Forage List Guide

Introduction

This list has been compiled from a variety of sources and will be updated with new information as we learn more about Washington pollinators (check out the Washington Bee Atlas for how we are identifying Washington's bees, and the plants they pollinate). This plant list is NOT RESTRICTIVE. The initial list has focused on known bee attractive native plants. While we recommend using as many native plants as possible in your pollinator habitat designs, many non-native, non-invasive plants also provide excellent nectar and pollen resources and may be easier to source and better suited to your site. It is recommended that you not use plants that have been treated with neonicotinoids, and you should never use plant species on the Washington noxious weeds list in any landscaping.

Pollinator habitat is defined by WAC as "an area of land that is or may be developed as habitat beneficial for the feeding, nesting, and reproduction of all pollinators, including honeybees." From a practical perspective, this mainly involves planting nectar and/or pollen rich flowering plants, which is where this list may be used. Depending on the pollinators one wishes to attract, pollinator habitat may also include host plants (for butterflies and moths), nesting habitat (for bees), and reduced, limited, or prohibited pesticide usage. It may also include water sources (for honeybees and birds) or mudding areas (for butterflies). There's been an effort made to include if forage plants that are also host plants, but all known butterfly host plants have not currently been added (hopefully in the future).

Pollinator habitat can be implemented in many different types of landscape, including bee lawns, herb gardens, food gardens, permaculture, and both formal and naturalized designs. It may be intended for a variety of different pollinators and wildlife or curated to appeal to one specific type of pollinator. Washington state has over 600 species of bees, 150 species of butterflies, more than 1000 species of moths, four species of hummingbirds, and numerous wasp, fly, and beetle pollinators. When building a pollinator garden, people seem to gravitate toward planting for either bees, butterflies or hummingbirds. Rest assured that many of the plants on the list are also excellent pollinator plants for the remaining pollinators as well. They may be included in future iterations of the list, especially as we learn more about our state's pollinator ecology.

Terminology/Definitions

Plant Species: The scientific names of the plants.

Common Names: How we talk about species in more casual conversation.

Pollinators: Animals that transfer the pollen from one flower to the stigma of another flower.

Bees: Descended from wasps, these winged insects get their food exclusively from flowers. In the order Hymenoptera, clade Anthophila.

Bumble bee species: Bees from the genus *Bombus*. There are at least 25 species in Washington, and several are imperiled.

Honeybees: *Apis mellifera*, a non-native but agriculturally important bee species.

Butterflies: Rhopalocera members of the insect order Lepidoptera. Typically day flying, showy colored, and important pollinators.

Butterfly larval host: This is a plant that you will find caterpillars feeding on. That's a good thing!

Hummingbirds: The only vertebrate pollinators found in Washington.

Bloom period: The time of year this plant flowers. Good pollinator habitat has something blooming throughout the growing season.

Ethnobotany: The use of plants by humans.

Food: Eaten by humans.

Fiber: Used to make clothing, cordage, bindings.

Medicine: Has been used to treat diseases, injuries, or symptoms of afflictions.

Dry Sites: Plants that grow at locations with either low precipitation, or soil that does not retain much water. Likely suited for sites with little to no additional irrigation.

Extremely Dry, Sandy: Plants that only grow in arid/semi-arid areas, with no additional irrigation, and often poor soils.

Higher Elevation: Plants found above 3000 ft elevation. Some plants may only be found at higher elevations, others may have a much broader distribution.

Riparian: Plants found near water, either streams, rivers, ponds, lakes, marshes, wetlands, or beaches.

Light: S = Shade, PS = Part Shade or Part Sun, FS = Full Sun, Examples: P-FS = Part to Full Sun, S-FS = Shade to Full Sun

Vegetation Type: Plant growth types. T = Tree, S = Shrub, V = Vine, F = Forb, G = Grass, B = Bulb

Duration: A = Annual, B = Biennial, P = Perennial

Non-native, non-invasive: Not natively found in Washington state, but does not behave invasively and is suitable for use in landscaping. Usually not suitable for native habitat restoration however. **Note: If the plant species is not native, then county presence/absence data was not included.**

Non-native, invasive: Some species in this genus found on the Noxious Weed list. Do not plant those species.

Beneficial to other birds: Known food source for birds besides hummingbirds (seeds, fruit or nuts usually). Please note that butterfly host plants are also important for many birds, as caterpillars are important food sources.

Areas: Is this plant commonly found or grown on the west side, central area, and/or east side of the state? For more specificity, check county fields.

Source(s)

The following is a bibliography of the pollinator/plant lists or sources that have to date been used to populate the forage list.

Katie's List

Katharine Buckley. (2019). NATIVE HABITAT RESTORATION IN EASTERN WASHINGTON WINE VINEYARDS AS A PEST MANAGEMENT STRATEGY - Washington State University [PhD, Washington State University]. https://rex.libraries.wsu.edu/esploro/outputs/doctoral/NATIVE-HABITAT-RESTORATION-IN-EASTERN-WASHINGTON/99900581619301842

Noxious Weed Mix

Washington State Noxious Weed Control Board. (n.d.). Retrieved June 4, 2024, from https://www.nwcb.wa.gov/bee-u-tify

WSDOT

Protecting pollinators | WSDOT. (n.d.). Retrieved June 4, 2024, from https://wsdot.wa.gov/construction-planning/protecting-environment/maintaining-vegetation-along-our-highways/protecting-pollinators

PNW BB Atlas

Rich Hatfield, Leona Svancara, Leif Richardson, Joel Sauder, & Ann Potter. (2021). The Pacific Northwest Bumble Bee Atlas: Summary and Species Accounts (21–026; Guidelines, p. 73). Xerces Society. https://xerces.org/sites/default/files/publications/21-026_01_2.pdf

Honey Bee Forage

Franclyn Heinecke. (2011a). Honey Bee Forage East of the Cascades (WA State Master Beekeeper Research Paper). Washington State Beekeepers Association.

Franclyn Heinecke. (2011b). Honey Bee Forage West of the Cascades (WA State Master Beekeeper Research Paper). Washington State Beekeepers Association.

WA Bee Atlas

Currently observational field data. As we progress with the project, we will include more quantifiable information. Eventually we hope to also have a database of plant – bee interactions in addition to this forage list.

Hummingbird Handbook

Shewey, J. (2021). The Hummingbird Handbook: Everything You Need to Know about These Fascinating Birds. Timber Press.

Xerces Society Guides

Pollinator Conservation Resources: Pacific Northwest Region | Xerces Society. (n.d.). Retrieved June 4, 2024, from https://xerces.org/pollinator-resource-center/pnw Currently incomplete. See Plant Lists on their website.

Ethnobotany Sources

Daniel E. Moerman. (2009). Native American Medicinal Plants: An Ethnobotanical Dictionary. Timber Press.

Daniel E. Moerman. (2010). Native American Food Plants: An Ethnobotanical Dictionary. Timber Press.

County Data

Presence/absence data for native plants was pulled from the Consortium of Pacific Northwest Herbaria at https://www.pnwherbaria.org/index.php County data is only provided in the forage list for native plants.

Selecting Plants

The forage list is meant to give you ideas of plants that both attract pollinators and should do well in your area. The forage list is not exhaustive, especially as the main focus is on native plants. This should not dissuade you from using non-native, non-invasive plants, as there is research showing the highest diversity and abundance of pollinators is found when people garden with both. Also, unless you intend an area to be only planted for the benefits of pollinators, there are many other reasons people choose to plant what they do. Even if you can only have small patches, or a percentage of your plants as pollinator friendly plants, pollinators can still utilize them, and see a benefit. While native habitat restoration by experts may strive for 100% native plants, 60% is a far more reasonable goal for most people interested in creating a more native, natural landscape. And any number besides zero is a good first step.

If you want to winnow down the rather daunting number of plants, I recommend using the search function in Excel to sort by your county and check the non-native, non-invasive entries as well. Native plants are becoming easier to source, but they are still not always available. From there, you may have site considerations. Are you trying to fill a pot, or an acre? Where are you located? Will the site be irrigated (after plant establishment)? Is it sunny or shady? Do you live at a high elevation, along a beach, or in a city?

As far as the pollinators are concerned, try to make sure you choose things with different bloom periods. Overlap is fine, but you should try to have something blooming at every point during the growing seasons. If you have very limited space, you may want to choose a few plants that have extended bloom periods, such as blanketflower or yarrow. If you have the space, flowering trees and shrubs often provide a multitude of floral resources when they bloom.

If you need further input (and want to see photos), the following sites provide excellent information and photos.

Burke Herbarium https://burkeherbarium.org/imagecollection/

Washington Native Plant Society https://www.wnps.org/native-plant-directory

Lady Bird Johnson Wildflower Center https://www.wildflower.org/plants/

Calscape https://calscape.org/search

Gardenia https://www.gardenia.net/

Oregon Flora https://oregonflora.org/

Sourcing Plants

The Washington Native Plant Society maintains a list of commercial sources of native plants and seeds here: https://www.wnps.org/native-gardening/sourcing

The WNPS and many conservation districts also have plant sales, which are an excellent way to pick up native species for your area. They also sometimes host “plant salvages” or rescues when a new site is to be developed. Participation in these is a good way to get free plants.

The Noxious Weed Control Board (https://www.nwcb.wa.gov/bee-u-tify) and Washington Fish and Wildlife (https://wdfw.wa.gov/species-habitats/living/habitat-at-home/pollinator-habitats) both run pollinator seed packet programs. These are free, and will only include native species. Commercial pollinator seed mixes often include non-native species and should be used with caution.

It is not advised that you collect native plants from public lands. Some areas will allow seed collection, usually with permission or permits, and only from abundant species.

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