



# Koma Kulshan Chapter WNPS Newsletter

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## Find Koma Kulshan Online

**Website:** [www.wnpskoma.org](http://www.wnpskoma.org)  
**Facebook:** WNPSKomaKulshan

## Virtual Meetings

We are living through an extraordinary time. Covid-19 has disrupted all our routines, and it is disrupting the activities of our chapter. The committee is dedicated to protecting the safety of our members, and to that end we have canceled in-person events in April and May. Events in June and beyond will be reassessed over time.

We are thinking about ways to mitigate the impact on our chapter, and how to emerge with a chapter that is stronger than ever. We will be conducting April and May meetings via Zoom, which is a very simple web conferencing tool -- all you will need is a link and possibly a password to register, and you'll be able to see and hear our speaker and slides, and interact with one another through a chat function. Look for more information and instructions on our Facebook page and the WNPS-Koma email list.

You can find listings of our and many other WNPS Zoom events at <https://www.wnps.org/events>. Click on the webinar you want to attend, then the registration link, and you'll get an email invitation. Click on that emailed link, and you'll be taken directly to the webinar.

## Spring (April, May, June) 2020

### President's Corner

by Allan Richardson

April 2020 was proclaimed as Native Plant Appreciation Month by Governor Inslee and WNPS. The main intent of this effort was to have been public outreach to spread the message of WNPS regarding the importance of native plants and their habitats. COVID-19 has made this impossible to carry out as intended. All of our chapter events and group activities have been cancelled through to the end of May. Instead, we will be holding virtual zoom meetings in April and May, including our regular programs. Please see the sidebar for details.

A positive response to the virus epidemic is promoting and enhancing our on-line communication and sharing. Without meeting in person we can be reading about native plants and the natural world. We can go on outings to appreciate native plants alone or with a partner and share our experiences via Facebook or iNaturalist. For more on iNaturalist see Abe Lloyd's excellent article in the most recent issue of *Douglasia*. Make use of the WNPS plant lists available on the state website for 78 destinations in Whatcom County. Everyone is encouraged to maintain a nature notebook, take date-stamped photos of what you are seeing, and/or make narrated video clips of your observations in wild places. Records of pollinators in your home garden would also be of interest to others.

Observations can be shared on the chapter Facebook page and through iNaturalist. Meanwhile, be sure to get out in the natural world—it is great therapy in times of stress.

### Adventures in Biogeography

At our February meeting, Ellen Kuhlmann and Barry Wendling teamed up to discuss how native plant distribution is connected to the history and geography of the state and region. Ice ages, volcanoes, and human intervention have combined to shape the places where plants reside.

Ellen and Barry both received their master's degrees from Western Washington University. Both have explored the state and region's flora extensively. Along with Mark Turner, Ellen co-authored *Trees and Shrubs of the Pacific Northwest*, and Barry is the collection manager for vascular and non-vascular plants at the Pacific Northwest Herbarium.

Biogeography is the study of the past and present distributions of organisms, and it is split into two disciplines; historical biogeography and ecological biogeography. Known historical factors in Washington State include the geologic uplift of the Cascade and Olympic mountains, extensive volcanic activity around Mount Baker, Mount Rainier, and basalt flows of the Columbia Plateau, and glaciation. The history of speciations and extinctions also influence today's patterns.

The latest glacial period, known as the quaternary, started about 2.6 million years ago. The Cordilleran ice sheet covered much of British Columbia and Washington State at its peak, and our region was wedged between the Cordilleran sheet, the Laurentide ice sheet to the east, and mountainous glaciers that advanced from the Cascades and Olympics. We are currently in an interglacial period and overdue for another advance of the ice.

Despite these massive ice sheets, there were refuges where local conditions remained relatively stable. Locally, these included the Olympic Mountains, some of which were never glaciated, and waterways separated them from the south. Spruce, hemlock, fir, and pine trees likely found shelter in these regions ([https://www.nps.gov/parkhistory/online\\_books/olym/schalk/chap5.htm](https://www.nps.gov/parkhistory/online_books/olym/schalk/chap5.htm)). Other

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## Locked Down and Online, by Mark Turner

Our world turned upside down almost overnight. For the time being, and no one knows for just how long, we can't get together in person to share our questions and knowledge about native plants. We're all on our own for a while, with just our books and electronic tools to help us as we explore spring in our neighborhoods.

Fortunately we have quite a few options, including social media.

\* If you use Facebook, WNPS has both a Group and a Page. I know, it's confusing.

WNPS Facebook Group: <https://www.facebook.com/groups/WashingtonNativePlants/>. The Group is where you can post pictures of plants you've found, tell their story, or ask for help learning their names. Anyone who is a member of the Group can post and anyone on Facebook can see it since the group is public. Over 4500 people are members of the Group.

\* Our Koma Kulshan chapter also has a Facebook Group, but it doesn't get much activity. Find it here:

<https://www.facebook.com/groups/271848189554320/>

\* WNPS Facebook Page: <https://www.facebook.com/WashingtonNativePlants/>. The Page is primarily a one-to-many platform for WNPS to share information with the public. Anyone can see posts and comment on them, but only posts from the administrators are easy to find.

Here are my own favorite online native plant websites:

\* Burke Herbarium Image Collection: <http://biology.burke.washington.edu/herbarium/imagecollection.php>

\* When I'm trying to narrow down the choices within a genus, I'll search the image collection and compare photos with the specimen in front of me.

\* Washington Flora Checklist. <http://biology.burke.washington.edu/herbarium/waflora/checklist.php>. If I have a question about the currently accepted name for a plant, this is my go-to resource. Entries also link to herbarium records.

\* Pacific Northwest Wildflowers. <http://www.pnwflowers.com/>. I'm admittedly prejudiced since this is my website, but you'll find all the flowers in *Wildflowers of the Pacific Northwest* with lots of search options. The site gets 400-600 unique visitors daily during the flowering season so apparently a lot of people find it valuable.

## Biogeography (cont'd from p1)

refugia included the Wenatchee Mountains, and Columbia River Gorge. The mountains may have acted as massive snow fences, among other factors. Other refuges were the Beringia land bridge between North America and Asia, and the Queen Charlotte Islands. The evidence of these shelter locations is found in today's plant distributions. Each has significant numbers of endemic species suggesting past isolation. It's not unlike the sky islands that harbor unique flora at higher altitudes.

Ice is one dramatic historical factor – fire is another. The Juan de Fuca plate, which is spreading from the undersea Juan de Fuca ridge, subducts beneath the North American plate, leading to the creation of our signature mountain ranges and volcanoes. Both types of land features dramatically alter weather patterns, affecting species distribution.

Basalt eruptions in Eastern Washington began around 17 million years ago, and continued until around 6.5 million years ago, remodeling the landscape. Volcanoes and ice merged and influenced one another in interesting ways. Ice dams held back water during the glacial period, periodically failing abruptly to produce tumultuous water flows that eroded the basalt deposits. Some examples of the modern results of these forces can be found at the Ginkgo Petrified Forest in Central Washington.

### Ecological Biogeography

Stepping away from the grand view of geologic time, ecological biogeography provides a more fine-grained look at the forces that shape species distribution. It looks at functional groups – plants with similar leaves and life histories, which are assumed to have similar ecological function, though this isn't always true. Key factors driving ecological biogeography in Washington are temperature, rainfall, soil types, disturbance from fire, wind, or flood, and the arrival of non-native species. Temperature and rainfall combine to encourage specific ecosystems, such as tropical rain forest (high rainfall, high temperature), temperate rain forest (lower rainfall and temperature, but still high for both), tundra (low temperature, low rainfall), woodland or shrubland, or savanna.

Fire has a greater effect on the east side of Washington, but it also plays a role in the west. The opposite is true for wind, with Western Washington species feeling greater impact from windfalls. It's a critical process in forests, where openings in the canopy created by blowdowns allow species in the understory to grow and survive.

Vascular plant species diversity varies throughout the world. We have about 1,000-1,500 species per 10,000 square kilometers, putting us pretty squarely in the middle worldwide: Tundra areas have fewer than 100, while tropical rainforests lead the way at about 5,000.

The Armenian botanist Armen Takhtajan identified 35 floristic regions and 152 provinces around the world. North American has several regions. The Arctic region is treeless, with no endemic families, but many species are circumpolar. There are few pollinators, so sedges and grasses dominate. In the Canadian boreal forest, coniferous forests are dominant, and many species are circumboreal (cont'd p3).

## Spring (April, May, June) 2020

### Chapter Meetings

The April and May meetings have been moved to a Zoom meeting format. Look for login details and instructions on our facebook page and the wnps-koma email list.

#### April 15, 2020: Chasing blue carbon on the Arabian peninsula

You may not expect the arid Middle East to be an ideal study area for a wetland ecologist, but the region does contain a narrow strip of tidal wetlands along the coast, and what they lack in diversity, they make up for in hardness to some of the toughest conditions for plant life. Katrina Poppe traveled to the United Arab Emirates in 2019 to study the country's tidal mangrove forests, which not only have some impressive adaptations to their environment, but also the ability to sequester a substantial amount of carbon in their sediments, which was the focus of her study. Katrina's talk will be part travelogue and part science talk, and the photos of sweating scientists in 120° heat may help you appreciate cooler conditions in the PNW. Katrina is a research associate at WWU in the Wetlands Ecology Lab, where she has been studying carbon, plant, and sediment dynamics in tidal wetlands since 2013. She also serves on the WNPS Koma Kulshan chapter board as secretary and as program committee member.

#### May 20, 2020: To Be Determined

#### June 17: Summer Kickoff Potluck

6 – 9 pm, 2582 N Shore Rd. Abe Lloyd and Katrina Poppe would like to welcome you again to their home for an outdoor potluck to celebrate the beginning of summer. Dinner will begin around 6:30 pm. Bring a dish and a drink to share.

### Field Trips

#### June 20, Saturday, 8:00 AM to 6:00 PM, Hannegan Pass Trail

This trail becomes a busy route to the back country after the snow melts out, but should be ideal for leisurely botanizing in late June. We will likely go 2 or 3 miles on the gentle valley bottom part of the trail before we are turned back by snow. There is a new plant list on the WNPS state website, and lots of local knowledge from the meadow monitoring transects on this trail. Meet at the southeast corner of the Sunset Square Safeway parking lot at 8:00 AM. Bring a lunch and water, dress for the weather, and wear shoes suitable for crossing snow patches. Contact Allan Richardson at 360-733-5477 or asrichardson5@gmail.com to confirm.

### Biogeography (cont'd from p2)

We live in the Rocky Mountain region, which includes the north-south oriented Vancouverian province and the Rocky Mountain Province. It has the greatest species diversity of conifers the new world. It is also a center of diversity for both *Arnica* and *Lomatium* species. Overall, 60% of the genera that occur in North American are found in our region.

Washington State has 158 endemic species and 27 endemic subspecies, and endemics are particularly common in the Olympics, Wenatchees, and the Southern Cascades. Overall, we have 3,500 species of indigenous vascular plants. Whatcom County has 1,008 species from 422 genera and 91 families, according to a survey by Walter Conrad Muenscher, who was a professor of biology at Cornell and a botanist with the New York State Biological Survey. He was also a Whatcom County native with a family home near Ten Mile.

Ellen and Barry highlighted some of the ecoregions in Washington State, along with examples of unique or interesting flora from each. The Blue Mountains in Southeastern Washington have high plateaus and deep canyons, and high plant diversity. *Allium dictuon* (Blue mountain onion) is one of its natives. The Columbia Plateau, characterized by basalt flows, is dominated by sagebrush and grasslands. It covers about 33% of Washington, and has sand dunes, lithosols, talus slopes, talus slopes, depressional wetlands, and saline soils. Its shrub-steppe landscape has sagebrush, bitterbrush, rabbitbrush, and bunchgrasses.

About 4% of Washington State, in the northeast, falls in the Canadian Rockies. It acts as a North-South flora and fauna corridor, and retains all its pre-European macrofauna. Its montane wetlands have a number of rare plants like *Dryopteris cristata* (Crested woodfern), found in Pend Oreille County.

The Okanogan is Washington's coldest region. It has large areas with low disturbance and Ponderosa parklands. Interesting plants include *Sanicula marilandica* (Black snakeroot). Tiffany Lake, in Okanagon's highlands at 6,500' elevation, is home to *Carex heteroneura* var. *epapillosa*, which is found primarily in California.

The Eastern Cascades see wide fluctuations in temperature and rain, and have some serpentine soils. It has many rare and endemic species, include diverse conifers and fescue grasslands. The Wenatchee Mountains were a refugium during the last glacial maximum, and harbor endemics like *Delphinium viridescens* (Wenatchee larkspur) and *Silene seelyi* (Seely's catchfly). The Western Cascades is forested and often steep, and young, having appeared in the past 2 million years. The coast ranges have some geographic separation from other regions, and some unique species. The Puget lowlands include prairies, oak savanna, and lowland conifer forests, and aren't heavily developed. The North Cascades sports alpine glaciers, boreal species, and relatively pristine montane forests.

Native conifers are abundant. 33 species from 13 genera are found in the Cascades, 17 species from 9 genera in the Olympics, 19 species from 9 genera in the coastal region. Contrast that to 28 species from 12 genera in the Klamath Mountains, 27 species from 10 genera in the Sierra Nevada, and 28 species from 11 genera in the Rockies.

## Koma Kulshan Board

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## Koma Kulshan Chapter WNPS Newsletter

If you would like to join WNPS

Please return the membership application form to:  
Washington Native Plant Society  
6310 NE 74th St., Suite 215E  
Seattle, WA 98115

Please make checks payable to WNPS  
(outside US add \$5 to dues)

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City, State, Postal Code: \_\_\_\_\_

Phone: \_\_\_\_\_

Email: \_\_\_\_\_

Koma Kulshan Chapter Total Enclosed: \_\_\_\_\_

Membership Category:

- \$20 Budget (Senior/Student)
- \$40 Individual
- \$55 Family
- \$75 Club/Institution
- \$100 WNPS Friend
- \$250 Special Friend
- \$500 Best Friend
- \$1000 Sustaining Member

The Koma Kulshan chapter of WNPS is dedicated to the preservation and study of native plants and vegetation of Washington State and the education of the public to the values of native flora and its habitat.

WNPS -- Koma Kulshan Chapter  
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