triclopyr ester (Garlon 4 or Remedy) or triclopyr amine (Garlon 3A) or triclopyr + 2,4-D ester (Crossbow)

Rate 0.5% to 2% concentration for application with a handgun sprayer.

Time Apply to actively growing plants after bloom drop in the spring. Garlon 4 and Crossbow can be used for basal bark applications any time of year.

Remarks Adding 0.25% to 0.5% of a suitable surfactant to Garlon 3A improves results. No surfactant is needed with Garlon 4 or Remedy. Use the higher rates on larger plants and on solid stands of old plants.

Caution Garlon products are registered for use on rights-of-way, industrial sites, and forestry (release and site preparation). Crossbow and Remedy can be used on permanent pastures and rangeland up to 1.5 lb ae/a. Observe all grazing and harvesting restrictions.

Site of action Group 4: synthetic auxin

Chemical family (triclopyr) Pyridine; (2,4-D) Phenoxy acetic acid

Related Links

- [EC 1593 Invasive Weeds in Forestland: Gorse](#)

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Common nameIvy

- English ivy (T)
- Atlantic ivy (all cultivars) (T)

Scientific name*Hedera helix**H. Hibernica*

Information provided by Oregon Department of Agriculture – For full credits and information please click the following link: [EnglishAtlanticIvyProfile.pdf \(oregon.gov\)](#) and Pacific Northwest Weed Management Handbook – For full credits and information please click the following link: [Ivy, common or English \(Hedera helix\) | Pacific Northwest Pest Management Handbooks \(pnwhandbooks.org\)](#)

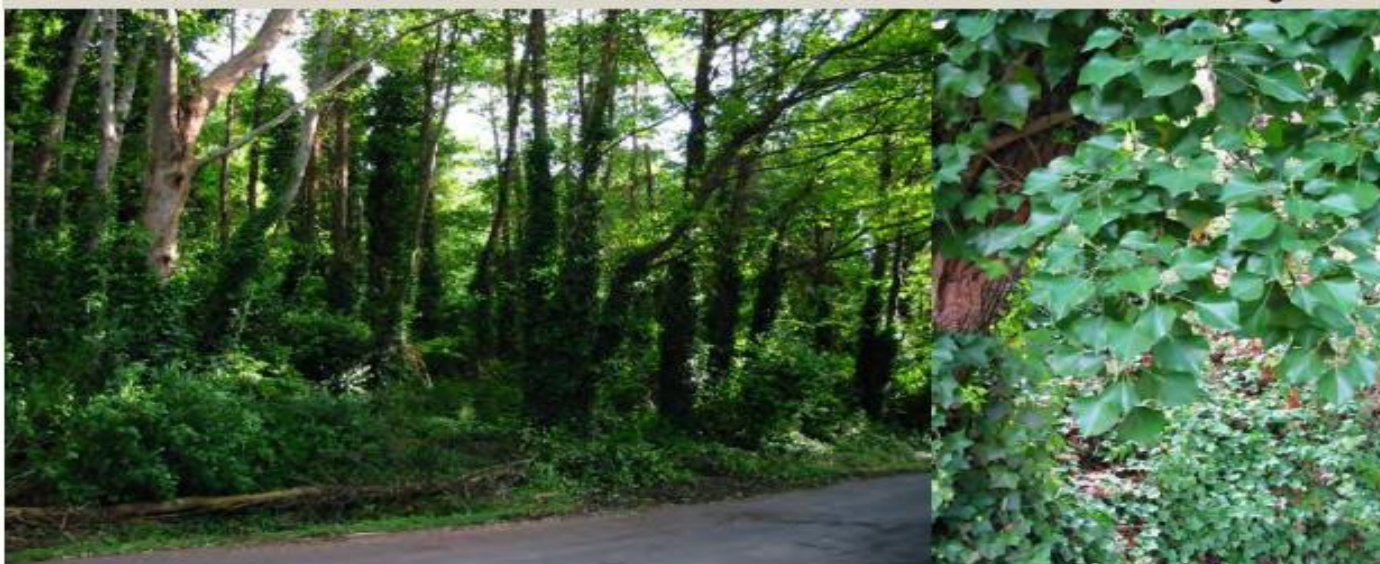
“B” Rated Weeds

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English ivy - *Hedera helix*
Atlantic ivy - *Hedera hibernica*

Other common names: Common ivy, branching ivy, glacier ivy, needlepoint ivy, sweetheart ivy, ivy

USDA symbol:
 HEHE, HEH1 2
ODA rating: B



Introduction: English and Atlantic ivies were first introduced to the United States by European immigrants and have been widely sold as ornamental plants for landscaping. They originated from central Asia, not from Western Europe as the names suggest.

Distribution in Oregon: English and Atlantic ivy distribution is widespread on the western side of the Cascades where they are considered very invasive. English and Atlantic ivies can be found on the east side of Oregon as ornamentals, but have yet to show invasive tendencies in arid regions.

Description: Very robust perennials, English and Atlantic ivies produce thick, woody, evergreen vines on trees with smaller long, trailing stems on forest floors. The leaves are alternate and waxy. Juvenile leaves are lobed, mature leaves larger and pointed with no lobes. When light and nutrients are optimum as in forest canopies, green or white flowers are produced forming black berries that are relished by starlings and robins, their main dispersal agents.

Impacts: Rapid and massive vegetative growth of English and Atlantic ivy vines reaches the tops of trees and woody ornamentals. Ivies can also displace native vegetation on the forest floor. English and Atlantic ivies frequently become intertwined with forest shrubs creating difficulties for manual removal or herbicide use. Removal costs in some Oregon parks have reached \$3000 per acre.

Biological controls: No approved biological control agents available.



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<https://oda.direct/NWP>

Photos by Tom Forney, ODA

Ivy, common or English (*Hedera helix*)

triclopyr amine (Garlon 3A, Brush-B-Gone, or Brush Killer) or triclopyr ester (Garlon 4, Pathfinder, or Vinex) or glyphosate (Accord, Glypro, or Rodeo)

Rate at least 41% active ingredient (3 lb ae or 4 lb ai) glyphosate

Remarks Basal bark application: apply 33% dilution of triclopyr or glyphosate to exposed stems after stripping the leaves from stems near ground level.

Cut stem application (most effective method): cut each vine stem close to the ground and treat freshly cut surfaces (preferably within 5 minutes) with a 33% solution of triclopyr amine or glyphosate mixed in water. Do not dilute products such as Brush-B-Gone and Brush Killer. Roundup Pro Concentrate (50.2% formulation) may be diluted with water.

Foliar application From summer to fall, foliar-apply a 2 to 5% solution of triclopyr ester mixed in water with a nonionic surfactant. Fully coat foliage. Some control may be possible with glyphosate as a 2 to 4% dilution using at least a 41% (3 lb ae or 4 lb ai glyphosate), but repeat applications will probably be necessary. Broadcast applications of triclopyr will cause less damage to desirable grasses.

Manual and mechanical Pull vines on the ground by hand and discard. Cut vines will root easily. Cut climbing vines near the ground, then pry the vines from the tree or structure. Once the vines are cut they will eventually die and fall from the tree, usually after the first extended hot and dry period. Occasionally vines will be embedded in the trunk of the tree. This makes control by both hand and chemicals very difficult; continual removal of sprouts will be needed.

Site of action (triclopyr) Group 4: synthetic auxin; (glyphosate) Group 9: inhibits EPSP.

Chemical family (triclopyr) pyridine; (glyphosate) none generally accepted

Use pesticides safely!

- Wear protective clothing and safety devices as recommended on the label. Bathe or shower after each use.
- Read the pesticide label—even if you've used the pesticide before. Follow closely the instructions on the label (and any other directions you have).
- Be cautious when you apply pesticides. Know your legal responsibility as a pesticide applicator. You may be liable for injury or damage resulting from pesticide use.

Common name
Jubata Grass (purple pampas grass)

Scientific name
Cortaderia jubata

Information provided by Oregon Department of Agriculture – For full credits and information please click the following link: [JubataGrassProfile.pdf \(oregon.gov\)](#)

Pacific Northwest Weed Management Handbook – No information available for Jubata Grass on the PNW

“B” Rated Weeds

**A weed of economic importance which is regionally abundant,
but may have limited distribution in some counties**

Jubata grass
Cortaderia jubata

Other common names: Pampas grass, Andes grass,
Selloa pampas grass, cortaderia, pink pampas grass,

USDA symbol: COJU2
ODA rating: B



Introduction: Jubata grass is native to northern Argentina and the Andes of Bolivia, Peru, Chile, and Ecuador. In its native range, it can be found from sea level to elevations greater than 11,000 feet. It was first cultivated in France and Ireland from seed collected in Ecuador. This robust grass is highly invasive in Northern California.

Distribution in Oregon: Escaped jubata grass occurs in most southwestern Oregon counties on disturbed ditch banks, road cuts, cliff-sides and logged areas. It is less common on the northern Oregon coastline.

Description: Jubata grass is a perennial grass ranging 6 to 10 feet tall. Plants have long leaves arising from a tufted base or tussock. The flower cluster is a plumed panicle at the end of a very long stem. Stems generally are at least twice as long as the tussock. Plumes consist of hairy female flowers, deep violet when immature, turning pinkish or tawny cream-white at maturity. Jubata grass is easily confused with pampas grass, *Cortaderia selloana*. The two species are distinguished by stem height, leaf, plume, and spikelet color, florets, leaf tip, and presence of viable seed. The tussocks of jubata grass are less erect and more spreading and not fountain-like, when compared to tussocks of pampas grass.

Impacts: Jubata grass has the potential to greatly impact Oregon's coastal ecosystems. Escaped plants crowd out native vegetation and are very competitive in forestry operations. In clear cuts, jubata grass can out-compete seedling trees retarding their establishment and growth. It creates a fire hazard with an excessive build-up of dry leaves, leaf bases, and flowering stalks. Large clumps can complicate road access and fire management activities by blocking vehicles.

Biological controls: No approved biological control agents are available.



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Photos by Glenn Miller, ODA



C. jubata is a large tussock grass, native to South America, which has been introduced elsewhere as an ornamental plant and, in some countries, for forage, shelter or erosion control. It has naturalised and become established in Australia, New Zealand, South Africa and the USA, and is regarded as a very serious invasive species; it forms dense stands that displace native vegetation, and has become a serious problem in new forestry areas where it suppresses the growth of young trees and creates a fire hazard.

▼ Identity

Preferred Scientific Name

Cortaderia jubata (Lemoine ex Carrière) Stapf

Preferred Common Name

purple pampas grass

Other Scientific Names

Gynerium jubatum Lemoine ex Carrière

Gynerium pygmaeum Meyen

Gynerium quila var. *pygmaeum* Nees

International Common Names

English: pampas grass

Spanish: sacuara

Local Common Names

Australia: pink pampas grass

South Africa: pampasgras

USA: Andean pampas grass; jubata grass; selloa pampas grass

Treatment and data shown that Glyphosate and Imazpyr are the top two herbicide treatments. Should contact wholesaler to learn more.

Common name
Diffuse knapweed
Knapweed, Meadow

Scientific name
Centaurea diffusa
Centaurea moncktonii

Information provided by Oregon Department of Agriculture – For full credits and information please click the following link: [DiffuseknapweedProfile.docx \(oregon.gov\)](#) and [Meadow knapweed Profile \(oregon.gov\)](#)

Pacific Northwest Weed Management Handbook – For full credits and information please click the following link: [Knapweeds \(Centaurea spp. and Acroptilon repens\) | Pacific Northwest Pest Management Handbooks \(pnwhandbooks.org\)](#)

“B” Rated Weeds

A weed of economic importance which is regionally abundant, but may have limited distribution in some counties

Diffuse knapweed
Centaurea diffusa

Other common names: White knapweed, spreading knapweed, tumble knapweed

USDA symbol: CED13
ODA rating: B



Distribution in Oregon: Although widely, diffuse knapweed has limited distribution in Oregon with the northeastern and central areas having the heaviest infestation.

Introduction: Diffuse is a member of a large genus of over 400 species, most originating in the Mediterranean region. Diffuse knapweed was first introduced to the Pacific Northwest at the turn of the century as a contaminant in alfalfa seed imported from Turkestan, Turkmenistan or hybrid alfalfa seed from Germany.

Description: Diffuse knapweed is a biennial that flowers from midsummer to fall. It grows to 3 feet tall. It is a single-stemmed plant with numerous lateral branches. Flowers are white to rose, sometimes purplish. Flower heads are slender with pointed, fringed bracts and grows out of urn-shaped heads carried as the tips of the many branches. It spreads by seed, aided by the tumbling of windblown mature plants. A single plant can produce approximately 18,000 seeds.

Impacts: Diffuse knapweed will form dense stands on any open ground, excluding more desirable forage species. Once established, the necessary extensive control measures are often more expensive than the income potential of the land. It grows under a wide range of conditions, such as riparian areas, sandy river shores, gravel banks, rock outcrops, rangelands and roadsides. There are possible health hazards from absorbing plant juice through bare hand pulling of plants. It is recommended that gloves be worn while handling plants. Diffuse knapweed also supports small mites that bite humans and cause skin irritation

Biological controls: Biocontrol agents include several seed feeding flies and weevils, and a root-boring beetle. One beetle species causes serious damage to the vegetative parts of the plants resulting in large reductions of knapweed.



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Photos by Dan Sharratt, ODA

"B" Rated Weeds

A weed of economic importance which is regionally abundant,
but may have limited distribution in some counties

Meadow knapweed
Centaurea pratensis

Other common names: hybrid knapweed

USDA symbol: CEDE5
ODA rating: B



Introduction: Meadow knapweed is a hybrid species with its parentage in Europe. Initially introduced in the Northwest for livestock forage, it is now well established in Western Oregon counties where it is considered invasive. It does produce an abundance of nectar late in the season for honeybees.

Distribution in Oregon: Meadow knapweed is widely distributed in the western part of Oregon with limited but increasing distribution in the northeast and central areas.

Description: Meadow knapweed is a hybrid of black and brown knapweeds. It blooms in midsummer to fall growing from robust root crown. Plant height generally reaches 3'. The lower leaves are long-stalked, upper leaves having no stalk. Stems are many-branched and tipped by a solitary flower head up to one inch wide. Flower heads are pink to reddish purple, oval or almost globe-shaped. A key-identifying feature is the brown brushy-fringed bracts on the flower head. Meadow knapweed's tough perennial root system makes manual control methods very difficult.

Impacts: Meadow knapweed out-competes grasses and other pasture species, reducing grass productivity for forage though sheep find it quite edible. It is susceptible to herbicide treatments, but control efforts must persist for the long-term to decrease soil-seed stocks. It will invade native prairie, oak savannah even clearcuts. Meadow knapweed favors roadsides, sand or gravel bars, riverbanks, irrigated pastures, moist meadows, and forest openings. It also invades industrial sites, tree farms, and grasslands.

Biological controls: Some approved biological control agents released for other knapweeds have become established on meadow knapweed including a seed-head fly, a seed-head moth, and two seed-head weevils. This plant is currently being tested as a host for other approved knapweed biocontrol agents.



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Photos by Eric Coombs and
Tom Forney, ODA

Knapweeds (*Centaurea* spp. and *Acroptilon repens*)

The following herbicides usually control treated plants. Plants often regrow, so plan annual applications for several years. Control of regrowth and of new seedlings is much better if a competitive crop or sod is established. A perennial grass is the logical choice because, except for glyphosate, the herbicides listed here will not kill established grasses.

2,4-D

Rate 1 to 2 lb ae/a (4 to 8 lb ae/a for Russian knapweed)

Time Apply at the early stage of flower stem elongation (late April to early May).

Remarks Treatment will control only plants emerged at time of spraying.

Caution Avoid drift to sensitive crops.

Site of action Group 4: synthetic auxin

Chemical family Phenoxy acetic acid

aminocyclopyrachlor + chlorsulfuron (Perspective)

Rate 1.8 to 3.2 oz/a aminocyclopyrachlor + 0.7 to 1.3 oz/a chlorsulfuron (4.5 to 8 oz/a of product)

Time Apply to actively growing plants in spring.

Remarks Adjuvants can be used; these include methylated seed oils 0.5 to 1% v/v, nonionic surfactants at 0.25 to 1% v/v, and crop oil concentrates at 1%v/v. Can be applied using an invert emulsion rather than water.

Caution Even low rates can kill nontarget tree and shrub species, so avoid application within a distance equal to the tree height of the sensitive species. Do not allow spray to drift off target. Can injure several grass species including bromes, as well as basin wildrye.

Site of action (aminocyclopyrachlor) Group 4: Synthetic auxin; (chlorsulfuron) Group 2: ALS inhibitor



Diffuse knapweed



Diffuse knapweed

Chemical family (aminocyclopyrachlor) Pyrimidine carboxylic acid; (chlorsulfuron) Sulfonylurea

aminopyralid (Milestone)

Rate 1 to 1.75 oz ae/a (4 to 7 fl oz/a Milestone). Rate of application will depend on knapweed species to be controlled.

Time Consult label for optimal timing. Diffuse and spotted knapweed: apply to actively growing plants in fall or in spring from rosette to bolting growth stages. Russian knapweed: apply in spring and summer to plants from bud to flowering stage; in fall, to dormant plants.

Remarks A nonionic surfactant at 1 to 2 quarts per 100 gal of spray enhances control under adverse environmental conditions.

Caution Do not allow drift to desirable vegetation. Many forbs (desirable broadleaf plants) can be seriously injured or killed. Do not exceed 7 fl oz/a Milestone per year.

Site of action Group 4: synthetic auxin

Chemical family Pyridine

clopyralid (Stinger or Transline)

Rate 0.25 to 0.5 lb ae/a (0.66 to 1.33 pints/a). Labeled rates vary with crops.

Time Up to the bud stage of knapweeds.

Remarks Results are best if applied to actively growing weeds. See labels for registered sites.

Caution Consult label for crop rotation restrictions before using Stinger. Several crops may be injured up to 4 years after application.

Site of action Group 4: synthetic auxin

Chemical family Pyridine

clopyralid + 2,4-D amine (Curtail)

Rate 2 to 4 quarts/a Curtail

Time Apply after most rosettes emerge but before flower stem elongates.

Remarks Lower rate for in-crop cereal grain application; higher rates for fallow, postharvest, and Conservation Reserve Program (CRP) applications. Consult label for specific directions. CRP applications for established grass only. Apply in enough total spray volume to ensure good coverage for diffuse and spotted knapweed.

Caution Consult label for crop rotation restrictions before using product. Several crops may be injured up to 4 years after application.

Site of action Group 4: synthetic auxin

Chemical family Pyridine

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Site of action Group 4: synthetic auxin

Chemical family (clopyralid) Pyridine; (2,4-D) Phenoxy acetic acid

diflufenzopyr + dicamba (Overdrive)

Rate 0.26 to 0.35 lb ae/a (6 to 8 oz/a)

Time Apply to rosettes.

Remarks Add a surfactant to the spray mix.

Caution Avoid drift to sensitive crops. Will kill legumes.

Site of action (diflufenzopyr) Group 19: inhibits indole acetic acid transport; (dicamba) Group 4: synthetic auxin

Chemical family (diflufenzopyr) Semicarbazone; (dicamba) Benzoic acid
glyphosate

Rate 3 lb ae/a

Time Apply to actively growing knapweed when most plants are at bud stage.

Remarks Glyphosate kills many knapweed plants but also kills grass that might compete with new knapweed seedlings. Russian knapweed is not controlled. When using glyphosate, follow by seeding with a locally adapted grass.

Site of action Group 9: inhibits EPSP synthase

Chemical family None generally accepted

imazapic (Plateau)

Rate 0.188 lb ai/a for Russian knapweed

Time Apply in fall or early winter after Russian knapweed has grown old.

Remarks Use 1 quart/a methylated seed oil as the adjuvant. Selective to most native grasses. Higher rates may suppress seed of some cool-season grasses.

Caution Before using, note crop rotation restrictions.

Site of action Group 2: acetolactate synthase (ALS) inhibitor

Chemical family Imidazolinone

picloram (Tordon)

Rate 0.25 to 0.5 lb ae/a (1 lb ae/a for Russian knapweed)

Time Apply in late spring before or during flower stem elongation.

Remarks A selective treatment that, at the suggested rate, will not damage perennial grasses. Treatment made in bud stage may not prevent seed production in the year of application. However, seed germination is markedly reduced.

Caution Most formulations are restricted-use herbicides. Do not contaminate water or use in diversified crop areas. Potatoes, beans, and most other broadleaf crops are sensitive to picloram.

Site of action Group 4: synthetic auxin

Chemical family Pyridine

triclopyr + clopyralid (Redeem R&P)

Rate 1.5 to 2 pints/a (2.5 to 4 pints/a for Russian knapweed)

Time Apply from rosette to early bolt stage when weeds are actively growing. Russian knapweed should be in early bud to early flower growth stage.

Remarks Add a nonionic surfactant at surfactant manufacturer's recommended rate. Apply in at least 10 gal/a water by ground.

Caution Do not exceed 4 pints/a per year. Do not allow drift to desirable vegetation. Note label restrictions on overseeding or reseeding.

Site of action (both) Group 4: synthetic auxin

Chemical family (both) Pyridine

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Common name
Knotweed, Bohemian
Knotweed, Giant
Knotweed, Himalayan
Knotweed, Japanese

Scientific name
Polygonum bohemicum
Polygonum sachalinense (Fallopia sachalinensis)
Polygonum polystachyum
Polygonum cuspidatum (Fallopia japonica)

Information provided by Oregon Department of Agriculture – For full credits and information please click the following link: [GiantKnotweedProfile.pdf \(oregon.gov\)](#), [HimalayanKnotweedProfile.pdf \(oregon.gov\)](#) and [JapaneseKnotweedProfile.pdf \(oregon.gov\)](#)

Pacific Northwest Weed Management Handbook – For full credits and information please click the following link: [Knotweed, Bohemian \(Polygonum bohemicum\)](#), [Japanese \(Polygonum cuspidatum\)](#), [giant \(Polygonum sachalinense\)](#), [Himalayan \(Polygonum polystachyum\)](#), or [fleeceflower | Pacific Northwest Pest Management Handbooks \(pnwhandbooks.org\)](#)

“B” Rated Weeds

A weed of economic importance which is regionally abundant, but may have limited distribution in some counties

Giant knotweed
Polygonum sachalinense

Other common names: Sakhalin knotweed, Japanese bamboo

USDA symbol: POSA4
ODA rating: B



Introduction: It is native to one Japanese island and was introduced to North America as an ornamental plant. It was also promoted as a streamside soil binder. Though not as common as Japanese knotweed, it is easily recognizable by its huge leaves and 10' tall growth. Hybridization with Japanese knotweed is common.

Distribution in Oregon: The first documented site in Oregon was in Coos County in 1937. It can be found occasionally in many western Oregon counties where it is often the target of control efforts.

Description: Giant knotweed is a robust perennial, growing annually from woody rhizomatous roots. It blooms from August through September. Rhizomes of giant knotweed often have a diameter of 3 inches and may spread to 65 feet laterally. The stems are generally clustered, erect, hollow, and grow up to 10-11 feet tall. Leaves are alternate, oval and large, frequently 12 inches long, with a cordate or heart-shaped base. Flowers are small, creamy white and packed in racemes producing an abundance of nectar, popular with pollinators. Giant knotweed has the ability to sprout from both aboveground nodes and rhizomes in the presence of adequate moisture. Humans spread the species through yard waste dumping, or using contaminated dirt and ornamental plantings. Flood events are the most important mechanism for transporting the plant in individual watersheds.

Impacts: Giant knotweed is the largest of the knotweeds, enabling this species to dominate and out-compete native or beneficial plants. It poses a significant threat to riparian areas where it prevents streamside tree regeneration. Research indicates that giant knotweed produces allelopathic chemicals from the roots, which aid in its dominance and rapid colonization. Giant knotweed is a viable pollen source for Japanese knotweed, resulting in male fertile hybrids that are often confused with Japanese knotweed.

Biological controls: No approved biological control agents are available at this time.



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Photos by Glenn Miller, ODA

"B" Rated Weeds

A weed of economic importance which is regionally abundant,
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Himalayan knotweed
Polygonum polystachyum

Other common names: Cultivated knotweed,
Kashmir plume, bell-shaped knotweed

USDA symbol: POPO5
ODA rating: B



Introduction: Himalayan knotweed is the lower-growing cousin of the other perennial knotweed species in the northwest. The first record of the plant is Polk County in 1934. It was introduced from Asia to be planted as an ornamental. Though it can be found in most coastal counties, its abundance is much less than Japanese knotweed.

Distribution in Oregon: The largest populations are found on the north coast near Seaside and on the lower Alsea River near Waldport.

Description: Himalayan knotweed is a perennial polygonum growing up to 6 feet tall and is related to giant and Japanese knotweeds. Its leaves are alternate, long and narrow (4 to 8 inches), and tapered compared to Japanese and giant knotweeds that are ovate and heart shaped, respectively. It has branching inflorescences in an array of lacy clusters of many white small fragrant flowers. Stems are numerous, glabrous, ribbed, reddish-brown and erect. It blooms from late July to October.

Impacts: Himalayan knotweed is the least common of the three weedy knotweed species in the Pacific Northwest. Plants grow vigorously creating dense colonies that exclude native vegetation, though they seem less adaptable to dense shade. Established populations are persistent and difficult to eradicate due to their proximity to streams. It poses a moderate threat to riparian areas, where it disperses in flood events, rapidly colonizing scoured shores and islands. Himalayan knotweed competes with riparian trees and may reduce forest canopies in the long-term along rivers and streams by preventing regeneration. Dense mats of fallen leaves may prevent germination of other important species.

Biological controls: No approved biological control agents are available at this time.



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A weed of economic importance which is regionally abundant,
but may have limited distribution in some counties

Japanese knotweed
Polygonum cuspidatum

Other common names: Crimson beauty, Mexican bamboo, Japanese fleecflower

USDA symbol: POCU6
ODA rating: B



Introduction: Japanese knotweed is a robust growing polygonum, native to Eurasia and introduced to the United States as an ornamental and for stream bank stabilization. Frequently planted in logging camps and along the headwaters of streams during the 1900's, flood events have transported root masses from these early plantings downstream, creating huge infestations on many Oregon rivers.

Distribution in Oregon: Though the species can tolerate cold temperatures, the mild temperatures of Western Oregon provide it with the best climate for growth. Most coastal and Willamette Valley streams host populations of knotweed with the Nehalem and Molalla Rivers two of the most severely infested. A large infestation was also located in Hell Canyon.

Description: Japanese knotweed is a deciduous perennial growing up to 9 foot tall. Annually growing from deep-rooted creeping rhizomes, it forms extensive clonal patches that are expensive to treat or remove. Stout hollow stems are greenish red, with nodes. Leaves are short stalked, 6-8" long by 4-5" wide. Japanese knotweed flowers are greenish-white to cream in large plume-like clusters at the ends of the stems. Bloom time occurs late July, to October. It establishes most often along riparian areas, though many reports place them in forest understories, forest edges, yards and gravel operations.

Impacts: Japanese knotweed grow vigorously along roadsides, waste areas, streams, and ditch banks and create dense colonies that exclude native vegetation and greatly alter natural tree regeneration. Large infestations can be reduced with approved herbicides, but treatments are costly and time consuming. It poses a significant threat in riparian areas, where it disperses during flood events rapidly colonizing scoured shorelines, islands and adjacent forestland.

Biological controls: One biological control insect, a psyllid is under final review.



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Photos by Glenn Miller, ODA

Knotweed, Bohemian (*Polygonum bohemicum*), Japanese (*Polygonum cuspidatum*), giant (*Polygonum sachalinense*), Himalayan (*Polygonum polystachyum*), or fleecflower

dicamba (Banvel, Rifle, or Clarity)

Rate 0.25 lb ae dicamba mixed with 1 gal water/400 sq ft

Time Apply in late August to new regrowth since plant was cut back in June.

Remarks Apply as a basal spray to the stems at ground level.

Caution Do not apply in areas where roots of desirable plant species are growing.

Site of action Group 4: synthetic auxin

Chemical family Benzoic acid

glyphosate

Rate Spot treatment: 0.06 lb ae (2.67 fl oz) glyphosate with 1 gal water

Time Apply as a coarse spray when weeds are actively growing and most are at bud to early flowering growth stage.

Remarks Spray for complete, uniform coverage but not to the point of runoff.

Caution Glyphosate is nonselective: it injures or kills any vegetation it contacts.

Site of action Group 9: inhibits EPSP synthase

Chemical family None generally accepted

glyphosate (Roundup Pro Concentrate)

Rate Inject 5 ml/stem

Time Inject with a hand-held device into hollow stem of actively growing plants between second and third internodes.

Remarks Mark each stem when making the injection to avoid reapplying.

Caution Non-crop use only. Total of all treatments must not exceed 8.5 quarts/a of Roundup Pro Concentrate or 1,600 stems/a per year.

Site of action Group 9: inhibits EPSP synthase



Japanese knotweed



Japanese knotweed

Chemical family None generally accepted

imazapyr (Arsenal or Habitat)

Rate 0.5 to 1 lb/a or 1% solution + 0.25% surfactant.

Time Apply in midsummer, after seedhead forms, up to killing frost.

Remarks Spray to cover plants but not to runoff. Habitat is labeled for aquatic sites.

Caution Before using, note crop rotation restrictions.

Site of action Group 2: acetolactate synthase (ALS) inhibitor

Chemical family Imidazolinone

triclopyr ester (Garlon 4 or Remedy) or triclopyr amine (Garlon 3A) or triclopyr + 2,4-D ester (Crossbow)

Rate 0.5% to 2% concentration for application with a handgun sprayer.

Time Apply to actively growing plants in midsummer.

Remarks Adding 0.25% to 0.5% of a suitable surfactant to Garlon 3A improves results. No surfactant is needed with Garlon 4 or Remedy.

Caution Garlon products are registered for use on rights-of-way, industrial sites, and forestry (release and site preparation). Crossbow and Remedy can be used on permanent pastures and rangeland up to 1.5 lb ae/a. Observe all grazing and harvesting restrictions.

Site of action Group 4: synthetic auxin

Chemical family (triclopyr) Pyridine; (2,4-D) Phenoxy acetic acid

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Common name
Tansy ragwort

Scientific name
Senecio jacobaea

Information provided by Oregon Department of Agriculture – For full credits and information please click the following link: [Tansy ragwort profile \(oregon.gov\)](http://www.oregon.gov/ODA/programs/Weeds/Pages/TansyRagwort.aspx)

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“B” Rated Weeds

A weed of economic importance which is regionally abundant,
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Tansy ragwort
Senecio jacobaea

Other common names: Stinking willie, ragwort, tansy
butterweed, stinking davies, sinking ninny, tansy ragweed

USDA symbol: SEJA
ODA rating: B and T



Introduction: *Senecio jacobaea* is native to Europe and western Asia and has become a serious rangeland pest in New Zealand, Tasmania, Australia, South Africa, and the Americas.

Distribution in Oregon: The first documented site in Oregon was in 1922 in Multnomah County and is now wide spread throughout western Oregon. Tansy ragwort is still very limited on the east side of Oregon. All eastside infestations are under intense management.

Description: It is generally a biennial or short-lived perennial; blooming midsummer to fall. It grows 1 1/2 – 4 feet tall. Leaves dark green, deeply lobed. Flowers are numerous, and bright yellow. Reproduction is entirely by seed. Mowed or grazed plants will regenerate to become a short-lived perennial when moisture conditions are adequate. Tansy ragwort's seeds can lay dormant in the soil for 15 years.

Impacts: Prolific in pastures, clear cuts, and disturbed roadside areas, tansy populations can become quite dense. The leaves are toxic to cattle and horses, causing irreversible liver damage. In the 1960's and 70's livestock losses in Oregon amounted to 5 million dollars a year. Unlike cattle and horses, sheep appear to be unaffected by ragwort's toxicity. Once considered Western Oregon's most economically serious noxious weed, biological controls have reduced the severity of outbreaks below economic threshold levels.

Biological controls: Three biological control agents, a seed head fly, a flea beetle and a moth, are well established.



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Photos by Eric Coombs, ODA

Ragwort, tansy (*Senecio jacobaea*)

2,4-D or picloram (Tordon) or dicamba (Banvel, Rifle, or Clarity) or 2,4-D + dicamba (Weedmaster) or triclopyr + 2,4-D (Crossbow)

Rate 1 to 2 lb ae/a 2,4-D LV ester or 2,4-D amine; or 0.25 lb ae/a picloram; or 1 lb ae/a dicamba; or 2 quarts/a Weedmaster; or 1.5 to 2 quarts/a Crossbow

Time Apply 2,4-D in spring before any flowers appear; the earlier the application in relation to plant growth, the better the control. Picloram and dicamba can be used at the flowering stage with good results. Fall applications after rains begin seed germination have proven effective also.

Remarks Respraying for more than 1 year is necessary to control late-germinating seeds. Consult labels for grazing restrictions. See also pasture and rangeland section for broadcast spray.

Caution Most picloram formulations are restricted-use herbicides. Avoid drift to sensitive crops. Do not contaminate water with picloram. Potatoes, beans, and many other broadleaf crops are sensitive to picloram. Do not use picloram in diversified cropping areas. Do not graze dairy animals within 2 weeks after application.

Site of action (all) Group 4: synthetic auxin

Chemical family (2,4-D) Phenoxy acetic acid; (picloram and triclopyr) Pyridine; (dicamba) Benzoic acid

aminocyclopyrachlor + chlorsulfuron (Perspective)

Rate 1.8 to 3.2 oz/a aminocyclopyrachlor + 0.7 to 1.3 oz/a chlorsulfuron (4.5 to 8 oz/a of product)

Time Apply to actively growing plants in spring.

Remarks Adjuvants can be used; these include methylated seed oils 0.5 to 1% v/v, nonionic surfactants at 0.25 to 1% v/v, and crop oil concentrates at 1% v/v. Can be applied using an invert emulsion rather than water.

Caution Even low rates can kill nontarget tree and shrub species so avoid application within a distance equal to the tree height of the sensitive species. Do not allow spray to drift off target. Can injure several grass species including bromes, as well as basin wildrye.

Site of action (aminocyclopyrachlor) Group 4: Synthetic auxin; (chlorsulfuron) Group 2: ALS inhibitor

aminocyclopyrachlor + chlorsulfuron (Perspective)

Rate 1.8 to 3.2 oz/a aminocyclopyrachlor + 0.7 to 1.3 oz/a chlorsulfuron (4.5 to 8 oz/a of product)

Time Apply to actively growing plants in spring.

Remarks Adjuvants can be used; these include methylated seed oils 0.5 to 1% v/v, nonionic surfactants at 0.25 to 1% v/v, and crop oil concentrates at 1% v/v. Can be applied using an invert emulsion rather than water.

Caution Even low rates can kill nontarget tree and shrub species so avoid application within a distance equal to the tree height of the sensitive species. Do not allow spray to drift off target. Can injure several grass species including bromes, as well as basin wildrye.

Site of action (aminocyclopyrachlor) Group 4: Synthetic auxin; (chlorsulfuron) Group 2: ALS inhibitor

Chemical family (aminocyclopyrachlor) Pyrimidine carboxylic acid; (chlorsulfuron) Sulfonylurea

aminopyralid (Milestone)

Rate 1 to 1.25 oz ae/a (4 to 5 fl oz/a Milestone)

Time Apply to actively growing plants in the rosette.

Remarks A nonionic surfactant at 1 to 2 quarts per 100 gal of spray enhances control under adverse environmental conditions.

Caution Do not allow drift to desirable vegetation. Many forbs (desirable broadleaf plants) can be seriously injured or killed. Do not exceed 7 fl oz/a Milestone per year.

Site of action Group 4: synthetic auxin

Chemical family Pyridine

metsulfuron (Escort and others)

Rate Escort: 0.45 to 0.6 oz ai/a (0.75 to 1 oz/a)

Time Apply to actively growing plants.

Remarks Use a surfactant to increase effectiveness. Application sites differ among products; consult labels.

Caution Apply only to pasture, rangeland, and non-crop sites.

Site of action Group 2: acetolactate synthase (ALS) inhibitor

Chemical family Sulfonylurea

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Common name**Scientific name**Thistle – Grouped by treatments solutions

- | | |
|-------------------------------|----------------------------|
| • Thistle, bull (T) | <i>Cirsium vulgare</i> |
| • Thistle, milk (T) | <i>Silybum marianum</i> |
| • Thistle, Canada (T) | <i>Cirsium arvense</i> |
| • Thistle, Italian (T) | <i>Carduus tenuiflorus</i> |

Information provided by Oregon Department of Agriculture – For full credits and information please click the following link:

- [BullThistleProfile.pdf \(oregon.gov\)](#),
- [MilkThistleProfile.pdf \(oregon.gov\)](#),
- [CanadaThistleProfile.pdf \(oregon.gov\)](#) and
- [ItalianThistleProfile.pdf \(oregon.gov\)](#).

Pacific Northwest Weed Management Handbook – For full credits and information please click the following link:

- [Thistle, bull \(Cirsium arvense\), milk \(Silybum marianum\), musk \(Carduus nutans\), Scotch \(Onopordum acanthium\), woolly distaff \(Carthamus lanatus\), and smooth distaff \(Carthamus baeticus\) | Pacific Northwest Pest Management Handbooks \(pnwhandbooks.org\)](#) ,
- [Thistle, Canada \(Cirsium arvense\)-selective control in crops | Pacific Northwest Pest Management Handbooks \(pnwhandbooks.org\)](#)
- [Thistle, Italian \(Carduus pycnocephalus\), slenderflower \(Carduus tenuiflorus\) , and plumeless \(Carduus acanthoides\) | Pacific Northwest Pest Management Handbooks \(pnwhandbooks.org\)](#)

"B" Rated Weeds

A weed of economic importance which is regionally abundant,
but may have limited distribution in some counties

Bull thistle
Cirsium vulgare

Other common names: common thistle, spear
thistle, Fuller's thistle

USDA symbol: CIVU
ODA rating: B



Introduction: Bull thistle is a Eurasian native, widely established throughout North America. Accidental introductions have occurred many times through imported seeds and grains. Historically, the plant found limited application for medicinal uses and some parts were deemed edible.

Distribution in Oregon: Bull thistle occurs in every county in Oregon.

Description: Bull thistle is a biennial, blooming July to September and growing 2 to 5 feet tall. The branches sport greenish-brown spines and hairs. Leaves are pinnately lobed, hairy, prickly on the upper side and cottony underneath. Flowers are dark purple, 1½ to 2 inches wide, a clustered at the ends of branches. A circle of plume-like white hairs called pappus tops bull thistle seeds.

Impacts: Considered a nuisance weed in pastures, rangeland and newly logged sites, in the short term it competes with desirable forbs and grasses but will eventually diminish in density and impact. It is easy to control in pastures and agricultural settings with herbicides or mixed species grazing. Homeowners and grub out the large rosette stage with a shovel.

Biological controls: Bull thistle is attacked by several biocontrol insects that were originally intended to target other thistles but the damage levels seldom control individual plants. Observations though indicate that population levels of bull thistle statewide seem to be reduced from historical levels. The most effective insect is the seed head gall fly which prevents seed dispersal.



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Photos by Eric Coombs, ODA

"B" Rated Weeds

A weed of economic importance which is regionally abundant,
but may have limited distribution in some counties

Milk thistle
Silybum marianum

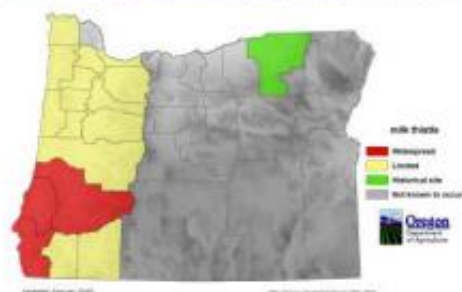
Other common names: Blessed thistle, St
Mary's thistle, lady's thistle

USDA symbol: SIMA3
ODA rating: B



Introduction: Milk thistle is native to the Mediterranean region of Europe. With its large variegated leaves and large flower head, it is a standout in garden settings or in pastures. This robust plant has been known since ancient times as a medicinal plant for the treatment of liver diseases, disorders of the bile duct and spleen. Even today the seed is sold extensively in the herbal medicine trade.

Distribution in Oregon: The first record of milk thistle in Oregon is 1886 in Multnomah County. Today it is primarily a pest of western Oregon especially in Douglas County. Scattered populations are found throughout the Willamette Valley and south coast, often associated to livestock operations.



Description: Milk thistle is a biennial or winter annual blooming from April through July. It grows two to six feet tall. Stems are stout, rigid and generally branching. Leaves are very broad and clasp the flower stem. The spiny margins and white marbling along veins are very distinctive. Flower heads are reddish-purple, spine-tipped and 3-4 inches across. The seed is capable of remaining dormant in the soil for many years.

Impacts: Once established, it forms dense clumps that exclude livestock and crowd out more desirable forage species. Individual plants are so large that forage displacement is high. It has invaded extensive pastureland acres in Douglas County though biocontrol agents have reduced their impact significantly. It is a nitrate accumulator, lethal when livestock ingest the plant though they avoid the sharp spines. It infests roadsides, waste and disturbed areas, grazing lands and often occurs in association with Italian and slender-flowered thistles.

Biological controls: One approved biocontrol agent, *Rhinocyllus conicus* a seed head weevil, is well established in Oregon.



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Photos by Eric Coombs, ODA,
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"B" Rated Weeds

A weed of economic importance which is regionally abundant,
but may have limited distribution in some counties

Canada thistle
Cirsium arvense

Other common names: Californian thistle,
Canadian thistle, creeping thistle, field thistle

USDA symbol: CIAR4
ODA rating: B



Introduction: Canada thistle is a native of southeastern Eurasia and Europe and was accidentally introduced to the US starting in the early 1600s. Multiple introductions over the centuries have been linked to imported grains. It is the most common weedy thistle found in the U.S.

Distribution in Oregon: Canada thistle occurs in every county in Oregon.

Description: Canada thistle is classified as a creeping perennial. Plants are either all male or all female. Its leaves are wavy, margined to lobed, up to 6 inches long and armed with yellowish spines. It has small purple to white flowers that are born in clusters. It sports an extensive horizontal-spreading root system enabling the plant to create dense patches. Fragmentation of the root system during tillage aids in dispersal throughout a field creating headaches for farmers. It has large seed production but a low percentage of viable seeds.

Impacts: Canada thistle can be found in cultivated fields, riparian areas, pastures, rangeland, forests, lawns, gardens, roadsides, and waste areas. Poor weed control can result in crop reductions up to 25% in heavily infested ground. It is the most common and impacting thistle species in the U.S.

Biological controls: Four approved biocontrol agents, a stem weevil, a seed head weevil, a crown weevil, and a stem gall fly are established in Oregon



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Photos by Eric Coombs, Glenn Miller, ODA archives

Thistle, bull (*Cirsium arvense*), milk (*Silybum marianum*), musk (*Carduus nutans*), Scotch (*Onopordum acanthium*), woolly distaff (*Carthamus lanatus*), and smooth distaff (*Carthamus baeticus*)

2,4-D

Rate 1.5 to 2 lb ae/a

Time Spring or fall.

Remarks Use fall treatments to control rosettes of these biennial weeds. Use spring treatments before flower stalk elongates. Annual treatments are needed to control seedlings. Pasture legumes are injured or eliminated at these rates.

Caution Avoid drift to sensitive crops.

Site of action Group 4: synthetic auxin

Chemical family Phenoxy acetic acid

**aminocyclopyrachlor + chlorsulfuron
(Perspective)**

Rate 1.8 to 3.2 oz/a aminocyclopyrachlor + 0.7 to 1.3 oz/a chlorsulfuron (4.5 to 8 oz/a of product)

Time Apply to actively growing plants in spring.

Remarks Adjuvants can be used; these include methylated seed oils 0.5 to 1% v/v, nonionic surfactants at 0.25 to 1% v/v, and crop oil concentrates at 1% v/v. Can be applied using an invert emulsion rather than water.

Caution Even low rates can kill nontarget tree and shrub species, so avoid application within a distance equal to the tree height of the sensitive species. Do not allow spray to drift off target. Can injure several grass species including bromes, as well as basin wildrye.

Site of action (aminocyclopyrachlor) Group 4: Synthetic auxin; (chlorsulfuron) Group 2: ALS inhibitor

Chemical family (aminocyclopyrachlor) Pyrimidine carboxylic acid; (chlorsulfuron) Sulfonylurea

aminopyralid (Milestone)

Rate 0.75 to 1.25 oz ae/a (3 to 5 fl oz/a Milestone)

Time Apply in spring or early summer to rosettes or bolting plants or in fall to seedlings and rosettes.

Remarks A nonionic surfactant at 1 to 2 quarts per 100 gal of spray enhances control under adverse environmental conditions.



Bull Thistle flower



Bull thistle seedling

Caution Do not allow drift to desirable vegetation. Many forbs (desirable broadleaf plants) can be seriously injured or killed. Do not exceed 7 fl oz/a Milestone per year.

Site of action Group 4: synthetic auxin

Chemical family Pyridine

chlorsulfuron (Telar)

Rate 0.75 oz ai/a (1 oz/a)

Time Apply to young, actively growing weeds.

Remarks Do not apply to frozen ground. Maintain constant agitation while mixing product with water. Add 0.25% by volume of nonionic surfactant to spray mixture.

Caution Avoid contact with sensitive crops. Do not treat powdery, dry soils and light, sandy soils if rain is not likely after treatment. Labeled for use on pasture, range, Conservation Reserve Program (CRP), and non-cropland only.

Site of action Group 2: acetolactate synthase (ALS) inhibitor

Chemical family Sulfonylurea

clopyralid + 2,4-D amine (Curtail)

Rate 1 to 5 quarts/a Curtail

Time Apply to actively growing thistle after most basal leaves emerge but before bud stage.

Remarks Lower rate for in-crop cereal grain application, higher rates for fallow, postharvest, and Conservation Reserve Program (CRP) applications. Consult label for specific directions. With CRP applications, for established grass only. For best results, wait at least 20 days after application before disturbing treated areas (cultivation, mowing, fertilization with shank-type applicators) to allow thorough translocation. Apply in enough total spray volume to ensure good coverage.

Caution See label for crop rotation restrictions before use. Several crops may be injured up to 4 years after application.

Site of action (both) Group 4: synthetic auxin

Chemical family (clopyralid) Pyridine; (2,4-D) Phenoxy acetic acid

clopyralid (Stinger or Transline)

Rate 0.09 to 0.375 lb ae/a (0.25 to 1 pint/a). Labeled rates vary with crops.

Time Up to the bud stage of thistles.

Remarks Best if applied to actively growing weeds. See labels for registered sites.

Caution Consult label for crop rotation restrictions before using these products. Several crops may be injured up to 4 years after application.

Site of action Group 4: synthetic auxin

Chemical family Pyridine

dicamba (Banvel, Rifle, or Clarity)

Rate 0.5 to 1 lb ae/a

Remarks Repeat applications for several years to control new seedlings.

Caution Dicamba residues may be in soil for 12 to 18 months after applying. Grass tolerates dicamba at these rates.

Site of action Group 4: synthetic auxin

Chemical family Benzoic acid

diflufenzopyr + dicamba (Overdrive)

Rate 0.175 to 0.35 lb ae/a (4 to 8 oz/a)

Time Apply to the rosettes.

Remarks Use higher rates on thistles that have bolted. Add a surfactant, either nonionic or methylated seed oil, to the spray mix.

Caution Avoid drift to sensitive crops. Will kill legumes.

Site of action (diflufenzopyr) Group 19: inhibits indole acetic acid transport; (dicamba) Group 4: synthetic auxin

Chemical family (diflufenzopyr) Semicarbazone; (dicamba) Benzoic acid

glyphosate + 2,4-D (Campaign)

Rate Broadcast: 16 to 32 fl oz/a. Spot treatment: 1 to 2% solution.

Time Apply to thistles in rosette stage of growth in spring or before freeze-up in fall.

Remarks This product is recommended for musk thistle control in rangeland, pasture, and non-croplands and for the control of those weeds listed on the product label.

Caution Do not graze lactating dairy animals on treated grass within 7 days after application. Animals being finished for slaughter and grazing in the treated area within 30 days of treatment must be removed from the treated area 3 days before slaughter. Do not cut forage for hay within 30 days of application. No grazing restriction if product is used for spot treatments in less than 10% of the total grazed area.

Site of action (glyphosate) Group 9: inhibits EPSP synthase; (2,4-D) Group 4: synthetic auxin

Chemical family (glyphosate) none generally accepted; (2,4-D) phenoxy acetic acid

metsulfuron (Escort and others)

Rate Escort: 0.6 oz ai/a (1 oz/a)

Time Apply postemergence to actively growing plants.

Remarks Using a nonionic or silicone surfactant increases effectiveness. Certain biotypes of musk and Scotch thistle are more sensitive than others to metsulfuron. Application sites differ between products; consult labels.

Caution Apply only to pasture, rangeland, and non-crop sites.

Site of action Group 2: acetolactate synthase (ALS) inhibitor

Chemical family Sulfonylurea

picloram (Tordon)

Rate 0.25 lb ae/a

Time Apply in the fall before thistle bolts.

Remarks Do not use on diversified cropland. Follow-up applications will be necessary to control new seedlings and escaped plants.

Caution Most formulations are restricted-use herbicides. Soil residuals may last over 1 years after a 0.25 lb ai/a application. Do not contaminate water. Potatoes, beans, and many other broadleaf crops are sensitive to picloram. Do not use in diversified cropping areas.

Site of action Group 4: synthetic auxin

Chemical family Pyridine

triclopyr + clopyralid (Quali-Pro 2,D Herbicide)

Rate 1.5 to 2 pints/a

Time Apply to actively growing thistle from rosette to early bolt stage.

Remarks Add a nonionic surfactant at surfactant manufacturer's recommended rate. Apply in at least 10 gal/a water by ground.

Caution Do not exceed 4 pints/a per year. Do not allow drift to desirable vegetation. Note label restrictions on overseeding or reseeding.

Site of action (both) Group 4: synthetic auxin

Chemical family (both) Pyridine

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Thistle, Canada (*Cirsium arvense*)-selective control in crops

2,4-D

Selective treatment in grain and grass crops

Rate 1 to 1.5 lb ae/a

Time Apply at the early bud stage of thistle. May require repeated applications.

Remarks Do not apply to grass or grain crops before tiller stage or from early boot to dough stage. The 1.5 lb/a rate can injure wheat.

Caution Avoid drift to sensitive crops.

Site of action Group 4: synthetic auxin

Chemical family Phenoxy acetic acid

2,4-D or MCPA + dicamba (Banvel, Rifle, or Clarity)

Rate 1 lb ae/a 2,4-D or MCPA and 0.125 lb ae/a dicamba

Time In wheat or barley, apply after crop begins tillering and before boot stage. May also be applied in stubble or fallow.

Remarks MCPA is usually more effective on Canada thistle. Results are best if applied to actively growing thistles.

Site of action (all) Group 4: synthetic auxin

Chemical family (2,4-D and MCPA) Phenoxy acetic acid; (dicamba) Benzoic acid

bentazon (Basagran)

Selective in corn, dry beans, peas, and mint

Rate 0.75 to 1 lb ai/a

Time When thistle is 6 to 8 inches tall. If needed, apply again in 10 to 14 days.

Remarks Light leaf speckling may occur, but crop plants generally outgrow this within 10 days. Canada thistle must be thoroughly covered. Use at least 20 gal/a of water and at least 40 psi by ground. For aerial application, use at least 5 gal/a of water and a maximum of 40 psi.

Caution Do not use near water. Avoid applying during drought or unseasonably cold weather. Expect unsatisfactory results if daytime temperatures do not reach at least 70°F during the week after applying.

Site of action Group 6: photosystem II inhibitor



Canada thistle



Canada thistle seedling

Chemical family Benzothiadiazole

chlorsulfuron (Glean)

Barley, oats, wheat

Remarks To suppress Canada thistle only. See sections in this handbook on barley, oats, and wheat for use instructions.

Site of action Group 2: acetolactate synthase (ALS) inhibitor

Chemical family Sulfonylurea

chlorsulfuron + metsulfuron (Finesse)

Barley and wheat

Remarks To suppress Canada thistle only. See sections in this handbook on barley and wheat for use instructions.

Site of action (both) Group 2: acetolactate synthase (ALS) inhibitor

Chemical family (both) sulfonylurea

clopyralid (Stinger)

Rate 0.09 to 0.5 lb ae/a (0.25 to 1.33 pints/a). Labeled rates vary by crop.

Time Apply to actively growing weeds. For Canada thistle, apply after most basal leaves emerge but before bud stage.

Remarks For most effective control, apply as a broadcast treatment to the entire infested area.

Caution Consult label for crop rotation restrictions before using these products. Several crops may be injured up to 4 years after application. Consult labels for registered use sites. Stinger is registered for use on field corn, sugar beets, Conservation Reserve Program (CRP), grass seed, rangeland, pasture, Christmas tree, small grains, and non-crop areas.

Site of action Group 4: synthetic auxin

Chemical family Pyridine

clopyralid + 2,4-D amine (Curtail)

Rate 1 to 2 quarts/a Curtail. Maximum rate depends on crop.

Time Apply 2.66 pints/a formulated product to wheat or barley after crop begins tillering and before boot stage. The 2-quart rate can be used in fallow and in grass seed crops. Canada thistle should be in the rosette to prebud growth stage.

Remarks Apply in warm weather when weeds are actively growing and soil moisture is adequate for active plant growth.

Caution Consult label for crop rotation restrictions before using product. Several crops may be injured up to 4 years after application. Do not permit dairy animals or meat animals being finished for slaughter to forage or graze treated grain fields within 1 weeks after treatment. Do not harvest hay from treated grain fields.

Site of action (both) Group 4: synthetic auxin

Chemical family Pyridine

clopyralid + 2,4-D amine (Curtail)

Rate 1 to 2 quarts/a Curtail. Maximum rate depends on crop.

Time Apply 2.66 pints/a formulated product to wheat or barley after crop begins tillering and before boot stage. The 2-quart rate can be used in fallow and in grass seed crops. Canada thistle should be in the rosette to prebud growth stage.

Remarks Apply in warm weather when weeds are actively growing and soil moisture is adequate for active plant growth.

Caution Consult label for crop rotation restrictions before using product. Several crops may be injured up to 4 years after application. Do not permit dairy animals or meat animals being finished for slaughter to forage or graze treated grain fields within 1 weeks after treatment. Do not harvest hay from treated grain fields.

Site of action (both) Group 4: synthetic auxin

Chemical family (clopyralid) pyridine; (2,4-D) phenoxy acetic acid

dichlobenil (Casoron)

Selective in trailing berries, fruit trees, grapes, and ornamentals

Rate 4 lb ai/a in berries; 4 to 6 lb ai/a in fruit trees and grapes

Time Apply in winter or spring before active growth of crops or thistle before a rainy period to allow for activation and to avoid volatilization.

Remarks Apply midwinter immediately before a cold rain to reduce volatility and enhance weed suppression. Weigh and distribute uniformly exact quantities over precisely measured areas. Oregon results over 9 years suggest that perennial weeds can be suppressed with 4-, 3-, and 2-lb ai/a rates applied during 3 consecutive years. Grazing livestock is prohibited. (Inhibits cellulose and cell wall formation.)

Site of action Group 20: inhibits cell wall synthesis Site A

Chemical family Nitrile

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Thistle, Italian (*Carduus pycnocephalus*), slenderflower (*Carduus tenuiflorus*), and plumeless (*Carduus acanthoides*)

clopyralid (Transline or Stinger)

Rate 0.125 to 0.25 lb ae/a (0.33 to 0.66 pint/a)

Time Apply to rosettes

Remarks Consult labels for specific site registrations.

Caution Product will injure or kill sensitive broadleaf forages. Consult label for crop rotation restrictions before using. Several crops may be injured several years after application.

Site of action Group 4: synthetic auxin

Chemical family Pyridine

MCPA amine

Rate 1.5 lb ae/a

Time When thistle is actively growing but before bolting. Thistle rosettes wider than 6 inches may be difficult to control.

Remarks Subclover smaller than two trifoliolate leaves may be severely injured by this treatment. Other formulations may injure clover more severely. Aerial applications often produce erratic results. Results are good from applications in October through early April, but thistles may be too dormant in midwinter in some years.

Caution Avoid drift to sensitive crops.

Site of action Group 4: synthetic auxin

Chemical family Phenoxy acetic acid



Italian thistle



Italian thistle

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Common name
Yellow flag iris

Scientific name
Iris psuedacorus

Information provided by Oregon Department of Agriculture – For full credits and information please click the following link: [Yellow flag profile \(oregon.gov\)](#)

Pacific Northwest Weed Management Handbook – For full credits and information please click the following link: [Iris, wild \(Iris spp.\) | Pacific Northwest Pest Management Handbooks \(pnwhandbooks.org\)](#)

“B” Rated Weeds

**A weed of economic importance which is regionally abundant,
but may have limited distribution in some counties**

Yellow flag iris
Iris psuedocorus

Other common names: pale-yellow iris

USDA symbol: IRPS
ODA rating: B



Introduction: Yellow flag iris is a popular ornamental in North America that is planted in natural and artificial wet areas within urban and rural landscapes. It is particularly popular as a large and colorful flowering element in ponds and has been planted in wastewater ponds where it is used to remove heavy metals. Unfortunately, *I. pseudacorus* commonly escapes from cultivation. The species has naturalized extensively and is currently distributed across the United States.

Distribution: Yellow flag can be found in every county of Oregon and is becoming problematic in most.

Description: Yellow flag is a very showy species growing 3-4 feet in height with the most vigorous growth attained in the wettest environments. The leaves are long, flattened and sword-like. Large plant clumps are formed from the lateral growth of rhizomes sometimes attaining 20 feet in width. Flowers are produced on erect plant stalks with multiple flowers produced on each. Fruit capsules are large, 3-angled and up to 4 inches in length. Disk-like seeds are shed from the capsules throughout the fall and winter. Floating mats of seed can be observed in backwaters and marshes aiding dispersal.

Impacts: An infestation of yellow flag iris presents a dual impact on both human interests and native environments. Irrigation canals and flood control ditches can be severely restricted by the physical nature of the plant clumps. Removal can be costly requiring large excavation equipment or herbicides. Control of heavily infested waterways can be cost prohibitive due to the huge volume of plant material needing to be removed. Any rhizome fragments that remain quickly reestablish a population. Invaded marshes in some eastern states are experiencing a significant displacement of native sedges and rushes with monocultures of iris. Many over-wintering waterfowl species are dependent on sedge and rush seeds as a high-energy food source. Replacement of this food source with yellow flag iris reduces the carrying capacity of these marshes to sustain waterfowl populations.

Biological controls: None have been identified.



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Photos by Glenn Miller, ODA

Iris, wild (*Iris* spp.)

2,4-D LV ester

Rate 5 lb ae 2,4-D in 100 gal water

Time Apply in the early bloom stage.

Remarks Foliage must be thoroughly wet.

Caution Avoid drift to sensitive crops.

Site of action Group 4: synthetic auxin

Chemical family Phenoxy acetic acid

glyphosate

Product labeled for aquatic sites

Rate 5% solution of a 4 lb ae (5.4 lb ai) glyphosate

Time Apply prebloom or in the fall.

Remarks Use a nonionic surfactant recommended for aquatic sites

Caution Glyphosate is nonselective and may injure or kill desirable species.

Site of action Group 9: inhibits EPSP synthase

Chemical family None generally accepted

imazapic (Plateau)

Rate 0.188 lb ae/a

Time Apply postemergence at the late boot or bloom stage.

Remarks Use a methylated seed oil at 1 quart/a; do not exceed 25 gal/a spray volume.

Caution Before using, note crop rotation restrictions.

Site of action Group 2: acetolactate synthase (ALS) inhibitor

Chemical family Imidazolinone

imazapyr (Habitat)

Rate 0.75% v/v product

Time Apply prebloom or in the fall.

Remarks Use a surfactant the label recommends.

Caution Before use, note rotation and other restrictions on label

Site of action Group 2: acetolactate synthase (ALS) inhibitor

Chemical family Imidazolinone

metsulfuron (Escort and others)

Rate Escort: 0.6 ai/a (1 oz/a)

Time Apply to actively growing plants.

Remarks Use a surfactant to increase effectiveness. Application sites differ among products; consult labels.

Caution Apply only to pasture, rangeland, and non-crop sites.

Site of action Group 2: acetolactate synthase (ALS) inhibitor

Chemical family Sulfonylurea

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Use pesticides safely!

- Wear protective clothing and safety devices as recommended on the label. Bathe or shower after each use.
- Read the pesticide label—even if you've used the pesticide before. Follow closely the instructions on the label (and any other directions you have).
- Be cautious when you apply pesticides. Know your legal responsibility as a pesticide applicator. You may be liable for injury or damage resulting from pesticide use.

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Common name
Yellow nutsedge (T)

Scientific name
Cyperus esculentus

Information provided by Oregon Department of Agriculture – For full credits and information please click the following link: [Yellow nutsedge profile \(oregon.gov\)](#)

Pacific Northwest Weed Management Handbook – For full credits and information please click the following link: [Nutsedge, yellow \(Cyperus esculentus\) and purple \(Cyperus rotundus\) | Pacific Northwest Pest Management Handbooks \(pnwhandbooks.org\)](#)

“B” Rated Weeds

A weed of economic importance which is regionally abundant,
but may have limited distribution in some counties

Yellow nutsedge
Cyperus esculentus

Other common names: nut grass

USDA symbol: CYES
ODA rating: B



Introduction: Yellow nutsedge is native to North America and Eurasia, but is found throughout the world. Although it is of subtropical origin, this species has spread north into temperate regions. Prior to 1950, it was found mostly in native habitats, but today it is considered one of the world's worst weeds. Yellow nutsedge is especially troublesome in the northcentral and northeastern U.S. (courtesy Ohio State Extension). It is common throughout Western Oregon, where it occurs naturally in marshes and along riverbanks, and as a weed in cultivated fields, turf and gardens.



Distribution: This species can be found in almost every state in the union. In Oregon it is most commonly found in Western Oregon Counties.

Description: Yellow nutsedge is an erect, grass-like perennial, characterized by its shiny yellowish green leaves, triangular stem, golden-brown flower head and shallow rhizomes (horizontal underground stems) that produce many nut-like tubers. Stems (1/3 to 3 feet tall) are erect, hairless, unbranched and triangular in cross-section. The leaves are light yellowish-green (4 to 12 inches long or longer, 1/8 to 1/2 inch wide) with a prominent mid-vein, a waxy surface and a gradually tapering, pointed tip. Young seedlings are often confused with grasses. This species reproduces primarily by tubers and less often by seeds. Rhizomes help to enlarge patches (courtesy Ohio State Extension).

Impacts: Yellow nutsedge can be a significant problem in vegetable crop production and other irrigated crops. It thrives in seasonally flooded sandy loam bottomlands where it can be introduced by floods. Often, loams sold in garden centers are contaminated with nutsedge turions that quickly establish and create persistent weed problems for homeowners. It can also be a problem in potted nursery stock.

Biological controls: None are available.



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Photos (left) Jack Kelly Clark.
(right) Joseph M. DiTomaso.

Nutsedge, yellow (*Cyperus esculentus*) and purple (*Cyperus rotundus*)

alachlor (Lasso or Micro-Tech)

Rate 1.5 to 4 lb ai/a

Time Use a preplant incorporation application.

Remarks Selective in corn and dry beans. Controls most annual grasses and certain annual broadleaf weeds. Absorbed mainly by germinating plant shoots; seems to inhibit protein synthesis.

Caution A restricted-use herbicide. Avoid contact with the eyes and skin.

Site of action Group 15: inhibits very long chain fatty acid synthesis

Chemical family Chloroacetamide

dichlobenil (Casoron)

Rate 150 lb/a of 4% granules

Time Apply in winter just before a period of rain, or in spring just before applying bark mulch in landscape plantings.

Remarks Incorporate by rototilling or rain. Selective in some fruits and ornamentals (see label). Apply midwinter immediately before a cold rain to reduce volatility and enhance weed suppression. Weigh and distribute uniformly exact quantities over precisely measured areas. Oregon results from over 9 years suggest perennial weeds can be suppressed with 4-, 3- and 2-lb ai/a rates applied in 3 consecutive years. Grazing livestock is prohibited. In non-crop-land areas only, up to 250 to 500 lb of 4% granules can be used for nutsedge control. Inhibits cellulose and cell wall formation.

Caution Do not breathe dust or allow contact with eyes or skin.

Site of action Group 20: inhibits cell wall synthesis Site A

Chemical family Nitrile

EPTC (Eptam)

Rate 3 to 6 lb ai/a

Time Apply before final seedbed preparation in the spring.

Remarks Incorporate immediately by disking in two directions, or rototill to distribute 2 to 3 inches deep. Apply only to soil dry on the surface, then disk immediately. Use before planting beans and potatoes. Treatment suppresses nutsedge for one season only.

Caution Incorporate 2 to 3 inches into soil immediately after application.

Site of action Group 8: lipid synthesis inhibitor but not an ACCase inhibitor

Chemical family Thiocarbamate

EPTC with safener (Eradicane or Genate) or butylate with safener (Sutan)

Rate 4 to 6.14 lb ai/a, depending on soil type and infestation; see label.

Time Apply preplant and incorporate immediately and thoroughly.

Remarks These herbicides are selective in corn. Perennial weeds must be turned under and chopped up thoroughly before treatment. See label for additional application and incorporation instructions. Suppresses emergence of new shoots from yellow nutsedge tubers but does not necessarily kill them.

Caution Do not use EPTC without safener on "Golden Jubilee" sweet corn west of the Cascades. Do not exceed 4 lb ai/a EPTC with safener on sweet corn.

Site of action (both) Group 8: lipid synthesis inhibitor but not an ACCase inhibitor



Yellow nutsedge



Yellow nutsedge

Chemical family Thiocarbamate

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Site of action (both) Group 8: lipid synthesis inhibitor but not an ACCase inhibitor

Chemical family (both) Thiocarbamate

glyphosate

Rate 2.25 lb ae/a as a broadcast spray, or a 1% solution using hand-held equipment

Time When nutsedge is actively growing in midseason but before new tubers begin to form, usually by June 15 to July 1.

Remarks Nutsedge can be reduced by encouraging active growth and applying glyphosate once or more often when several nutsedge leaves are present but before new tubers begin to form.

Caution Re-treatment is important. Glyphosate controls grasses as well as other vegetation in the treated area.

Site of action Group 9: inhibits EPSP synthase

Chemical family None generally accepted

halosulfuron (Permit, Sandea, or SedgeHammer)

Rate 0.5 to 1 oz ai/a (0.67 to 1.33 oz/a)

Time Labels differ. For example, apply SedgeHammer to yellow nutsedge in the three- to five-leaf stage. Apply SedgeHammer in turf to yellow nutsedge in the three- to eight-leaf stage of growth.

Remarks Halosulfuron is labeled on several crops. Consult labels for stage of crop or turf growth. Add 1 to 2 quarts nonionic surfactant or crop oil concentrate per 100 gal spray solution for broadcast applications. A second halosulfuron application may be required 6 to 10 weeks after the first.

Caution Do not exceed 1.5 oz ai/a (2 oz/a) of Permit or Sandea or two applications per season. Do not exceed 0.4 oz ai/a (5.33 oz/a) of SedgeHammer or four applications per season. Note labels for information on recropping, reseeding, and site of application.

Site of action Group 2: acetolactate synthase (ALS) inhibitor

Chemical family Sulfonylurea

imazapic (Plateau)

Rate 0.125 to 0.188 lb ai/a

Time Apply postemergence when plants have bolted.

Remarks Add 1 quart/a methylated seed oil; do not exceed 25 gal/a spray volume.

Caution Before using, note crop rotation restrictions.

Site of action Group 2: acetolactate synthase (ALS) inhibitor

Chemical family Imidazolinone

S-metolachlor (Dual II Magnum or Dual Magnum)

Rate Refer to label

Time Use preplant incorporated.

Remarks Incorporate uniformly to 2 inches before planting. Use lower rates on coarse soils.

Caution May cause skin sensitization reactions in some people. Do not breathe spray mist.

Site of action Group 15: inhibits very long chain fatty acid synthesis

Chemical family Chloroacetamide

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