

# Noxious Weeds That Harm Washington State

## Eastern Washington Field Guide



Washington State Noxious Weed Control Board

[www.nwcb.wa.gov](http://www.nwcb.wa.gov)

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## What is a noxious weed?

Noxious weed is the legal term for invasive plants in Washington that are so aggressive they harm our local ecosystems or disrupt agricultural production. These plants crowd out the native species that fish and wildlife depend on. They also cost farmers millions of dollars in control efforts and lost production. Noxious weeds are both terrestrial and aquatic and include non-native, invasive plants, shrubs, and trees that grow both on land and in wetlands, lakes, shorelines and streams.

## How do noxious weeds spread?

Many of the noxious weeds in Washington are escapees from gardens, and that explains why



Sue Winterowd, SCNWCB

so many of them are quite beautiful. Others came to Washington as stowaways on ships, as seed contaminants, or on the wheels or shoes of travelers. The more people travel – and the more globally connected our world becomes – the more we

spread seeds and plant fragments from place to place.

## Why are there laws about noxious weeds?

Weed laws establish all property owners' responsibility for helping to prevent and control the spread of noxious weeds. Since plants grow

without regard to property lines or political jurisdictions, everyone's cooperation is needed to combat them. City gardeners, farmers, public land owners, foresters, and ranchers all have a role to play in this effort.

Washington's first noxious weed law was passed in 1881 to combat the spread of invasive plants that threatened farmers' fields. For many decades, the agricultural community led efforts to combat the spread of invasive plants. More recently, people have recognized the harm invasive plants cause to native ecosystems and wildlife. For instance, when spotted knapweed spreads in mountain meadows, it can reduce 90% of the native plants elk eat.

Washington's state weed law (RCW 17.10) established the State Noxious Weed Control Board, and authorized counties to establish County Noxious Weed Control Boards. Many County Noxious Weed Control Boards are financed with a small assessment.

### **What are the three classes of noxious weeds?**

**Class A noxious weeds** are very limited in their distribution and it is the goal of state and local weed boards to completely eradicate them before they get a foothold in Washington. There are many success stories in the early detection and eradication of Class A weeds. For instance, kudzu – a notoriously invasive plant in the South – was found in Clark County. Kudzu was listed as a Class A invader and eradicated. So far, it has not turned

up anywhere else in our state.

Class A noxious weeds are the ones you are least likely to see – but the ones that are most important to report. If you see a plant you think might be a Class A noxious weed, please report it to your County Weed Board or to the State Noxious Weed Control Board. Note the exact location, and if possible, take pictures.

**Class B noxious weeds** are abundant in some areas of the state, but absent or uncommon in others. The goal for Class B weeds is to contain and reduce their occurrence where they are widespread, and to prevent them from spreading to other areas of the state where they are less common. In areas where Class B weeds are uncommon or absent, control may be required to prevent their establishment.

**Class C noxious weeds** are often already widespread in Washington or are of special interest to the state's agriculture industry. In some cases, county weed boards may require their control, but more often control is not required and the focus is on educating residents about why controlling them is a good idea and providing management advice.

### **Make a plan**

Develop a long-term, integrated pest management plan (IPM), which will often use a combination of control methods, to manage noxious weeds on your property and prevent new

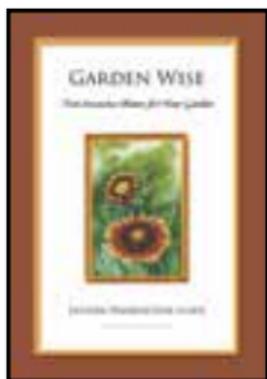
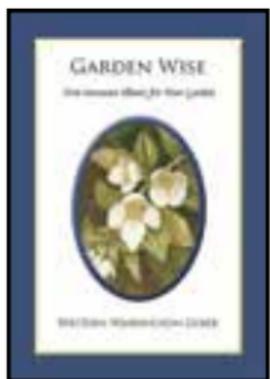
weeds from establishing. These control methods may include manual and cultural methods, biological control, and herbicides. See the recommendations listed in this book and contact your county weed board for more information.

### **It's more than just controlling weeds**

Solely focusing on the control of noxious weeds may not allow you to reach your landscape goals. Developing and managing healthy plant communities that contain a diversity of native and non-invasive plants will help your landscape resist weed invasions, while meeting other land-use goals. Select plants that are best adapted to your local site conditions, making sure to include plants that will support pollinators from spring to fall.

For a complete list of Washington State noxious weeds and additional information go to:

[www.nwcb.wa.gov](http://www.nwcb.wa.gov) or call 360-725-5764.



## How can you help prevent and control invasive noxious weeds?

- Be careful what you plant. Many noxious weeds are escapees from gardens, ask questions before you buy plants or seeds. The State Noxious Weed Control Board can send you a publication (also available online at [www.nwcb.wa.gov](http://www.nwcb.wa.gov)) called Garden Wise that lists alternatives to common garden plants known to be invasive.
- Prevent the spread of noxious weeds when traveling. Seeds ride along in wheels, stick to your shoes, boots, clothing and pets. Take care not to take invasive plant seeds with you when you go hiking.
- Clean your boat thoroughly between trips. Aquatic invaders are spread by even the smallest plant fragments.
- Do your part to control or eradicate invasive plants on your property. If you need help or advice, contact your County Weed Board.
- Volunteer to participate in weed pulls and native plant restoration projects. Many organizations sponsor these events.

# common reed

## *Phragmites australis*

**Identification:** Common reed is a large perennial grass with woody, hollow stems up to 12 feet tall. The lance-shaped leaves are up to 16 inches long and 1.5 inches wide and will often twist to one side in the wind. The flowerheads are dense, silky, brownish-purple plumes that can reach 16 inches long. Bloom time is July to October. Common reed has an extensive, creeping rhizome network.

**Impact:** This robust grass species forms dense colonies in both freshwater and saline wetlands and ditches. These stands alter hydrology, displace native vegetation, and degrade valuable wetland habitat.

**Control:** Since rhizomes can produce new plants, care must be taken to prevent dispersal. Mowing, when timed correctly, can reduce populations. For large infestations, selective aquatic herbicides can be effective, with late-summer through fall applications appearing to be most effective.



King County NWCB



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King County NWCB

# medusahead and ventenata

## *Taeniatherum caput-medusae* and *Ventenata dubia*

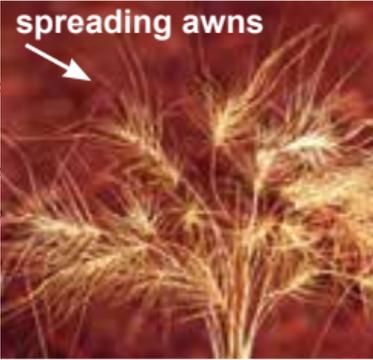
**Identification:** Both species are invasive, winter annual grasses. **Medusahead** can grow up to 2 feet tall. Inflorescences are a dense spike with long awns that can be somewhat twisting, and are covered in small barbs. As the spike matures, the awns dry and turn tan, and may twist and spread. Medusahead matures later than many other annual grasses, so it can often be recognized by its green color when other grasses have turned brown. **Ventenata** is basally branched and tufted, with purplish-black nodes, rolled or folded leaves and membranous ligules. Its inflorescence is open, pyramidal in shape, blooms June-July, with spikelets comprised of typically 3 florets (small flowers). The awns of some florets are bent and twisted.

**Impact:** Both invasive grasses invade rangeland and cropland, reducing desired forage plants, crops and native species. Both species contain silica, making ventenata a poor forage plant and slowing medusahead's decomposition, resulting in the formation of a thatch layer that results in lower germination of other species and increased fire fuel and fire frequency.

**Control:** These grasses are difficult to control and an integrated management plan is needed for effective control and to promote healthy native and non-invasive plant communities. It's important to prevent spread to new locations - make sure to clean seeds from equipment and clothing. Detailed control information has been developed for various site conditions. Contact your county weed board, conservation district or WSU Extension office for more information.

# medusahead

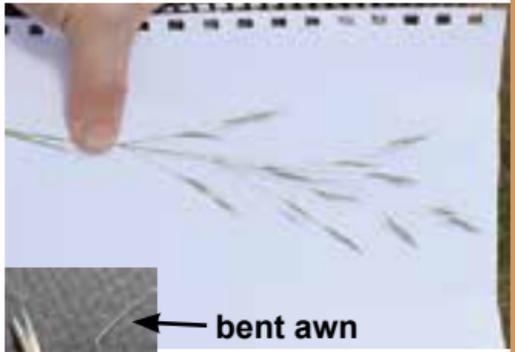
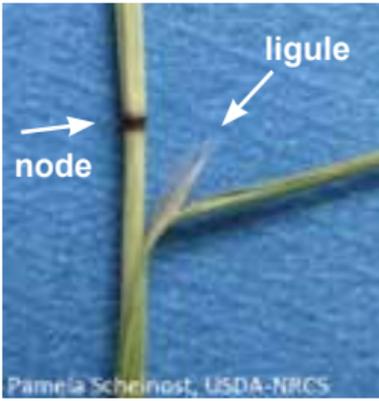
top photos by Steve Dewey, Utah State University, Bugwood.org



John M. Randall, The Nature Conservancy, Bugwood.org



# ventenata



lower 3 images: Matt Leavin, Bozeman Montana, CC BY-SA 2.0, Wikimedia Commons

# Ravenna grass

## *Saccharum ravennae*

**Identification:** Ravenna grass is a large clumping perennial grass that forms flower stems up to 14 ft. Leaves growing from the base of the stems are long and narrow, 3 to 4 feet long by 1/2 to 1 inch wide. Basal clumps of leaves can be 4 to 5 feet across. Leaves have a white midvein and the base of upper side of the blade is densely covered with long fuzzy tawny hairs. Leaves on the flowering stems are shorter and occur all the way up the stems to the base of the inflorescence. Plumes are 10 to 24 inches long and appear in late summer to early autumn. The stems are often tinted red in late summer. The plumes bloom purplish-bronze, then turn to silver-gray and persist well into winter.

**Impact:** Ravenna grass's large basal clumps of leaves crowd out native and desirable plant species. In Washington, seeds of Ravenna grass are spreading from ornamental plantings and can successfully germinate in a wide range of habitats, including ditches, marshes, wetlands, and riparian areas, tolerating a wide range of conditions.

**Control:** Leaf hairs can be mildly irritating so make sure to wear gloves when handling the plants. Seedlings and small plants can be hand dug out of the ground. Large plants can be dug out but may be difficult. It is important to remove the roots to prevent resprouting. Cut, bag and remove plumes to prevent seed developing on site. Check with your county noxious weed board for herbicide recommendations.



Class B Noxious Weed

# kochia

## *Bassia scoparia* (*Kochia scoparia*)

**Identification:** Kochia is a branching annual that grows up to 5 feet tall. Stems can be red-tinged later in the summer. Its leaves are narrow with hairy edges and undersides. Tiny flowers bloom along the stems in clusters at leaf bases, producing thousands of seeds per plant. Old plants can spread seed by breaking at the base and tumbling around.

**Impact:** Kochia is a crop pest and can reduce yields as it competes with desirable plants for resources. Kochia spreads readily through its high seed production and establishes in pastures, rangelands, roadsides, ditch banks and other disturbed areas.

**Control:** Pull or till plants prior to seed production. Establish desirable plants to provide competition. Several herbicides can be effective; treatment of young seedlings is often more effective. Rotating herbicides may be needed to avoid the development of herbicide resistance.

Leslie J. Mehrhoff, U of Connecticut, Bugwood.org



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# leafy & myrtle spurge

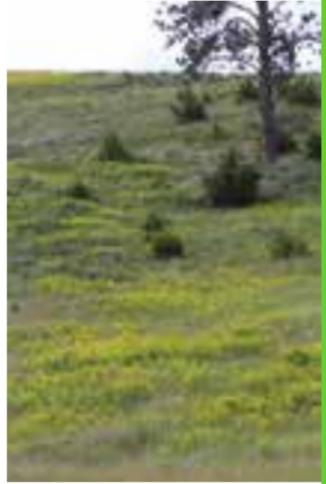
## *Euphorbia esula* and *E. myrsinites*

**Identification:** **Leafy spurge** is a perennial, typically 1-3 feet tall, with a single stem that branches near the top of the plant. Leaves are narrow and about 3 inches long. Flowers are inconspicuous, but flower bracts are yellow-green and heart-shaped. **Myrtle spurge**, is a low-growing, sprawling plant that is only 4-6 inches tall but can grow 18 inches long. Fleshy leaves are arranged in a spiral pattern around the stem. Both species are bluish-green and contain a toxic, milky sap

**Impact:** Both spurge species are escaped ornamentals that can invade and quickly overwhelm native plants in dry rangelands. Leafy spurge is more widespread and damaging than myrtle spurge. **The latex sap of both plants can cause severe blistering and temporary blindness if it comes in contact with the eye.**

**Control:** For small infestations, hand-pull or dig up plants. Wear gloves. Selective herbicides can provide control but re-treatment may be necessary. Goats and sheep will eat leafy spurge, and there are several effective biocontrol insects. A combination of control strategies is best.

## leafy spurge



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## myrtle spurge



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# tree of heaven

## *Ailanthus altissima*

**Identification:** Tree of heaven is a tall, deciduous tree with smooth bark. Leaves made up of many leaflets (each leaflet looks like one leaf), commonly 10 to 27, having 1 to 3 small, round glands at the base. The leaves have a strong peanut-butter or popcorn-like smell when crushed. Trees have either male or female flowers that are small and yellowish green. Female flowers develop a single seed in the middle of a pink to tan papery wing that can be slightly twisted.

**Impact:** Tree of heaven reproduces by seed, as well as by root and stump sprouts, forming dense stands that can outcompete native vegetation. It grows in riparian areas, open woodlands, disturbed sites and spreads from plantings. Plants can also produce allelopathic chemicals which have inhibitory or toxic effects on neighboring plants. Roots can also damage structures.

**Control:** Plants can be difficult to control when established - try to control in seedling stage. Monitoring and controlling seedlings and sprouts will be needed multiple times a year. Seedlings and small plants can be hand pulled, making sure to remove all the roots. Establishing a dense groundcover layer or canopy can shade out and discourage seedling establishment. A number of herbicide treatment methods are successful, including cut stump treatments (cutting stems and applying herbicide to fresh cut), foliar sprays and basal bark application.



Class C Noxious Weeds

# orange hawkweed

## *Hieracium aurantiacum*

**Identification:** Orange hawkweed is a perennial with fibrous roots and rhizomes and can also develop stolons. Orange hawkweed can easily be identified by its bright orange flower clusters on the end of long, leafless stems up to 2 feet tall. Each dandelion-like flower is about 1 inch across. Leaves are long and taper to a point and grow primarily from the base of the plant. The stems, leaves, and flower buds are covered with small, bristly hairs. Stems exude a milky sap when broken.

**Impact:** Like other non-native, invasive hawkweeds, orange hawkweed is an aggressive competitor that overwhelms pasture and rangeland plant species, and reduces forage for livestock and wildlife. Infestations can become extremely dense, with the basal leaves forming a thick carpet.

**Control:** For small, scattered patches, the simplest control is to hand-pull or dig up and dispose of plants and roots. Selective herbicide control can be effective on large, well-established infestations.



Fran Lucero



Fran Lucero



Class B Noxious Weed

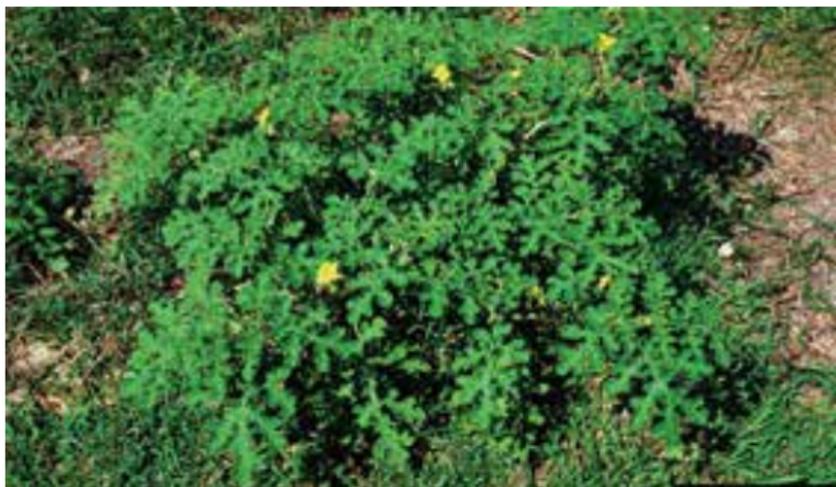
# buffalobur

## *Solanum rostratum*

**Identification:** A member of the tomato family, buffalobur is an annual plant that reaches a height between ½ to 2 feet. The entire plant is covered with straight, yellow spines. The leaves are alternate and irregularly divided into 5-7 lobes. Flowers in clusters (racemes) of 3 to 15. The flowers are yellow, have 5 lobes, are flat and circular, about 1 inch in diameter. Fruits look like a spiny bur.

**Impact:** Buffalobur is native to the Midwest, where it is highly aggressive and invasive in pastures and dry rangeland. It is also a host for the destructive Colorado beetle. Seeds of this plant often contaminate other seed crops, and so buffalobur plants occasionally appear beneath bird feeders and in gardens. Although it only appears occasionally in Washington, controlling it is important to prevent it from becoming widespread.

**Control:** Isolated plants or small infestations can be controlled by hoeing or digging them out. Be certain to wear gloves. Selective herbicides can also be effective.



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Class C Noxious Weed

# Dalmatian & yellow toadflax

## *Linaria dalmatica* & *L. vulgaris*

**Identification:** **Dalmatian toadflax** is a showy perennial that ranges from 2-4 feet tall. The light green leaves are waxy, heart-shaped and clasp the stem. **Yellow toadflax** ranges from 2-3 feet tall. It has soft, long, narrow, pale green leaves that also clasp the stem. Both species have bright yellow flowers resembling those of snapdragons, with an orange or purplish throat and long spur. Both species form cylindrical capsules filled with many small seeds.

**Impact:** Both species are highly competitive, have extensive root systems and are prolific seed producers. A mature Dalmatian toadflax may produce up to 500,000 seeds that can remain viable for 10 years. They spread along roadsides and colonize pastures, rangeland, and natural areas, where they displace native and desirable species.

**Control:** Both species are difficult to control. Hand-pulling can be effective on small infestations and can provide eradication if done consistently for 5-6 years. Selective herbicides can also provide control if applied in the spring or fall. Biocontrol agents can provide considerable control on large infestations.

## Dalmatian toadflax - Class B noxious weed



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## yellow toadflax - Class C noxious weed



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# puncturevine

## *Tribulus terrestris*

**Description:** Puncturevine, also known as goathead, is a low-growing annual that grows from a central taproot and sprawls along the ground. Leaves are oppositely arranged on the stems and are divided into oval-shaped leaflets. Flowers are small, 5-petaled, and yellow. The fruit is a distinctive woody bur with very sharp, rigid spines resembling a goat head.

**Impact:** The spines of the fruit are so sharp and rigid they puncture bicycle tires and shoe soles. Because it grows along roadsides, it is the bane of bicyclists. Puncturevine is inedible to livestock, and the spines can injure the mouths, stomach, and intestines of grazing animals.

**Control:** When working in puncturevine infestations, make sure to clean shoes, clothing and tires to prevent spreading seeds to other areas. Hand-pulling can provide good control if done prior to seed formation. If done after seed set, pick up any loose seeds (wear gloves!) to prevent re-infestation. Shallow tilling can also be used in the spring to control the plant prior to flower and seed development. Selective herbicides can provide effective control. Biocontrols are also available. After puncturevine control, plant areas with site appropriate plants to provide competition and reduce further puncturevine invasion.



Rich Old, [www.xidservices.com](http://www.xidservices.com)



# rush skeletonweed

## *Chondrilla juncea*

**Description:** Rush skeletonweed is a perennial that can grow up to 4 feet tall and has a taproot that can grow 7 feet deep. Nearly all leaves are basal and green in the spring but die as the stem starts to grow. Each rosette produces a single stem with coarse, downward-pointing brown hairs at the base and numerous branches above. Flowers are small and yellow and are followed by dandelion-like puffballs.

**Impact:** Rush skeletonweed is highly invasive in both rangeland and cropland. It spreads along roadsides and once it establishes in croplands, it is spread through cultivation. It outcompetes beneficial or crop plants, and the latex sap gums up harvesting machinery.

**Control:** Hand-pulling or tilling is not recommended because root fragments can increase the infestation size. Selective herbicides can provide control, and biocontrols (a mite, a midge, and a rust that attack this plant) are available and can provide effective control on large infestations.



Class B Noxious Weed

# sulfur cinquefoil

## *Potentilla recta*

**Identification:** Sulfur cinquefoil is a perennial plant up to 3 feet tall. Palm-shaped leaves have 5-7 leaflets that are covered in stiff hairs on both the upper and lower surfaces and are finely toothed. The flowers are pale yellow with 5 heart-shaped petals. Native cinquefoil species also occur in Washington, check with your local county weed board for identification assistance.

**Impact:** Sulfur cinquefoil can form dense stands that displace native and beneficial plants and grasses. Because this species is not palatable to livestock and wildlife, infestations can significantly reduce the forage value of rangelands and pastures.

**Control:** For small, scattered patches, the simplest control is to hand-pull or dig up and dispose of plants and roots. Selective herbicides provide fair control of large, well-established infestations, but treatments are more effective when combined with other control techniques, such as planting competitive grasses.



Rich Old, www.xidservices.com

Class B Noxious Weed

# yellow and Malta starthistle

## *Centaurea solstitialis* and *C. melitensis*

**Identification:** **Yellow starthistle** is a winter annual or biennial that grows up to 3 feet tall. Young plants start as a basal rosette with lobed leaves that resemble dandelion leaves. Stem leaves are narrow, and both leaves and stem are covered with fine, woolly hairs giving the plant a grayish tinge. The knapweed-like yellow flowers have, yellowish spines at the base, up to ~1 inch. Similar in appearance and lifecycle to yellow starthistle, the spines at the base of **Malta starthistle's** flowers are often purplish to brownish, up to ~1/2 inch long.

**Impact:** Yellow starthistle is an aggressive invader that can colonize nearly all semi-arid rangeland, where it rapidly displaces native vegetation and desirable forage. It causes chewing disease in horses, which is fatal. It is also a contaminant in seed alfalfa, clover, hay, and straw. The distribution of Malta starthistle is unknown in eastern WA, please contact your local county noxious weed board if you find it.

**Control:** The same control methods can be used on both species. Small infestations can be hand-pulled, especially when the plants are young. Selective herbicides are available that can provide effective control for larger infestations. Biocontrols (insects that attack specific plant species) are available for only yellow starthistle and can help control large infestations by reducing viable seed production.



Bud Harwick



Stevens County NWCB



Marty Hudson, Klickitat County NWCB

# non-native yellow hawkweeds

## *Hieracium* species

**Identification:** Yellow hawkweeds are a complex of herbaceous perennials that can look similar. Dandelion-like flowerheads are made of yellow flowers and grow in clusters at the top of a stem that exudes a milky white sap when broken. Different types of hairs on the plants can help identify particular species. Also, some species have leafy stolons (above ground stems) that grow along the ground and create mats. Hawkweeds can have leaves at the base of the plant and/or stem leaves. Leaves may have smooth or toothed edges. Some native hawkweeds have yellow flowers, check with your county weed board if you need help with identification.

**Impact:** Yellow hawkweeds reproduce by seed, stolons and/or rhizomes and are aggressive competitors in mountain meadows, rangelands, and may even invade cultivated fields. They are unpalatable and crowd out more desirable forage. There are several non-native yellow-flowered hawkweed species and they are grouped by two subgenera on the noxious weed list as Class B noxious weeds. Learn more about them at [www.nwcb.wa.gov](http://www.nwcb.wa.gov).

**Control:** Small infestations may be hand-pulled or dug out, but the entire plant must be removed since it can resprout. For larger infestations, selective herbicides can be effective. Re-vegetation of the site may be needed for long-term control.



King County NWCB



Rich Old, [www.xidservices.com](http://www.xidservices.com)

# hoary cress & hairy whitetop

## *Lepidium draba* (*Cardaria draba*) & *Lepidium appelianum* (*C. pubescens*)

**Identification:** Hoary cress is a perennial that grows to 3 feet tall. Leaves are grayish-green and shaped like arrowheads. It forms dense flower clusters of tiny 4-petaled, white flowers. Fruits are 1/8-inch wide hollow globes, not covered in fuzzy hairs. Hairy whitetop is a deep-rooted perennial that reaches about 1.5 feet tall. It is similar in appearance but its fruits are even rounder and covered with fuzzy hairs.

**Impact:** While both species are prolific seed producers, they spread more aggressively by their extensive root networks. In moist or irrigated areas, they can form dense stands that outcompete native plants and are a threat to wheat and other crops.

**Control:** Intensive tilling, repeated regularly for 3-4 years, can provide control by killing the roots. Selective herbicides can also be effective. Repeated grazing by sheep or goats can prevent plants from going to seed. Caution should be taken to prevent new infestations when moving tillage equipment to new sites by removing any root fragments.

## hoary cress

Rich Old, www.xidservices.com



Klickitat County NWCB

Montana Noxious Weed Awareness  
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## hairy whitetop

Rich Old, www.xidservices.com



# hoary alyssum

## *Berteroa incana*

**Identification:** Hoary alyssum is an annual or short-lived perennial that grows 1 to 3.5 feet tall, and is covered in small hairs, giving it a silver-gray color. Leaves at the base of plants are oblong in shape, being wider toward the tips. Stem leaves are alternately arranged and decrease in size up the stem. Flower clusters bloom from the bottom up. Each flower is on a short stalk and has 4 petals with a deep cleft down the middle, giving the appearance of 8 petals. Seeds are in semi-inflated pods. Pods are rounded and 1/4 inch long.

**Impact:** Hoary alyssum is a growing problem in the northeastern part of the state. It spreads incredibly fast by seed and can outcompete native or beneficial plants, especially when the habitat is stressed. This plant is poisonous to horses, whether green or dried plant parts. Make sure not to produce hay from fields containing hoary alyssum.

**Control:** Hand-pulling can be effective on smaller infestations if done for a period of years. Selective herbicides can provide control when applied before seed set. As with all noxious weed control, bare ground should be replanted with desirable species. Well-maintained pastures provide suppression of hoary alyssum through competition.



Sue Winterowd, Stevens County NWCB



Class B Noxious Weed

# knotweeds

*Polygonum sachalinense*, *P. cuspidatum*, and *P. x bohemicum*, also placed in the genus *Fallopia* or *Reynoutria*. Himalayan knotweed is known by names that include *Polygonum polystachyum*, *Persicaria wallichii* and *Koenigia polystachya*.

**Identification:** The four knotweed species - giant, Japanese, Bohemian, and Himalayan - are tall, shrub-like, perennial, herbaceous plants. Stems often grow to over 10 feet tall and are segmented and hollow, resembling bamboo. Knotweeds form dense colonies that sprout in April, and bear clusters of small white flowers in late summer. Each species produces differently shaped leaves, ranging from heart-shaped to arrow-shaped to long and slender.

**Impact:** The knotweeds' greatest impact is along streams and in riparian areas where they can completely displace native vegetation, erode stream banks, and change the nutrient cycle at the expense of salmon and other animals. Knotweed roots can grow so vigorously that they erupt through blacktop and damage foundations and other infrastructure.

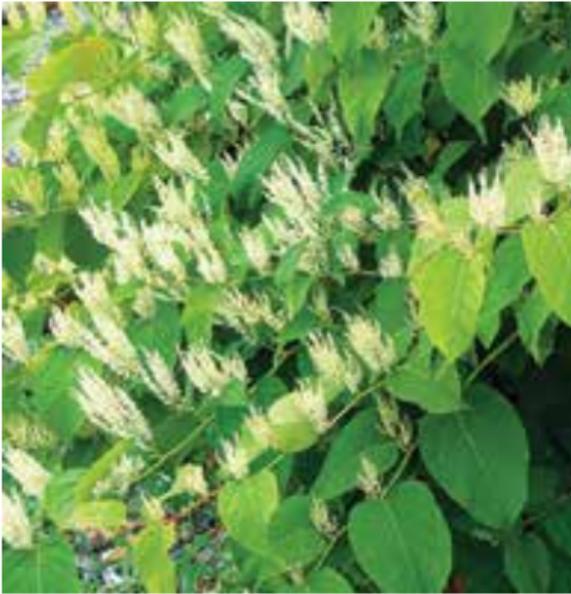
**Control:** Knotweed's extensive roots and vigorous growth makes it extremely difficult to control. Although small patches can be dug up, it may take several years to eradicate, and most stands require repeated applications of herbicide over several years. County noxious weed control boards can provide advice and assistance.



Skamania County NWCB



Tim Miller, WSU-NWREC



Island County NWCB



# perennial pepperweed

## *Lepidium latifolium*

**Identification:** This hairless perennial in the mustard family develops stems from a woody base, growing on average to 3 feet tall, but sometimes taller. Its leaves are waxy, alternately arranged on the stem, and can have a prominent whitish midvein. Flowers have 4 white petals and form dense clusters at the branch tips. From a distance, they have a fluffy, cloud-like appearance. Flowers develop tiny seed pods.

**Impact:** Plants form dense infestations that can turn into monocultures, outcompeting native and desirable plants. Accumulations of its semi-woody stems degrade nesting habitat for wildlife. Perennial pepperweed rapidly spreads by seeds, rhizomes, and root fragments.

**Control:** Small infestations may be hand-pulled or dug, roots and root fragments must be removed to prevent resprouting. Avoid methods that may cut off the roots and spread plants such as tilling. Plants can be grazed, typically when young. Some selective herbicides work well, especially when paired with mowing - mow plants when bolting or when flower buds are present, then treat new growth when it has developed flower buds. Plant desirable native and/or non-invasive species to provide competition and help prevent reestablishment.



# poison hemlock

## *Conium maculatum*

**Identification:** This biennial member of the parsley family can grow up to 8 feet tall. Small, white, 5-petaled flowers grow in 4-inch clusters on stalks that radiate out like umbrella spokes. Leaves are dark glossy green and fernlike. The stem is smooth and hollow with distinctive purple splotches. Crushed leaves also have a unique musty odor.

**Impact:** All parts of the plant are extremely toxic to humans and livestock. Accidental human poisonings have occurred when the plants were mistaken for parsley, parsnip, or wild carrot. It also causes livestock deaths. Poison hemlock easily colonizes roadsides, vacant urban lots, pastures, and waterways.

**Control:** Always wear gloves when handling this poisonous plant. Small infestations can be dug up, making sure to remove the entire taproot. Selective herbicides are effective on this noxious weed. Monitor for and treat areas for seedlings and resprouts. Plant grasses and other desirable vegetation to help prevent further weed establishment at the site. Because poison hemlock foliage remains toxic after drying, it is critical to dispose of it in the trash.



# white bryony

*Bryonia alba*

**Identification:** White bryony is a perennial herbaceous vine with climbing stems. The roots are large, thick, and light yellow. Its leaves have 3-5 lobes and look similar to that of a cucumber plant. Long, curling tendrils grow from where leaves attach to the stem. The greenish-white flowers are around a half inch across and are either male or female. Green berries mature to purple-black, each containing 3-6 seeds. **All parts of the plant are toxic.**

**Impact:** White bryony's vigorous growth forms dense mats that degrade wildlife habitat and outcompete native plants it is growing upon. It is commonly spread by birds and invades riparian areas and disturbed habitats.

**Control:** Wear protective clothing when controlling white bryony. Carefully digging up the roots can provide effective control. Foliar herbicides are difficult to selectively apply to this twining weed, although cut-stem treatments may give effective control while improving selectivity. Monitor locations for resprouts and seedlings.

Robin Kusske FCNWCB



Robin Kusske FCNWCB



Vic Reeve FCNWCB



Robin Kusske FCNWCB



Class B Noxious Weed

## annual & common bugloss, blueweed

*Anchusa arvensis* (*Lycopsis arvensis*),  
*Echium vulgare*, & *Anchusa officinalis*

**Identification:** All three species are covered in stiff, bristly hairs and have small, funnel-shaped flowers that grow close together in coiled stalks that unfold as the flowers open. **Annual bugloss** is between 4-12 inches tall with lance-shaped, alternate, wavy-edged leaves and sky-blue, curved flowers about ¼-inch long. **Blueweed** is a biennial between 1-3 feet tall with broader-tipped leaves and showy, bright blue flowers up to ¾-inch long. **Common bugloss** is a perennial between 1-2 feet tall with lance-shaped alternate leaves and purplish-blue flowers about ¾-inch long.

**Impact:** These invasive borages are highly competitive and spread through pastures, rangelands, and alfalfa fields. They outcompete native and desirable plants and are unpalatable to livestock and wildlife.

**Control:** Hand-pulling or digging can be effective for small infestations, but be sure to remove the deep taproots of common bugloss and blueweed. Selective herbicides can also be effective for larger infestations.

## annual bugloss



Rich Old, [www.xidservices.com](http://www.xidservices.com)

## blueweed

Rob Routledge, Sault College, Bugwood.org



Fran Lucero



Sue Winterowd

## common bugloss



Sue Winterowd



Sue Winterowd



Fran Lucero

# indigobush

## *Amorpha fruticosa*

**Identification:** Indigobush is a shrubby plant or small shrubby tree that can grow over 12 feet tall and twice as wide. Leaves are hairy, gland dotted, and consist of 13-25 leaflets. Flowers are in dense, upright clusters, in the upper branches. They are blue-violet to dull dark purple, about ¼ inch long, and have 10 stamens. Seed pods are small, curved, dark brown when mature, and are dotted with glands. Each pod contains 1 or 2 seeds. Indigobush grows in prairies, road shoulders, and along rivers and streams. It is particularly problematic along the Snake and Columbia Rivers.

**Impact:** Indigobush forms nearly impenetrable thickets along riverbanks, where it displaces native species such as a rare species of yellowcress in southwestern Washington. It also reduces wildlife habitat. Because it fixes nitrogen, indigobush can thrive on sandy gravel where few other plants can survive.

**Control:** One reason indigobush is difficult to control is because it resprouts vigorously from cut or broken stems. Repeated cutting may be used to control seed production each year. Selective herbicides applied to freshly cut stems or foliage can provide effective control.



Rich Old, [www.xidservices.com](http://www.xidservices.com)



# purple loosestrife

## *Lythrum salicaria*

**Identification:** Purple loosestrife is a long-lived perennial, 6-10 feet tall. It has small, purple-to-magenta flowers with 5-6 petals arranged in upright flower spikes. Leaves are lance-shaped and either opposite or whorled in threes. The leaves are stalkless and clasp the stem, which is distinctively square in cross-section.

**Impact:** Purple loosestrife displaces large areas of riparian and wetland native plants needed by waterfowl and other wildlife for food, nesting, and groundcover. This invasive wetland species changes the nutrient cycle, affecting the food web. It also clogs irrigation canals and drainage ditches.

**Control:** Small patches can be dug up and discarded. Cutting alone will not control purple loosestrife because of its extensive and vigorous root systems. Because one plant is capable of producing 2 million seeds, flowers need to be disposed of properly along with roots and stem fragments, which can resprout. For large infestations, selective, aquatic herbicides can be effective, but a special permit is required. Several biocontrol insects are also available.

Jennifer Andreas



Jennifer Andreas WSU Extension



Class B Noxious Weed

# Invasive sages

*Salvia sclarea*, *S. pratensis*, *S. aethiopsis*.

**Description:** **Clary sage** is a tap-rooted biennial or perennial herb that grows 6 feet tall. It has hairy, egg-shaped leaves and a strong sage odor. Flowers are arranged in spikes, have petal-like bracts right below the flowers, and may be white, pink, or purple. **Meadow clary** is a fibrous-rooted perennial, 1-2 feet tall. It has long, pointed leaves and a single flowering stem with blue to violet flowers. **Mediterranean sage** is a biennial or short-lived perennial up to 3 feet tall. It is covered with dense, felt-like hair, giving it a silver-green appearance. Flowering stems have many branches that bear small, white flowers at the tips.

**Impact:** These invasive sages are particularly problematic in eastern Washington. They invade pastures, rangeland, and meadows, where they reduce forage quality and crowd out native plants. Mediterranean sage also invades alfalfa and grain crops.

**Control:** Hand-pull or dig up plants and dispose of them, being careful to include the roots. Selective herbicides can effectively control these sages. Plant and seed competitive plants.

## clary sage



Sue Winterowd

Sue Winterowd

## meadow clary



Larry Hudson OCNWCB

Larry Hudson

Larry Hudson OCNWCB

## Mediterranean sage



K. George Beck and James Sebastian, Colorado State University, Bugwood.org

Lloyd Andres, USDA Agricultural Research Service, Bugwood.org

# common crupina

## *Crupina vulgaris*

**Identification:** Common crupina is a winter annual that grows 1-3 feet tall. The cotyledons (first seedling leaves) are thick, shiny and dark green with a reddish-purple middle vein. Alternately arranged leaves are finely divided into lace-like leaflets, with short stiff hairs. Flowers are lavender-pink and are ½ inch long. Narrow pink to lavender, knapweed like flowerheads have a few rows of tapering bracts at its base and bloom in the late spring. Flowerheads have 3 to 5 flowers and each head generally produces one seed. Seeds each have a ring of brown-black, spreading bristles on broad end.

**Impact:** A prolific seed producer, it forms dense stands that displace native plants and desirable forage species. Livestock and wildlife do not eat mature plants due to the short, stiff, spine-like hairs covering the leaves and stems. Common crupina is also a federally listed noxious weed.

**Control:** Hand-pulling can be effective, if done several times during the growing season. Selective herbicides can also provide good control, but timing is crucial.



Greg Haubrich



PPQ Archive, USDAAPHIS PPQ, Bugwood.org



Nelle Murray



# flowering rush

## *Butomus umbellatus*

**Identification:** Flowering rush is a freshwater perennial, which can grow either as a submersed or emergent plant. Leaves grow from rhizomes, which also produce bud-like structures (bulbils) that can break away to form new plants. The leaves are fleshy and triangular in cross-section, growing either below, above, or floating on the water surface. Flower stalks, when present, are usually taller than the leaves, reaching up to 3 feet above the water surface. Each flower stalk bears a cluster of pink flowers at the tip, arranged on umbrella-like spokes. Depending on the plant's biotype, bulbils may also grow at the base of these umbrella-like spokes.

**Impact:** Flowering rush rapidly colonizes wetlands, lake shorelines, and slow-moving rivers. Native species can be outcompeted, reducing habitat for native fish. It forms dense stands in previously unvegetated areas, which can reduce recreational activities such as swimming, boating, and fishing. This species also clogs unlined irrigation canals and drainage ditches.

**Control:** Flowering rush can be difficult to control, so if you find it, contact your county noxious weed board. Isolated plants may be dug up and disposed of, making sure to include all rhizomes. Diver hand-pulling and bottom barriers, which require a permit, are often used to control submersed infestations. Herbicides labeled for aquatic use are available, but a special permit is also required.



Ben Legler



Tim Miller



Ben Legler



Greg Haubrich



Class A Noxious Weed

# houndstongue

## *Cynoglossum officinale*

**Description:** Houndstongue is a biennial or short-lived perennial that can grow to 4 feet tall. Leaves are covered with rough hairs. The lower leaves are 4-12 inches long and  $\frac{3}{4}$ -inch wide. Upper leaves are smaller but lack stems. Flowers are dull, reddish-purple at the end of upper stems, blooming from May until frost.

**Impact:** Houndstongue is poisonous to livestock, and they will usually avoid eating it. Horses are especially at risk. The seed hulls are covered in tiny spines, giving them a Velcro-like ability to cling to clothing and the hair or fur of animals, allowing this noxious weed to easily spread. Contact with the plant has been known to cause dermatitis in people. Burred seeds are also an irritant to cattle, and infestations reduce the marketability of rangeland for livestock and recreational uses.

**Control:** Hand-pull or dig up and dispose before it produces seed. Mowing or clipping flowering stems before they produce seed can also help to reduce infestations. Selective herbicides can be effective. Re-seed problem areas with fast growing grasses, and do not overgraze.

Sue Bird, Yakima County NWCB



Spokane County NWCB



Sue Winterowd



# Russian knapweed

## *Acroptilon repens*

**Description:** Russian knapweed is a bushy perennial, growing to 3 feet tall and forming dense colonies. Stems of young plants are whitish and woolly, but then turn dark brown to black. Leaves are blue-green, and its creeping roots are black. Basal leaves are deeply notched, and stem leaves have toothed edges. The pinkish-to-purple flowerheads are pineapple-shaped and grow singly on the ends of the stems.

**Impact:** With its vigorous, spreading root system, Russian knapweed forms extremely dense monocultures that quickly crowd out native plants.

**Control:** Tilling is not recommended, as root fragmentation can cause new infestations. Depending on the moisture regime, nitrogen fertilizer applied in conjunction with an herbicide may significantly improve the competitiveness of residual grasses. Re-seed with competitive species after herbicide treatment. Improved grazing management will also aid the efficacy of control efforts. Biological control options are now available for certain conditions.



Sue Winterowd



Sue Winterowd



Class B Noxious Weed

## knapweeds: spotted, diffuse, & meadow

*Centaurea stoebe*, *C. diffusa*, &  
*C. x moncktonii* (*C. x gerstlaueri*)

**Identification:** These members of the thistle family range from 2-5 feet tall, are spineless, and bear flowerheads with showy petals atop round or egg-shaped bases. Leaves are small, lobed, and often bluish-green. All three species start as basal rosettes in the spring. Spotted and meadow knapweed are perennials with stout taproots and pinkish-purple flowers. Diffuse knapweed is a biennial with white to purple flowers and small spines covering the base of the flower.

**Impact:** Invasive knapweeds rapidly spread along rights-of-way and colonize meadows, rangeland, prairies, and open forests. They quickly crowd out native and desirable plants, dramatically reducing available forage and habitat for livestock and wildlife.

**Control:** Knapweed species are prolific seed producers, so preventing the flowers from going to seed is critical. Hand-pulling or digging can be effective for small patches. Mowing is not a good option, because taproots can resprout. For large infestations, both selective herbicides and biocontrol are very effective options. Revegetate with desirable species to provide competition.

## spotted knapweed



Spokane County NWCB



## diffuse knapweed



Okanogan County NWCB



## meadow knapweed



# saltcedar

## *Tamarix ramosissima*

**Description:** Saltcedar is a deciduous shrub or small tree that grows 5-20 feet tall. It has numerous slender branches, and the leaves are small and scale-like, resembling cedar. Pale pink flower spikes cluster at the branch tips from late spring through summer.

**Impact:** Saltcedar rapidly forms monotypic stands in riparian areas of arid lands. It replaces willows, cottonwoods and other native riparian species that provide wildlife habitat. Stems and leaves secrete salt, which forms a crust above and below ground and prevents other plants from growing. This tree also absorbs an enormous amount of water - up to 200 gallons per day - further stressing native vegetation. Roots may extend 150 feet or more in search of water.

**Control:** Saltcedar can be difficult to control because of its ability to resprout from roots. Effective control efforts utilize both mechanical and chemical methods. There has been some research on insects that may be used as biocontrol agents, although none is currently available in Washington.



Leslie J. Mehrhoff, U of Connecticut, Bugwood.org



Joseph M. DiTomaso, U of California - Davis, Bugwood.org

# thistles: musk, Scotch & bull

## *Carduus nutans*, *Onopordum acanthium* & *Cirsium vulgare*

**Description:** These thistles are robust biennials with spiny “winged” stems. **Musk thistle**, also called nodding thistle, may grow 6 - 7 feet tall. Leaves are alternate, spiny, and deeply lobed. Flowerheads are very distinctive: reddish-purple pincushion-like flowers are surrounded by broad, purplish-green bracts. **Scotch thistle** can grow to 10 feet tall. The entire plant is covered in woolly hairs, giving it a silvery appearance. Leaves are long and wide, with basal leaves up to 2 feet long. Flowerheads are up to 2 inches wide and are spiny. **Bull thistle** is a biennial, with stems growing to 5+ feet, and covered in stiff hairs. Purple flowerheads are up to 2 inches wide.

**Impact:** Like other invasive thistles, these thistles infest pastures, meadows, and fields, reducing forage for livestock and wildlife and creating impenetrable thickets.

**Control:** Hand-pulling or digging plants prior to flowering throughout the growing season can provide effective control. Biocontrols are also available and can do an impressive job eliminating seed production. Selective herbicides are also effective.

## musk thistle - Class B noxious weed



## Scotch thistle - Class B noxious weed



Sue Winterowd



Sue Winterowd



Spokane County NWCB

## bull thistle - Class C noxious weed



# Have you seen these noxious weeds? Please let us know!

## spurge flax



Spurge flax is a slender, wiry plant that can grow up to 2 feet and has small, narrow leaves. This Class B noxious weed can be easily spread and hard to find among other plants.

## wild four o'clock

Jennifer Andreas, WSU Extension



This Class A noxious weed is a perennial that grows 3-4 feet tall, has opposite, heart-shaped leaves, and purple-pink flowers. It invades a variety of habitats including riverbeds, rangelands, and cultivated fields.

## oriental clematis

Sue Bird, YCNWCB



This clematis is a Class A noxious weed that invades riverbanks, roadsides, irrigation canals and hillsides. Its vines grow into trees and blanket the ground. Flowers are solitary or in clusters of 3 or more. Each has 4 yellow petal-like sepals that are 3/4 inch long.

## garlic mustard



This biennial Class A noxious weed has a distinctive garlic odor when crushed. Plants typically form a basal rosette of kidney-shaped leaves the first year and grow stems up to 3 feet tall with heart to triangular-shaped leaves the second. Spring-blooming, white, four-petaled flowers form narrow, upward-pointing seed pods. Limited populations have been found in eastern WA.

**Please visit our website for more information about these and other noxious weeds in Washington state.**

**\*Noxious weed listings may change, please check our website [www.nwcb.wa.gov](http://www.nwcb.wa.gov).**

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**For information on biological control, please contact:  
Integrated Weed Control Project, WSU Extension at  
253-445-4657; <http://invasives.wsu.edu>**

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Protecting Washington's Resources  
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