Identification and Management of Noxious Weeds

Wendy DesCamp

April 4, 2019

Washington State Noxious Weed Control Board

Today's topics

- Common noxious weeds
- Lesser known weeds
- Ornamental plants and noxious weeds
- Recently listed noxious weeds in WA

COMMON NOXIOUS WEEDS

Tree-of-heaven, *Ailanthus altissima*

- WA Class C; OR: B
- Tall, deciduous tree
- Smell
- Alternate leaves
- Compound leaves
  - 10-27 leaflets
- Glands on leaflet base

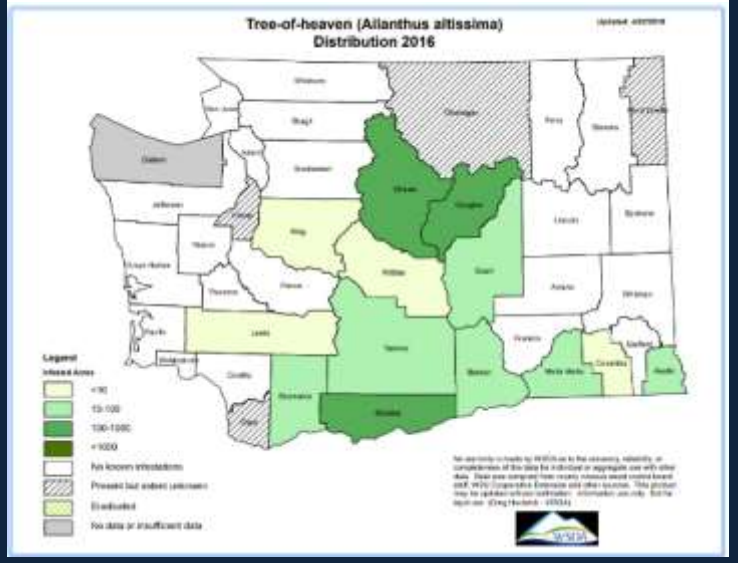
Tree-of-heaven

- Blooms May to July
- Male and female flowers on separate plants
- Pink-tan single seeds with papery wings
- Reproduces by seed and vegetatively

Tree of heaven

- Disturbed sites, floodplains, riparian areas, open woodlands and forests
  - pollution tolerant
  - drought tolerant

WSNWCB



Tree-of-heaven

- Quickly take over, form thickets
- Outcompete native vegetation
- Allelopathic chemicals
- Damages structures

Control

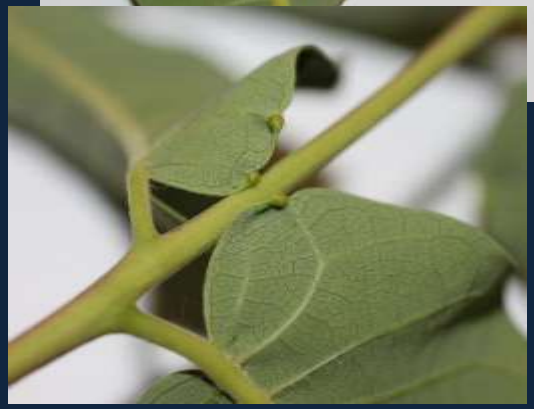
- Hand pull seedlings; dig out plants, must remove roots
- Herbicide:
  - Many methods and options: foliar sprays, hack and squirt, injection (glyphosate, imazapyr)
  - Check timing of treatments for best results
- Monitor

Nancy Fraley, USDI National Park Service

Grant County Noxious Weed Control Board

WSNWCB

Tree of heaven and smooth sumac (*Rhus glabra*)



Franklin Bonner, USFS (ret.), Bugwood.org, Creative Commons Attribution 3.0 License

Vern Wilkins, Indiana University, Bugwood.org, Creative Commons Attribution 3.0 License

Spotted Lantern Fly
***Lycorma delicatula* (White)**

A planthopper introduced from Asia, already in 7 eastern states

Feeds on hops, grapes, apples, and other things we like

Prefers tree of heaven (*Ailanthus altissima*) for breeding

WSDA needs help mapping tree of heaven for strategic removal and monitoring, to avoid this…

Erica Smyers, PSU

WSDA Pest Program
PestProgram@agr.wa.gov
1-800-443-6684

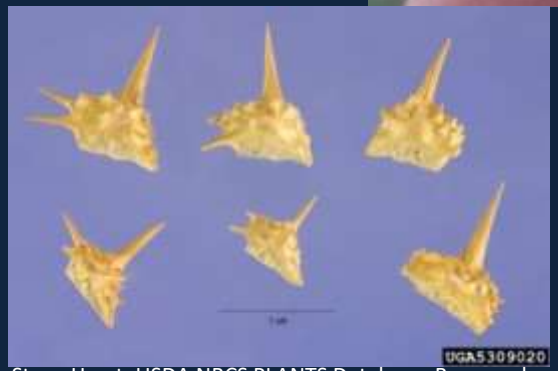
Puncturevine, *Tribulus terrestris*

- Goat head, caltrop
- WA: Class B, OR: B
- Annual, taproot, hairy
- Cotyledons narrow with groove
- Opposite leaves, 1-3 inches long
- Flowers from leaf nodes, short stalk, 5 yellow petals; ½ inch wide

Puncturevine, *Tribulus terrestris*

- Woody bur with sharp, rigid spines, break into 5 parts
- Reproduces by seed, as many 200-5,000 burs
- Viable for many years in soil
- Seed germinate begins in spring under suitably moist, warm conditions
- From seeds sprout to bloom, can be 2-3 weeks and be from late April to September

Eileen Sande, Ferry County NWCB

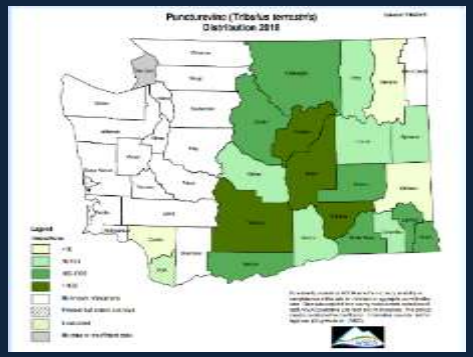


Steve Hurst, USDA NRCS PLANTS Database, Bugwood.org

L. Scott

Puncturevine, *Tribulus terrestris*

- Commonly establishes in areas with compacted, disturbed soils
- Roadsides, waste places, pastures, cultivated fields (margins), vineyards, parks, railway yards



- Injurious to people and to feet of animals
- Toxic but generally not grazed
  - especially toxic to sheep when consumed in quantity
- Burs also damage wool, undesirable in hay

Images: L. Scott

Control

- Prevent introduction
- Control before seed production; repeat control necessary during the year
- Hand removal or hoeing/digging out (wear gloves!)
- Shallow till/repeated cultivation just after germination
- Mulch layer

Photo by Jack Kelly Clark

Control

- Propane torch on seedlings
- Solarization
- Competition from desired plants
- Maintain healthy pastures
- Mowing is not an option
- Biological control

Photo by Jack Kelly Clark

Eric Coombs, ODA, Bugwood.org

Puncturevine control

- Preemergence and postemergence herbicides
- Many herbicides can work: selective herbicides
  - examples: 2,4-D and dicamba are effective, the smaller/younger the plant the better
- Follow the label, make sure to apply to appropriate sites and weather conditions
- If burs are produced, make sure to remove the plant and burs from site, properly dispose
- Remember, it will take repeated control efforts for many years to control infestations

Invasive Annual Grasses

Many culprits:

- Cheatgrass/downy brome, *Bromus tectorum*
- Medusahead, *Taeniatherum caput-medusae*
- Ventenata, *Ventenata dubia*
- Ripgut brome, *Bromus diandrus* (*B. rigidus*)
- Soft brome, *Bromus hordeaceus*
- Rattail fescue, *Vulpia myuros*

Medusahead, *Taeniatherum caput-medusae*

- WA: Class C; OR: B
- Winter annual
- Up to 2 feet
- Long awns that can be spreading and twisting
  - small barbs
- Matures later
- High silica content – thatch layer

Steve Dewey, Utah State University, Bugwood.org

Steve Dewey, Utah State University, Bugwood.org

Barry Rice, sarracenia.com, Bugwood.org

Ventenata, *Ventenata dubia*

- African wire grass
- WA: Class C ; OR: B
- Basally branched winter annual, up to 18 inches
- Leaves have open leaf sheaths, membranous ligules
- Openly branched panicles, pyramidal
- Awns sometimes bent and twisted
- Also contains silica

Matt Lavin from Bozeman, Montana, CC BY-SA 2.0

Invasive Annual Grasses

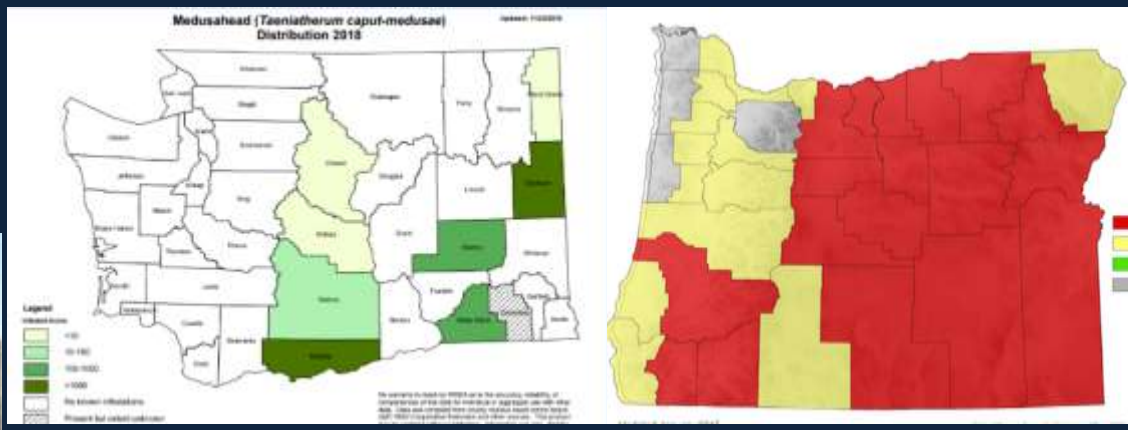
- Weed of agricultural systems, pastureland, rangeland
- Invades other communities, including sagebrush, and other shrub communities, outcompetes native grasses and forbs
- Not palatable to livestock, wildlife
- Creates fuels, can be flammable, changing fire cycles

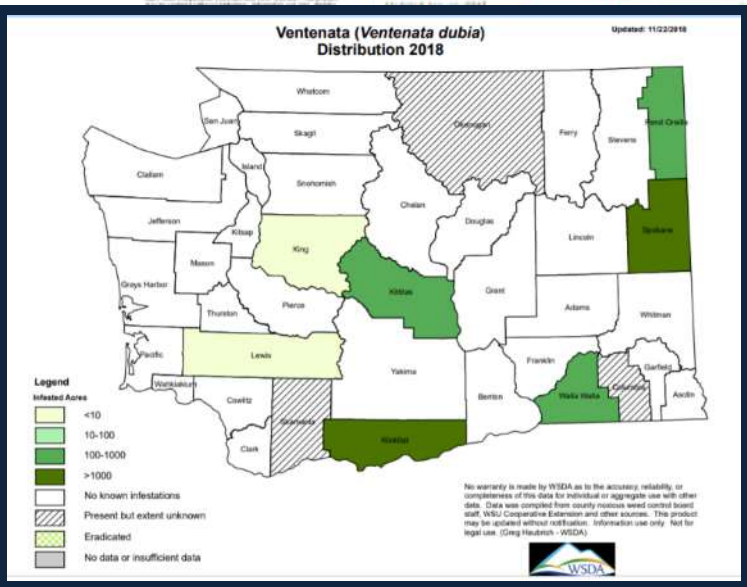
Medusahead: creates thatch layer

Invasive Annual Grasses

- Noted recent increase in these grasses in Washington, especially after fires

https://rangemanagement.extension.colostate.edu/land-and-livestock/invasive-plants/how-to-beat-the-cheat/





Control options

- Mechanical removal of thatch can be useful for establishing desirable plants and improve efficacy of soil applied herbicides.
- Tillage (disking and plowing) before seed set, breaks up thatch layer, buries seed, controls plants
- Targeted early grazing possible in some cases
- Establish competitive, desirable plant communities

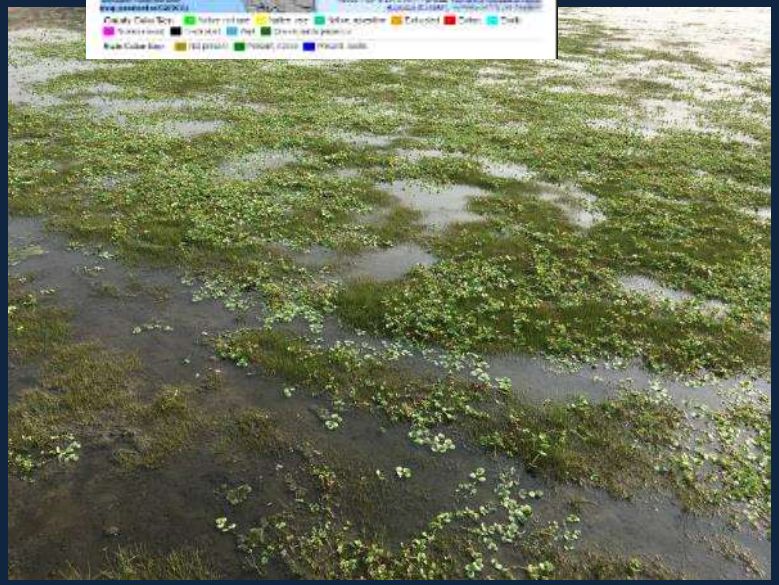
- Herbicide treatments: many options
  - Aminopyralid
  - Sulfometuron (Oust)
  - Rimsulfuron (Matrix)
  - Sulfometuron + chlorsulfuron (Landmark XP)
  - Imazapic (Plateau, Panoramic)
  - Glyphosate

Utah State University

LESSER KNOWN WEEDS

Bacopa rotundifolia, disk water hyssop (roundleaf water-hyssop)

- WA Contact: Jenifer Parsons, jenp461@ecy.wa.gov
- OR contact: Mark Systsma, mark.sytsma@pdx.edu



- Umatilla Wildlife Refuge – 4 herbarium collections (3 in WA, 1 in OR)

Image by Rich Miller

Disk water hyssop, *Bacopa rotundifolia*

Image by Rich Miller

- Perennial, shallow water or stranded in mud
- Stems root at nodes, hairy, at least on newer growth
- Leaves opposite, up to 1.25 inches long x 1 inch wide
  - Round, elliptical, smooth margins, 6 or more veins radiating from base
- Flowers axillary, 1-2 per node; 5 white petals
- Capsule, typically enclosed within persistent calyx, numerous seeds

Check out image and species description at:
www.missouriplants.com/whiteopp/Bacopa_rotundifolia_page.html

Bacopa rotundifolia, disk water hyssop

- Ponds, sloughs, swamps, ditches, rivers, aquatic or stranded in mud

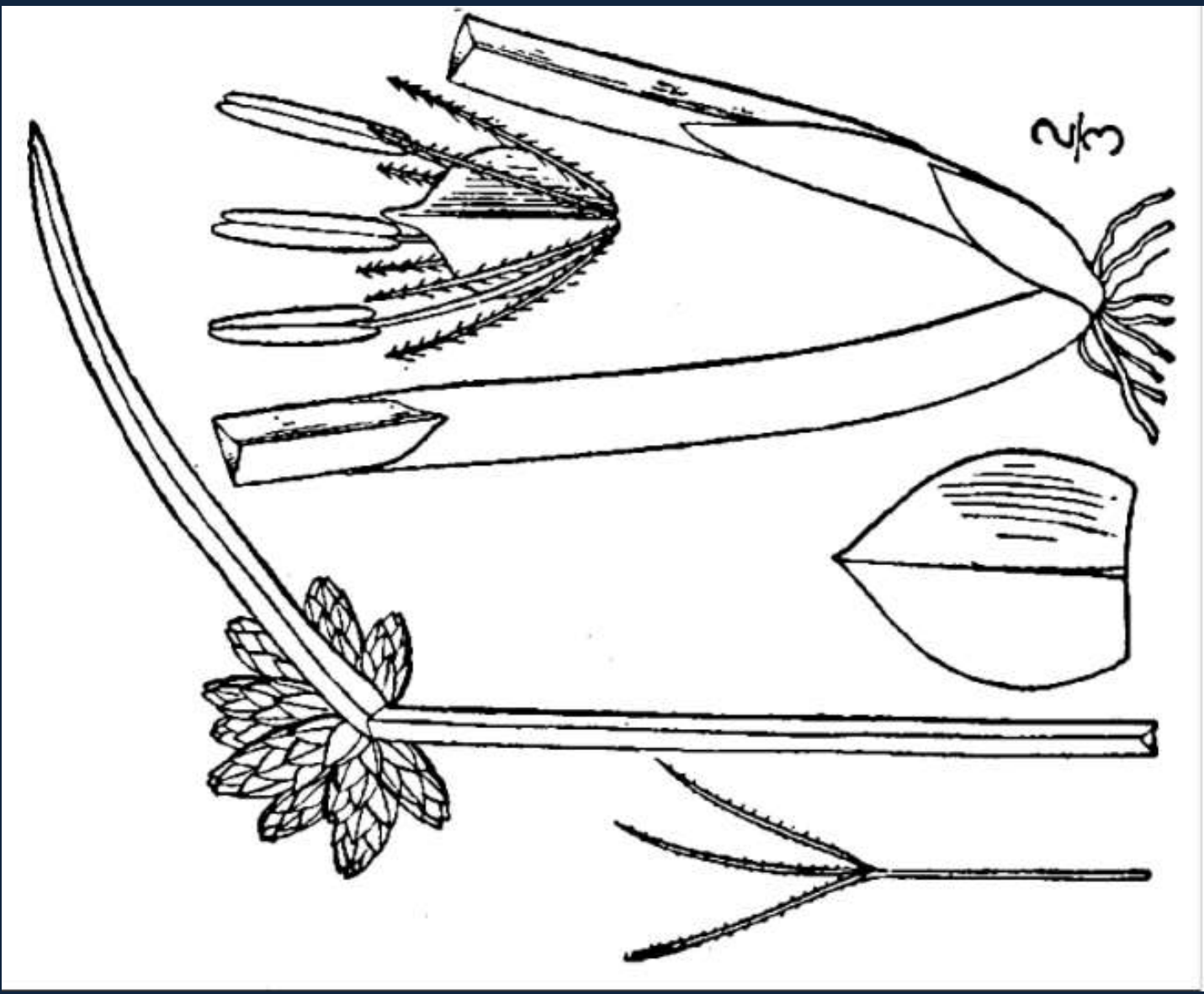
Image by Rich Miller

Ricefield bulrush, *Schoenoplectus mucronatus*

- WA: Class A
- Perennial with stout rhizomes
- Upright, triangular stems, up to ~3 feet
- Inflorescence 4 to 20 spikelets
- Subtended by stiff, angled to spreading bract

Image by Patrick Sowers

Schoenoplectus mucronatus syn. Scirpus mucronatus from Britton, N.L., and A. Brown. 1913. An illustrated flora of the northern United States, Canada and the British Possessions. Vol. 1: 331. Courtesy of Kentucky Native Plant Society. Scanned by Omnitek Inc.



- Known from growing in rice fields, also in ponds, wetlands, ditches
- Moist and wet terrestrial habitat, and in shallow water
- Reproduces by seed and vegetatively

Image by Ben Peterson

Ricefield bulrush

- Clark: Ridgefield National Wildlife Refuge in Clark County
- Skamania County
- King County

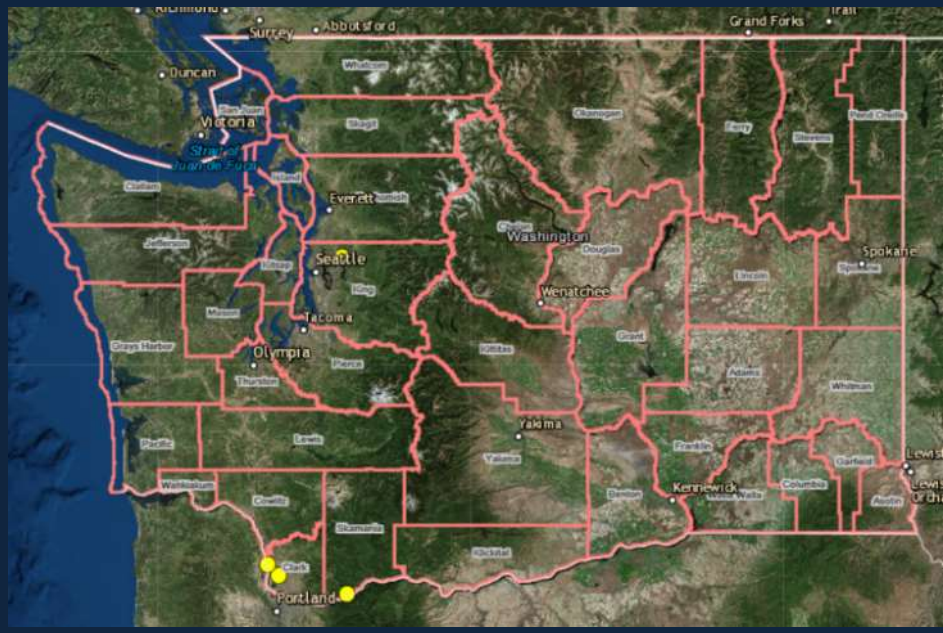


Image: Skamania County NWCB

Flowering rush, *Butomus umbellatus*

- Class A noxious weed
- Ornamental pond plant
- Submersed or emergent, freshwater, aquatic perennial

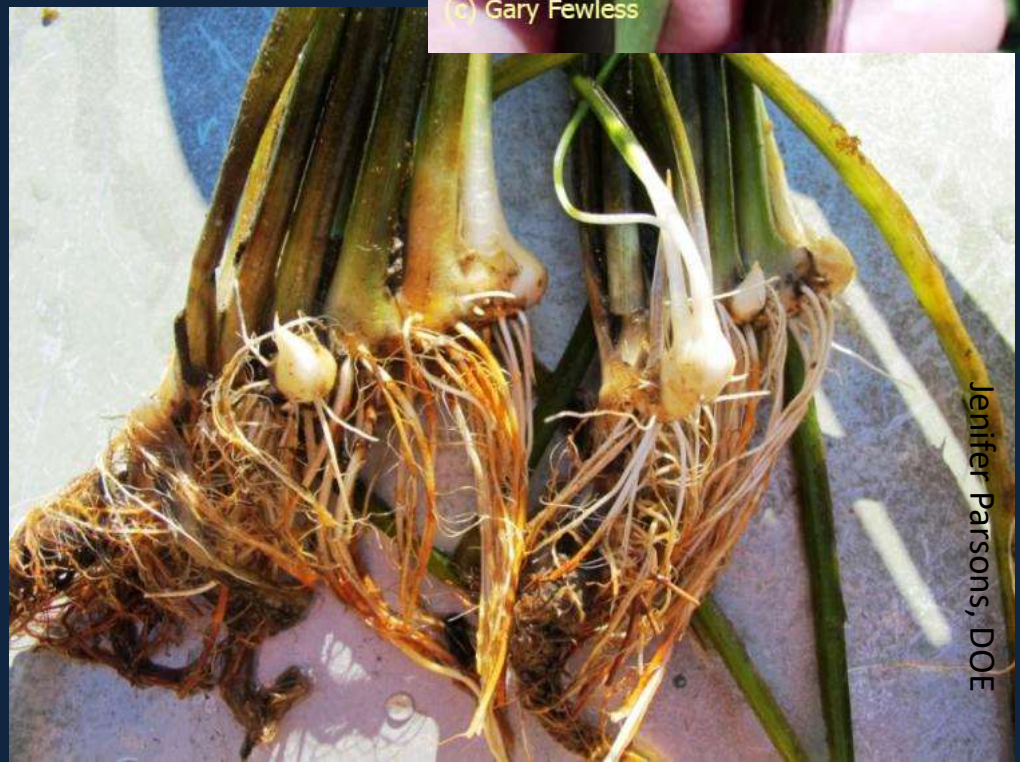
WSNWCB

Jenifer Parsons, Dept. of Ecology

Tim Miller, WSU

Flowering rush

- Stout rhizomes, bulbils
- Leaf blade triangular proximally, flattened distally
- Growth can have twisted/spiral growth



Flowering rush

- Pretty, umbellate pink flowers with 3 petals and 3 sepals
- Sporadic flowering

Image courtesy Dr. Peter Rice

WSNWCB

Flowering rush

- Capable of spreading via rhizomes, rhizome branches, bulbils and possibly seed
- Wide range of hardiness
- Outcompete native species, reducing habitat for native fish
- Impedes recreational activities, choke irrigation ditches

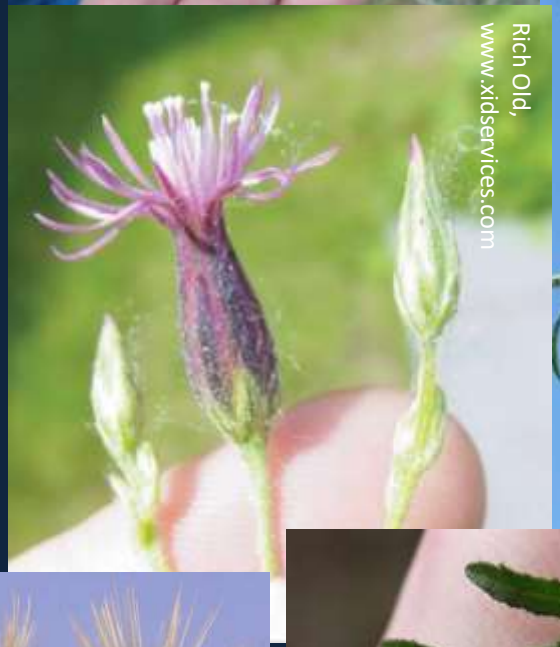

WSDA Weed Mapper


Images courtesy Dr. Peter Rice


Vic Reeve, Benton County NWCB

Common crupina, *Crupina vulgaris*

- Class A noxious weed
- Winter annual, up to 3 feet tall
- Cotyledons are thick, shiny and dark green
- Leaves alternate, lace-like with short, stiff bristles, up to 2.8 inches long
- Flowerheads clustered, 3 to 5 flowers, thin and vase-shaped
- Seed with bristle



Rich Old,
www.xidservices.com


WSNWCB


Rich Old, www.xidservices.com

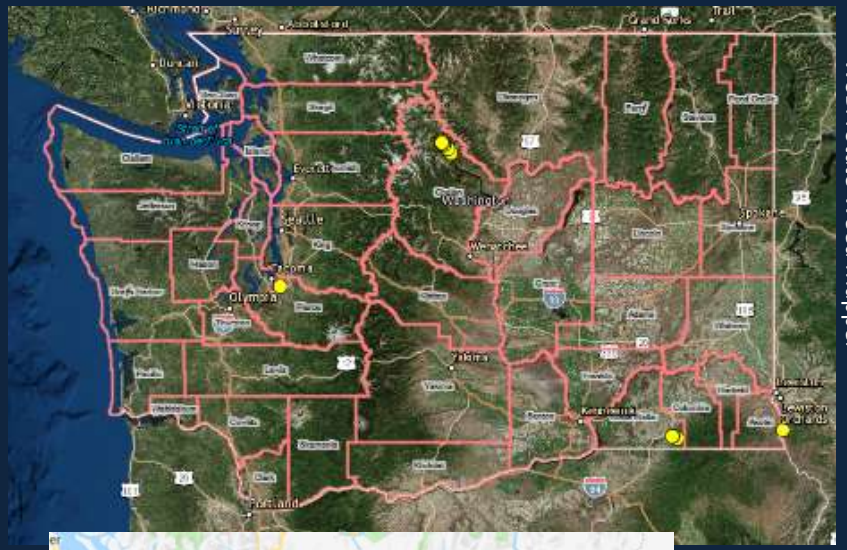
Common crupina

Greg Haubrich, 10/13/2017

Nelle Murray, 3/14/2014

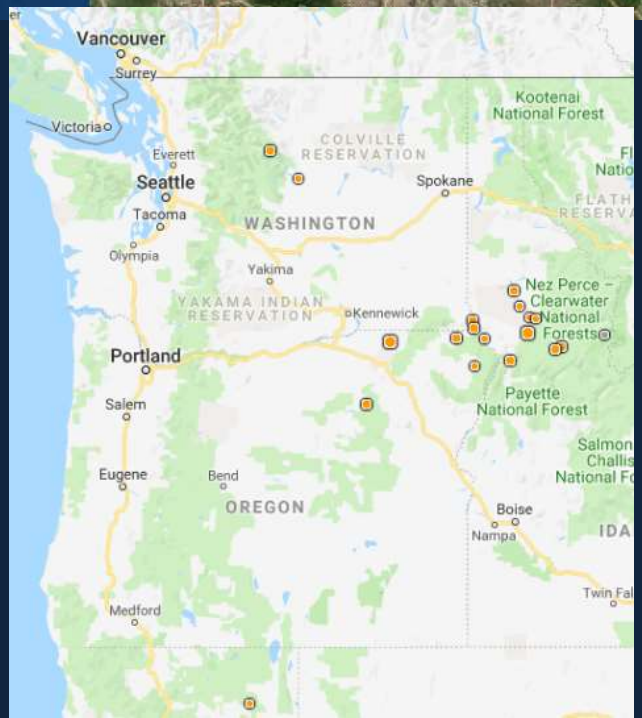
Common crupina, *Crupina vulgaris*

- Grows in a wide variety of habitats including fields, grasslands, roadsides and open woodlands
- Spreads quickly, solid stands



WSDA State Weed Mapper

WSNWCB



www.pnwherbaria.org

ORNAMENTAL PLANTS AND NOXIOUS WEEDS

Many of the WA State Noxious Weeds are ornamental escapees

Tim Miller

WSNWCB

Laurel Baldwin

Noxious Weeds and pretty plants

Baby's breath
Gypsophila paniculata

- Invasive plants - noxious weeds - are commonly:
  - Fast-growing
  - Quick to mature
  - Prolific
  - Adaptable to many environments
  - Difficult to control

Noxious Weeds and pretty plants

- Many garden plants are often touted for being:
  - Fast-growing
  - Quick to mature
  - Prolific
  - Easy-to-grow
  - Hard to kill

WSNWCB

Yellow archangel,
Lamiastrum galeobdolon

Ornamentals and Noxious Weeds can be a sensitive subject

- Nurseries do not always appreciate regulation or negative spin on some profitable plants
- Gardeners do not always appreciate regulation
- Most plants behave nicely in the garden when properly cared for, but some…

Purple loosestrife,
Lythrum salicaria

Wreak havoc when they escape

Purple loosestrife,
Lythrum salicaria

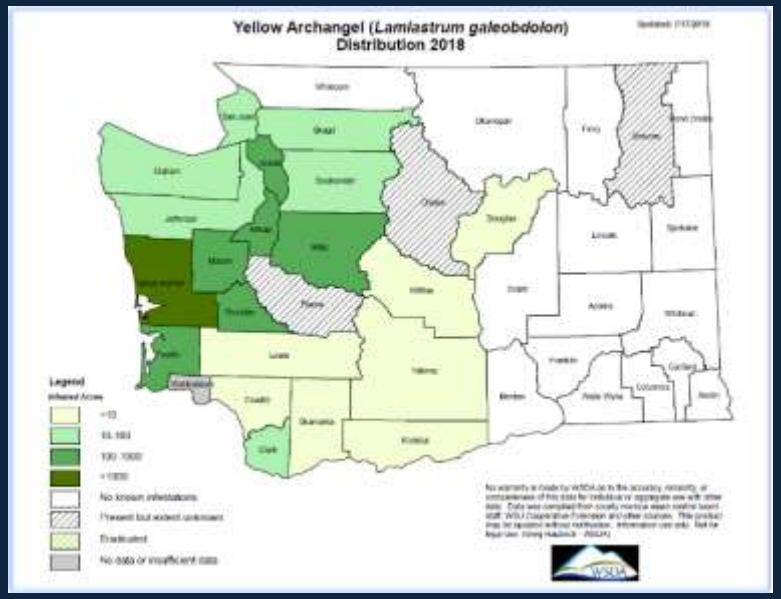
Yellow archangel, *Lamiastrum galeobdolon*

- Class B noxious weed
- Quarantined
- Perennial groundcover,
- Opposite leaves, silvery variegation
- Flowers in whorls at leaf axils

Images: Wendy DesCamp

Yellow archangel

- Grows in sun and full shade
- Forests, riparian areas, greenbelts
- Dense carpets of growth
- Spreads vegetatively by rooting stems
- Seeds



Ravenna grass, *Saccharum ravennae*

(syn. *Tripidium ravennae*)

- Class B noxious weed
- Proposed for quarantine list
- Tall, upright, ornamental grass, forms clumps,
  - basal mound of leaves up to 4 ft
  - flower stems up to 13 ft

Ravenna grass, *Saccharum ravennae*

- Leaves 3 - 4 feet long by 0.5 - 1 inch wide
- Plumes 10-24" long in late summer to early autumn, on upright, leafy stalks
  - Stalks often red tinted in late summer
- Stalks remain through winter
- Spread by seed

All Images WSNWCB

Italian arum, *Arum italicum*

- Class C
- Proposed quarantine
- Perennial, herbaceous plant that grows from tubers
- Leaves emerge in the fall to late winter and die back in the summer. Leaf blades are arrowhead-shaped, variegated
- Flowers: spathe and spadix, emerge in late April to June and give off a displeasing odor
- Fruit is a orange-red berry

Italian arum, *Arum italicum*

- Reproduces by seeds and tubers. Berries are dispersed by birds and can be spread by water
- Forms dense groundcover
- Toxic
- Forest understories, riparian areas, old gardens and woodland gardens and disturbed locations near urban development


WSNWCB

Creeping Jenny, *Lysimachia nummularia*

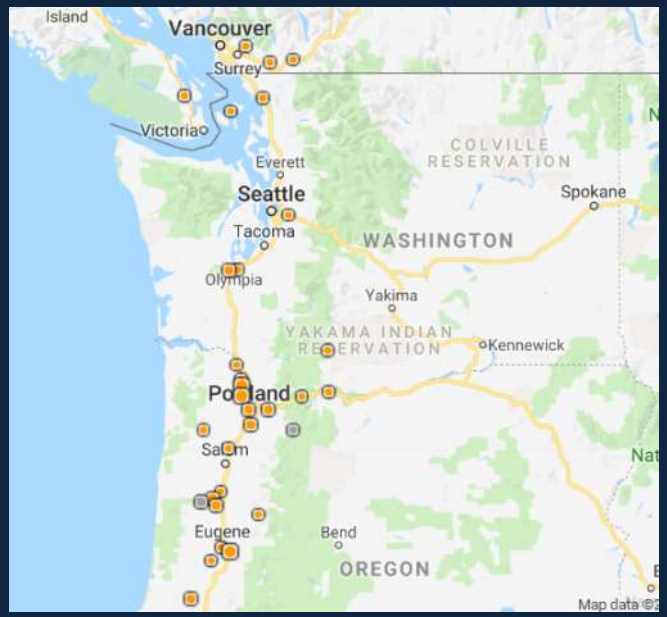
WSNWCB

- Monitor List in WA
- Perennial, herbaceous, hairless
- Stems root at nodes
- Leaves opposite, rounded, 0.25-1.5 in (0.6-3.8 cm) long
- Plant may not flower
- Flower from the leaf axils. 5 yellow petals, blooms from June to August.

Rich Old

Creeping Jenny, *Lysimachia nummularia*

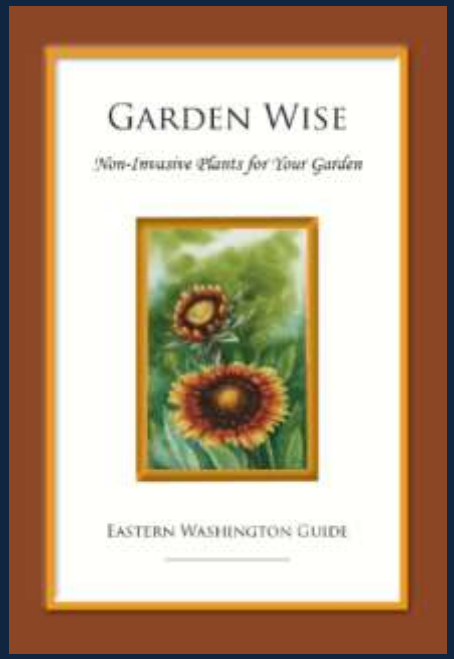
- Variety of habitats, moist, disturbed ground along lakes, ponds, roadsides and near gardens

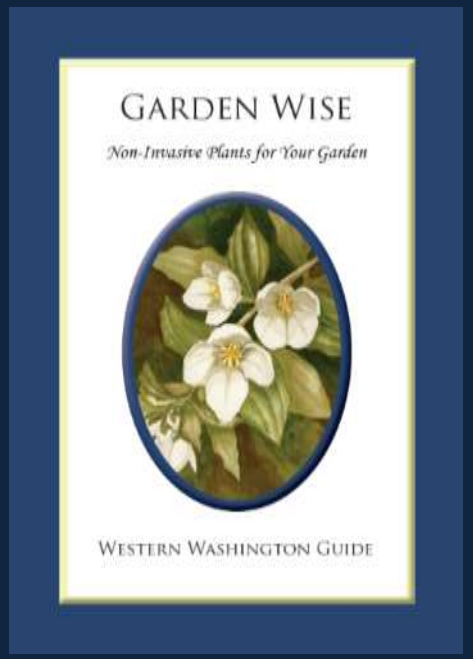


Emily Stevenson, Skamania County

What should I plant?

- Promoting non-invasive species is good business
- Choose plants that are
  - Native
  - Non-native & not invasive
- Supporting pollinators
  - Bloom time
  - Diversity





Our website > outreach > publications

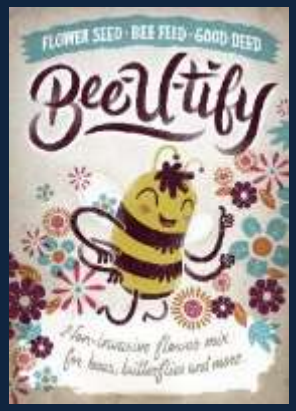


Image by Trish Durand

RECENTLY LISTED NOXIOUS WEEDS IN WASHINGTON

Washington's newest noxious weed additions: 2018

- *Impatiens parviflora*, small-flowered jewelweed, Class A noxious weed

- *Impatiens capensis*, spotted jewelweed, Class C noxious weed

Tussilago farfara, European coltsfoot

- coltsfoot, butterbur, bullsfoot, and more
- Washington: Class B
- Oregon: A
- Rhizomatous perennial 2 to 20 inches tall
- Flowering stems grow first in spring
  - Tip of stem, yellow flowerhead, disk and ray flowers

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

Tussilago farfara, European coltsfoot

- Leaves sprout during to after flowering
  - Basal leave grow from rhizomes, up to 11.8 inches long
    - white-woolly below
- Seed production varies depending on conditions
- Spreads by windblown seeds or by rhizomes

Matt Below, King County Noxious Weed Control Program

King County Noxious Weed Control Program

European coltsfoot

- Open to shaded, disturbed environments
- Dispersed in agricultural fields by tillage equipment, in water along rivers.
  - Rhizome fragment with one node can produce plant
- Can invade and impact natural areas
  - Establishing in areas after knotweed treatment

European coltsfoot


WSNWCB


WSNWCB

Control:

- Small amounts: may be dug out
- Establish competition
- Herbicide to fully emerged leaves
- Greenhouse trial by Tim Miller, good results with tested treatments, including: glyphosate/Rodeo (2.5%), imazapyr/Habitat (1%), aminopyralid/Milestone (5 fl.oz/a)


Tim Miller, WSU Extension

Centaurea melitensis, Malta starthistle

- Class B noxious weed listing; (designations for control same as yellow starthistle, *Centaurea solstitialis)*

  All of Washington except in Klickitat, Whitman, Benton, Franklin, Walla Walla, Columbia, Garfield, and Asotin counties, and a portion of Stevens County
- Winter annual, 1 to 3 ft. tall, loosely gray-tomentose, the stem with narrow wings
- Leaves
  - Basal and lower stem leaves: margins entire to dentate lobed, to 6 inches
  - Middle and upper leaves smaller, linear-oblong and entire

Centaurea melitensis, Malta starthistle

- Flowerheads solitary or in groups of 2-3; often with covered with cobwebby hairs; round-oval in shape
- Principle bracts: tipped by spine 0.2 to 0.5 inches, purplish, spiny-fringed at base
- All disk flowers; pappus 1.5-3 mm. long

Image by Ron Vanderhoff

D. Walters and C. Southwick, USDA APHIS ITP, Bugwood.org

Image by: Rich Old

image by: Franco Folini

Malta starthistle

- Washington:
  - Skagit County, Cypress Island (2016)
- Prefers disturbed and open areas, including grasslands, open woodlands, agricultural fields and roadsides
- Spreads by seed
- Potentially toxic to horses - "chewing disease" - suspected but as yet its toxicity has not been confirmed experimentally

image by: Bud Hardwick

Malta starthistle

- Control methods similar to yellow starthistle
- Prevention
- Hand-pull, disposal (repeat)
- Grazing: Sheep, goats, and cattle may graze in early spring when plants have developed flowering stems, before spiny flowerheads
- Many herbicides can be used

image by: Bud Hardwick

Thank you!

Contact:

Wendy DesCamp

wdescamp@agr.wa.gov

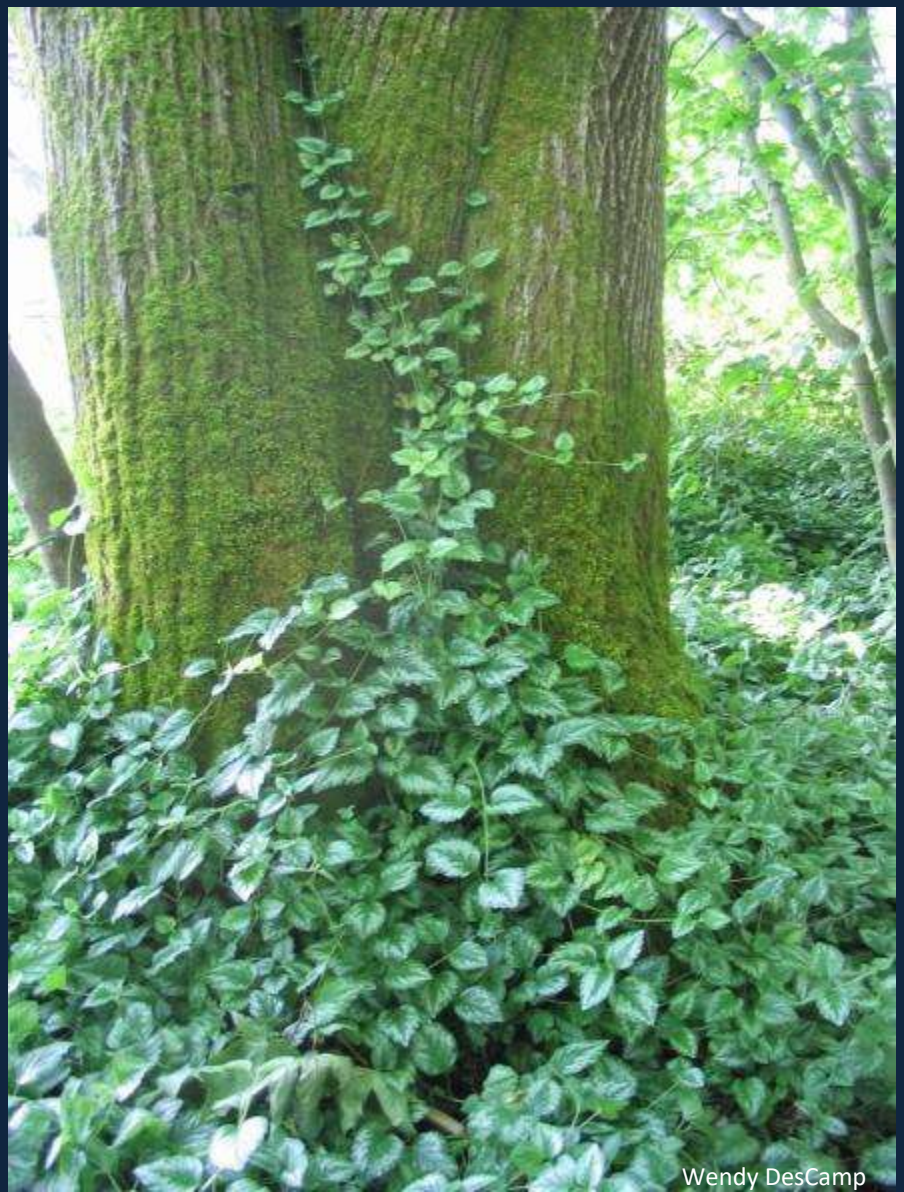
(360) 725-5764

Website

http://www.nwcb.wa.gov

Visit us on Facebook

Washington State Noxious Weed Control Board



Wendy DesCamp