



Koma Kulshan Chapter WNPS Newsletter

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Study Weekend, Anacortes: Bays, Bogs, and Balds

The 2019 Study Weekend will be held May 17-19 and hosted by the Salal chapter of WNPS. The base will be the Fidalgo Bay Resort in Anacortes on Fidalgo Island (access by bridge).

There will be about 30 fieldtrips, 15 each day, many with stunning views. Sites will include beaches, bogs, and balds in Anacortes parks and community lands, Deception Pass State Park (on both Whidbey and Fidalgo), central Whidbey, Samish Island, and mainland areas including Padilla Bay, home of a National Estuarine Research Reserve that manages and protects more than 11,000 acres of intertidal and upland habitat and the second largest eel grass bed in the United States.

Friday evening, Samish members will prepare a salmon dinner followed by a presentation by the tribe, "Feeding the Spirit: Native Plants for Food, Culture, and Medicine." Saturday evening, Joe Rocchio will present, "Hanging on a Thread: The Precarious Nature of Washington's Bogs in the Face of Natural Succession, Climate Change, and Human Stressors." Joe is the senior vegetation ecologist for the Washington Department of Natural Resources.

Online registration opens January 12 at 10 am.

Winter (January, February, March) 2019

President's Corner

by Allan Richardson

I arranged a lot of field trips over the past 10 years! Of course, this was all somewhat selfish, because I was able to go on most of the field trips and enjoy exploring the natural world with great company. The field trips were also highly educational for me as a learner in the early years and more as a teacher in recent years. In addition to parks and wilderness exploration, many of our field trips are directed to conservation and stewardship of native plants, often on Whatcom Land Trust properties, in Bellingham City Parks, and at Nooksack Salmon Enhancement Association locations. We should continue sharing our expertise (and our muscle) with these other groups.

Now as your chapter president I am looking ahead to the coming year. We will continue having excellent, and increasingly popular, programs at our monthly meetings in the winter, spring, and fall. I am sure there will be many great field trips for us all to enjoy with Eric Worden's able coordination. Our big chapter-sponsored event and money raiser will be the Flora Fair on April 27. This always needs lots of volunteer helpers in the weeks ahead and the day of the event. At the chapter board meeting in October we discussed possibilities for another chapter-sponsored event or on-going project to increase our public outreach and put our earnings from the Flora Fair plant sale to good use. There is also interest in offering another native plant stewardship training class. This would take considerable effort and funds from the local chapter, with assistance and some funding from the state WNPS. Another outreach effort of ours is the grants and scholarships that we offer (see announcement on page 2).

Be sure to get out and have a look at native plants in the winter -- the deciduous woody plants can be identified by their growth forms, buds, remnants of last year's seed production, or an occasional stray leaf. There is often Indian plum and beaked hazel blooming by late February, followed by several other species with new leaves and flowers in March.

Climate Change and Forests -- the Pacific Northwest and Beyond

by Jim Kling

At the October meeting of the Koma Kulshan chapter, Dave Peterson, professor emeritus at the University of Washington School of Environmental and Forest Sciences, discussed the impact of climate change and fire on the future of Pacific Northwest forests.

The effects of climate change are already upon us. You can see it in our native trees, but it's evident in our own neighborhoods, with die-offs and drought injury to the hardy arborvitae. Dr. Peterson said that, with current trends, in the year 2100 Bellingham will likely have a climate similar to Sacramento, California.

So how might this affect our native forests? We can expect declines in moisture-limited, low elevation west side native trees, including Douglas Fir, Western Hemlock, Western Red Cedar, and Sitka Spruce. On the east side, declines can be expected in Ponderosa Pine, Douglas-fir, and Western Larch. On the other hand growth limited, high elevation trees stand to benefit, including Subalpine Fir, Mountain Hemlock, and Lodgepole Pine. Other changes to species composition and growth will impact wetlands and riparian areas.

Generally speaking, climate sensitive species tend to have: low numbers of seeds or propagules; low seed dispersal or vegetative propagation; intolerance of low soil moisture, high air temperature, and wildfire; low competitive ability; a narrow environmental tolerance; and low genetic diversity.

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Climate Change and Forests (cont'd)

Climate tolerant species have just the opposite characteristics.

Climate changes will pose conservation challenges, the most prominent of which will be fire and disturbance. Drought and dry summers are on the increase, and 2018 was no exception, with negligible rain recorded this summer in Seattle. That makes wild fires more frequent and potentially more severe. Almost all regions of Washington are projected to experience an increase in wildfires, with estimates projecting a doubling or tripling of area burned with just a 2 degree F warming. Climate change also bolsters other threats like the Mountain Pine Beetle, which has an increased reproductive rate at warmer temperatures and can therefore expand its range. Dr. Peterson noted that many tree types have individual species of beetle that specialize in exploiting them, and all will likely be affected by climate change in ways that are as yet unknown.

These challenges will force changes to conservation. The old paradigm focused on preserving individual species, but few species are functionally critical, and that approach can create mismatches between conservation areas and the scale of disturbance. Instead, he called for a resilience strategy to preserve the structure and function of ecosystems, which can be done at any scale and allows species distribution and abundance to adapt to changing conditions.

The approach should incorporate models of the impact of climate change to estimate future ranges of variation, and incorporate this across broad areas. It should reduce non climate stressors by reducing road erosion, removing non-native species, and quickly establishing trees following wildfires. Management should also focus on diversifying the landscape at the species level, but also by forest age and structure.

In fact, fire and other disturbances can represent an opportunity. Revegetation efforts can change the trajectory of the landscape, introducing different species or genetic stock that may be more resilient to projected climate changes. Hotter, drier summers call for drought tolerant species such as Ponderosa Pine. Seed zones should be defined more broadly, using seed banks from environmental regions that more closely match the projected conditions of the restoration area. In some cases, managed relocation may even be considered.

Another challenge is the inevitable surprises, such as novel fungi, insects, or non-native species. That calls for rapid removal of invasives and maximizing species diversity, including variability of canopy levels, and species should be partitioned according to their water needs.

Dr. Peterson finished with an inspirational message: "The best time to plant a tree was twenty years ago. The second best time is today."

Reference: Responding to Climate Change in National Forests: A Guidebook for Developing Adaptation Options. 2011.

Call for Grant Applications

The Koma Kulshan Chapter of the Washington Native Plant Society is soliciting grant requests to fund projects consistent with the Society's mission to promote the appreciation and conservation of Washington's native plants and their habitats. Potential project categories to be funded include research, conservation, and education, but the chapter may entertain other plant related projects of interest.

The chapter is also committed to offering scholarships to defray costs to attend events such as WNPS Study Weekends, Botany Washington, scientific conferences, and other workshops. Anyone with an interest in expanding their knowledge of Washington's native plants are encouraged to apply. Applicants must be members of the Koma Kulshan chapter of the Washington Native Plant Society. For more information please see our website at wnpskoma.org or contact Grants and Scholarships committee members Barry Wendling, Barry.Wendling@wwu.edu and Ellen Kuhlmann, ellenkuhlmann@gmail.com.

Field Trips (Cont'd)

March 23, Saturday, 9:00 AM-3:00 PM: Kukutali Reserve and Breazeale Interpretive Center

We will be exploring trails on 84-acre Kiket Island, where we can find both remnants of old-growth cedar and madrone as well as driftwood-covered beaches. Kiket, an island in Lang Bay, is accessed by a sand spit or tombolo. This Reserve is jointly managed by Swinomish Indian Tribal Community and Washington State Parks Department, and its historical significance is as interesting as its plant communities. Then we will go on to the Breazeale Interpretive Center, where we can explore the lookout over Padilla Bay, the Center itself, and an upland trail that forms a loop through a cedar forest, an upland wetland, and native plants the Center is installing on its property. Total walking distance could be as much as 6 miles with little elevation gain. Meet at 9:00 AM at the Fairhaven Parkway Park & Ride off 32nd street on the west side of I-5. Bring your lunch; we will eat at Kukutali before heading to Padilla Bay. We plan to return to our cars by 3:00. If you have any questions, call Penny McGinty at 502-724-8765 (pennymcginty44@gmail.com)

March 30, Saturday, 9:00 AM-4:00 PM: Pine and Cedar Lakes Trail

This is a local trail that, to my memory, the chapter has not held a field trip on, so this will involve a bit of exploration. Our goal will be to examine the dense forest and the two lakes. The trail is steep, about two miles long with an elevation gain of 1300 feet. The plant list available on the state WNPS website needs much work -- the trail was surveyed only during the winter months. Meet at 9am at the Fairhaven Parkway Park & Ride off 32nd street on the west side of I-5. If you have questions contact Jim Duemmel at 360-733-3448 or jimduemmel@q.com.

Winter (January, February, March) 2019

Chapter Meetings

Meetings begin at 7pm in the Sustainable Living Center education room at the ReStore (2309 Meridian St.). The entrance is off the back alley and the SLC is upstairs. For more information, contact Katrina Poppe at (360) 303-7806 or katrinalee_98@yahoo.com.

January 16, 2019: Importance of Salmon-Derived Nutrients for Riparian Forest Growth

As they return to spawn and die in their natal streams, anadromous Pacific salmon import nutrients from the Pacific ocean to otherwise nutrient-poor freshwater and riparian ecosystems. These marine-derived nutrients support various populations of mammals, birds and invertebrates, and previous studies have indicated that marine-derived nutrient imports might also enhance the growth of riparian trees. Jim Helfield will present the results of a recently completed 20-year fertilization experiment, in which sockeye salmon carcasses were systematically deposited on one bank of Hansen Creek in southwestern Alaska from 1996 to 2016. In 2016, they measured the leaf nitrogen content and annual growth rates of white spruce trees on both creek banks, finding greater concentrations of marine-derived nitrogen and increased growth rates on the fertilized bank. These results indicate that salmon carcasses can have a measurable effect on riparian trees against the background of other factors affecting forest growth. Jim Helfield is an Associate Professor at WWU in the Department of Environmental Sciences, where he teaches courses on stream ecology, ecological restoration, and salmon habitat and ecology. A recurring theme in his research is the interconnectedness and interdependence of rivers and their surrounding watersheds, and the need for habitat restoration strategies to recognize these linkages.

February 20, 2019: From Genes to Ecosystems: Exploring the role that genes play in influencing traits, biodiversity and ecosystems.

In the western United States, forest trees provide many essential functions ranging from biomass production, water and nutrient cycling and supporting diverse communities of organisms, such as arthropods, birds and microbes. Dr. Matthew Zinkgraf will describe the role that genetics of forest trees play in shaping variation in ecologically important traits and how genetics can have far-reaching effects on community biodiversity and ecosystem processes. The knowledge gained through genetics can help improve the management, restoration, and conservation of natural systems. Matthew Zinkgraf is a recent addition to the Pacific Northwest and has been an assistant professor in the Biology Department at Western Washington University since 2017. His research takes an interdisciplinary approach to address questions underlying the biology of forest trees, using methods from computational biology, molecular biology, quantitative genetics and forest ecology. He did his undergraduate studies at the University of Wisconsin - Stevens Point and his PhD at Northern Arizona University.

March 20, 2019: Intelligent Trees: Documentary and Discussion

Intelligent Trees is a 2016 documentary about how trees communicate and care for each other, a scientific journey into the "wood-wide web." In this film, German forester Peter Wohlleben (author of *The Hidden Life of Trees*) and UBC scientist Suzanne Simard share their findings from their decades of observations and studies of how trees talk, know family ties, and care for their young. This program will be a little different than our typical meeting style, with the 45-min film showing followed by a facilitated discussion to share our own observations and ideas on the topic. Watch the trailer here: <https://www.intelligent-trees.com/>

Field Trips

January 19, Saturday, 9:00 AM: Larrabee Old Growth Exploration

I have long enjoyed ridgeline hiking and skiing; only flying could be better. I would like to share an interesting ridge walk in the Chuckanuts that features some wonderfully large fire scarred old growth trees to hug and measure. The area raises many questions concerning the fire and logging history which seems to be this winter's topic of interest. I think 6 miles and 500ft elevation gain would get us to the best material, but expansion is possible. Almost none is on constructed trail, but there is little brush on this boot-beaten route. There is parking for only three cars, max (Discover Pass required); therefore this field trip will be limited to 12 participants. Pre-register by contacting Bob Lemon at (360)714-8629 or lemprev@alphahunt.com. Meet up at 9:00 AM at the Fairhaven Parkway Park & Ride off 32nd street on the west side of I-5. High wind or road closure would dictate a reschedule.

February 9, Saturday, 9:00 AM: Lookout Mountain Exploration

Covering almost 4,500 forested acres on the south side of Lake Whatcom, the Lookout Mt. Preserve is one of Whatcom County's newest parks. Last summer the County Parks Department, Washington Trails Association, and City of Bellingham Public Works Department collaborated to construct 6.5 miles of trail. The new trail takes hikers through high quality Douglas fir habitat with a lush understory of sword fern, salal, and red huckleberry. In the early summer this is an excellent place to look for those bizarre mycoheterotrophic plants that lack green photosynthetic tissue and therefore depend on mycorrhizal networks to get their energy from trees. This being a winter hike, we will practice identifying plants in their more modest attire (by their twigs, buds, and bark) while pondering what the forest vegetation can tell us about past land use. Our route will take us up the Rufous Creek Trail (moderate grade) for 4.3 miles with the possibility of returning on a different trail. Bring a sack lunch and dress for slow to moderate pace walking for four or five hours. Meet at the Lookout Mountain Trailhead on Lake Louise Road at 9AM. Contact Abe Lloyd for more information at (360) 303-1339 or arcadianabe@yahoo.com.

March 2, Saturday, 8:30 AM: Cryptogam Ramble, Goose Rock, Deception Pass State Park

Goose Rock is wonderfully rich in a variety of ferns, bryophytes, lichens and perhaps a mushroom or two and, of course, other living things. The hike from the parking area on the south side of the Deception Pass bridge to the top of Goose Rock is a bit under a mile and makes about 300 feet elevation gain. As usual, we will take it slowly. Meet at 8:30 AM at the Fairhaven Parkway Park & Ride off 32nd street on the west side of I-5. Return late afternoon. Contact Fred Rhoades at 733-9149 or fmrhoades@comcast.net to confirm and check on any last minute changes of location and carpool meeting. Discover Pass required for parking.

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
- \$50 WNPS Friend
- \$100 WNPS Special Friend
- \$500 WNPS Best Friend
- \$1000 WNPS 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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