# Koma Kulshan Chapter WNPS Newsletter

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## The Lake Whatcom Homeowner Incentive Program

The Lake Whatcom Homeowner Incentive Program (HIP) is a voluntary program supported by a partnership of the City of Bellingham, Whatcom County and the Whatcom Conservation District. The program encourages watershed residents to install projects that treat stormwater runoff on their property.

HIP provides financial reimbursement, personalized assistance with project planning and permitting, and in some cases assistance with landscape design and construction. Some examples include native landscaping, rain gardens, and underground pollution filters. These projects are designed to remove phosphorus from runoff. High phosphorus levels cause harmful algae overgrowth in Lake Whatcom, resulting in water quality issues.

If you live in the Lake Whatcom watershed, visit www.lakewhatcomHIP.org to find out if your property is eligible for HIP and access resources. HIP is only available to a portion of the Lake Whatcom watershed at this time.

Contact Jenny Coe, HIP Coordinator, jcoe@whatcomcd.org.

## Fall (October, November, December) 2018

### President's Corner
by Abe Lloyd

After three very quick years as your chapter president, I passed on the torch at our September meeting. Serving our chapter has shown me how very much we all accomplish by allowing our love for Washington's native flora to inspire and teach us, and carry us into service. Judging by our extensive list of field trips, programs, and partners, we are having a significant impact on not only our environment, but also our human community. For example, we have recently supported or collaborated with organizations such Bellingham Parks and Recreation, Bellingham Public Works, Whatcom County Parks, the Whatcom Land Trust, and the Nooksack Salmon Enhancement Association on restoration projects, plant lists, and native plant gardens. I want to especially thank the excellent planning team made up of the other officers, committee chairs, gurus, tsars, and wizened members listed on the back of this newsletter. They are the chloroplasts that keep this plant thriving. If you would like to share your talents with our organization, we are always looking for new ideas and more help. You don't have to be a botanist to make a meaningful contribution to our society (you just have to endure bad plant jokes!).

I would like to be the first to congratulate and welcome Allan Richardson as the new Koma Kulshan Chapter President. Allan has been a long time member and devoted 10 excellent years of service as the Field Trip Coordinator. While much of the rest of the leadership team remains the same, I would also like to honor Vikki Jackson who is stepping down after a decade or more of hard work as the Program Coordinator, and Jim Davis for being my right hand man as Vice President.

### An iNaturalist primer
by Vikki Jackson

Welcome to the future! Many of us have joked about taking a picture of a plant or animal and have our phones or computer identify it for us. Well the time has come. Enter iNaturalist (www.inaturalist.org), a crowd sourced "species identification system and an organism occurrence recording tool." iNaturalist is an online social network that allows you to record your observations, assists with identification, and helps you collaborate with others. The primary goal of iNaturalist is to connect people with nature, while generating scientifically valuable biodiversity data.

iNaturalist began as Master's final project for three students at UC Berkeley. It has grown into an international database program. It is now a joint initiative of the California Academy of Sciences and National Geographic, ensuring data housed in the system should remain safe and persist over time. The tool and data are available free to everyone from casual nature nerds to scientists, teachers, and agencies.

The concept is simple: A user can input data from their smartphone or home computer through the iNaturalist program. The program will assist with the organism identification and house your data. You can make lists, journals, calendars or projects from your data.

Getting started is easy. If you are using a smartphone you download the free app (available for iPhone and Android platforms) and register (also free). If you are using a computer you go to www.inaturalist.org and set up an account. From that point it is as easy as taking a picture of an organism and uploading it into the program. If you are using a smart phone it will automatically record the location and date (if these features are turned on). If you are using a separate camera, make sure it has the location and date features turned on. iNaturalist will use the details in the photo, the location, and date to provide possible species matches. This is where it gets interesting,

## iNaturalist (Cont'd)

for many groups of organisms this tool is highly accurate in its identification. In my experience it is excellent with vascular plants, birds, amphibians and decent with insects. It is still weak on fungi and I have not tested it much on lichens and mosses. The beauty of the tool is that it learns over time and the more accurate the data that is input, the more accurate the identification tool becomes over time.

Once your data has been input into iNaturalist they are then vetted by other people using the system. Other iNaturalist users can see your observation and either agree with your identification or may suggest a different choice. The program also allows you to disagree and input different identification and notes. The result is an observation that includes a photo, a name, date observed, a map with the location, your own notes. There are other options such as adding the data to projects or to start your own project. You can also review other observer's data and make identification suggestions.

iNaturalist has many other tools built in and many possible applications. You just have to get started and explore. I see iNaturalist as a great tool to allow people to start collecting data on locations of plants and animals in our community and generating a strong database of species locations and patterns that can be used by researchers, planners or the casual nature nerd wanting to know where to go to find cool stuff. If you want to know more, Pam Borso and I will be teaching an introductory workshop on November 4th (see the field trip listing for more details) and we will walk you through it. Join the future, build our local data, join iNaturalist!

## Divergence points between algae and terrestrial plants

(Adapted from a Kanazawa University press release. Reference: Nishiyama, et al. Cell. 2018;174:448-464.)

A genome analysis of the aquatic green algae *Chara braunii* reveals many qualities in common with terrestrial plants. Chara is a close relative of land plants, having diverged from them between 550 and 750 million years ago, and the new research suggests that terrestrial plants must have already evolved some of the traits that adapt them to life on land before they emerged from the sea.

Chara are multicellular and resemble land plants, with stem-like and leaf-like structures. They are widespread in the northern hemisphere, living in fresh water, and attach themselves to muddy beds. Beyond their superficial resemblance to terrestrial plants, Chara bear other similarities. For example, they share their male sexual organ, the antheridium, with ferns, mosses, and other non-flowering plants.

When the researchers examined genes for cellular functions, they found some interesting similarities and differences. Chara contained all of the genes for cell division found in terrestrial plants, with one exception: TANGLED1. It had all of the ethylene signaling genes found in land plants, and two genes that control plant growth. Another plant growth gene found in terrestrial plants was missing from Chara.

Other notable differences included the absence in Chara of the cellular receptors for the hormones abscisic acid, jasmonic acid, and salicylic acid. These molecules play a range of roles in plants, including plant responses to stress, formation of tubers and photosynthesis. That suggests that land plants gained these receptors after they diverged from Chara.

Chara have more similarities to land plants than other species of green algae with known genomes, and which were known to be more distantly related to land plants. The researchers contend that the leaf-like and stem-like features of Chara are unrelated to those found in land plants, that they were due instead to expansion of gene families after they diverged.

## Field Trips (Cont'd)

<u>November 4, Sunday, 12:30 PM to 3:00 PM: NSEA Native Plant Habitat Garden Work Party</u>
Location: Nooksack Salmon Enhancement Association (NSEA), 3057 E. Bakerview Road, Bellingham, WA 98226  The 6-acre site is east of Hannegan Road, down the hill where E. Bakerview Rd. turns north.
Join us for a work party to help plant native plants at the Nooksack Salmon Enhancement Association's (NSEA) Native Plant Habitat Garden, which was created with WNPS support in 2016. WNPS Koma Kulshan Chapter has a partnership agreement to assist with the management and maintenance of the Native Plant Habitat Garden. We'll be weeding the garden and planting more native plants. Warm drinks and snacks provided!  Wear sturdy boots---the ground is wet and you will be digging--and weather appropriate clothing to stay warm and dry! If you have any questions, contact Wendy Scherrer at 360-319-9518 or bluegreen.northwest@gmail.com

<u>December 16, Sunday, 10:00 AM to 3:00 PM: Old Growth Ecology and Evergreen Ethnobotany</u>
Location: Meet at the Stimpson Family Nature Reserve trailhead on Lake Louise Road.  Directions: From I-5 in Bellingham, drive 3.5 miles east on Lakeway Dr to the Geneva neighborhood, turn right on Austin St (which becomes Lake Louise Rd), trailhead will be on the left in 1.5 miles. The Stimpson Family Nature Reserve has 5 miles of easy trails through mature forest and thriving forest wetland. In this beautiful forest setting, the conifers appear to be ascendant. The undisturbed woodland provides a stable environment for under-story plants, fungi, and animals to establish themselves at a climax of ecological succession. These forests of trees are sure to have been providing food and shelter to a multitude of species, including to human beings, for many generations. Jazmen Yoder and Jim Davis will walk us through the preserve identifying coniferous trees and other plants, and discussing traditional uses of bark, roots and leaves for things such as medicine, food and fiber for shelter, weaving, art, and more. Wear appropriate clothing for the December weather. We will stop for lunch on the trail around noon and we plan to return to our cars about 3. Questions should be sent to Jazmen at jazbotwwu@gmail.com

# Fall (October, November, December) 2018

## 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.

October 17, 2018: Climate Change and Forests – The Pacific Northwest and Beyond
The primary effects of climate change on forest ecosystems will occur through increased frequency and magnitude of extreme events, including drought, insect outbreaks, and wildfire. These disturbances will alter terrestrial and aquatic systems across large landscapes, with potential changes in the growth, distribution, and abundance of plant species. David Peterson will describe these effects as well as assertive management actions that can help reduce some negative effects of climate change and ease the transition to a permanently warmer climate. Adaptation by federal agencies is underway at large scales, including altered perspectives about forest management and restoration. Dr. David L. Peterson is professor emeritus at the UW School of Environmental and Forest Sciences. He is a member of the Skagit Climate Science Consortium, and was co-recipient of the Nobel Peace Prize as contributing author for the Intergovernmental Panel on Climate Change. Dr. Peterson has conducted research on the effects of climate change and fire on forest ecosystems throughout western North America, and works to develop climate change assessment and adaptation strategies for these lands.

November 28, 2018: *Note this is the 4th Wednesday instead of the 3rd*. On beyond S (Species Richness): Putting Biodiversity in the Context of Other Controls on Ecosystem Properties
The dramatic changes in the biosphere caused by human society are contributing to the “Sixth Extinction” – losses of biodiversity that greatly exceed the geologic record for background extinction rates. While this raises a number of conservation and ethical questions, it also raises questions about the effects of these losses: At what point might these changes in diversity affect the way ecosystems work? At what point do such losses “kick us in the butt” by adversely affecting the benefits that humans derive from ecosystems? Dr. Hooper will briefly review the history of the field commonly referred to as “biodiversity and ecosystem functioning” that addresses these questions, point out some current hot topics of study, and outline some recent findings that help us understand biodiversity effects in the context of other ecological changes. Dave Hooper is a plant ecologist interested in how changing biodiversity affects the way ecosystems work. He teaches classes in ecology, evolution, and ecosystems in the Biology Department at Western Washington University, where he has worked since 1998. The twenty years of accumulated papers in his office serve as a strong carbon sink, helping to sequester CO2 from the atmosphere and prevent climate change. He did his undergraduate studies at Middlebury College and his PhD at Stanford University.

December 19, 2018: Holiday Potluck. 6-9 pm
4682 Wynn Road. Please join us at our annual winter potluck to enjoy a feast of food, and share stories about the year. Mark Turner, Natalie McClendon, and Brian Small have again offered to host. Dinner will begin around 6:30 pm and we will finish off with a slideshow of highlights of the year. Bring a dish and a drink to share (last names N-Z bring entrees, and A-M bring a side or dessert). For those with photos to share, bring along a USB drive with up to 10 digital images.

## Field Trips

October 20, Saturday, 9:00 AM to 12:00 Noon: Salmon Woods Open Space
This short hike will explore some natural gems hidden in the center of Bellingham. The Salmon Woods Open Space is fairly unique among the parks and open spaces of Bellingham and other cities: due its terrain and limited accessibility it has remained little disturbed for perhaps a hundred years, and harbors a remarkably mature, biologically diverse, and quite beautiful small forest. A city-maintained trail runs through the Salmon Woods and connects to adjacent public properties that also hold botanical interest, including the Red Tail Reach restoration area adjacent to Whatcom Creek -- restored in 2008 with a diverse stand of native shrubs, trees, and wetland features. Together, the several segments of our hike offer access to diverse habitats and plants, and lessons on ecological succession and the urban pressures affecting open space ecosystems. The total walking distance is about 2.5 miles. Meet at 9:00 AM at the southeast corner of the Civic Center parking lot, on Puget Street one block north of Lakeway Drive.  For questions contact Eric Worden: eric@ericworden.seattle.wa.us or 360-778-3542

November 4, Sunday, 9:00 AM to Noon:  Introductory Workshop on using iNaturalist
Location: Nooksack Salmon Enhancement Association (NSEA) campus, 3057 E. Bakerview Road, Bellingham, WA 98226. The 6-acre site is east of Hannegan Road, down the hill where E. Bakerview Rd. turns north. This interactive workshop is geared towards introducing you to iNaturalist and how to use it. iNaturalist is a crowd sourced species identification system and data base. You can use it to help you ID species and to maintain data on where and when you have seen different species. You can use it from an app on your smart phone or tablet or on your home PC. This is citizen science at its best and a great way to learn and track plants, fungi and animals! The goal of the training is to get you started and let you know the potential of this tool! We will begin in the classroom learning the basics and then we will go out and try it out on plants around the campus. You do not need to have a smart phone or tablet to take the class, but if you do I would recommend you download the iNaturalist app (www.inaturalist.org) and register yourself. It is all free and registration is super simple. Any questions contact Vikki Jackson at Vikki@nwecological.com or 360-319-6988. *We expect to be done by noon, but bring a lunch and stay to help out in the NSEA Native Plant Habitat Garden planting and caring for native plants. (See details in the separate calendar item.)

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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:____

Mebership 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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