

2018 WASHINGTON BOTANICAL SYMPOSIUM

WEDNESDAY, MARCH 21, 2018, 9:00AM - 4:00PM

UNIVERSITY OF WASHINGTON BOTANIC GARDENS, CENTER FOR URBAN HORTICULTURE – NHS HALL
3501 NE 41ST ST., SEATTLE, WA 98105. RECEPTION TO FOLLOW, 4:00—6:00PM



V. flettii

Viola flettii (Flett's violet) is endemic to subalpine and alpine areas of Washington's Olympic Mountains. Though not currently considered to be of conservation concern, potential climate change impacts could restrict the availability of the habitat that this species currently occupies. Illustration by Jeanne R. Janish; © University of Washington Press.

2018 WASHINGTON BOTANICAL SYMPOSIUM
MARCH 21, 2018

AGENDA

9:00 Welcome and introductory remarks

Alison Halpern, Executive Secretary, Washington Noxious Weed Control Board

9:15 Recent changes to Washington's flora: new taxa, new arrivals, and new taxonomy

David E. Giblin, Ph.D. Collections Manager, University of Washington Herbarium, Burke Museum

Washington's flora, like that of any area comparable in size, is dynamic. Despite over 200 years of vascular plant collecting in Washington, taxa new to science continue to be discovered nearly every year. However, newly collected herbarium specimens of existing species, particularly nonnative ones, is the single greatest source of additions to the state's vascular plant checklist. Another significant source of additions to the state checklist is close examination of legacy herbarium specimens in collections across the region. The use of outdated floras, the misapplication of names, and simple misidentifications all contribute to significant "hidden" diversity among herbarium collections. Finally, advances in taxonomy contribute to the recognition of additional taxa, and corrections in nomenclature bring new names to long-familiar taxa. Keeping pace of all of these changes is essential to tracking plant diversity in Washington and achieving a relatively stable taxonomy and nomenclature for the state's flora. This talk provides an overview of recent changes to Washington's flora over the past year and introduces ideas about future management of the state's vascular plant checklist.

9:45 Using the PNW Herbaria web site to study Washington's flora: tools, tips, and tricks

Ben Legler, University of Washington Herbarium, Burke Museum

The Consortium of Pacific Northwest Herbaria website presents nearly 2.8 million specimen records and over 1.4 million specimen images from 38 regional herbaria. It represents the most comprehensive source of information documenting the presence and distribution of all plant species in Washington. The web site provides a set of interfaces to access data; however, some of these interfaces and the techniques for most effectively using them may not be apparent to many users. Here I will provide a live walk-through of the website's features, show tips and techniques for accessing data, and mention some precautions about using the data. Following the presentation, time will be left for solicitation of ideas on how the PNW Herbaria web site can be made more useful. If there is a feature you wish the website offered that would support your work, we would like to hear it.

10:15 BREAK

10:40 Prioritizing vascular plant species for conservation: some lessons from Wyoming

Walter Fertig, Ph.D., Rare Plant Botanist, Washington Natural Heritage Program

Resources for plant conservation are limited, so it is important that they be allocated wisely. In a 1981 paper, Deborah Rabinowitz derived an excellent model for identifying 'seven forms of rarity' in plants based on abundance, range size, and habitat specificity. I expanded her model to include number of occurrences, threats, trends, and intrinsic rarity and developed a simple, qualitative ranking scheme to prioritize species across the entire flora of Wyoming. A team of experts and I were able to use the system to identify a relatively small (and manageable) subset of species at the highest risk of extirpation as well as species that might warrant attention in the future if environmental conditions deteriorate. This system has been applied to other states in the West and to smaller land units, such as national parks. The system might be useful in prioritizing state endangered, threatened, and sensitive species in Washington.

2018 WASHINGTON BOTANICAL SYMPOSIUM
MARCH 21, 2018

1:10 Introduction to the vernal pool flora of the Pacific Northwest

Ed Alverson, Natural Areas Coordinator for Lane County Parks

Vernal pools are seasonal wetlands that occupy small topographic depressions, forming shallow pools in the winter/spring rainy season, but drying out completely in the summer. In western North America, they occur as small patch communities in a grassland matrix, under a climatic regime of dry summers and wet winters. The flora of vernal pools is composed of plant species that can successfully tolerate both inundation and extreme drought. Similar growing conditions are also found on open bedrock outcrops with seasonal seepage or surface water flow. Though widespread (and better studied) in California, in the Pacific Northwest vernal pools and related habitats occur at low elevations on both sides of the Cascades, including the Willamette Valley, the San Juan Islands and Vancouver Island, the Columbia River Gorge, and the channeled scablands of eastern Washington. Floristic inventories of Pacific Northwest vernal pools show similarities with California, particularly in the high levels of representation of the annual life form. This pattern is evident from inventory efforts from both the west and east side of the Cascades. Vernal pools often harbor uncommon plant species that are globally or regionally rare, disjunct, or peripheral, and thus are a focus of rare plant conservation efforts.

11:40 Bryophytes of the Okanogan: finding the hidden gems

Erica Heinlen, MSc., Seasonal Botanist, Tonasket Ranger District, Okanogan-Wentachee National Forest

Bryophytes are a little studied group of plants and the Okanogan is a little studied area of the state which, combined, makes this area a great opportunity for discovery. With a large cross-section of habitats, the Okanogan offers a rich canvas for bryophyte diversity. Discussions of diversity will lead to an examination of the conservation status of bryophytes in the state. While many factors affect rarity, one driving influence is uniqueness of habitat. The landscape of the Okanogan offers plenty of opportunities for unique habitats such as dryland waterfalls, boreal habitats, and fens. Discovering these will reveal a look at some of the rare bryophyte gems from the area.

12:10 LUNCH

1:00 Understanding the traditional value of Pacific Northwest plants

Warren KingGeorge, Historian at Muckleshoot Indian Tribe Preservation Program

1:30 Classifying and mapping vegetation in Washington's National Parks

Catharine Copass, NCCN Vegetation Inventory and Mapping Project Coordinator, National Park Service

The National Park Service is engaged in a long term project to classify and map vegetation communities in Washington's national parks. In collaborative projects with the Washington Natural Heritage Program and the Institute of Natural Resources at Portland State University, vegetation classifications have been developed using the National Vegetation Classification Standard (NVCS), with map classes building from Association and Alliance concepts from the NVCS. Maps for Ebey's Landing National Historical Park, Fort Vancouver National Historical Park, Lewis and Clark National Historical Park, and San Juan Island National Historical Park showcase the broad range of vegetation communities classified within the parks. The ongoing mapping effort for Mount Rainier, North Cascades and Olympic National Parks highlights challenges in the interactive process of classifying and mapping vegetation in large remote parks. This generation of NPS vegetation maps provide a contemporary view of the distribution of plant communities in the parks and inspire a discussion about the role of vegetation classification in the context of climate change.

2:00 BREAK

2:25 **New insights from plant-pollinator networks for conservation and restoration**

Susan Waters, Ph.D., Rare Species Ecologist, Center for Natural Lands Management (CNLM)

Plant-pollinator interaction networks are useful tools that have been little used in conservation so far. Networks can (i) provide insights into important indirect interactions affecting species of conservation concern, (ii) help improve restoration practice by identifying native plants playing key pollinator-supporting roles, and (iii) provide valuable information about community-wide resilience to species losses. We used this tool to examine community resilience and interactions of a key butterfly host plant in six sites along a gradient of restoration. We found that: (i) Networks identified important indirect interactions, including several cases where non-native plants support insects that pollinate these key host plants. Best management practices should therefore include removing non-native forbs in stages rather than attempting to eliminate them wholesale, risking a gap in resources for pollinators of key native plants. (ii) Networks identified several forbs that support a wide range of pollinators. We suggest that restoring these species as early as possible could draw pollinators that in turn may support other native plants. (iii) Several key measures of community resilience increased with restoration. These results should be used as a baseline to follow the effects of restoration on resilience over time.

2:55 **Vegetation dynamics in the Columbia Basin sagebrush-steppe**

Claire Wainwright, Ph.D., Research Associate, Terrestrial Restoration Ecology Lab, School of Environmental and Forest Sciences, University of Washington

Sagebrush steppe ecosystems are among the most imperiled in the western United States. Wildfires and invasion by non-native annual grasses have created a vicious cycle of increased fire frequency and further invasion. However, most research has been based on a limited range of conditions and datasets covering the period soon after fire. Long-term monitoring programs are necessary to distinguish temporary changes from sustained changes in ecosystem state. My research uses several long-term datasets to illustrate patterns of post-fire vegetation dynamics in the mid-Columbia Basin. Monitoring areas include the Yakima Training Center, Hanford Reach National Monument, and private rangeland. I will discuss the successional trajectories of burned and unburned plant communities (including the effects of repeated fires), the extent to which abiotic landscape conditions interact with fire to alter successional trajectories, and the effectiveness of restoration treatments.

3:25 **Refugia for endemic alpine plants in the Pacific Northwest**

Eric DeChaine, Professor of Biology and Herbarium Curator, Western Washington University

The unique history, geography, and climate of the Pacific Northwest have promoted a flora with exceptional endemism that may face high rates of extinction due to climate change. Several glacial refugia scattered across the region provided areas of suitable habitat for alpine plants throughout Ice Ages. Isolation among those refugia likely promoted the evolution of endemics that now exhibit restricted distributions. Thermal refugia, or cold microhabitats, may be the only climatically suitable locations for the same taxa into the future. The alpine plants endemic to the Olympic Mountain refugium in Washington provide a representative system for understanding how future changes in climate may impact endemics across the Pacific Northwest. The Olympic alpine will experience novel environmental conditions in the future, with a pronounced decrease in winter snow and an increase in growing season moisture stress. For each of five Olympic Mountain endemics, 85-99% of the suitable habitat will be lost by 2080. Thermal refugia will remain only on the highest peaks of the eastern Olympics. Alpine endemics are stranded on ever shrinking habitat islands. Within a few, isolated thermal refugia, the distribution of micro-topography may be a critical factor in determining long-term survival.

3:55 Closing Remarks

Sponsored by:

4:00 – 6:00 Reception in Merrill Commons

Supported by: Rebalance Environmental Consulting,
UW College of the Environment, UW Sustainability, UW EDGE



WASHINGTON NATIVE PLANT SOCIETY