Borealis

The Newsletter of the

Alaska Native Plant Society

PO Box 141613, Anchorage, Alaska | December 2020 – January 2021

Join us at our Next Meetings!

Monday, December 7, 7:00 PM

Main Topic: **"Pollinator Research in Alaska"**

Speaker: **Justin Fulkerson**

Beringian Mini-Botany – *Primula tschuktschorum*
Speaker: **Beth Baker**
Rose Family: *Dasiphora fruticosa*
Speaker: **Joan Tovsen**

Monday, January 4, 7:00 PM

Main Topic: **"Soils of Arctic Alaska"**

Speaker: **Lorene Lynn**

Beringian Mini-Botany –
Speaker:
Rose Family: Fragaria ssp.
Speaker: **Debbie Hinchey**

PLEASE NOTE: December and perhaps January monthly meetings will not be held in public but via computer and teleconference. By now you may have this format figured out, but if not we have people standing by to help you.

For the latest information about ANPS events and field trips, go to www.aknps.org/

Zooming into Winter 2020

Actually, it is with Google Meetings that we'll continue to hold our monthly meetings virtually through the rest of 2020. The bright side is that people all over the state (and world) can participate! We've had good feedback from members around the state who appreciate being able to share in our meetings. If you haven't tried it yet, you should really enjoy it now that we've worked out most of the kinks on our side!

To join the webinar and watch the presentation:

1. Click on the Meeting ID link below to open it in a web browser. The best web browser to use for this is Chrome, but Firefox or Safari will also work. Avoid Internet Explorer.

   Meeting ID: meet.google.com/vax-nosy-fzd

2. A Google Meet window should open in your browser and your camera will turn on. You'll see an image of yourself (from your computer's camera) and "What's your name?"
3. Enter your name on the line below "What's your name?" and then click the "Ask to join" button.
4. You will be granted access to the webinar. This may take a minute or two.
5. Hover over the image of yourself and click the "Mic" icon and camera icon to mute your computer mic and turn off your camera (so we all don't see you...unless you want to be seen :), respectively.

Audio:

1) If you use the above link you can listen and talk using headphones connected to your computer, or

2) alternatively you can call the phone number below, and enter the pin and you can listen and talk through your phone while watching the live video.

Phone Number: +1 617-675-4444
PIN: 146 152 270 6175#

News from the Board

With the start of a new season, there are a few changes to the ANPS Executive Board. After valiantly leading us through the past several years, Dennis Ronsse has moved up to the exalted position of "Past President", with all the honors and perks that go with such status! Thank you, Dennis! We'll all miss Annie's great soups! Our long-time treasurer extraordinaire, Mary Stella, has taken a job with the Alaska Civil Air Patrol and has reluctantly turned over her financial and membership duties.

The (executive) board is composed of current officers, committee chairpersons, and most recent past president.

Here is the current list:

President: Elizabeth Bluemink
Vice President: Zoe Meade
Secretary: Ginger Hudson
Treasurer: Aaron Wells
Newsletter- Ginny Moore

Technology Co-chairs: Timm Nawrocki & Aaron Wells
Statewide: Jeff Mason(Fairbanks) Kitty LaBounty (SE Alaska)
Education: Beth Baker
Summer Activities: Beth Norris
Past President: Dennis Ronsse

Ginger Hudson recently accepted a new job in Juneau (read about it on the next page, if you don't mind feeling jealous) but in this age of virtual meetings, she thinks she will be able to continue to provide her excellent record-keeping.

Other news from the board is that things are already on track for a busy summer with educational seminars and field trips if public health mandates allow. In recent months our technology committee upgraded our webpage, acquired a non-profit Google account with a multitude of features, and is near completion of an on-line membership system, and newsletter delivery.

Borealis
the newsletter of the
Alaska Native Plant Society

ALASKA NATIVE PLANT SOCIETY

State and Anchorage Chapter Officers

President	Elizabeth Bluemink
Vice President	Zoe Meade
Secretary	Ginger Hudson
Treasurer	Aaron Wells

Anchorage Chapter Program Coordinators

Membership	Mary Stella
Plant Family	Timm Nawrocki
Mini-Botany	Timm Nawrocki
Field Trips	Beth Norris

Newsletter ("*Borealis*")

Editor	Ginny Moore

Borealis is published bi-monthly, fall through spring. Articles may be sent to Ginny Moore, , Anchorage, AK 99516. Phone or FAX: 5, E-mail: elfinwood@gmail.com

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- Then, every time you shop and use your Rewards Card, you are helping (non-profit) earn a donation!
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- If you do not have a Rewards Card, they are available at the Customer Service desk of any Fred Meyer store.
- For more information, please visit

Jensen-Olson Arboretum

What a way to begin a new year! Our ANPS Secretary, Ginger Hudson, is soon to become the new manager of the Jensen-Olson Arboretum located on idyllic Pearl Harbor on Alaska's Inside Passage. The Arboretum houses the American Public Gardens Associations Plant Collections Networks nationally-accredited collection for the genus Primula. Some of the species seen here are rarely grown anywhere else in North America.

History

John and Marie (Jensen) Peterson, immigrants from northern Germany, were the first white settlers in Pearl Harbor. Beginning in 1897, John staked numerous lode claims and established a homestead. During this time, Marie was cultivating gardens and supplying produce to Juneau grocers as early as 1904, beginning a legacy we are sharing today. Several of Marie's plants were brought over from Germany and are now found in other gardens throughout Juneau.

In 1916, the home was destroyed by fire and John Peterson died the same year. After his death, Peterson's two daughters rebuilt the house, took over management of the mines, running the mill and the complete operation. In 1925, the eldest daughter Irma, married Charles Olson, foreman of the crew that extended the road to Pearl Harbor. The Olson's continued the gardens established by Marie, until her passing in 1958. Charles and Irma passed away by 1961, and the homestead and mining claims were inherited by Irma's uncle, William Jensen and her cousin, Carl Jensen with his wife, Caroline.

Caroline and Carl Jensen moved "out-the-road" in the mid-1960s and continued the gardening tradition on the beautiful land overlooking the Lynn Canal. Caroline wished for her gardens to be left for public admiration long after she was gone, and in 1998 partnered with the Southeast Alaska Land Trust and the City and Borough of Juneau to create a conservation easement on the land. After her passing in 2006, ownership was transferred to the city, and the groundwork was laid for the Jensen-Olson Arboretum. In 2007 the arboretum opened its doors for all to enjoy.

Ginger tells us: "There is a vegetable garden on the site that has been in use for over 100 years, one apple tree is said to be over 100 years old, and many ornamentals are still in existence from Caroline's time. The current manager, Merrill Jensen (no relation) greatly enhanced the gardens, oversaw creation of a small parking lot, welcome kiosk, bathroom, and is most well known for expanding the primula collection begun by Caroline. The collection is internationally recognized and contains possibly 150 varieties--some of the species have struggled with the warming climate. Merrill established a solid foundation. In addition to stewardship of the property, with some seasonal help and volunteers, my task is to expand outreach, deepen the historical record beyond the European settlers, expand use and accessibility of the IrisBG database, and possibly create another recognized collection: saxifrage and campanula have been suggested, though my NPS friends could make alternate suggestions!"

The arboretum is open all year, Wed-Sun, 9-5 and presents a wonderful opportunity for field trips! There is native rainforest on the property and it adjoins more city preserved space. One mile down the highway is the Eagle Valley Center that has a large facility for meetings or retreats, loads of trails, a new cabin, and lots of wild space.

FOCUS ON THE TONGASS – *Where Politics and Science Converge*

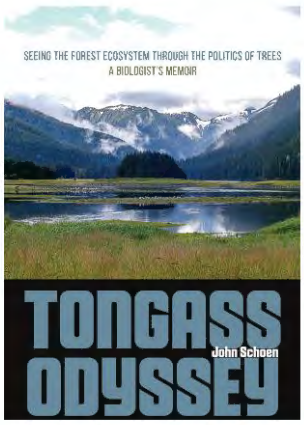
The Trump administration has eliminated federal protections for the largest intact temperate rainforest in the world, the Tongass National Forest in Southeast Alaska.

In late October, the U.S. Forest Service, part of the Department of Agriculture, cleared the way for the Tongass to be fully exempted from the Roadless Rule, a 2001 policy passed in the waning days of the Clinton administration.

The Roadless Rule has long prohibited development on 9.2 million acres of inventoried roadless areas in the Tongass. The Forest Service's proposal, if approved by the Secretary of Agriculture Sonny Perdue, would eliminate that rule for the Tongass and convert 165,000 acres of old-growth and 20,000 acres of young-growth to suitable timber lands.

Alaskan political leadership has long sought this change for the 32 islanded communities in the Tongass, saying the Roadless Rule is a hinderance to development, infrastructure, and economic opportunity.

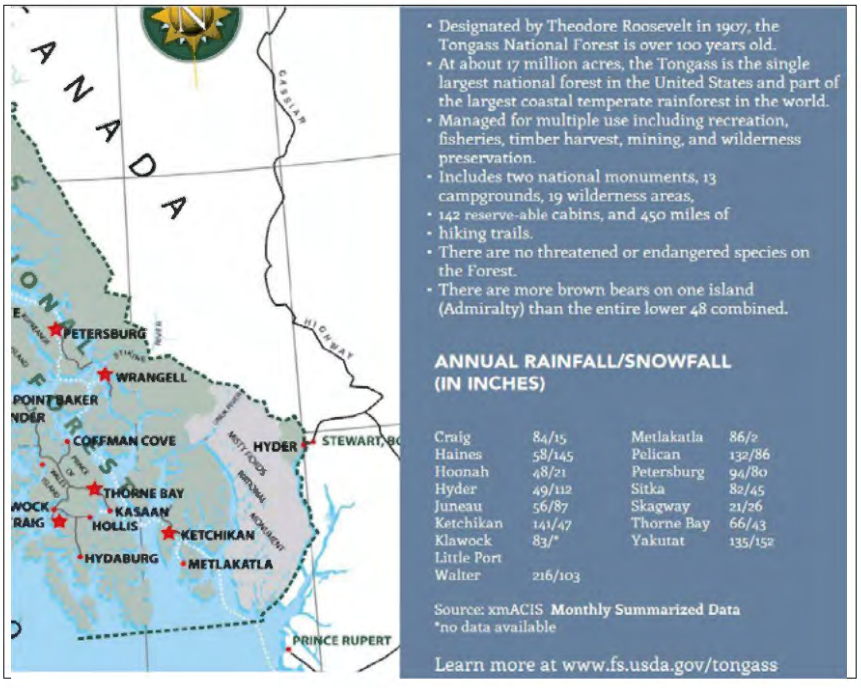
But environmental groups have long opposed this proposal. The trees of the Tongass have been storing carbon for centuries and provide critical habitat for wildlife. The region is also significant for Alaskan Native tribes and subsistence users, who rely on the Tongass for food and medicine. An internal Forest Service report said that 96% of public comments voiced support for keeping the Roadless Rule in place.



Alaskan wildlife biologist and conservationist John Schoen, has just published a new book that explores this critical habitat and the decades old battle.

Tongass Odyssey
John Schoen
University of Alaska Press
October 2020

Tongass Odyssey is a biologist's memoir of personal experiences over the past four decades studying brown bears, deer, and mountain goats and advocating for conservation of Alaska's Tongass National Forest. The largest national forest in the nation, the Tongass encompasses the most significant expanse of intact old-growth temperate rainforest remaining on Earth. *Tongass Odyssey* is a cautionary tale of the harm that can result when science is eclipsed by politics that are focused on short-term economic gain. Yet even as those problems put the Tongass at risk, the forest also represents a unique opportunity for conserving large, intact landscapes with all their ecological parts, including wild salmon, bears, wolves, eagles, and other wildlife. Combining elements of personal memoir, field journal, natural history, conservation essay, and philosophical reflection, *Tongass Odyssey* tells an engaging story about an enchanting place.



Meet the Author: Audubon Alaska held a virtual event last month that included a presentation from John and then a Q&A session with participants in a webinar format. Links to that are listed below.

Facebook: Facebook Interview
Box: National Audubon Society Article

Erring on the side of keeping every cog and wheel in the Tongass

Anchorage Daily News; Sun, Nov. 15, 2020 Rick Sinnott (reprinted with permission of the author)

"When in doubt, my rule of thumb is to err on the side of understatement." By the time John Schoen admits that, you are well more than halfway through his book. If the scientific findings and political struggles he describes are an understatement, then Southeast Alaska is in a world of hurt.

But Schoen wants you to know that Alaska's Tongass National Forest can still be saved. He has written a book about his career studying deer, mountain goats, and bears in Southeast Alaska – and his second career trying to protect their unique rainforest habitats from overzealous logging. Schoen has thrown down the gauntlet, and the best way to understand the challenge, and his unequivocal optimism, is to read his book, "Tongass Odyssey: Seeing the Forest Ecosystem through the Politics of Trees – A Biologist's Memoir."

Schoen was hired by the Alaska Department of Fish and Game as a wildlife biologist in 1977. Way back then conventional wisdom suggested that clearcutting spurred a burst of vegetation that helped deer and other wildlife. Unfortunately, by the time professional biologists began studying wildlife ecology, there were very few old-growth forests left in the United States. The Tongass was still largely intact, but the timber industry, aided and abetted by the U.S. Forest Service, was trying its best to catch up with the rest of the country.

Schoen's research demonstrated that unchecked logging had dire consequences. Natural openings in old-growth forests allow sunlight to penetrate the canopy, encouraging luxurious undergrowth required by Sitka black-tailed deer, mountain goats, and brown bears. In contrast, clearcut forests sprouted dense thickets of even-aged conifers that blocked sunlight. Replacing a mature forest in Southeast Alaska takes 200-300 years.

For 50 years, logging in the Tongass had concentrated on the most productive habitats. Unsurprisingly, places that grow lots of big trees are also productive fish and wildlife habitats. Thus, while it is true that most of the Tongass remains unlogged, logging has had a disproportionate impact on the most productive watersheds and the fish and wildlife that depend on them.

Schoen worked for Fish and Game for 20 years. During that time he received an ad hoc post-doctoral education in the politics of wildlife conservation. The logging industry and the Forest Service were not amused by his research and fought him at every step. Schoen eventually moved on to supervisory roles that kept him desk-bound. After retirement, he accepted a nongovernmental position as senior scientist with Audubon Alaska, where he worked another 15 years.

Audubon Alaska needed a senior scientist because it had established a reputation as a fact-based environmental organization. Schoen took its scientific dedication to a new level by re-engaging with various Forest Service plans for logging the Tongass. Long before he left Fish and Game, other scientists had begun accumulating information on the adverse effects of logging on other mammals, birds and fish in Southeast Alaska. Schoen compiled this information and seasoned it with his familiarity of Southeast Alaska habitats to develop maps that clearly depicted the most productive habitats. He was doing the broader ecological work that the Forest Service should have done, but hadn't. According to his maps, logging wasn't just reducing populations of mammals and birds important to subsistence and sport hunters, it was affecting salmon populations, one of the economic mainstays of Southeast Alaska.

Most scientists try, with mixed success, to turn over pieces of the existential puzzle. Only the most dedicated embark upon another career to fit their pieces with others in order to come up with a more complete picture. Even fewer try to explain what they've found in terms we all can understand. Schoen has always played the long game, believing as his precursor, Aldo Leopold, wrote about the natural environment, that "… every part is good, whether we understand it or not … To keep every cog and wheel is the first precaution of intelligent tinkering."

Rick Sinnott is a former Alaska Department of Fish and Game wildlife biologist. Email him: rickjsinnott@gmail.com(link sends e-mail)

FROM WHAT WE GATHER

How passion, luck and sweat saved some of North America's rarest plants

By Susan Milius: Science News, November 5, 2020

Some plant enthusiasts go to extremes trying to save beloved species. The possibility of snatching a flower or fern from the jaws of extinction has fired up a community of enthusiasts trying to document and protect what's left of the rarest of native vegetation. The challenge is immense, but sometimes there are wins. This article highlights two species, *Franciscan manzanita*, and *Thismia americana,* and the great efforts that have gone into tring to "un-extinct" them.

Vascular plant extinction in the continental United States and Canada

By Wesley M. Knapp et. al. 28 August 2020 https://doi.org/10.1111/cobi.13621

Extinction rates are expected to increase during the Anthropocene. Current extinction rates of plants and many animals remain unknown. We quantified extinctions among the vascular flora of the continental United States and Canada since European settlement. We compiled data on apparently extinct species by querying plant conservation databases, searching the literature, and vetting the resulting list with botanical experts. Because taxonomic opinion varies widely, we developed an index of taxonomic uncertainty (ITU). The ITU ranges from A to F, with A indicating unanimous taxonomic recognition and F indicating taxonomic recognition by only a single author. The ITU allowed us to rigorously evaluate extinction rates. Our data suggest that 51 species and 14 infraspecific taxa, representing 33 families and 49 genera of vascular plants, have become extinct in our study area since European settlement. Seven of these taxa exist in cultivation but are extinct in the wild. Most extinctions occurred in the west, but this outcome may reflect the timing of botanical exploration relative to settlement. Sixty-four percent of extinct plants were single-site endemics, and many occurred outside recognized biodiversity hotspots. Given the paucity of plant surveys in many areas, particularly prior to European settlement, the actual extinction rate of vascular plants is undoubtedly much higher than indicated here.

How Venus flytraps "remember" their prey

H. Suda et al. Calcium dynamics during trap closure visualized in transgenic Venus flytrap. *Nature Plants*. Published online October 5, 2020. doi: 10.1038/s41477-020-00773-1.

A Venus flytrap's short-term "memory" can last about 30 seconds. If an insect taps the plant's sensitive hairs only once, the trap remains still. But if the insect taps again within about half a minute, the carnivorous plant's leaves snap shut, ensnaring its prey. This new study reveals that the plants do so using calcium.

Scientists know that some plants have a type of long-term memory, says study coauthor Mitsuyasu Hasebe, a biologist at the National Institute for Basic Biology in Okazaki, Japan. One example is vernalization, whereby plants remember long periods of winter cold as a signal to flower in the spring. But short-term memory is more enigmatic, and "this is the first direct evidence of the involvement of calcium," Hasebe says.

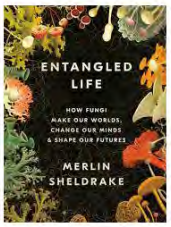
With the help of genetic engineering, Hasebe and colleagues were able to actually see calcium in action. After a hair inside a Venus flytrap is tapped once, calcium floods the leaves' cells, which researchers could observe after genetically engineering plants to glow when calcium was present. A second tap, a few seconds after the first, brings more calcium into the cells, brightening the glow and causing the trap to snap shut. Science News has created a video of the Venus flytrap in action.

Chinese *Fritillaria* may camouflage to protect itself from humans

For thousands of years traditional Chinese medicine herbalists have ground the bulbs of wild *Fritillaria* into a popular cough-treating powder. The demand for bulbs is intense, since about 3,500 of them are needed to produce just one kilogram of the powder, worth about $480.

But some *Fritillaria* are remarkably difficult to find, with living leaves and stems that are barely distinguishable from the gray or brown rocky background. Surprisingly, this plant camouflage seems to have evolved in response to people. *Fritillaria delavayi* from regions that experience greater harvesting pressure are more camouflaged than those from less harvested areas, researchers reported November 20 in *Current Biology*.

FROM OUR BOOKSHELVES



Entangled Life

Merlin Sheldrake
Random House Press
May 2020

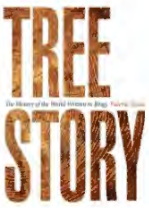
"Merlin Sheldrake's marvelous tour of these diverse and extraordinary life forms is eye-opening on why humans should consider fungi among the greatest of earth's marvels. . . . Wondrous."—*Time* ("The 100 Must-Read Books of 2020")

A mind-bending journey into the hidden universe of fungi, "one of those rare books that can truly change the way you see the world around you" (Helen Macdonald, author of *H Is for Hawk*).

When we think of fungi, we likely think of mushrooms. But mushrooms are only fruiting bodies, analogous to apples on a tree. Most fungi live out of sight, yet make up a massively diverse kingdom of organisms that supports and sustains nearly all living systems. Fungi provide a key to understanding the planet on which we live, and the ways we think, feel, and behave.

In *Entangled Life*, the brilliant young biologist Merlin Sheldrake shows us the world from a fungal point of view, providing an exhilarating change of perspective. Sheldrake's vivid exploration takes us from yeast to psychedelics, to the fungi that range for miles underground and are the largest organisms on the planet, to those that link plants together in complex networks known as the "Wood Wide Web," to those that infiltrate and manipulate insect bodies with devastating precision.

Fungi throw our concepts of individuality and even intelligence into question. They are metabolic masters, earth makers, and key players in most of life's processes. They can change our minds, heal our bodies, and even help us remediate environmental disaster. By examining fungi on their own terms, Sheldrake reveals how these extraordinary organisms—and our relationships with them—are changing our understanding of how life works.



Tree Story

Valerie Trouet
Timber Press
April 2020

Children around the world know that to tell how old a tree is, you count its rings. Few people, however, know that research into tree rings has also made amazing contributions to our understanding of Earth's climate history and its influences on human civilization over the past 2,000 years. In her captivating new book, *Tree Story*, Valerie Trouet reveals how the seemingly simple and relatively familiar concept of counting tree rings has inspired far-reaching scientific breakthroughs that illuminate the complex interactions between nature and people.

Trouet, a leading tree-ring scientist, takes us out into the field, from remote African villages to radioactive Russian forests, offering readers an insider's look at tree-ring research, a discipline formally known as dendrochronology. Tracing her own professional journey while exploring dendrochronology's history and applications, Trouet describes the basics of how tell-tale tree cores are collected and dated with ring-by-ring precision, explaining the unexpected and momentous insights we've gained from the resulting samples.

Blending popular science, travelogue, and cultural history, *Tree Story* highlights exciting findings of tree-ring research, including the fate of lost pirate treasure, successful strategies for surviving California wildfire, the secret to Genghis Khan's victories, the connection between Egyptian pharaohs and volcanoes, and even the role of olives in the fall of Rome. These fascinating tales are deftly woven together to show us how dendrochronology sheds light on global climate dynamics and uncovers the clear links between humans and our leafy neighbors.

ANNUAL MEMBERSHIP APPLICATION/RENEWAL

The Alaska Native Plant Society was organized in 1982 by an enthusiastic group of amateur and professional botanists. It is a non-profit educational organization with the goal of uniting all persons interested in the flora of Alaska. Membership is open to any interested individual or organization. If you wish to join us, please indicate the category of membership you desire, fill in the form below, and mail it with the appropriate remittance to:

Alaska Native Plant Society
P. O. Box 141613
Anchorage, AK 99514

STATUS ☐ **NEW** ☐ **RENEWAL**

CATEGORY	E-Mail Newsletter	Snail-Mail Newsletter	Both Mail Deliveries
☐ Full-time Student	$12	$22	$22
☐ Senior Citizen	$12	$22	$22
☐ Individual	$15	$25	$25
☐ Family	$20	$30	$30

Name: _____

Address:_____

City _____**State:** _____**Zip:**_____

Telephone: (Home)_____**(Cell)**_____**E-Mail:**_____

PLEASE RENEW OR JOIN TODAY!
ANPS Membership is on a calendar-year basis.

Alaska Native Plant Society
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Anchorage, AK 99514