

Noxious Weeds in Washington

Everybody's problem
Everybody's solution



Yellow starthistle is a noxious weed that colonizes semi-arid rangeland where it outcompetes native plants and desirable forage species that wildlife and livestock depend on. It also causes chewing disease in horses, which can be fatal.

Photo courtesy Marty Hudson, Klickitat County Noxious Weed Control Board.



Washington State

**Noxious Weed
Control Board**

What are Noxious Weeds?

“Noxious weed” is the legal term for invasive plants that are competitive, difficult to control, and are highly destructive to Washington’s agricultural, natural, and human resources. Noxious weeds include nonnative invasive herbaceous plants, shrubs, trees, and aquatic plants. Once established, these aggressive plants colonize our croplands, rangelands, forests, wetlands, and water ways, causing economic and ecological damage that affects us all in Washington. That’s why everyone- homeowners, outdoor enthusiasts, farmers, and public land managers - have a role to play in the effort to control and prevent the spread of noxious weeds, such as rush skeletonweed (right).



The various impacts of noxious weeds are almost as numerous as the weeds themselves. Although the effects of noxious weeds are often separated into economic, environmental, and health categories, the three can be interrelated. And while some noxious weed impacts can be measured with a dollar sign, many are too complex to fully calculate, particularly those affecting natural areas.



Submerged and floating aquatic noxious weeds such as water primrose clog waterways and ditches, trap sediments, create mosquito habitat, and are costly and difficult to control.

Noxious Weeds Reduce Wildlife Habitat

Noxious weeds can take over native plant communities or establish themselves as a dominant species where few plants had been able to grow before. They can change the habitat upon which our native Washington wildlife depends for food and shelter. Some species, such as gorse, knotweed, Scotch thistle, and Himalayan blackberry form physical barriers that restrict wildlife movement.

Purple loosestrife, *Lythrum salicaria*, is a well-studied noxious weed that illustrates how far-reaching the impacts of an invasive plant can be. This wetland invader forms dense stands that displace native species such as cattail and bulrush, reducing habitat for waterfowl, songbirds, and small mammals. A recent study also shows that its decomposition impacts the food web, changing the types of algae available for tadpoles, which affects the growth rate and size of developing frogs.



Many aquatic and wetland noxious weeds degrade aquatic habitat. For example, parrotfeather, *Myriophyllum aquaticum*, forms dense mats that choke streams and ponds, reduce water flow and oxygen levels in the water, and displace native aquatic plant communities, which had provided valuable habitat for fish, amphibians, invertebrates, and other wildlife.

Noxious Weeds Threaten Our Native Plants and Ecosystems

With over 4.5 million acres of Wilderness Area and over 150,000 acres of natural areas, Washington has been able to preserve many of its diverse ecosystems. While many pieces of land have been set aside and protected from development and disturbance, noxious weeds are still a constant threat. Many of these invasive plants adapt to many different environments and readily invade our natural areas where they outcompete our native vegetation for space, available sunlight, water, and nutrients. Many noxious weeds form dense monocultures, dramatically reducing biodiversity and often changing the way healthy ecosystems had functioned prior to infestation. And several of our state endangered and threatened plant species, such as golden paintbrush and showy stickseed, are at risk from encroaching noxious weeds.

Rangeland and Grassland

Many noxious weeds such as knapweeds, leafy spurge, and Scotch thistle can convert rangeland and grassland, which contain a rich array of native grasses and wildflowers, into monocultures that are less palatable for grazing animals. Many noxious weeds and other invasive plants such as cheatgrass produce more dry biomass than the native plants they displace, creating a serious fire hazard. Noxious weeds like Scotch broom and Dalmatian toadflax are often among the first species to emerge following these devastating wildfires.



Scotch thistle rosettes are the first plants to emerge following a wildfire. Photo by Sue Bird, Yakima County NWCB.

Riparian Habitat

Noxious weeds such as knotweed, butterfly bush (below), Russian olive, and indigobush colonize riparian habitat. These fast-growing invasive plants can transform riverbanks by restricting access to water, increasing soil erosion, displacing native vegetation, reducing available sunlight, and altering the nutrient cycle. The degradation of habitat caused by noxious weeds pose a serious threat to our native plants as well as salmon and other wildlife.



Image by Sarah Doyle

Forest Habitat

Washington's forests are also susceptible to noxious weed invasions. Shade-tolerant species such as garlic mustard, shiny geranium, and herb-Robert can rapidly outcompete native plants and reduce the forest understory biodiversity. Woody vines like invasive English ivy cultivars, old man's beard, and white bryony scramble up trees and make them weak and vulnerable. Yellow archangel can completely dominate the forest floor. Fast-growing shrubs like spurge laurel and English hawthorn can form dense stands that displace native woodland shrubs and regenerating trees.



Noxious Weeds are Economically Damaging

Noxious weeds are a problem for all of us, from farmers to urbanites, and their impacts cost us both directly and indirectly. According to a study by the Oregon Department of Agriculture, noxious weeds reduced that state's personal income by an estimated \$83.5 million in 2014. What's more, the loss in production caused by these weeds could eliminate an estimated 1,850 jobs per year.

Cost to Agriculture

Noxious weeds cost farmers, ranchers, and orchardists millions of dollars in control efforts and lost crop production, which can contribute to higher prices of food for all of us. Invasive knapweeds and yellow starthistle outcompete forage species and reducing grazing quality of rangeland. Infestations of these species resulted in an estimated loss of \$950,000 per year in forage production in eastern Washington. The estimated cost to provide hay to replace that lost forage was an additional \$2 million.



Image by Farren Young

Cost to Timber Industry

The majority of forested land in Washington is commercial timberland and some noxious weeds interfere with the reforestation process. For example, it was estimated in 2014 that Scotch broom alone cost Oregon \$44.8 million in reduced timber production per year.



Cost to Urban and Suburban Areas

Noxious weeds are also costly in suburban and urban areas. Invasive knotweeds can damage infrastructure by growing through pavement, pipes, and septic systems. Scrambling vines such as English ivy (left) and white bryony can down trees and powerlines and cause structural damage to fences. They also harbor rats and other vermin. Some noxious weeds such as gorse create a fire hazard.

Additionally, we all pay for weed control along roadways and utility right-of-ways, where weeds reduce visibility and access.

Reduction in Property Values

Many noxious weeds can significantly reduce property values. Once noxious weeds monopolize rangeland and farmland, it can be very expensive to control the plants and restore the land back to a functional condition. A classic example in the Pacific Northwest is a ranch that sold in auction in 1988 for only about 10% of its original worth after becoming overrun with the noxious weed leafy spurge.



These sweeping rangeland hills look beautiful but they are infested by the bright yellow-green plant leafy spurge. This Class B noxious weed is toxic to cattle and horses, so this land cannot be used for grazing. Goats have been deployed to control the leafy spurge as part of a long-term management plan to reclaim this land.

Noxious Weeds Affect Recreational Activities

Washington State's abundance of pristine landscapes and diverse ecosystems attract many visitors who come to enjoy our beautiful natural areas and recreational activities. Noxious weeds have a negative effect on many outdoor activities and on tourism, which impacts the livelihood of many Washingtonians.

Hunting and Wildlife Viewing

Rangeland invaders outcompete the native plants that game animals depend on. For example, spotted knapweed (right) can reduce the forage quality of areas by up to 90% for elk and deer. The lack of forage forces them to search elsewhere for food and affects hunting and wildlife viewing opportunities. Noxious weeds such as knapweeds, knotweeds, and thistles block trails and restrict access to waterways.



Image by Gary Kramer



Image by L. Scott

Biking, Hiking, and Trail Riding

Puncturevine is a noxious weed that is right at home on road shoulders and trails. Its sharp-spined seeds can rip right through tires (left), stick to shoes, pierce the paws of dogs, and really hurt when touched, making it a serious nuisance for bicyclists, hikers, dogs, and other park visitors.



Thorny and spiny noxious weeds such as Scotch and Canada thistle and Himalayan blackberry encroach upon trails making them impassable (left), and they can injure horses and pack animals. Since many noxious weeds are unpalatable or even toxic, they are unsuitable for grazing horses and pack animals.

Boating and Fishing

Submerged and floating-leaved aquatic noxious weeds can be problematic for water sports enthusiasts. They can form dense mats that limit swimming areas and can even pose a drowning hazard. They also



Image by Julie Sanderson

block waterways for boaters and paddlers. The submerged plants can clog boat propellers, and plant fragments infest new water bodies by clinging to boats, trailers, and equipment. Plants like



Eurasian watermilfoil (above) can ruin anglers' favorite fishing spots by degrading fish habitat (left), as they increase sedimentation and water temperature and decrease dissolved oxygen.

Some Noxious Weeds are Toxic to People and Animals

In addition to the economic and environmental damages that these invasive plants cause, some noxious weeds are toxic, and in some cases, even deadly to animals and humans. That many of these plants rapidly colonize disturbed areas and spread into neighboring properties makes them even more troublesome.



Poison Hemlock, *Conium maculatum*

As its name indicates, poison hemlock is deadly to both people and animals. It contains the alkaloid coniine, a neurotoxin that can cause respiratory paralysis if too much is consumed. Accidental ingestion occurs in people when plants are mistaken for

parsley, parsnip, or wild carrot. Several people are poisoned each year, including one death in 2010. A frequent invader of pastures, it also causes livestock deaths.



Giant Hogweed, *Heracleum mantegazzianum*

Giant hogweed had once been a favorite ornamental plant due to its unusually large size. However, this noxious weed is a public health hazard, as the plant exudes a clear, watery sap that sensitizes the skin to sunlight. This

reaction can result in painful third-degree burns that cause blistering and scarring. Giant hogweed also forms dense canopies along streams and riverbanks, outcompeting native species and increasing soil erosion. Eradication of this Class A noxious weed is required in Washington.



Image by Jennifer Andreas



Tansy Ragwort, *Senecio jacobaea*

Tansy ragwort is poisonous to cattle, horses, and sheep whether fresh or dried in hay. It contains toxic alkaloids that damage the liver when ingested, ultimately resulting in liver failure. Unfortunately, many people do not remove it from their pastures, thinking that their animals will only graze around the noxious weed. What they don't realize is that livestock cannot always

avoid eating the low-growing and highly toxic rosette leaves. It spreads aggressively and seeds prolifically, with seeds remaining viable in the soil for over 10 years.



Image by King County NWCB

To learn more about these and other toxic noxious weeds and how to identify and control them, please go to our website or contact your county noxious weed control board, conservation district, or WSU Extension office.

If you think you have ingested toxic plants, call 911, please go to the emergency room, or contact the Washington Poison Center at 1-800-222-1222.

Noxious Weed Law in Washington State

Although you have the right to use your land for your own purposes, noxious weeds can interfere with your land use goals. And because noxious weeds do not abide by property or boundary lines, they can also interfere with the land uses of your neighbors- be they homeowners, farmers, timber producers, horse and livestock owners, or park and natural area managers. Noxious weeds impact us all in Washington, either directly or indirectly, and it takes the cooperative effort of all of us to help control them.

The History of Weed Laws in Washington

This is one of the noxious weeds that started it all: Canada thistle. Washington farmers realized early on that infestations of this weed on their neighbors' land could spread onto their own land and affect their crops. Thus, in 1881- before Washington was recognized as a state- an act was passed that required both landowners and district road supervisors to control Canada thistle on their property. This act paved the way for the noxious weed laws of today. Established in collaboration with and at the request of scientists, farmers, and landowners in Washington state, our main noxious weed law, Chapter 17.10 RCW, was created in 1969.



Washington Weed Law

The purpose of Chapter 17.10 RCW is to limit the economic loss and other negative impacts that noxious weeds cause our agriculture, natural resources, and human health. This law mandates the control of noxious weeds by landowners, both private and public.

Who Administers Weed Law?

Noxious weed laws are administered through the State Noxious Weed Control Board, county weed boards and weed districts, and the Washington Department of Agriculture (WSDA). The State Weed Board advises WSDA about noxious weed control. Through its actions and policy decisions, it helps coordinate and support county boards and weed districts. The Board maintains the official Washington State Noxious Weed List and reviews proposals for changes or additions to the list annually. It also provides educational resources for county boards and weed districts, community organizations, businesses, and landowners.



Your County Noxious Weed Control Board

While every county noxious weed control board and weed district is different, they all strive to provide many valuable resources to their communities, such as education, weed identification, technical advice on weed control and, when necessary, enforcement of the noxious weed laws. Your local county weed board offers many resources for free or at a low-cost.



Noxious Weed Classification

To help protect our economy and natural resources, the Washington State Noxious Weed Control Board adopts an annual noxious weed list- WAC 16-750. This list determines which plants meet the criteria of a noxious weed and where in Washington control will be required. It groups noxious weeds into three classes (A, B, and C), primarily on how widespread each species is in Washington and therefore how feasible eradication or control is. This approach allows control efforts to be prioritized in the most reasonable and cost-effective manner.

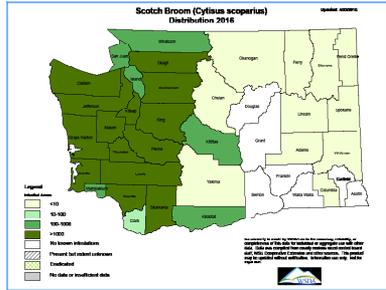
Class A noxious weeds are very limited in their distribution, and the goal is to prevent them from gaining a foothold in Washington. By law, all Class A noxious weed plants *must* be eradicated (eliminated). Garlic mustard (right) is a highly invasive annual in many parts of the country where it completely dominates forest floors. Fortunately, its distribution is still limited in Washington, and it is aggressively being targeted for eradication so it does not become widespread in our forests.



Image by Fran Lucero

Class B noxious weeds are nonnative, invasive species that are abundant in some areas of the state, but absent or limited in other areas. The statewide goal is to “draw the line” around and contain infested regions, to keep these noxious weeds from spreading into new areas. They are *designated* for mandatory control in areas where they have not yet invaded or where distribution is still limited. Scotch broom is widespread in counties throughout western Washington, and

it would cause a financial burden on most landowners to require control of Scotch broom in these counties, especially since its seeds remain viable over 30 years. It could do very well in eastern Washington, so it has been a Class B designate there in most counties in order to keep it from becoming widespread on that side of the Cascades.



Scotch broom (left), a Class B noxious weed, is widespread in western Washington but still limited or absent in eastern Washington as indicated in the distribution map on the right. The goal is to contain it where it is already abundant and to control and prevent its spread so that it does not become a problem statewide. Therefore, it is designated for control in almost every county east of the Cascades.

Class C noxious weeds meet the criteria of noxious weeds but are typically so widespread that there is no realistic hope of eradicating them. Other times, noxious weeds are added to the Class C list when the distribution is not fully known at the time of listing. The State Weed Board provides educational resources about these species but does not require control of them. County noxious weed control boards may require landowners to control certain Class C noxious weeds, particularly those that pose a threat to local agriculture or natural resources, or they may opt to educate about and encourage voluntary control of these species, such as Himalayan blackberry (below left) and Russian olive (below right).



Simple Steps You Can Take Take to Be Part of the Solution

Know your noxious weeds and learn how to control them.

Contact your county noxious weed control board, WSU Extension office, or conservation district for assistance in plant identification and advice on best control practices. Many county weed boards also loan tools to help with weed control, such as weed-pulling tools and backpack sprayers.



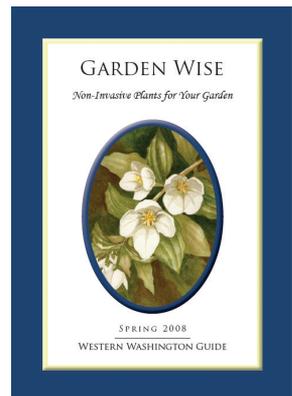
Stop noxious

weeds from spreading from your property. Be a good neighbor by

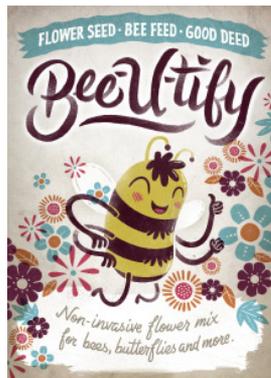
controlling your noxious weeds, and show folks in the neighborhood how to do the same. Even if you aren't required to control some of the more widespread noxious weeds on your property, it's appreciated by surrounding neighbors who choose to control them.

Choose non-invasive plants for

your garden. Nearly half of our listed noxious weeds are garden escapees but, fortunately, the majority of ornamental plants are not invasive. Consult your local nurseries, Master Gardener program, or publications such as our booklet *GardenWise* for help choosing the best plants for your area.



Replace noxious weeds with native or non-invasive pollinator-friendly plants. Many noxious weeds may provide pollen and nectar for bees and other pollinators, but their negative impacts far outweigh their use as forage. You can replace these invasive plants with beautiful, easy-to-grow native or nonnative, non-invasive plants that benefit pollinators as part of your long-term weed management plan.



Help prevent the spread of noxious weeds when you explore natural areas. Stay on established trails, and please check your shoes, socks, clothing, and camping/hiking gear for plant material before and after your trip.

Feed horses weed-free forage and/or processed feed pellets before and during backcountry trips. Using weed-free products such as our NAISMA-recognized WA Wilderness Hay and Mulch (WWHAM) helps prevent the dispersal of noxious weed seeds through forage and manure. Also, check horses' coats, tack, and gear for clinging seeds.

AGR FORM 80-04-02 (9/2011)

**WA State Wilderness
Hay and Mulch
Certification Program**

The North American
Weed Free Forage
Certification Program

*This product is certified to the
North American Standards*



360-902-1822

plantservices@agr.wa.gov

Tag N!

Never release aquarium and water garden plants into the wild. Many of these species can thrive in the wild where they are very difficult to control. Dispose of these plants in the trash or compost away from water.



Image by Laurel Baldwin

Check your watercraft and trailer for plant fragments and remove them. Many aquatic noxious weeds are introduced to new areas through watercraft movement since plant fragments can grow into new plants.

Volunteer to control noxious weeds.

There are many organizations that work on weed removal in natural areas, such as this group which held a thistle-pulling event at Mount Rainier. These are great opportunities to get some fresh air and enjoy and help protect Washington's precious natural areas.



Julie Hover, Mt. Rainier NPS

Report new noxious weed sites. Please keep your eyes open for new invasive plants in Washington. Early Detection Rapid Response (EDRR) is critical in preventing new infestations. Organizations like the PNW Invasive Plant Council provide excellent citizen science training to help you be on the lookout. To report new sightings, please contact us at noxiousweeds@agr.wa.gov.

For more information, please contact us at:

Washington State Noxious Weed Control Board
360-725-5764

noxiousweeds@agr.wa.gov

www.nwcb.wa.gov

or contact your county noxious weed control board
or weed district.



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Weeds on the Ecology and Economy of Montana.*

Please help us protect
Washington's economic
and natural resources
from noxious weeds.



Photo Courtesy Robin Kusske, Franklin County Noxious Weed Control Board

**Native wild hyacinth growing in Lyons Ferry is
threatened by encroaching yellow starthistle.**