



Pollinator Forage EHB 2478

October 2020 Report



Washington State

**Noxious Weed
Control Board**

INTRODUCTION

The Washington State Noxious Weed Control Board was directed under EHB 2478 to conduct a pilot project that replaces invasive noxious weed infestations with native, pollinator-friendly plantings that share a similar bloom succession. The resulting on-the-ground projects were intended to achieve two complementary goals: 1) to remove noxious weeds and 2) to support agricultural production by creating healthy, native forage for European honeybees and other important pollinators.

EHB 2478 gives the State Weed Board sole discretion on how to implement this pilot project, and it directed the Board to coordinate with County Weed Boards to assist the selected landowners who will be replacing noxious weeds with native, pollinator-friendly species. The Board could also work with Conservation Districts.

No funding was allotted for the EHB 2478, the bee forage project, in the Washington state budget for FY17, FY18, FY 19, or FY 20. The Washington State Noxious Weed Control Board has done its best to meet the goals of unfunded EHB 2478.

EHB 2478 SECTION 1

Section 1 of EHB 2478 directed the Washington State Noxious Weed Control Board to conduct a pilot project that evaluates the options, methods, and costs of purposefully replacing pollen-rich and nectar-rich noxious weeds with either native or noninvasive, nonnative forage plants that can produce similar levels of pollen and nectar with a similar bloom succession to support populations of honey bees and other pollinators. The goal was to develop optional guidance and best practices for landowners and land managers faced with the removal of noxious weeds.

Per house bill 2478 Section 1, the Washington State Noxious Weed Control Board has developed optional guidance and best practices for landowners and land managers regarding the removal of noxious weeds and establishment of pollen-rich and nectar-rich native species.

Guidance and Best Practices for Noxious Weed Control and Bee Health

- Time your noxious weed control so that it minimizes disturbance to bees and other pollinators. Conduct control work in the morning or in the evening when bees and other pollinators are less active.
- Control as many noxious weeds as you can in early spring, fall, or even winter if possible, when plants are not in bloom, keeping in mind the best time to control the particular weed species on your land.
- Plant desirable species in nearby areas in conjunction with weed control so the bees still have a source of nectar and pollen. If you are converting a large infestation, replace sections over time instead of all at once.
- Transform underutilized patches of land into pollinator-friendly forage by planting native and pollinator-friendly species along field edges, roadsides, field pivot corner, gardens, and yards.

- Many crops are also pollinator friendly, including alfalfa, apples, blueberries, buckwheat, canola, cherries, corn, raspberries, soybeans, and sunflowers.
- When choosing ornamental plants, avoid double-flowers, (having double or more petals), which typically produce fewer stamens and less pollen.
- When possible, leave some areas of bare ground to provide ground nesting sites for native bees and other insects. The Xerces Society recommends that these bare patches be flat to sloped, well drained, in sunny conditions and as small as a few inches, ranging up to several feet. Monitor these spots for weeds that may try to invade. Including plants with hollow stems, like non-invasive Rubus and elderberry species, will also provide important bee habitat.
- An at-home tip to help pollinators: mow lawns less frequently, about once every two weeks. A recent study found that when lawns could grow longer, less aggressive lawn weed flowers, such as clovers, can provide some pollen and nectar for bees. Be aware that these weeds may spread in your lawn, so make sure you do not mind them being there.
- Minimize tilling in areas that may have pollinators underground, turning the ground only when necessary.

The Full Circle brochure was expanded in June 2017 to include in-depth sections regarding pollinator conservation tips, Eastern Washington Plant recommendations to support pollinators, and Western Washington plant recommendations to support pollinators. Approximately 12,000 Full Circle brochures have been requested from the Washington State Noxious Weed Board's website in the past three years.



Additionally, the Bees and Noxious Weed Control brochure was reprinted in June 2018. Approximately 8,500 Bees and Noxious Weed Control brochures have been requested within the same time period. Both brochures continue to be distributed to county boards as well as other organizations, agencies, and private landowners. A list of suppliers is currently available on the state weed control board's website.

Eastern Washington Plant Recommendations to Support Pollinators

Forbs (herbaceous flowering plants)

Common name	Scientific name	Estimated flowering	Life cycle
native biscuitroot species	<i>Lomatium species</i>	spring	P
native balsamroot species (1.)	<i>Balsamorhiza species</i>	April-July	P
Idaho blue-eyed grass	<i>Sisyrinchium idahoense</i>	April-July	P
common camas,	<i>Camassia quamash</i>	April-June	P
common yarrow	<i>Achillea millefolium</i>	April-Oct.	P
desert yellow fleabane	<i>Erigeron linearis</i>	May-June	P
blue flax (6.)	<i>Linum lewisii</i>	May-July	P
purple sage	<i>Salvia dorrii</i>	May-July	P
pale evening-primrose	<i>Oenothera pallida</i>	May-July	B, P
shaggy fleabane	<i>Erigeron pumilus</i>	May-July	P
threadleaf fleabane	<i>Erigeron filifolius</i>	May-July	P
western prairie clover	<i>Dalea ornata</i>	May-July	P
parsnip-flower buckwheat	<i>Eriogonum heracleoides</i>	May-July	P
northern mule-ears	<i>Wyethia amplexicaulis</i>	May-July	P
grand collomia (5.)	<i>Collomia grandiflora</i>	May-August	A
woolly sunflower	<i>Eriophyllum lanatum</i>	May-August	P
Munro's globemallow (4.)	<i>Sphaeralcea munroana</i>	May-August	P
silver-leaf phacelia	<i>Phacelia hastata</i>	May-August	P
blanket flower (2.)	<i>Gaillardia aristata</i>	May-Sept.	P
dusty maidens	<i>Chaenactis douglasii</i>	May-Sept.	B, P
common sunflower,	<i>Helianthus annuus</i>	June-Sept.	A
yellow bee plant,	<i>Peritoma lutea</i>	June-Sept.	P
smoothstem blazing star,	<i>Mentzelia laevicaulis</i>	July-Sept.	B, P
hoary aster	<i>Dieteria canescens</i>	July-Oct.	P

Life cycle: A=annual, B=biennial, P=perennial

Eastern Washington Plant Recommendations to Support Pollinators Continued

Shrubs and trees

common name	Scientific name	Estimated flowering
tall Oregon grape	<i>Berberis aquifolium</i>	March-May
golden currant	<i>Ribes aureum</i>	April-May
antelope bitterbrush	<i>Purshia tridentata</i>	April-June
creeping Oregon-grape	<i>Berberis repens</i>	April-June
native ceanothus	<i>Ceanothus species</i>	spring-summer
black hawthorn	<i>Crataegus douglasii</i>	May-June
mock orange	<i>Philadelphus lewisii</i>	May-July
Nootka rose	<i>Rosa nutkana</i>	May-July
snow buckwheat	<i>Eriogonum niveum</i>	June-September
yellow rabbitbrush	<i>Chrysothamnus viscidiflorus</i>	July-September
rubber rabbitbrush (3.)	<i>Ericameria nauseosa</i>	August-Sept.

Grasses:

Common name	Scientific name	Estimated flowering	Life cycle
curly blue grass	<i>Poa secunda</i>	April-July	P
Idaho fescue (7.)	<i>Festuca idahoensis</i>	May-July	P
bluebunch wheatgrass	<i>Pseudroegneria spicata</i>	June-August	P
tufted hairgrass	<i>Deschampsia cespitosa</i>	June-September	P

Pictures of Eastern WA Pollinator Friendly non-invasive Plants



Images: 2., 4., 5., 6., 8. Ben Legler, 2004; 3. Tad Dillhoff, 2008; 7. Bluestem Nursery.

Western Washington Plant Recommendations to Support Pollinators

Forbs (herbaceous flowering plants)

Common name	Scientific name	Estimated flowering	Life cycle
Pacific bleeding heart (5.)	<i>Dicentra formosa</i>	March-July	P
sea-thrit,	<i>Armeria maritima</i>	March-July	P
sea blush (2.)	<i>Plectritis congesta</i>	April-June	A
common camas	<i>Camassia quamash</i>	April-June	P
Idaho blue-eyed grass	<i>Sisyrinchium idahoense</i>	April-July	P
Philadelphia fleabane	<i>Erigeron philacelphicus</i>	April-August	B, P
large-leaf avens	<i>Geum macrophyllum</i>	April-August	P
riverbank lupine	<i>Lupinus rivularis</i>	April-September	P
farewell to spring (1.)	<i>Clarkia amoena</i>	May-July	A
nodding onion	<i>Allium cernuum</i>	May-July	P
woolly sunflower (8.)	<i>Eriophyllum lanatum</i>	May-August	P
red columbine	<i>Aquilegia formosa</i>	May-August	P
silver-leaf phacelia	<i>Phacelia hastata</i>	May-August	P
tall alumroot	<i>Heuchera chlorantha</i>	May-August	P
Self-heal	<i>Prunella vulgaris</i> var. <i>lanceolata</i>	May-September	P
native penstemon species (7.)	Penstemon species	late spring to summer	
bluehead gilia	<i>Gilia capitata</i>	June-July	A
bigleaf lupine (6.)	<i>Lupinus polyphyllus</i>	June-September	P
slender cinquefoil,	<i>Potentilla gracilis</i>	July-August	P
Canada goldenrod	<i>Solidago canadensis</i>	July-October	P
Pacific aster	<i>Symphotrichum chilense</i>	July-October	P

Life cycle: A=annual, B=biennial, P=perennial

Western Washington Plant Recommendations to Support Pollinators Continued

Trees, shrubs and vines

Common name	Scientific name	Estimated flowering
osoberry	<i>Oemleria cerasiformis</i>	March-April
tall Oregon grape	<i>Berberis aquifolium</i>	March-May
salmonberry	<i>Rubus spectabilis</i>	March-June
red elderberry	<i>Sambucus racemosa</i>	March-July
kinnikinnick	<i>Arctostaphylos uva-ursi</i>	April-June
Pacific ninebark (4.)	<i>Physocarpus capitatus</i>	May-June
mock orange (3.)	<i>Philadelphus lewisii</i>	May-July
salal	<i>Gaultheria shallon</i>	May-July
Nootka rose	<i>Rosa nutkana</i>	May-July
native maple species	<i>Acer species</i>	spring
huckleberry species	<i>Vaccinium species</i>	spring to summer
oceanspray	<i>Holodiscus discolor</i>	June-August
hairy honeysuckle	<i>Lonicera hispidula</i>	June-August

Grasses

Common name	Scientific name	Estimated flowering	Life cycle
curly blue grass	<i>Poa secunda</i>	April-July	P
Roemer's fescue	<i>Festuca roemerii</i>	May-July	P
tufted hairgrass	<i>Deschampsia cespitosa</i>	June-September	P

Pictures of Western WA Pollinator Friendly non-invasive Plants



Images: 1. Rod Gilbert, 2006; 6. Ben Legler, 2004; 8. Rod Gilbert, 2007.

Examples of native and pollinator-friendly seed and plant sources in Washington and nearby include:

- [BFI Native Seeds](#)
- [Clearwater Seed](#)
- [Derby Canyon Natives](#)
- [Ed Hume Seed Company](#)
- [Frosty Hollow Ecological Restoration](#)
- [Granite Seed Company](#)
- [Great Basin Seed](#)
- [Heritage Seedlings & Liners](#)
- [Humble Roots Nursery](#)
- [Inside Passage](#)
- [Landmark Native Seed](#)
- [L&H Seeds](#)
- [Methow Natives Nursery](#)
- [Northwest Meadowsapes](#)
- [Oregon Wholesale Seed Company](#)
- [Plants of the Wild](#)
- [Rainier Seeds Inc.](#)
- [Sound Native Plants](#)
- [Sunmark Seeds](#)
- [Watershed Garden Works](#)

EHB 2478 SECTION 2 AND 3

Section 2 of EHB 2478 states that the state noxious weed control board must coordinate with willing landowners to provide goods or services, such as plant starts and seed packs, necessary to replace noxious weeds with either native or noninvasive, nonnative plants or to create, in conjunction with noxious weed control efforts, new seasonally balanced forage patches for honey bees and other pollinators. Section 3 of EHB 2478 directs the state noxious weed control board to coordinate with partners from both Eastern and Western Washington.

Per Section 2 (a) and Section 3, native pollinator friendly seed blends were developed for both Eastern and Western Washington. The blends were packaged in 2017, 2019, and 2020 and are continuously distributed. Several county boards from both Eastern and Western Washington

along with the Washington Invasive Species Counsel collaborated contributed funding to support the production of the seed packets. The seed packets have been and currently continue to be distributed to county noxious weed boards as well as conservation districts, bee keeper groups, master gardeners, 4-H groups, as well as any other groups or individuals that request them. Per section 2(b) priority has been given to private landowners located in areas where dual benefits can be maximized. However, availability of seed packets and brochures has not been limited to only priority land owners. A total of 19,745 individual single packets have been requested from landowners via the Washington State Noxious Weed Board's website, approximately 4,200 for the Eastern WA mix and 15,000 for the Western WA mix. Additional, larger quantities have been distributed to weed boards, conservation districts, and other organizations averaging 22,900 packets for the Western WA mix and 7,000 packets for the Eastern WA mix per year.



Per section 3, the Washington State Noxious Weed Control Board has made available brochures and seeds to both landowners located in Eastern and Western Washington. Per section 3 (a) and (b), the Washington State Noxious Weed Control Board has coordinated efforts with county noxious weed boards and conservation districts. Examples of such coordination include, providing a table, brochures, and seed packets for Spokane County's Noxious Weed Control Board to attend the Pacific Northwest Bee Keeping Conference, providing seeds and informational brochures to the Natural Resources Conservation Service Colville Tribal Office for workshops including noxious weed control and best management practices. The seeds in turn are utilized by private landowners and farmers creating areas for pollinator species.

The Washington State Noxious Weed Control Board promotes the Eastern and Western seed packets, Full circle Brochure, and Bees and Noxious Weed Control brochure at both the Washington State Weed Conference and the Northwest Flower and Garden Show each year (with the exception of covid-19 restrictions). County Boards do similar promotions at local events including local fairs, master gardener workshops, municipality specialty celebrations (i.e. Issaquah salmon days or Vashon Strawberry Festival), and pesticide recertification classes (with the exception of covid-19 restrictions).

EHB 2478 SECTION 4

Section 4 directs the state noxious weed control board to issue this report outlining the successes as well as the challenges of this project. The report is to include the list of suitable pollen-rich forage plant alternatives (listed above), a list of seed and plant start suppliers that may be able to provide pollen-rich forage plants (listed above), and provide guidelines for

replacing noxious weeds with pollen-rich forage or creating new pollen-rich forage patches (listed above).

Successes and Challenges

Education and outreach on the removal of invasive noxious weed species and replacement of pollen-rich, nectar-rich species has been a great success. This is shown by the requests for publications and outreach done by the state noxious weed control, the Washington State Invasive Species Council, county noxious weed boards, and other organizations. Likewise, the planting of pollen-rich and nectar-rich pollinator friendly plant species has been successful shown through the requests for Western and Eastern WA Beautify Seed packets.

The resources developed by this project, as well as, additional resources provided by the Washington State Noxious Weed Control Board pertaining to noxious weed control and pollinator health are available at <https://www.nwcb.wa.gov/bee-u-tify> and through requests to the noxious weed board at <https://www.nwcb.wa.gov/publications>.

Due to lack of funding, the Washington State Noxious Weed Control Board was unable to collaborate with landowners to conduct proper test plots for the control and removal of noxious weed species and replacement of non-invasive pollen-rich, nectar-rich plant species. Lack of funding is a detriment to this project. Noxious weed removal was not funded, nor was it tracked, recorded, or reported for this project. Additional challenges include staffing, staff time, and current Covid-19 mandates.

CONCLUSION

In conclusion, the unfunded pilot project mandated by EHB 2478, was a minor success with major funding challenges. The Washington State Noxious Weed Control Board coordinated with the Washington State Invasive Species Council, county noxious weed boards, and other entities to distribute information and educational materials developed by the weed board and pollinator friendly seed packets.

Educational materials included the Full Circle brochure and the Bee and Noxious Weeds brochure. The Full Circle Brochure outlines optional practices and guidelines for noxious weed control and pollinator health as well as recommended non-invasive plant species. The Bees and Noxious Weeds Brochure provide an in depth overview of bee-sensitive weed control and resources. Both Western WA and Eastern WA Beautify seed packets were produced and distributed throughout the state. Additional information and resources including a list of potential suppliers for non-invasive pollinator friendly species is available on the weed board website.

With proper funding this project could potentially include 10-30 on the ground sites with noxious weed removal and native pollinator friendly species replanted. Additional funding would drastically help to provide native plants for this part of the project and potentially some noxious weed removal. Each site is unique and may not require the same amount of funding.

Resources

Native Plant Information

Washington Native Plant Society: www.wnps.org

Reforestation, Nurseries, and Genetics Resources (USDA Forest Service and Southern Regional Extension Forestry) www.rngr.net/resources/directory

Native Seed Network: www.nativeseednetwork.org

Pollinator Conservation Resources – PNW Region <http://xerces.org/pollinatorspecific-northwest-region/>

USDA Forest Service’s Gardening with native plants
www.fs.fed.us/wildflowers/Native_Plant_Materials/Native_Gardening/index.shtml

Western WA native plant guide and gardening tips green2.kingcounty.gov/gonative/index.aspx

Pollinators

The Xerces Society for Invertebrate Conservation: [Insects and Pollinators by USDA NRCS many sources located here
\[www.nrcs.usda.gov/pollinators\]\(http://www.nrcs.usda.gov/pollinators\) Pollinator Partnership \[www.pollinator.org/\]\(http://www.pollinator.org/\)](https://xerces.org/WSDOT-
<u>www.wsdot.wa.gov/Design/Roadside/Pollinators.htm</u></p>
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North American Butterfly Association [www.naba.org/Bumble bees of Western U.S.](http://www.naba.org/Bumble%20bees%20of%20Western%20U.S.)
www.xerces.org/wp-content/uploads/2008/09/Western_BB_guide.pdf

Integrated Pest Management

WSU’s Integrated Weed Control Project, biological control, invasives.wsu.edu

Pacific Northwest Weed Management Handbook: pnwhandbooks.org

Soil solarization <http://ipm.ucanr.edu/PMG/PESTNOTES/pn74145.html>

Sustainable Agriculture Research & Education: www.sare.org/Learning-Center

Books

Attracting native pollinators: protecting North America’s bees and butterflies: the Xerces Society guide, E. Mader et al. 2011

Encyclopedia of Northwest Native Plants for Gardens and Landscapes by K. A. Robson et al. 2008