North Coast CWMA
Early Detection Field Guide

Presented By:
Western Invasives Network

Resources

Noxious Weeds in the State of Oregon:
http://www.oregon.gov/ODA/PLANT/WEEDS

Neighboring states/provinces:
http://www.nwcb.wa.gov/index.htm
http://www.agf.gov.bc.ca/cropprot/weeds.htm
http://www.cal-ipc.org
http://idahoweedawareness.net/index.html

Photos and control information:
http://www.invasive.org

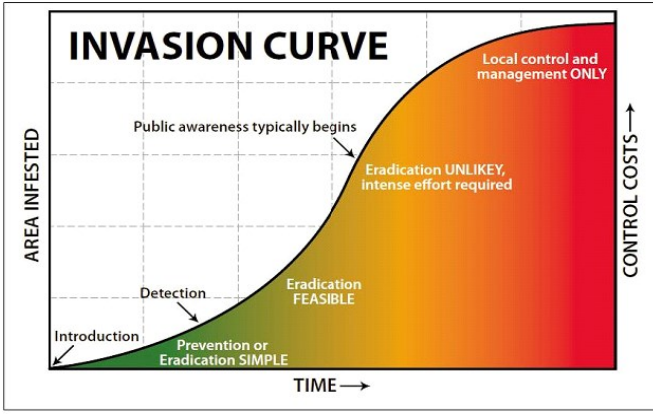
General invasive species information and resources:
http://emswcd.org/weeds
http://www.opb.org/programs/invasives
http://www.kingcounty.gov/environment/animalsandplants/noxious-weeds.aspx
http://www.invasivespeciesoforegon.com
http://www.westerninvasivesnetwork.org
http://plants.usda.gov

Reporting Invasives:
http://www.oregoninvasiveshotline.org

What is Early Detection & Rapid Response?

Early Detection and Rapid Response (EDRR) is an approach to invasive species management that focuses on surveying and monitoring areas to find infestations at their earliest stages of invasion. Monitoring can be either passive (during normal work or recreation), or active (by searching a particular area repeatedly for invasive species).

Once found, control of a new invader is begun rapidly to prevent its establishment and spread. After prevention, EDRR is the most successful, cost effective, and least damaging means of invasive species control.



Early Detection Report Form

Date:_____ Observer:_____

Location:_____

_____

Plant
Species:_____

Patch Size: Length_____ ft.
Width_____ft.
% cover_____# of plants_____

Type of site (riparian, road, forest, trail, etc):

_____

Notes (landowner, location, physical description, directions, etc.)

_____

_____

_____

_____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Common Reed—*Phragmities australis*

General: A large, perennial, clonal grass species with creeping rhizomes and stolons, and terminal, plume-like flower stalks.

Leaves: Elongate, typically 1-1.5 inches wide, 6-16 inches long, and with an open leaf sheath.

Flowers: Flowers form bushy panicles in late July and August and are usually purple or gold in color.

Fruit: As seeds mature, the panicles begin to look "fluffy" due to the hairs on the seeds and they take on a grey sheen. Plants produce thousands of seeds annually, Seed viability is typically low although there appears to be a great deal of interannual variation in fecundity.

Notes: Commonly occurs in tidal and nontidal brackish and freshwater marshes, river edges, shores of lakes and ponds, roadsides, and disturbed areas. Reproduction is primarily asexual, occurring during flood events and tidal exchanges, which undercut root masses dispersing root fragments downstream and onto flood plains. Herbicides, mowing, and prescribed burning may be used to control common reed.

Impacts: Can quickly take over a marsh community, crowding out native plants, changing marsh hydrology, altering wildlife habitat, and increasing fire potential.

Spurge Laurel—*Daphne laureola*

General: Attractive ornamental plant known for its spiraling evergreen leaves and bitter-fragrant flowers. Can be either upright or sprawling and reach a height of 1.5-5 feet. Blooms from late January to late March or early April.

Leaves: Oblong-lance shaped, 1¼–5 inches long and ½–1¼ inches wide. Very dark green, shiny, smooth, thick, and densely whorled near the top of the stem.

Flowers: Small and inconspicuous, light green with orange stamens, in clusters of 2 to 10 at the base of the leaves, and fragrant at night when they attract moths.

Fruit: Poisonous, one-seeded, oval, black berries.

Notes: Tolerates low light levels and prefers better-drained clay and forest loams. Can reproduce by root sprouts. Plants can be pulled by hand or with a weed wrench being sure to remove all of the roots to avoid re-growth from root sprouts. **Caution, all plant parts are toxic and may irritate skin.**

Impacts: Forms thick patches that block sunlight, out-competing native flora for water and nutrients, as well as alter soil chemistry.

Policeman's Helmet—*Impatiens glandulifera*

General: A herbaceous annual that is succulent, smooth stemmed and hairless. Plants can reach a height of 10 feet, although can be smaller. Upright, hollow stems are easily broken and have a purple tinge.

Leaves: Arrangement can be opposite or whorled with three leaves per node. Leaf shape varies from oblong to egg-shaped, with serrated edges.

Flowers: Solitary, irregular, ranging from white to shades of pink, with 5 petals (2 fused) and 3 sepals (2 fused) and 5 fused stamens. Shape resembles and English policeman's helmet.

Fruit: Elongated, five-chambered capsules that when touched at maturity explode, ejecting up to 800 seeds.

Notes: Tolerates a wide variety of soil types, but requires high soil moisture. Occurs in lowland, riparian areas which include moist forests, stream sides, and roadside thickets. Mechanical and herbicides are effect control methods. Pull plants before flowering or spray during early season to prevent flowering. **Flowering plants sprayed with herbicide still produce viable seed**.

Impacts: Forms dense stands along river systems and moist lowlands, excluding native plants and altering wildlife habitat.

Herb Robert—*Geranium robertianum*

General: Low-growing annual or biennial (to 10") imported for herbal treatments but escaped into wildlands. Brittle, forked stems are redish and growing from a weak central root. Entire plant is covered with glandular hairs, giving it a sticky feel. Blooms in spring and summer.

Leaves: The light green leaves are deeply dissected and covered with glandular hairs. As with all parts of the plant, leaves are pungent when crushed—hence the use of the name "Stinky Bob." Late fall foliage turns red.

Flowers: Small, pink or white, 5-petaled, often blooming in pairs on brittle, hairy stems.

Fruit: Long, pointed beak at the top of the fruit pod. At maturity, pod explosively propels seeds up to 20 feet from the plant.

Notes: Occurs in well shaded woodlands, conifer forest, rocky outcrops and open grasslands. Isolated plants or small populations best controlled by hand-weeding. Burning with a propane-based flaming unit and herbicides are effective on larger populations. **Sticky seeds move easily on pets and clothes!**

Impacts: Forms monoculture patches that replace native plant communities reducing or eliminating plant diversity. Commonly moved by seeds and seedlings in nursery stock.





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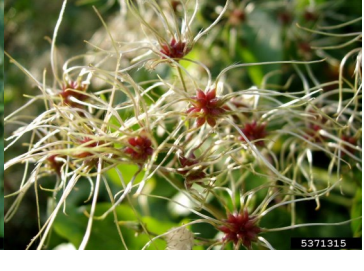
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Old Man's Beard—*Clematis vitalba*

General: Perennial woody vine climbing and smothering objects like trees, shrubs, or fences. Aggressively grows vertically 100 feet or more. Self-pollinating.

Leaves: Deciduous, opposite, usually with five leaflets. Leaflets, elongated, heart-shaped. Leaf edges typically smooth on flowering stems. Upper leaflets sometimes 3-lobed.

Flowers: Blooms throughout summer, green to white, perfect flowers (stamens and pistils on all flowers) about 1 inch in diameter, arranged in clusters.

Fruit: Numerous, small seeds arranged in clusters bearing long white feathery tails. Prolific seed clusters hang from vine like white puffy spheres, and persist after leaves have fallen from trees through late fall and into winter.

Notes: A native look-alike, *Clematis ligusticifolia,* exists predominantly east of the Cascades, has imperfect flowers, (some flowers have stamen only), and does not have the aggressive growth habit of *C. vitalba*.

Impacts: Blankets existing vegetation, starving trees and shrubs of sunlight, eventually killing them. Will try to grow vertically, but may also create dense mats of vegetation on the ground preventing the regeneration of future plants.


Invasives.org


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Garlic Mustard—*Alliaria petiolata*

General: A herbaceous biennial. First year rosettes of 3-4 dark leaves. Second-year plants produce flowering stems 2-3.5 ft tall. Crushed leaves smell like garlic.

Leaves: First year rosettes have green, kidney-shaped, scallop-edged leaves. Stem leaves of second-year plants alternate, heart-shaped and coarsely toothed.

Flowers: Flowers 1/4 in. wide with 4 white petals forming a cross. In button-like clusters.

Fruit: Seedpods are skinny, 1-2.5 in., turning tan by midsummer. They split along seams to release small black seeds.

Notes: Invades forests, roadsides, streamsides, trails, and agriculture lands. Garlic mustard control is a multi-year project because the seed bank can remain viable for years. Plants are easily pulled when soils are moist. If flowering, plants must be bagged as seeds can continue to ripen after plant is pulled. Cutting plants a few inches above ground just after flower stalks have elongated can be effective in preventing seed production. Herbicides can be used to control larger infestations.

Impacts: Displaces native forest understory species, reducing diversity and forage availability. Adversely affects several native butterfly species.


spikelets on
short stalks

False Brome—*Brachypodium sylvaticum*

General: This perennial grass forms short, squatty bunches. Its hollow stems are 1/4-1/3 in. wide and bear soft hairs at the nodes. Reproduces by seed and re-sprouts from stem or root fragments when cut.

Leaves: Broad, flat, and bright green and remain so through fall and part of winter. The margins and lower stems of the leaves are hairy, and **open-sheathed** at the base. The ligules are membranous.

Flowers: The flowers me are located on short, pale-green spikelets that noticeably droop and have **short stalks.**

Fruit: Appears that seed banks do not remain in the soil for longer than one year.

Notes: Grows primarily in coniferous forest understory, but is also habitating riparian forests, forest edges, and upland prairies. **Please report but do not try to pull as it is easily confused with native grasses**. Control methods are not well studied, but it appears that herbicide use is most effective. The **native look-alike** is Columbia brome, *Bromus vulgaris,* which has spikelets that are stalked

Impacts: Displaces native understory plants, suppresses forest regeneration, degrades wildlife habitat and increases fire risk.

Italian Arum—*Arum italicum*

General: Escaped ornamental that readily invades riparian areas. Grows from tubers.

Leaves: Waxy, arrow shaped, dark green with white veins. Leaves appear in the fall, last through winter and die back during the summer.

Flowers: Flowers are white and resemble a calla lily, but have a long drooping hood that covers the spike.

Fruit: Berries covering the end of the flower stalk range from red to orange and often yellow toward the bottom of the cluster.

Notes: This plant is toxic and does not respond well to herbicide. It reproduces by berries and tubers. It tends to respond aggressively to soil disturbance, so digging is not recommended for large infestations.

Impacts: All parts of this plant are highly toxic and can cause skin irritation. Ingesting any part of the plant can be fatal.

Orange Hawkweed—*Hieracium aurantiacum*

General: Aggressive perennial with fibrous roots and rhizomes. The stems grow 12” tall or more and contain a milky sap.

Leaves: Leaves are hairy, lance-shaped and rounded at the end. They are exclusively basal with the exception of 1 or 2 round leaves on the flower stalk.

Flowers: Bright orange with red margins clustered at the top of the stem. Flower bracts and stalk are covered in hairs. The color of the hairs can vary but is often black.

Fruit: Dandelion-like.

Notes: This plant spreads by runners and can quickly form a dense mat of vegetation. It is an abundant seed producer and unpalatable to livestock and wildlife.

Impacts: Thrives in a variety of soil conditions and prefers sunny locations with well drained soil. It is very aggressive and can quickly take over lawns.

Meadow Knapweed—*Centaurea pratensis*

General: Aggressive invader of pastures, roadsides and forest openings.

Leaves: Not divided. Long-stalked on the lower part of the plant and no stalk on the upper leaves.

Flowers: Pink to reddish purple with brown fringed papery bracts on the lower part of the flower head.

Fruit: Small white to light brown seeds that may have hair on one end.

Notes: Plants have a very tough root system. It can be confused with other species of *Centaurea*.

Impacts: Replaces desirable vegetation. It is not palatable to livestock except for sheep.

Giant Hogweed—Heracleum mantegazzianum

General: Large plant growing up to 15’ tall. Looks similar to cow parsnip only much larger and has purple blotches on the stem.

Leaves: Deeply cut and commonly 2-4’ wide and sometimes up to 5’ wide.

Flowers: Large, white, umbrella-like flowers very similar to cow parsnip only much larger. Flower heads are only at the top of the stalk and are 2-3’ wide.

Fruit: Dry elliptical seed pods.

Notes: The sap is highly toxic to humans causing increased photosensitivity resulting in blisters and burns. Even the smoke from burning plants is toxic. Wear PPE when handling this plant.

Impacts: Easily crowds out native vegetation and spreads rapidly due to high seed production.

Canada Thistle– *Cirsium arvense*

General: Creeping perennial that inhabits moist and disturbed sites. Flowering adults can reach 5’ in height and have showy pink to purple flowers from late spring through summer.

Leaves: Alternate, lanceolate with wavy/serrated/lobed margins and prickly spines. Rosettes have whorled appearance.

Flowers: Few to numerous, in terminal clusters. Inferior ovary, pink to purple rays up to 1” long.

Fruit: Small achene, attached to fluffy expired rays and dispersed by wind, primarily.

Notes: Also reproduces via rhizomes.

Impacts: Can rapidly infest ag and pasture lands, reducing productivity. Degrades meadow and riparian habitats and can be very difficult and costly to control if left unmanaged.

Yellow Flag Iris– *Iris pseudacorus*

General: Riparian to semi-aquatic perennial with showy yellow flowers growing from large basal clumps. Infests ditches, ponds, wetlands, lakes and riverbanks. Adults can be over 4' tall.

Leaves: Long, smooth lanceolate leaves up to 3' long that create a "sheath" near the crown.

Flowers: Large, showy yellow flowers with three large, relaxed sepals and three reduced, upright petals. Petaloid styles. Usually has dark veins on petal, near base.

Fruit: Large capsule that contains many seeds. Seeds are "pill-shaped" and float when dispersed. Seeds can travel great distances in moving water and are long-lived.

Notes: Primary reproduction is via dense mats of tuber-like rhizomes. Fragments of roots can create new infestations.

Impacts: Yellow iris can dramatically change the hydrology of infested sites. Dense monocultures trap sediment that builds soil, paving its own way. Choked waterways are prone to flooding and aquatic/riparian habitats can be lost entirely as natives are replaced.

“English” Ivy– *Hedera sp.*

General: Creeping, climbing, stoloniferous perennial with conspicuously veined leaves that prefers moist, forest understory and structured riparian areas. Full shade to full sun, hardy with purple to maroon berries

Leaves: Dark green, lobed to spade-shaped with waxy upper surface, conspicuous veins and a sturdy, fibrous petiole. Leaves up to 8” across.

Flowers: Sparse umbels, greenish-white to yellow. Blooms in late summer through fall.

Fruit: Small clusters of purple-maroon berries.

Notes: Can be highly toxic, if ingested.

Impacts: The Hedera species wreak havoc on forest understories, monopolizing resources and pushing natives out. Climbing vines can severely damage forest health and productivity while ivy-weakened canopies can present safety hazards. Ivy has little to no forage value.

Knotweeds– *Fallopia/Polygonum sp.*

General: Upright perennial with sturdy canes attached to large, tuberous root crowns. Low and creeping (Himalayan) to very tall (Giant). Forms dense hedgerows in riparian areas and wet sites. Prefers full sun but can tolerate some shade, especially in deciduous understories.

Leaves: Drab to bright green, alternate. Himalayan leaves are lanceolate up to 6" long, occasionally larger. Other species with spade to heart-shaped. Giant knotweed leaves up to 16".

Flowers: Small, 5-petaled and white to pinkish. Flowers hang from graceful racemes. Dioecious.

Fruit: Small brown achene. Encased in winged paper-like "pod".

Notes: Used medicinally and occasionally as a foodstuff. An important pollen source for many beekeepers in the Pacific Northwest.

Impacts: Another introduced ornamental, the knotweed species thrive in western Oregon's riparian areas. Knotweeds can quickly take over a streambank, pushing out native vegetation and habitat. Knotweeds do not hold soil as well as native riparian species and infested areas are more prone to erosion during high-water/flood season. Knotweeds can spread rapidly through fragmentation, rhizomes and wind-driven seeds. Restoration of infested sites can take many years and can be very costly and these species also pose a threat to infrastructure like roads and underground utilities. Recreational access can be severely impacted by knotweed infestations.

Gorse- *Ulex europaeus*

General: Spiny, evergreen legume shrub that inhabits disturbed areas, waste sites, dunes, cliffs and areas with poor soil. Can be up to 15' tall, averages 4-6'. Forms dense stands.

Leaves: Dark green, trifoliate in juveniles, making way for spines at maturity. Stem and spines are photosynthetic.

Flowers: Showy yellow pea flowers in sometimes large clusters at end of branches.

Fruit: Dark, fuzzy pods with hard seeds. Very long lived.

Notes: Scotch broom is often reported as gorse. Very few known gorse sites North of Newport.

Impacts: Gorse causes many negative impacts to our natural landscapes as well as urban areas. Gorse is a severe fire hazard and gorse fires have destroyed entire cities in the past. Dense stands can form on dunes, contributing to foredune buildup and displacing plants that inhabit open sands. These habitat modifications also displace wildlife and shore birds. Long-lived seed banks create persistent infestations, once established and restoration can be vary costly. Recreation is also impacted by shrinking dunes and invaded forest areas where access becomes nearly impossible.

Purple Loosestrife- *Lythrum salicaria*

General: Woody, perennial shrub that inhabits moist to saturated soils. Forms dense stands in roadside ditches, marshes and wetlands.

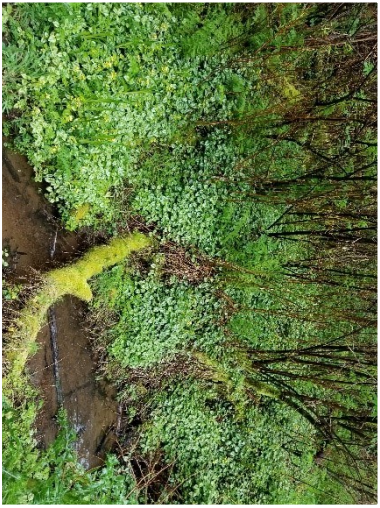
Leaves: Lanceolate to almost linear; opposite or whorled; sessile to somewhat clasping; 3-10 cm (1-4 in); larger leaves at the base

Flowers: Numerous, purple (also white or light pink) in color, 6-20" terminal spike-like inflorescences in axillary clusters of two to several, 5-7 petals; bloom July through October

Fruit: Small seeds in pods. Up to 2 million seeds/plant.

Notes: Long-established in Willamette Valley with increasing frequency on the North Coast of Oregon. Biocontrols are available and can be effective.

Impacts: As a prolific seed producer, purple loosestrife population can expand rapidly. They displace native riparian and aquatic plants and the habitats that they provide and can increase sedimentation by altering hydrologic processes. Control can be difficult due to very strong , resilient root crowns and the environmental challenges associated with herbicide use in/near water.



Yellow Archangel– *Lamiastrum galeobdolon*

General: Low, creeping herbaceous perennial in the mint family. Does well in shade to full sun, forest understories and riparian areas. Rapid colonizer that creates dense groundcover.

Leaves: Spade or heart shaped, sometimes near lanceolate (many varieties) 1/2 to 2" long. Pale green to bright green. White to silver variegation.

Flowers: Small, yellow with distinct "hood" and "lip", characteristic of Lamium. Appear in clusters on stem that resemble a whorl. Blooms in mid-Spring and sporadically throughout season when conditions permit.

Fruit: Small seeds inside of nutlet. Numerous per flower. Can be long lived, depending on variety

Notes: Can be just as invasive as garlic mustard, others, but is relatively easy to control.

Impacts: These plants can grow outward at over 3 feet/year and also spread through fragmentation as stolons are transported by wildlife, etc. Yellow archangel can quickly overtake a moist forest floor or riparian area. In shaded habitats, it can be extremely aggressive due to limited competition from other shade-loving plants. As a mostly evergreen plant, yellow archangel is always poised to take advantage of even the smallest windows of optimum conditions to spread.

Water Primrose– *Ludwigia spp.*

General: A sprawling aquatic plant that inhabits slow moving waterways, wetlands and marshes. Perennial, light green and often red stems. Blooms from Spring through Fall.

Leaves: Oblong to lanceolate and up to 3" or more long, up to 2" wide. Glossy dark to medium green, petioles up to 2".

Flowers: Small, yellow flowers with 5 petals, 5 sepals and 10 stamen. Up to 2" across.

Fruit: Cylindrical capsules up to 2" long with 5 partitions, each holding seeds. Large infestations can produce copious amounts of seed.

Notes: T-list weed in Oregon. Irrigation and drinking water intakes are a priority concern when considering chemical treatments.

Impacts: Spreading by seeds washed downstream and transported by waterfowl and wildlife as well as through fragmentation, Ludwigia can quickly take over a water body and clog it up. Infestations can drastically modify hydrology and sedimentation patterns, restrict access to recreation and create unsafe conditions for swimmers. These infestations also block sunlight for native aquatic organisms and displace habitat for native fish while promoting conditions that favor other invasive species. Management can be extremely expensive if infestations are not addressed in a timely fashion.

Poison Hemlock– *Conium maculatum*

General: Poison hemlock is an extremely poisonous plant. They are a large, herbaceous biennial and member of the carrot family that is found on roadsides, ditchbanks and disturbed areas with good spring moisture. It can grow to 10" feet tall but is more commonly found between 4'8' tall. Adults have a large fleshy taproot and lacy fern-like leaves. Stems are hollow and often have reddish-purple blotches. This plant has numerous "look-alikes"

Leaves: Finely divided, delicate looking leaflets that are typical of Apiaceae. May be glossy on top side. Foliage is (fatally) poisonous if ingested. Produce strong odor when crushed.

Flowers: Medium umbels full of small, white 5-petaled flowers bloom from April-July and occasionally into August. When shaken, adult plants can shed large amounts of pollen. Toxic if ingested or pollen inhaled.

Fruit: Very small ovate seeds that are a pale to medium brown and with distinct ribs. The seeds are also (even more) poisonous if ingested.

Notes: This is one of the most toxic plants in North America and is very common in parts of western Oregon. Ingestion by livestock is often fatal and even rubbing up against a plant can cause serious skin irritations in people. DO NOT burn poison hemlock, as smoke from burning plants is also toxic.

Impacts: Livestock and human safety are the primary concern with this species. In addition, poison hemlock can play host to numerous diseases that can damage agricultural crops like alfalfa and carrots. Fortunately, this plant is relatively easy to control.

Lesser Celandine- *Ficaria verna*

General: Lesser Celandine (*Ficaria verna*) is a perennial in the Ranunculus family that was brought to North America as an ornamental and favored for its showy flowers, glossy leaves and early season emergence. These plants grow low to the ground and bloom in late winter and early spring, going dormant by early summer. They are very competitive in forested sites and even established lawn turf. Mainly spread vegetatively.

Leaves: Glossy/waxy rounded leaves that are somewhat heart-shaped. May have few lobes or serrations on margins. Non pubescent.

Flowers: Showy yellow flowers with 3 tepals and 6-12 petals, or many. Radially symmetric. Petals relax in full bloom to subtend numerous stamens and carpels

Fruit: very small, single-seeded achene.

Notes: January-March is best time to survey in NW Oregon

Impacts: Lesser celandine can create expansive monocultures in forest understories and especially in deciduous forests. These populations capture the first rays of spring sun and the moisture of spring rains and runoff before many natives even germinate. Lesser celandine provides poor habitat, displaces natives and has no forage value. The glossy leaves make it somewhat resistant to chemical treatments and underground tubers can persist for many years before reemerging.

Yellow Floating Heart– *Nymphoides peltata*

General: Yellow floating heart (*Nymphoides peltata*) is an aquatic flowering plant that inhabits slow moving and still freshwaters. These stoloniferous invaders take root on the bottom and produce foliage that floats on the surface. Infestations create problems throughout the entire water column by impacting available sunlight, modifying hydrology/sedimentation patterns and modifying aquatic habitats.

Leaves: Cordate, floating leaves 3-15 cm in diameter, green to yellow-green in color, have purple-tinted undersides, and are attach to submerged rhizomes/stolons. Slightly wavy margins.

Flowers: Two to five showy yellow, five-petal flowers (2-4 cm in diameter) with fringed petal margins.

Fruit: Beaked capsule up to 2.5cm containing many seeds

Notes: Flowers late Spring to early Fall

Impacts: Many potential negative ecological and social impacts. Restricts the amount of light penetrating the surface which can exclude native submerged macrophytes and reduce biodiversity. Entire food webs can be disrupted by dense populations and recreational fishing opportunities and access can be greatly diminished.

Common/Cutleaf Teasel– *Dipsacus sp.*

General: Teasel (Dipsacus sp.) is a biennial plant that has existed in the US since the 1800's. Originally cultivated for use in the textile industry, it was later (and still is) used in flower arrangements. Cutleaf teasel (ODA "B" List) has shown aggressive invasive potential while common teasel is less invasive but potentially problematic. Typically grows along fencelines, roadsides and ditchbanks. General growth form resembles a thistle.

Leaves: Rosettes have long, linear leaves. Lanceolate, with rounded ends. Adult plants have sessile, opposite, pointed lanceolate leaves that form a "cup" around the prickly stem. Leaves have prickly midrib on underside. Cutleaf teasel leaves are deeply lobed, somewhat "frilly". Basal leaves up to 16" long, descending in size as you travel up the stem.

Flowers: Very spiny, large oval to conical flower head. Subtended by long bracts. Up to 5" long and 3" wide, bearing many purple to pink flowers, or white with cutleaf teasel.

Fruit: Very small wind-dispersed achene. Up to 1,500 per flowerhead.

Notes: Flowers Spring through mid Summer

Impacts: Teasel can consume large amounts of water in riparian areas and competes for early season resources. Due to the sharp spines, teasel infestations can create access problems for recreation. Can create large stands in the right conditions, diminishing habitats in high value riparian and wetland sites. Woody remnants can create fuels for fires. Relatively easy to control, if prioritized.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Flowering Rush– *Butomus umbellatus*

General: Perennial aquatic or semi-aquatic plant that resembles a rush, but with triangular stems, more like a sedge. Reproduces via seed, rhizomes and fragmentation. Can be entirely submerged or conspicuously emergent, depending on water depth. Forms dense stands in slower moving waters and along river margins. Leaves may also float on surface in a mat. Bright white to pink (or both) flowers that bloom in late summer to early fall.

Leaves: Linear, triangular, sedge-like leaves up to 3 feet long. Can be submerged, erect-emergent or floating emergent.

Flowers: Umbels of small white-pink flowers with 3 petals and 3 shorter sepals. 9 stamen. Up to 50 flowers per umbel cluster.

Fruit: Beaked, floating follicles up to 1cm long that contain many seeds. Seeds may not be viable.

Notes: Columbia Basin CWMA is dedicated to management efforts along the lower Snake and Columbia Rivers. If you find a new population of flowering rush, be sure to contact them!

Impacts: Flowering rush displaces native aquatic vegetation and modifies habitats for native fish. Additionally, flowering rush infestations provide habitat for other invasive species like Northern Pike. Large infestations restrict access to recreational opportunities and irrigation waterways can become clogged. Flowering rush also affects sedimentation patterns. This is a top priority EDRR species for all managing partners across the Pacific Northwest and an ODA "A" list species.

Matgrass– *Nardus stricta*

General: Slow growing, tufted, perennial bunchgrass. Can grow up to a foot tall. Native to eastern Europe but does well in moist sites in southern Oregon and on the Oregon Coast. Can be difficult to identify. In grazed areas, it is usually left untouched due to low palatability. Though slow growing, matgrass is able to displace established native flora, including other established grasses. Matgrass is an Oregon A & T list species.

Leaves: Leaves are hard and bristle-like, bluish green and up to 0.25 in. (0.6 cm) wide, appearing narrower because blades are tightly folded along the midrib

Flowers: It produces unbranched flower-spikes that carry the single-flowered **spikelets along one side only**. Matgrass flowers from June until August.

Fruit: Tiny spikelets, up to 1,000 per bloom

Notes: Mostly spread by clumps that cling to hooves, boots, tires, etc. Especially important EDRR species near trailheads.

Impacts: Matgrass is an uncommon non-native grass with the potential to out-compete desirable grasses and forbs. Because it is a species of low palatability it is not favored by grazing livestock or wildlife giving matgrass a competitive edge. Impacts to coastal habitats are less well known, but early surveys reveal an aggressive invader that pushes out native flora. One of the challenges in controlling matgrass is identifying it amongst other native or desirable forage species. Untreated plants develop seeds and perpetuate infestations for decades.

Parrot's Feather– *Myriophyllum aquaticum*

General: Parrot's feather typically grows in freshwater streams, ponds, lakes, rivers, and canals that have a high nutrient content. Prefers warmer waters and is mostly found in small lakes and ponds in Oregon but has also been observed in tidally influenced river systems on the Oregon Coast, suggesting some tolerance for saline conditions. Forms dense, emergent stands that take over aquatic habitats, increase sedimentation and can lower oxygen concentrations when it dies back. Presents numerous problems for boating and recreation.

Leaves: Finely divided, stiff, leathery leaves in a whorl. May be over 1' emergent but often laying on surface with just the tips being erect. Bright to dark green.

Flowers: Very small white flowers at emergent leaf axils. Often difficult to find, if present. Not a good diagnostic tool.

Fruit: Inconsequential, this plant spreads almost exclusively through fragmentation and downstream transport. Can be spread by waterfowl.

Notes: Numerous lookalikes.

Impacts: It can form dense mats and compete with native aquatic plants, especially in shallow ponds. It also provides habitat for mosquito larvae, impedes boats and clogs drainage ditches. Can really change the hydrology of an infested site and have dramatic impact on fish habitat and species composition. Large infestations are extremely costly to eradicate and manage.


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West Indian Spongeplant– *Limnobium laevigatum*

General: West Indian spongeplant is a perennial herb that is generally free-floating, though it will also grow rooted in mud in shallow water or on wet shorelines. Young plants resemble duckweed, then they develop into a rosette stage and finally a mature phase with stalked emergent leaves.

The floating leaves have spongy tissue on the underside, giving the plant its common name and providing floatation. It has small pale green to white flowers, and female flowers stalks bend as the fruit ripens so seeds are released in the water or sediment

Leaves: Leaves are subcircular, floating, glabrous and glossy above, with a thick layer of air-filled spongy tissue beneath, base rounded or shallowly cordate. Juvenile plants grow in rosettes of floating leaves that lie prostrate upon the water surface.

Flowers: Flowers are small, white, and unisexual. Female flowers have an inferior ovary. The fruit is a fleshy, berry-like capsule 4–13 mm long and 2–5 mm in diameter, borne on a recurved pedicel, developing in mud or under water

Fruit: The fruit contains up to 100 seeds. The seeds are 1 mm long, ellipsoid, and hairy The small, floating seeds easily disperse via water and wind once produced.

Notes: This is an unlisted EDRR species in Oregon

Impacts: L. laevigatum can from dense mats across waterbodies (with up to 2,500 plants m-2 recorded). This can dramatically change the habitat structure, limit access by other species (e.g. some aquatic birds) and block light to the aquatic community below (Akers, 2010). As a result this can decrease the biodiversity in an area (Akers, 2010). Other impacts seem likely, but have not yet been documented for this species.

Jubata/Pampas Grass– *Cortaderia sp.*

General: Jubatagrass is a perennial grass ranging6 to 10feet 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)

Leaves: The leaves are 1-3 m long and 3-8 cm wide, glaucous green, with serrulate margins and a V-shaped cross-section. The leaves are contained in groups in an auricle-like sheath often glabrous at the base.

Flowers: Inflorescences consist of several large plumose light-violet to silver-white (30-130 cm) long, stiff panicles. It is a gynodioecious species (i.e. it has hermaphrodite plants and female plants). It forms numerous 1.5 cm spikelets, containing six florets in female plants and three in hermaphrodite plants. Florets are less than 1 cm long.

Fruit: Very small, difficult to separate from plant. Largely insignificant for diagnostics and not always viable

Impacts: Jubatagrass has the potential to greatly impact Oregon's coastal ecosystems. Escaped plants crowd out native vegetation and are very competitive in forestry operations. In clearcuts, 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. Harbors rodents.