

Borealis

The Newsletter of the



PO Box 141613, Anchorage, Alaska

December 2021 – January 2022

Join us at our Next Meetings!

Monday, December 6, 6:00 PM

NOTE Temporary Time Change!

Main Topic: *"Plants as traditional food and medicine in the YK Delta"*
Speaker: Ann Fienup-Riordan

Ann and other invited guests will talk about their book, "Yungcautnguug Nunam Qaingam Tamarmi/All the Land's Surface is Medicine."

Mini-Botany

Apiaceae: *Conioselinum* and *Cnidium*
– Al Batten

Botany in the News: Aaron Wells

Monday, January 3 10, 7:00 PM

Main Topic: "Alaska's Berries and their Changing Seasons"

Speaker: Katie Spellman

Mini-Botany

Botany in the News:

Speaker: Beth Baker

Apiaceae Family: *Sium*

Speaker: Glenn Brown

PLEASE NOTE: VIRTUAL MEETING

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

Our Virtual Universe

We'll continue to hold our monthly meetings virtually at least for the time being. We will be using *Google Meetings*, as we did last spring. The bright side is that people all over the state (and world) can participate!

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: <https://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: (US) +1 352-720-0197

PIN: 711 490 807#

IT IS MEMBERSHIP RENEWAL TIME!!!

SEE NEXT PAGE FOR MORE INFO!

Membership Renewals



**Lesser Rattlesnake Plantain
(*Goodyera repens*) in Far North
Bicentennial Park, Anchorage, AK.**
Photo by Aaron Wells

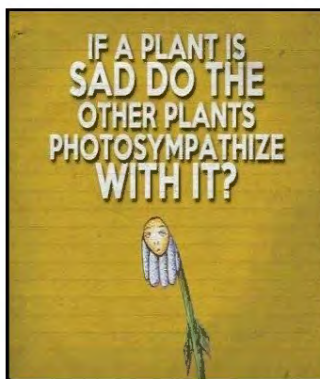
It's that time of year again, time to renew your Alaska Native Plant Society (AKNPS) membership! Memberships are run on an annual basis and the end of the year is just around the corner. You can renew using the paper form on the back of this newsletter OR you can renew on the AKNPS website (<https://aknps.org/membership/>) using our handy membership form with payment via PayPal. If you are interested in signing up for a recurring membership you can do so via the "Recurring Annual" option under the Subscription Type heading on the website - <https://aknps.org/membership>

Members of the AKNPS receive our newsletter, the *Borealis*, in October, December, February, and April, as well as a Summer Field Trip Calendar and email updates of meetings, field trips and announcements of AKNPS business. Members can also vote in AKNPS elections, volunteer on committees, and serve on our board of directors. All general meetings are open to the public and non-members are always welcome, so please invite a friend! Most field trips and workshops are also open to the public. However, some are limited to AKNPS members due to transportation or lodging availability.

If you signed up for a recurring membership in 2021 then you don't need to do anything; your credit card will be automatically charged a year after you initially signed up for the recurring membership.

If you are unsure if you signed up for a recurring membership in 2021 or if you have any other membership questions, then please contact Aaron Wells at treasurer@aknps.org with your questions.

BOTANICAL HUMOR??



“Naurait Iñupaitun - Iñupiaq plants from Northwest Alaska.”

The ANPS main speaker at our November monthly meeting was Maija Katak Luki. Her topic was “Naurait Iñupaitun - Iñupiaq plants from Northwest Alaska.” An Iñupiaq, she was born in Kotzebue and raised on the shores of Cape Krusenstern National Monument at Sisualik. Her upbringing and traditional lifestyle led her to advocate for the rights of the people of Northwest Alaska in her professional career, including Regional Communications Director for NANA Regional Corporation, Environmental Program Manager for the 12 consolidated tribes of Maniilaq Association, and former Mayor of the City of Kotzebue. Currently, Luki is the Native Relations Program Manager for Region 11 of the National Park Service.

Maija told us about the native plants that she and her community have traditionally used for medicine and for food. *Artemisia tilesii*, “wormwood,” or what they call “Stinkweed,” has been used for generations as an antidote to colds, flues, arthritis and infections. Other important plants for their community are Labrador tea (*Ledum palustre*), Sea Lovage (*Ligusticum scoticum* L. subsp. *Hulténii*) and Willow (*Salix pulchra*).



Wormwood – Sargig (*Artemisia tilesii*) “Stinkweed”

Along with other Alaska botany texts, Maija recommended a local reference: “Plants That We Eat: Nauriat Nigiñaqtaut - From the traditional wisdom of the Iñupiat Elders of Northwest Alaska” by Anore Jones 2010.

Borealis

the newsletter of the



ALASKA NATIVE PLANT SOCIETY

State and Anchorage Chapter Officers

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

Program Coordinators

Plant Family/Mini Botany	Marilyn Barker
Field Trips	Beth Norris
Seed Fundraiser	Erika Wolter
Technology	Aaron Wells and Timm Nawrocki

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: , E-mail: elfinwood@gmail.com



Where shopping & giving unite

IT WORKS!

IN 2018-2019 ANPS EARNED ALMOST \$400

FROM MEMBERS SHOPPING AT FREDDY’S!

WON’T YOU JOIN US?

IT DOESN’T AFFECT YOUR OWN REWARDS POINTS.

Fred Meyer is donating \$2.5 million per year to non-profits in Alaska, Idaho, Oregon and Washington, based on where their customers tell them to give. Here’s how the program works:

- Sign up for the Community Rewards program by linking your Fred Meyer Rewards Card to (non-profit) at www.fredmeyer.com/communityrewards. You can search for us by our name or by our non-profit number **GC263**.
- Then, every time you shop and use your Rewards Card, you are helping (non-profit) earn a donation!
- **You still earn your Rewards Points, Fuel Points, and Rebates, just as you do today.**
- 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

More ANPS News

Constitutional Changes on Track for Approval – Now for the Bylaws

Hooray, we've reached quorum for the Fall 2021 proposed amendments to our non-profit constitution. Members may still vote until the end of the 60-day notice period, which began Oct. 22 and ends Dec. 20. Paper ballots were sent to members on Oct. 22. You can also go to <https://bit.ly/2YUShMc> to vote online.

So far, the votes received by mail and online indicate a wide margin of approval for the constitutional changes.

What's next? After all votes are tallied, we will take the next step of a 30-day notice period for the proposed bylaw amendments. If you haven't read those, they are also included in the link above. Like the constitution amendments, the proposed bylaw amendments were proposed to allow our non-profit to adopt modern technology for meetings and decision making, and to repeal some old requirements. We hope these changes will improve access and participation by our statewide membership.

A ballot is not required to vote on proposed bylaw amendments. We hope to launch a 30-day notice period of the bylaw amendments after Christmas and will offer a Q&A opportunity at a member meeting before proceeding to a vote. For bylaw amendments to pass at a member meeting, a quorum must be present and 2/3rds of the votes cast must be favorable.

Thank you all for voting!

Elizabeth Bluemink, President

Alaska Native Plant Society members taught OLÉ class

ANPS members Marilyn Barker, Beth Baker, and Elizabeth Bluemink have been teaching a class for the Anchorage OLÉ Program during the fall semester. Topics of the very popular program "Botany of Anchorage and Alaska" included flowering plants, sex in the garden (i.e., pollination), the history of botanical explorations in Alaska and "smarty plants."

The Alaska Native Plant Society's seed fundraiser is in the works!



In early November, 4 volunteers packaged up seed from dozens of Alaska native species collected in 2021 to offer in our upcoming native seed fundraiser.

Last year we offered seeds from 45 native species and this year we expect to offer as many or more species. Also, we're hoping to launch the seed fundraiser earlier than we did last year. As this newsletter goes to print, however, we are still ironing out a few details.

Like last year, our native seed inventory will be published online with instructions on how to make an order. Donations to the seed fundraiser help support the Alaska Native Plant Society's projects to promote awareness, education, and preservation of Alaska native plants.

Stay tuned to AKNPS member emails and our Facebook page for a future announcement.





FROM WHAT WE GATHER



Unique fossil: Seeds sprouting from an amber-encased pine cone

Oregon State University research has uncovered the first fossil evidence of a rare botanical condition known as precocious germination in which seeds sprout before leaving the fruit.

In a paper published in *Historical Biology*, George Poinar Jr. of the Oregon State College of Science describes a pine cone, approximately 40 million years old, encased in Baltic amber from which several embryonic stems are emerging.

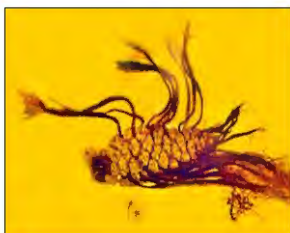
"Crucial to the development of all plants, seed germination typically occurs in the ground after a seed has fallen," said Poinar, an international expert in using plant and animal life forms preserved in amber to learn about the biology and ecology of the distant past. "We tend to associate viviparity -- embryonic development while still inside the parent -- with animals and forget that it does sometimes occur in plants."

Most typically, by far, those occurrences involve angiosperms, Poinar said. Angiosperms, which directly or indirectly provide most of the food people eat, have flowers and produce seeds enclosed in fruit.

"Seed germination in fruits is fairly common in plants that lack seed dormancy, like tomatoes, peppers and grapefruit, and it happens for a variety of reasons," he said. "But it's rare in gymnosperms."

Gymnosperms such as conifers produce "naked," or non-enclosed, seeds. Precocious germination in pine cones is so rare that only one naturally occurring example of this condition, from 1965, has been described in the scientific literature, Poinar said.

"That's part of what makes this discovery so intriguing, even beyond that it's the first fossil record of plant viviparity involving seed germination," he said. "I find it fascinating that the seeds in this small pine cone could start to germinate inside the cone and the sprouts could grow out so far before they perished in the resin."



Oregon State University. "Unique fossil: Seeds sprouting from an amber-encased pine cone." ScienceDaily. ScienceDaily, 16 November 2021.

Plants Act Fast To Fight Off Infections

New work led by Carnegie's Kangmei Zhao and Sue Rhee reveals a new mechanism by which plants are able to rapidly activate defenses against bacterial infections.

Published in *eLife*, this new work investigated how production of a plant defense compound called *camalexin* is activated at the genetic level.

"Because plants grow in a fixed location, they can't flee from predators or pathogens," Zhao explained. "Instead, they've evolved to produce compounds that help them fight off invaders, among other functions."

Camalexin, like other plant metabolites, is synthesized by specialized enzymes that perform many of the cell's functional duties. When the plant is under environmental stress, it activates the genes encoding these enzymes. The researchers set out to elucidate how a plant cell can rapidly fire up the production line and respond to external conditions or threats at the right time.

"Imagine a cell's genome is a massive library and each gene is a book, and each chromosome is an extremely large shelf," Rhee said. "The cell has different mechanisms for quickly finding the gene it so that it can respond to environmental conditions, including threats and stress."

These strategies include adding or removing tags or marks in the packaging of all the genes and associated material -- collectively called chromatin -- which can enhance or inhibit expression of particular genes.

They were able to elucidate the existence of a never-before-characterized type of **bivalent** chromatin which keeps the biosynthesis pathway for camalexin inactive until there is a pathogen signal. Their findings indicate that both elements are needed to control the proper timing of the plant's response to external stress.

"Camalexin and other defense compounds are often very expensive and toxic for the plants to make. So, it's disadvantageous for plants to make them all the time," said Zhao. "These defense compounds are made just in time when a plant is attacked by pests and pathogens. This finding could inform strategies for fighting climate change and global hunger, or even the synthesis of plant-derived medicines."

Carnegie Institution for Science. "How do plants act fast to fight off infections? Findings could inspire efforts to improve crop yields and combat global hunger." ScienceDaily. ScienceDaily, 27 October 2021.

<www.sciencedaily.com/releases/2021/10/211027085343.htm>.

Seminar in Ethnobotany

EBOT 200

2 credits, Mondays, 5:30-7:30pm, CRN 38645

LATE START: January 24-Apr 25, 2022

Canvas and Zoom; Instructor: Lisa Strecker
\$486 + Books (email for scholarship information)

Toll-free: 800-478-5822 • UAF-ethnobotany@alaska.edu
<https://alaskaethnobotany.community.uaf.edu/>



EBOT 200 surveys basic concepts of the interdisciplinary academic field of ethnobotany. Through readings, integration of Indigenous/Alaska Native plant knowledge, interactive exploration, and discussions of case studies of human-plant relationships, students will learn and reflect on the role and importance of ethnobotany in light of contemporary societal and environmental issues.



Kuskokwim Campus
College of Education and Community Development
700, 7th St S • Sitka, Alaska 99580
Your Success is Our Success



DRUMBEATS ALASKA
CONSORTIUM

UAF is an AA/EEO employer and educational institution and prohibits illegal discrimination against any individual. www.alaska.edu/nondiscrimination/
The UAF Ethnobotany Program is funded by a USDA NIFA ARNH grant #2020-18426-32342 / Accession No. 1023459



ALASKA
ETHNOBOTANY

University of Alaska Ethnobotany Program

Ethnobotany is the study of the relationships between people and plants. Ethnobotany as an academic discipline is relatively young and it is interdisciplinary; it builds on concepts and methods from both, the humanities and the sciences, mainly from anthropology and botany.

The University of Alaska ethnobotany certificate program involves interdisciplinary study of the relationship between human cultures and plants. Students will learn about native and non-native plants and their uses and ecology in the context of their cultural, social and economic importance by combining scientific and anthropological concepts and methods. Emphasis is given to the importance of plants in Alaskan Native cultures. The program emphasizes culturally relevant, place-based courses that highlight the ways this information contributes to other fields of study, such as cultural and natural resources management, community development, adaptive resilience, and human health. It is also designed to serve as a bridge to a variety of associate and baccalaureate programs in natural science and liberal arts.

This program may be especially of interest to individuals employed by or interested in employment with state, federal or tribal agencies or other local entities in rural Alaska which provide natural resource management services.

For more information on the requirements for the Ethnobotany Certificate or a minor in Ethnobotany, please see: [Alaska Ethnobotany Program](#)



Willow Fish Trap and Math in the Classroom



Lauhala



Willow paper



Artemisia - Moon Plants for Women

Selection of final student projects in Applied Ethnobotany Spring 2021

Applied Ethnobotany Spring

EBOT 251

Nine Saturdays, 9:00 am – noon

Jan 15 – Apr 23, 2022

2 credits • CRN 38644

WordPress and Zoom • Instructor: Lisa Strecker

\$486 + books (call or email for scholarship information)

Toll-free: 800-478-5822 • UAF-ethnobotany@alaska.edu

<https://alaskaethnobotany.community.uaf.edu/>



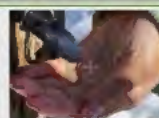
Interested in exploring your own ethnobotanical projects? Join us for a semester of hands-on learning and sharing of projects! You will meet a plant-loving community, work with plants of your choice and learn about the interdisciplinary field of ethnobotany in our Zoom facilitated class sessions.



Brief Video of Making a Plant Print on Fabric



Making Maple Syrup (part 2)



Tapping Maple Trees (part 1)



From Log Hive to Dye Pot – A Bittersweet Celebration!

Selection of final student projects in Applied Ethnobotany Spring 2021



Kuskokwim Campus
College of Education and Community Development
700, 7th St S • Sitka, Alaska 99580
Your Success is Our Success



DRUMBEATS ALASKA
CONSORTIUM

UAF is an AA/EEO employer and educational institution and prohibits illegal discrimination against any individual. www.alaska.edu/nondiscrimination/
The UAF Ethnobotany Program is funded by a USDA NIFA ARNH grant #2020-18426-32342 / Accession No. 1023459



Systematic Botany BIOL 331

Spring 2022, 3 credits
CRN: 35245 (fully asynchronous)
CRN: 38550 (asynchronous lecture, lab in person)



Course description

Classification of flowering plants with emphasis on Alaskan flora; familiarity with taxonomy (identification, nomenclature, classification), evolution (speciation, reproductive biology, adaptation, convergence, biogeography) and phylogenetics (morphology and molecules). Lab emphasizes learning representative families and genera of Alaskan flora using keys and manuals.



Instructor: Steffi Ickert-Bond
email: smickertbond@alaska.edu
Dates: Jan. 10 – Apr. 30, 2022
Delivery: Asynchronous or hybrid

Online lab activities

- Interactive greenhouse tour
- Virtual plant dissection
- Learning glass videos
- Find botanical fraud on the internet (Botanical Better Business Bureau)
- Explore your local grocery store in search of plant diversity
- Document plant diversity in your backyard using iNaturalist
- Virtual herbarium tour
- Specimen-based keying exercises

UAF is an AA/EEO employer and educational institution and prohibits illegal discrimination against any individual. www.alaska.edu/nondiscrimination/

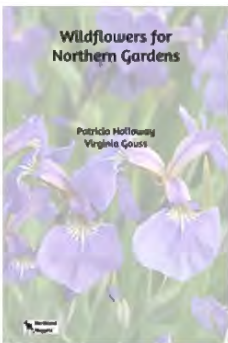
FROM OUR BOOKSHELVES



Yungcautnguuq Nunam Qaingam Tamarmi/All the Land's is Medicine: Edible and Medicinal Plants of Southwest Alaska

by Ann Fienup-Riordan (Author), Alice Rearden (Contributor), Marie Meade (Contributor), Kevin Jernigan (Contributor), Jacqueline Cleveland (Contributor), Sharon Birzer (Contributor), Richard W. Tyler (Contributor)
University of Alaska Press March 15, 2021

In this book, close to one hundred men and women from all over southwest Alaska share knowledge of their homeland and the plants that grow there. They speak eloquently about time spent gathering and storing plants and plant material during snow-free months, including gathering greens during spring, picking berries each summer, harvesting tubers from the caches of tundra voles, and gathering a variety of medicinal plants. The book is intended as a guide to the identification and use of edible and medicinal plants in southwest Alaska, but also as an enduring record of what Yup'ik men and women know and value about plants and the roles plants continue to play in Yup'ik lives. **NOTE: The author, Ann Fienup-Riordan, will be the main speaker for the ANPS December 6 meeting!**



Wildflowers For Northern Gardens

Patricia Holloway, Virginia Gauss
A.F. Farmer LLC, May 15, 2021

Two long-time Alaska gardeners showcase northern wildflowers that grow well in a variety of gardens from formal landscapes to enhancing natural areas such as woodlands, meadows and ponds. The book includes short wildflower descriptions, cultivation and propagation as well as additional resources to make gardening projects successful. **NOTE: This book is now available for sale from the Alaska Native Plant Society. Contact Marilyn Barker for more information.**

NEW: UAF Occupational Endorsement Certificate in Ethnobotany (OEC Ethnobotany)

The University of Alaska has announced the launch of a new degree, the Occupational Endorsement Certificate (OEC) in Ethnobotany! In order to earn the EBOT OEC, students will take 17 credits of EBOT classes. For more information about the new degree, please also visit the CRCD website. Questions? Please don't hesitate to send us an email (uaf-ethnobotany@alaska.edu)!

COURSES	OEC	Minor
EBOT 100 Introduction to Ethnobotany (3 cr.)	X	X
BIOL 195 Introduction to the Flora of Alaska (2 cr.)	X	
EBOT 200 Seminar in Ethnobotany (2 cr.)	X	X
EBOT 210 Ethical Wildcrafting (1 cr.)	X	X
EBOT 220 Ethnobotanical Techniques (2 cr.)	X	X
EBOT 250 Applied Ethnobotany Fall (2 cr.)	X	X
EBOT 251 Applied Ethnobotany Spring (2 cr.)	X	X
Electives *selected from related subject areas, including (but not limited to): ANL, ANS, ANTH, BIOL and RD	Either EBOT 336 (Ethnomycology) or EBOT program - approved	4-5 credits of EBOT-approved elective courses at 200+ level*
Credits hours total	17	16-17

University of Alaska Ethnobotany Program:
**Occupational Endorsement Certificate
in Ethnobotany**

UAF Ethnobotany Program
<https://alaskaethnobotany.community.uaf.edu>
 Scan here to learn more about the OEC Ethnobotany →
 Or email for more information: uaf-ethnobotany@alaska.edu

Kuskokwim Campus
The UAF Ethnobotany Program is funded by a USDA NIFA AN/NH grant #2020-58426-52342 / Accession No. 1023459. UAF is an AA/EQ employer and educational institution and prohibits illegal discrimination against any individual.

UAF
ALASKA

DRUMBEATS ALASKA
CONSORTIUM

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

PLEASE RENEW OR JOIN TODAY!
ANPS Membership is on a calendar-year basis
so... NOW IS THE TIME TO RENEW FOR 2022.

Name: _____
Address: _____
City: _____ State: _____ Zip: _____
Telephone: _____ (Home) _____ (Cell) _____ E- _____
Mail: _____

CATEGORY	E-Mail Newsletter	Snail-Mail Newsletter	Both Mail Deliveries
<input type="checkbox"/> Full-time Student	\$12	\$22	\$22
<input type="checkbox"/> Senior Citizen	\$12	\$22	\$22
<input type="checkbox"/> Individual	\$15	\$25	\$25
<input type="checkbox"/> Family	\$20	\$30	\$30

STATUS NEW RENEWAL

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

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 or to renew, you can either use our convenient online method by going to <https://aknps.org/membership>, or fill in the form below, and mail it with the appropriate remittance to:

ANNUAL MEMBERSHIP APPLICATION/RENEWAL