

Borealis

The Newsletter of the



PO Box 141613, Anchorage, Alaska

October – November 2021

Join us at our Next Meetings!

Monday, October 4, 7:00 PM

Main Topic: "2021 Plant Photo Sharing"

We'll have 10-15 minutes of club business followed by photo sharing.

Members are invited to show and discuss up to 10 favorite photos taken of Alaska native plants this year. Present your own screen or upload the photos to the meeting's [Google Photo Album](#). (Make sure to include your name and photo descriptions if you use the upload option.)

Monday, November 1, 7:00 PM

Main Topic: "Naurait Iñupaitun - Iñupiaq plants from Northwest Alaska"

Speaker: Maija Katak Lukin

Mini-Botany

Botany in the News:

Speaker: Beth Norris

Apiaceae Family: Ozmorhiza

Speaker: Sam Spraker

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#

Messages from the ANPS Board

Updating our Constitution

This fall, the Alaska Native Plant Society's Board of Directors will be providing members with some proposed updates to our constitution and bylaws. These were last revised in the 1980s and the board is interested in modernizing them.

The primary purpose of the amendments is to authorize our non-profit to use modern technology for meetings and decision making. Our hope is that the amendments will help us to increase access and participation by our members throughout Alaska and beyond.

To amend our constitution, a paper ballot must be sent to all eligible voting members. We will soon prepare a ballot to put in the mail, and we'll put all the background materials online for our members to consider before voting. We will also provide an online voting option when we send the paper ballot.

To amend our bylaws, we must hold a vote at a member meeting. We will proceed to a vote on the bylaws if the constitutional vote is successful.

Sixty percent of our members must respond to the vote on our constitution, for an amendment to pass, so we hope you will take the time to consider these changes and cast your vote!

- *Elizabeth Bluemink, President*

Each One Teach Many

WE NEED **YOU** to share 5 minutes of fun facts about Alaska native plants at an upcoming meeting!

While we've been meeting virtually, it's been a challenge to personally invite members to give short presentations at our meetings, as we normally do. No expertise is needed! Just an interest in gathering information and sharing it with the group. Please contact Marilyn Barker at marilynbarke29@gmail.com if you would like to learn more before signing up.

Otherwise, you can go straight to our [online signup sheet](#) to and pick from the available dates to present on the following topic:

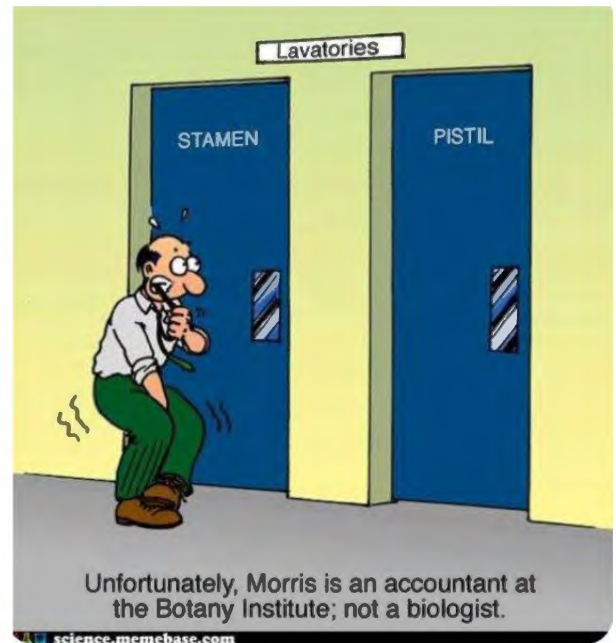
- **Botany in the News:** Find a recent article featuring scientific news about plants and share some highlights during the meeting. No slides necessary.

Here is the link to our online signup sheet: <https://www.signupgenius.com/go/10c0c45a9a62ba1f8c25-fall>

FALL MEET & GREET

BOTANICAL HUMOR

On September 25 the Alaska Native Plant Society hosted a **Meet & Greet** at the Alaska Botanical Garden. It was an opportunity for members to introduce themselves, ask questions, and learn about recent AKNPS programs and upcoming opportunities. Turnagain Arm serviceberry muffins, nettle tea and nettle shortbread were among the treats served at the outdoor Covid-safe event.



And, along the same line:

What did the male stamen say to the female pistil?

“I like your style.”

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



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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

Native Seed Collecting

Since our first newsletter in the fall arrives after the equinox, it may seem silly to now be reminding you about collecting seeds. But fall is often the best time for seed collecting anyway. And even though there has already been at least one surprise snow dump this fall as well as freezing temperatures, there is every chance that there is still time to get back outdoors and collect some seeds from native plants, either in your garden or in the wild. As long as the seeds have matured, they are likely to still be viable after a frost, or even snow. Of course there is a chance that pods and seed heads have already dehisced and dispersed their seeds and you will only find the empty husks.

KNOW WHAT YOU ARE COLLECTING: Of course, plants are easiest to identify when they are flowering, so it is important to know what plant you are harvesting. It would have been a good idea to have already marked individual plants with flagging tape or to have written down specific landmarks to help you relocate populations when the seeds are ready.

TIMING: Collecting seeds at the correct time is crucial for propagation to be successful. Gather fruits from the ground only if they have recently dropped. Reject any fruits or seeds that have been on moist ground for some time or any seed that may have started to decay or become infested with insects. They could contaminate the rest of your seed harvest if combined with other seeds during storage. Delayed harvesting of species with persistent pods often results in insect-infested seeds.

Seeds should be collected just before or as the pod turns brown and dries and before it dehisces. The pods should be dried in single layers spread thinly on canvas cloths, screens or trays elevated from the ground. Curing on the pod may take longer for species other than legumes. Air-drying takes one to three days, depending on the humidity. After the seeds have dried, you can extract them from the pods by beating or threshing. A mature pod will often twist and split open to drop the seeds.

COLLECTING: Although not all seeds need to be cleaned before storage, those with pulpy fruit should be cleaned to prevent mold. Remove the pulp of large fruits by hand by rubbing on a screen or mashing with a wooden block, rolling pin, or fruit press being careful not to damage the seed. You can clean smaller fruits with a blender, as long as you are careful not to damage the seeds. Blend a small amount of the seeds in a two to one ratio with water. Use brief, intermittent agitations at low speed and then strain the mixture to separate the seeds from the pulp.

Thrashing seeds (separating seeds from the rest of the collected plant material) is optional, but it does have at least two advantages: it reduces the volume of seeds to be stored, which saves on storage space and deters insect eggs, mold spores and other seed-disease vector, most of which are removed and discarded along with the chaff. The easiest way to thrash seeds is to rub the collected material against a coarse screen with a gloved hand.

STORING: The two most critical necessities for storing seeds are constant temperatures and low humidity. A temperature of 50 degrees Fahrenheit or less and a humidity of 50 percent or lower are ideal.

Store seeds in the refrigerator, not the freezer, until you are ready to plant. Low temperature, humidity and light level protect seed longevity. If it is not practical to store seeds in your refrigerator, store them in any place that is cool, dark and dry, protecting them from insects as much as possible. Store the seeds in paper sacks to allow good air circulation and prevent molding. Do not store seeds in plastic bags or other nonbreathable containers unless they are air-dried thoroughly first. It is important to include basic information on labels, including date of collection, species name, location of collection and name of collector.



FROM WHAT WE GATHER



A Carnivore Hiding In Plain Sight Among Us



A common plant that grows in the bogs of the North American west coast from Alaska to California, is actually a part-time carnivore that ensnares and digests insects during its flowering season, according to a new study.

The western false asphodel, or *Triantha occidentalis*, gets up to 64 per cent of its nitrogen requirements from insects, but unlike full-time predators like the Venus fly trap and the pitcher plant, it does so only when it's flowering, said the research.

Questions have, thus, been raised about the prevalence of part-time carnivorous behavior in other species by the study, [published in the journal PNAS](#).

“What’s particularly unique about this carnivorous plant is that it traps insects near its insect-pollinated flowers. On the surface, this seems like a conflict between carnivory and pollination because you don’t want to kill the insects that are helping you reproduce,” said study lead author Qianshi Lin.

The plant, however, can sort out friendly pollinating insects from those it can prey on, believe researchers, including those from the University of British Columbia in Canada.

Small red hair on the upper part of the plant’s flowering stalk secrete a sticky substance that often traps flies and small beetles in the droplets, while larger insects are spared.

“We believe that *T. occidentalis* is able to do this because its glandular hairs are not very sticky, and can only entrap midges and other small insects, so that the much larger and stronger bees and butterflies that act as its pollinators are not captured,” Tom Givnish, a professor of botany at the University of Wisconsin-Madison in the US and co-author of the research, pointed out.

“We tested the hypothesis that *Triantha occidentalis* is carnivorous by doing a field experiment with ¹⁵N-labeled insects to demonstrate nutrient uptake,” they said. “We demonstrated significant N transfer from prey to *Triantha*, with an estimated 64% of leaf N obtained from prey capture in previous years, comparable to levels inferred for the cooccurring round-leaved sundew, a recognized carnivore.”

“N obtained via carnivory is exported from the inflorescence and developing fruits and may ultimately be transferred to next year’s leaves. Glandular hairs on flowering stems secrete phosphatase, as seen in all carnivorous plants that directly digest prey.”

This is the 12th known independent evolution of carnivory in the plant kingdom. It is the first time the trait has been discovered in the [Alismatales](#) order, a group of largely aquatic flowering plants. It is also just the fourth established instance of carnivory in the [monocots](#), one of the major groups of flowering plants.

Some other species in the [Triantha genus](#) also have sticky hairs that trap insects. The authors plan to study these species to see how widespread carnivory might be in the genus.

“It seems likely that there are other members of this group that will turn out to be carnivorous,” Professor Givnish said.

“The fact that *Triantha*’s carnivorous lifestyle escaped notice for so long despite the plant’s abundance and its growth near large cities suggests that more carnivorous plants are waiting to be discovered off the beaten path.”

Alaska Bee Atlas

<https://www.atlasobscura.com/articles/alaska-humblebee-pollinator-bee-atlas>

Researchers and conservationists in Alaska are embarking on an unprecedented effort to figure out just how many bees, including bumbles, are buzzing around in our state. The first-ever Alaskan bee atlas project is underway, and bumblebees will play a starring role. (See reference below.)



***Bombus occidentalis* –
Western Bumblebee**

Of the nearly 50 bumblebee species documented throughout the United States, almost half can be found in Alaska, including four species found nowhere else in the country. Big-bodied and covered in thick, insulating hair, the bumbles have other cold weather survival skills, including, well, “twerking”. While bees in general can rapidly vibrate their flight muscles, independent of flying, to generate warmth, bumblebees are particularly good at it.

They use those flight muscles to raise their body temperature 30 degrees in five minutes. That rapid rise in heat allows them to fly on cold, even snowy days, when other insects are grounded. And, while other social bees, including honeybees, will cluster to keep their queen, brood, and each other warm, bumblebees can survive solo. A *Bombus* queen can actually transfer the heat generated with its flight muscles into its abdomen to keep its eggs warm.

The natural lifecycle of *Bombus* species fits with Alaska’s long winters and short summers. In August, when the first frosts typically arrive, the queen starts a long hibernation underground, alone. It emerges in spring, finds a nest site, and produces female worker bees and, eventually, potential new queens and males to mate with them. As August approaches again, successfully mated, new queens will find a spot to lie low during winter. Everybody else—the old queen, the workers, the males—dies. While many other social bee species overwinter in clusters of thousands, the bumblebees’ solo strategy requires fewer resources and is more efficient for their environment.

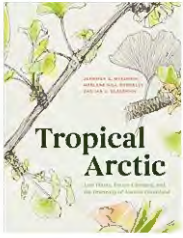
Five Alaskan bumblebee species live in places that are extreme even by Alaskan standards. “They’re very restricted to tundra habitats. You won’t even find them in southern Alaska. As its name suggests, for example, *B. polaris*—the Arctic bumblebee—lives above the Arctic Circle. During the region’s brief summer, it’s often seen sitting on poppies, not to collect pollen, but to take advantage of the extra heat offered by the flower’s shape, which reflects sunlight. The parasitic *B. hyperboreus*, the high Arctic bumblebee, shares territory with *B. polaris*, perhaps much to the latter’s dismay. Lone *B. hyperboreus* queens emerge in spring, invade *B. polaris* nests, kill their queens, and then force the workers to raise their brood. Or, as [a species description from the University of Guelph](#) puts it: “*B. hyperboreus* is a bully, thief, and murderer.”

Alaskan bumblebees seem to be doing well even where mosquitoes—the state’s infamously oversized, aggressive, and widespread winged terrors—fear to fly. “People often think the Arctic, the North Slope of Alaska, has got to be the coldest, harshest place, but it’s actually worse in the Aleutians,” says Sikes, referring to the arc of wind-battered and sea-lashed volcanic islands off Alaska’s southwest coast. “There are tons of mosquitoes in the Arctic, and almost none in the Aleutians. But there are bumblebees.” Sikes adds: “They’re pushing the envelope of what is possible for an insect.”

https://accs.uaa.alaska.edu/wp-content/uploads/Alaska_Bee_Atlas_2021.pdf

Fulkerson, J.R., M.L. Carlson, and C.T. Burns. 2021. Bee Survey and Monitoring Plan for Alaska. Alaska Center for Conservation Science, University of Alaska Anchorage, Anchorage, AK. 21 pp. plus appendices

FROM OUR BOOKSHELVES



Tropical Arctic: Lost Plants, Future Climates and the Discovery of Ancient Greenland

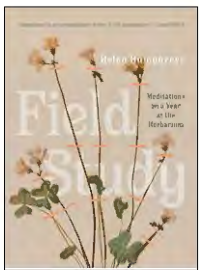
Jennifer McElwain, Marlene Hill Donnelly, Ian Glasspool
October 12, 2021

An illustrated visit to the tropical arctic of 205 million years ago when Greenland was green.

While today's Greenland is largely covered in ice, in the time of the dinosaurs the area was a lushly forested, tropical zone. *Tropical Arctic* tracks a ten-million-year window of Earth's history when global temperatures soared and the vegetation of the world responded.

A project over eighteen years in the making, *Tropical Arctic* is the result of a unique collaboration between two paleobotanists, Jennifer C. McElwain and Ian J. Glasspool, and award-winning scientific illustrator Marlene Hill Donnelly. They began with a simple question: "What was the color of a fossilized leaf?" *Tropical Arctic* answers that question and more, allowing readers to experience Triassic Greenland through three reconstructed landscapes and an expertly researched catalog of extinct plants. A stunning compilation of paint and pencil art, photos, maps, and engineered fossil models, *Tropical Arctic* blends art and science to bring a lost world to life. Readers will also enjoy a front-row seat to the scientific adventures of life in the field, with engaging anecdotes about analyzing fossils and learning to ward off polar bear attacks.

Tropical Arctic explains our planet's story of environmental upheaval, mass extinction, and resilience. By looking at Earth's past, we see a glimpse of the future of our warming planet—and learn an important lesson for our time of climate change.



Field Study: Meditations on a Year at the Herbarium

Helen Humphreys
September 2021

Award-winning poet and novelist Helen Humphreys returns to her series of nature meditations in this gorgeously written and illustrated book that takes a deep look at the forgotten world of herbariums and the people who amassed collections of plant specimens in the 19th and 20th centuries. From Emily Dickinson's and Henry David Thoreau's collections to the amateur naturalists whose names are forgotten but whose collections still grace our world, herbariums are the records of the often-humble plants that are still with us and those that are lost. Over the course of a year, Humphreys considers life and loss and the importance of finding solace in nature. She offers impressive mini-biographies of figures who contributed to botany, such as Jack Gillett, a botanist who enjoyed skinny-dipping; W.G. Dore, a grass specialist who wrote "detailed and vivid" descriptions of the subjects of his studies; Lulie Crawford, who found the sample of dog violet now at Fowler; and the Indigenous people who cataloged and preserved flora before the herbarium.

Illustrated throughout with images of herbarium specimens, Humphreys's own botanical drawings, and archival photographs, this will be the perfect gift for Humphreys's many fans, nature enthusiasts, and for all who loved *Birds Art Life*.

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 please be sure to renew for 2022.
 There will be only one more newsletter sent during this calendar year,
 so be sure to renew in time to stay in touch with next year's news!

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