Borealis

The Newsletter of the

Alaska Native Plant Society

PO Box 141613, Anchorage, Alaska | October-November 2023

Join us at our next meetings!

If you are in Anchorage, please join us at the Campbell Creek Science Center. Otherwise, we'll see you on Zoom!

Monday, October 2, 7:00 PM

- **Mingle:** Arrive at 6:30 if you'd like to visit and enjoy refreshments.
- **Main Topic: "2023 Plant Photo Sharing"**- Members invited to share up to 10 plant photos they took in 2023.

Monday, November 6, 7:00 PM

- **Main Topic: "Aleutian Shield Fern and the Endangered Species Act"**
  Speakers: Sabrina Farmer/Leah Kenney
- **Plant Families**: Aquatic Plants
  Scheuchzeriaceae (Pod-grass) Family
  Speaker: Marilyn Barker
- **Mini-Botany**: Medicinal Plants, TBD

Meet in Person: Campbell Creek Science Center (5600 Science Center Dr., Anchorage)
Virtual Meeting Link: Join via Zoom
Meeting ID: 938 2833 2935
Passcode: 362610

Blasts From The Past! Thanks to ANPS member Glenn Brown, previous years issues of *Borealis*, going back to 1982, are now available online (current year issues are available to members only). If you have a copy of an issue that we are currently missing, please contact us through admin@aknps.org.

Creating Native Plant Nurseries

The Problem: A Shortage of Native Plant Materials. Almost every ecosystem in Alaska has been impacted in recent years by human activity and climate change. Some of these impacts are neutral, but some disturbances threaten species or even affect an ecosystem's ability to sustain itself. Doing "less bad" is not good enough. In addition to minimizing harm to the environment, we must sometimes restore an ecosystem before it can become sustainable. Today, most of us are aware of the importance of planting Alaska natives for restoration of lands that have been abused by whatever means, natural or human. Unfortunately, the need for native plants is outstripping the resource.

The Solution: Native **Plant Nurseries**. Recently, the **Anchorage Soil and Water Conservation District (SWCD)** began working with neighboring districts, including Eklutna Tribal Conservation District, the Knik Tribal Conservation District, Wasilla SWCD, and Palmer SWCD, to address this problem.

Through funding from the US Fish & Wildlife Service, Chugach National Forest, and the Bureau of Land Management they are developing four small outdoor native plant nurseries throughout Southcentral Alaska, and are partnering with Homer SWCD Native Plant Nursery for technical support and expertise. They are growing regionally adapted native plants for use in ecological restoration projects.

In May, the Anchorage SWCD hired a Native Plant Program Leader and secured funds as its team sourced native plant seeds. The Alaska Plant Materials Center was a key component by providing native seeds from the BLM storage collections: Water Sedge (*Carex aquatilis*), Nootka Lupine (*Lupinus nootkatensis*), and Siberian Yarrow *(Achillea sibirica Ledeb.*). The PMC has been instrumental in providing technical support and greenhouse space to sow almost 4,000 little plant plugs.

Merten's Sedge (*Carex mertensii*) was collected in the fall of 2020 from the Chugach National Forest. Several other species were purchased from St. Isidore Farms in North Pole: Western Columbine *(Aquilegia formosa)*, Arctic Chamomile *(Tripleurospermum maritima),* Indian Potato (*Hedysarum alpinum*), Tall Jacobs' Ladder *(Polemonium acutilflorum),* and *Alpine Arnica (Arnica alpina).*

(Continued on Page 2)

Alaska Native Plant Nurseries (Continued from Page 1)

In the meantime, nurseries were busy building fences, capillary beds (which hold water for some sedges), and establishing irrigation systems. The districts' nurseries vary in size, infrastructure, micro-climates, and plans to expand with different species. Some examples include Knik TCD's fern bed under the trees and already successful production of trees for Fish and Wildlife Service, as well as Eklutna TCD's food forest berry patch.

Many sites already had some infrastructure, donated materials, and supplies. The districts were given reclaimed plastic pots, donated spaces, and volunteer time. Recycled plastic boards from Alaska Plastic Recovery were used in the construction of their capillary beds and purchased through extra funds from the US Fish & Wildlife Service.

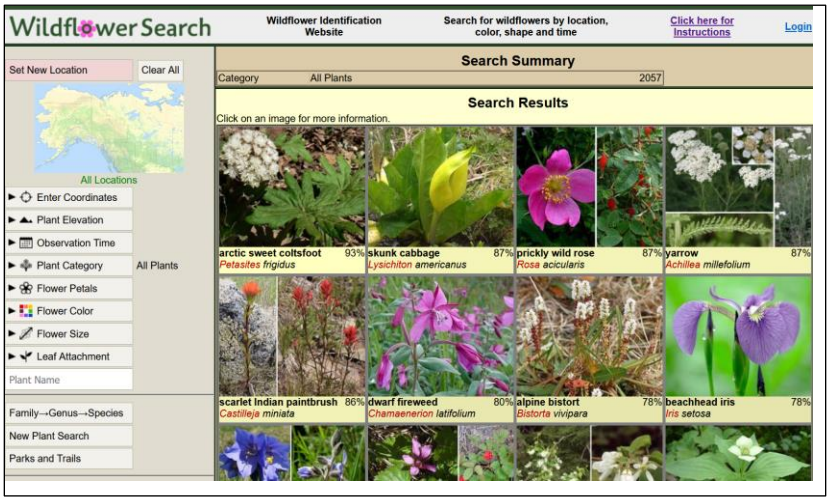
In future years, the districts plan to diversify with additional native trees, bushes, and sedges including a potential trial with cotton grass! In addition to using these plants for agency projects the district plans to offer a plant sale for landscapers and local backyard conservationists.

As their program develops, the districts will build coordination and planning to accommodate our "growing" need for native plants. They are using this opportunity to learn to collect seeds, propagate, and overwinter this precious resource. Let them know if you are interested in volunteering or learning more. They are salvaging native plants, collecting seeds, and performing general nursery duties in Anchorage and other nurseries in the area.

- Anchorage SWCD - Government Hill Commons Community Orchard
- Eklutna Tribal Conservation District - Eklutna Community Garden
- Palmer SWCD - Rebarchek Agricultural Park, colony farm at the Alaska Fairgrounds
- Knik Tribal Conservation District and Wasilla SWCD - Several sites within tribal lands in Wasilla SWCD District

http://anchorageswcd.org
Email: nativeplants.aswcd@gmail.com

Here's A New Alaska Wildflower Search App



A new website and five associated apps are available for identifying Alaska plants (and lichens) with filters for flower color, number of petals, leaf attachment, habitat, etc. The apps for Southeast, Southcentral, Southwest, Interior and Northern Alaska are free via Apple and Google Play (Android). They were developed by Steve Sullivan, a retired computer programmer who has created similar wildflower ID tools for most other U.S. states and Canadian provinces. The photos and plant descriptions are licensed via Creative Commons. https://alaska.wildflowersearch.org/

This website helps those of us with limited knowledge of botany to identify plants that are found outside of gardens. This help is provided by presenting you with small images of plants. You can use a number of search techniques to get to the images that are most likely the plant you are looking for. When you click on a plant image the program shows you links to plant descriptions and more plant images.

This site has many ways of searching for a plant. You can use these searches in any combination. Some searches eliminate some plants from consideration. Most searches give a "score" to each plant depending on how well the plant matches the search criteria. The plants with the highest score are displayed at the top of the results.

You can search for plants by location, color, number of petals and time of observation. Your search can use any combination of these criteria. Use the search menus on the left to set the search criteria.

The first thing you should do is set the location. If you don't set the location the program will show you tropical plants in Punta Arenas. The easiest way to set the location is to click on the **Set New Location** button and use the Google pop-up map. You can zoom with the "+" and "-" controls and drag the map with the mouse. When you find the location where the flowers were observed use a single mouse click to set the location.

Often, plants are observed because of their flowers. In this case you are setting the time you saw the plant flowering. To set the time that you observed the plant use the **Observation Time** button. This will show you a calendar allowing you to select the week of observation. If you have just seen the plant, you can select "Now" to see plants that are blooming now.

After the first two steps you will see pictures of flowers. When you find a picture that looks right, click on the photo. This will show you links to where you can find more photos and information about that plant.

The number of photos can be so large that it takes a long time to view all of them. If you do not see the flower that you are looking for right away, add additional search criteria. The **Plant Category** button lets you select between Wildflowers, Trees & Shrubs or Non-Flowering Plants. The **Flower Petals** button lets you select flowers with a certain number of petals. The **Flower Color** button shows you flower colors restricting the search to flowers that can have a certain color. The **Leaf Attachment** button allows you to restrict the search to plants with certain leaf arrangements. The more search criteria you add the more you will zero-in on the flower you are looking for.

Alaska Blueberries Are Good For You, Right?

By Ned Rozell, Alaska Science Forum, August 3, 2023

Our beloved Alaska blueberry seems to have a bad reputation in parts of Europe and Scandinavia. There, people have called it the "mad berry," "intoxicating berry" and "vomit berry."

Vaccinium uliginosum

Zuzana Vaneková, a pharmacology researcher at the University of Vienna in Austria, recently visited Alaska to gather blueberries in order to help solve a mystery regarding the bog blueberry. "Ever since I was little, people told me not to eat it because it would make me vomit and hallucinate," she said.

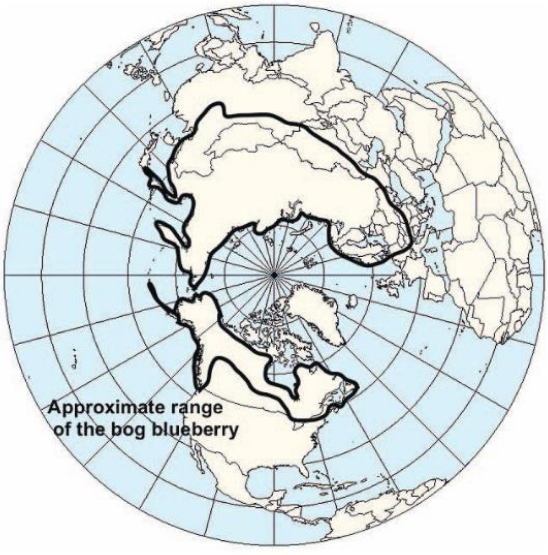
Pat Holloway and Zuzana Vanekova

Bog blueberries are a favorite of Alaskans and grizzly bears, but the fact that some people across the Atlantic have long avoided them was a puzzle to Vaneková. She studies the pharmaceutical properties of plants. Vaneková recently got funded on a study to analyze the berries for possible toxicity. She flew to Alaska to get samples "from a country where people never heard such tales. I wanted to know why it is such a prevalent story in Europe."

As part of her first visit to Alaska, Vaneková met Alaska plant expert Pat Holloway, a professor of horticulture emerita at the University of Alaska Fairbanks. Holloway has performed her own research proving the health benefits of Alaska berries. Holloway hosted Vaneková while she was in Fairbanks. "She shows up at my home, and the first thing I hand her is a blueberry muffin," Holloway said. Vaneková ate that muffin, just as she consumed "bowls of " bog blueberries in Europe and "of course" popped berries into her mouth on her Alaska gathering missions to Wickersham and Murphy domes near Fairbanks.

She freeze-dried the Alaska blueberries at a UAF lab for transport back to Vienna. There, she will determine the genetic signature of the Alaska berries, as well as look for compounds that might be toxic. While in Fairbanks, Vaneková visited UAF's Rasmuson Library and pored through a collection of Arctic books. She found one on shamanism in Russia in which the writer described Native peoples making moonshine from fermented bog blueberries. "I think that might be the source (of the bog blueberry folklore)," she said.

As for the health benefits of Alaska berries, Holloway performed studies and found bog blueberries had more antioxidants than cultivated berries from the Lower 48. Vaneková knew of those studies but had to come over and pluck some Alaska berries for herself. She said every Alaskan to whom she explained her quest was a bit incredulous at the claim that blueberries might be anything but wonderful. "When you are over here everybody looks at you like you're crazy for saying these claims," she said.



Before flying back with her Alaska blueberries, Vaneková said she wanted to perform the study because every plant she knows in the Vaccinium genus is good to eat and she found the "vomit berry" description bizarre. She knew she could perform the science to debunk it.

"I don't believe there is anything wrong with blueberries anywhere in the world," she said. "But I have to prove it."

2023 ALASKA BOTANY BIOBLITZ AWARDS

642 people observed & **267** people identified **1,002** plant species during the July 1-15 **2023 Alaska Botany Bioblitz** . We're pleased to announce three prizes for exceptional work by project members.

Most observations

Matt Goff (@gwark) of Sitka posted an amazing **565** observations during the bioblitz. The award for most observations is a free 2024 Alaska Native Plant Society membership and an Alaska native flora ID card set.

Most identifications

Matt Goff generously provided ID for **3,238** observations during the bioblitz. The award for most identifications is a mint copy of *A Field Guide to Alaska Grasses.*

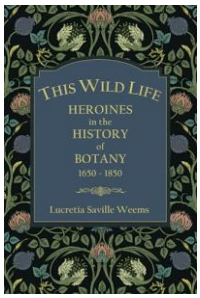
Best research grade photo

Our judges selected this July 3 photo of *Hedysarum boreale* by **Ryan Strother (@bristlecone)** out of 1,600 entries. The prize for best photo is an AKNPS bioblitz 'best photo' coffee mug and a free 2024 AKNPS membership.

View bioblitz photos & stats!

https://www.inaturalist.org/projects/alaska-botany-bioblitz-2023

From Our Bookshelves – Women Botanists



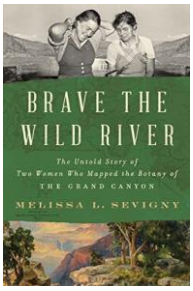
This Wild Life: Heroines in the History of Botany

Author: Lucretia Saville Weems
June 25, 2023
ISBN-10 : 1736912984

From encounters with pirates and historic earthquakes to visits from the Queen, the women in these pages led amazing lives. Each was a true heroine who contributed dramatically to plant knowledge before the word botany even existed. They explored, collected and propagated plants alongside a large majority of men, their endeavors often barely acknowledged, and their names forgotten.

Henrietta Clive and her two teenaged daughters collected while circumventing the Mughal Empire in India by elephant for eleven months. Sarah Lee collected in West Africa. She survived pirate raids and mutiny but lost her husband there to fever. Maria Graham was in Valparaiso, Chile for the famous earthquake of 1812, which lasted a full five minutes. She collected and catalogued plants in South America, India, Madeira and Tenerife.
Lady Anne Monson collaborated on the first English translation of Linnaeus' original work on taxonomy, which completely revolutionized access to botanical knowledge in the 1700s. Anna Maria Walker was a humble army wife who became a leading light in the botany of Ceylon. In the late 1600s, British gardener and botanist Mary Somerset cultivated and catalogued thousands of plants newly arrived from around the globe in her garden. Her herbarium, in twelve volumes was bequest to the British Natural History Museum. Margaret Bentinck created a true 'think tank' for botany and the natural sciences at her home in Buckinghamshire.

Each woman defied the conventions of the era, and each one's accomplishments were – and remain – dazzling. Adventure, courage, intelligence, and determination marked each life. Here are some of their stories, that we may celebrate these women and their accomplishments.



Brave the Wild River: The Untold Story of Two Women Who Mapped the Botany of the Grand Canyon

Author: Melissa L. Sevigny
W.W. Norton & Co.; May 23, 2023
ISBN-10: 0393868230

Brave the Wild River is a spellbinding adventure of two women who risked their lives to make an unprecedented botanical survey of a defining landscape in the American West, at a time when human influences had begun to change it forever.

In the summer of 1938, botanists Elzada Clover and Lois Jotter set off to run the Colorado River, accompanied by an ambitious and entrepreneurial expedition leader, a zoologist, and two amateur boatmen. With its churning waters and treacherous boulders, the Colorado was famed as the most dangerous river in the world. Journalists and veteran river runners boldly proclaimed that the motley crew would never make it out alive. But for Clover and Jotter, the expedition held a tantalizing appeal: no one had yet surveyed the plant life of the Grand Canyon, and they were determined to be the first.

Through the vibrant letters and diaries of the two women, science journalist Melissa L. Sevigny traces their daring forty-three-day journey down the river, during which they meticulously cataloged the thorny plants that thrived in the Grand Canyon's secret nooks and crannies. Along the way, they chased a runaway boat, ran the river's most fearsome rapids, and turned the harshest critic of female river runners into an ally. Clover and Jotter's plant list, including four new cactus species, would one day become vital for efforts to protect and restore the river ecosystem.

From What We Gather

Takakia – The Platypus of the Moss World Can't Keep Up With Climate Change

https://www.cell.com/cell/fulltext/S0092-8674(23)00736-5

The world's oldest moss has seen four mass extinctions but despite the fact that this ancient plant is one of the fastest-evolving species of moss known to science, it may not survive climate change.

The genus *Takakia* has the highest number of fast-evolving genes of any moss, researchers reported on August 9 in *Cell*. A decade-long study of *Takakia* in the Himalayas shows that the moss is well-adapted to its high-altitude home, with resistance to extreme cold and intense ultraviolet light. But no matter how fast it can tweak its genes, the scientists found, these hardy species don't seem to cope well to temperature rise compared to others. Their populations became significantly smaller over the study period while other plants benefited from the warming. The researchers believe this trend will continue. A species that saw the dinosaurs come and go might not survive the coming of humans.

Takakia consists of just two species of moss that are unlike any other plant in the world. The evolutionary shoot containing *Takakia* branched off the other mosses around 390 million years ago.

For a long time, this species was mistaken as a liverwort, and it is still challenging. R. M. Schuster (1997) has suggested that gametophytically *Takakia* is more like a liverwort, and sporophytically more like a moss. The Japanese common name is perhaps most telling, literally translated as "puzzling moss."

"The evolutionary position of *Takakia* in plants is like that of platypus in mammals," says Yikun He, a plant geneticist at the Capital Normal University in Beijing. Just as the platypus has a lot of strange, not-quite-mammal traits — like egg-laying and a beak — *Takakia* has a bunch of features that make it not quite like other plants, such as featherlike leaves and a lack of pores for controlling the flow of oxygen and carbon dioxide.

These two species of the around 400-million-year-old Takakia genus, *T. lepidozioides* and *T. ceratophylla*, are only seen growing together on the Tibetan plateau. In a few locations, notably Alaska and British Columbia, both species coexist without the other, however, it is unknown how they got there. In order to uncover the mysteries of this uncommon plant, Reski and his colleagues spent ten years trekking in areas of the Himalayas at elevations above 4,000 meters.

A team of researchers has spent a decade studying the 390-million-year-old moss that grows on the icy, isolated cliffs of the Tibetan Plateau. The researchers went on 18 expeditions between 2010 and 2021 to understand how Takakia has adapted to survive for millions of years in its home, located 13,123 feet (4,000 meters) above the ground. A study detailing the findings was published Wednesday in the journal Cell.

"We set out to describe and analyze a living fossil," said study coauthor Dr. Ralf Reski in a statement. He is a plant biotechnologist and professor in the faculty of biology at the University of Freiburg in Germany.

"These geological time records help us to trace the gradual adaptation to a life at high altitudes in the *Takakia* genome. Although the *Takakia* genome is evolving so rapidly, the morphology has not changed recognizably for more than 165 million years. This makes *Takakia* a true living fossil. This apparent contrast between unchanged shape and rapidly changing genome is a scientific challenge for evolutionary biologists," said co-author Ralf Reski in a press statement.

In Memoriam

Dominique Collet – 1954 - 2023

Dominique Marie Marcel Collet, of Homer, Alaska passed away on May 2nd, 2023, at age 68 in Seward, after a tenacious perseverance of life that came with a diagnosis of early-onset Parkinson's, and Alzheimer's. Despite these debilitating diseases, he was able to thrive for another twenty five years after diagnosis, aided by a brain stimulation implant that prolonged his quality of life for an additional fifteen years.

Dominique was born in Cologne, Germany of August 17th, 1954, to his French mother Marie-Therese Bailly, who was nurturing and supportive, and his Belgian father Gustave Collet, who was a decorated WWII hero for hiding Jewish children. Dominique spent his first years in Brussels, Belgium. Much of his early life was devoted to his passions for art and nature. As a young man, he set out in the world to find people with whom he shared similar life views. He soon found himself among the Laplanders of Finland, and then traveled through Scandinavia, ultimately landing in New York. He bicycled across northern Canada to Alaska, always staying and finding the most comfort with the Indigenous people of each area.

Arriving in Alaska in 1978, he found a niche within the University of Alaska community in Fairbanks. He journeyed to Newtok and lived amongst the Yup'ik, where he found Pauline Charlie, the future mother of his three children. After a brief hiatus from Alaska to his homeland, he returned to Alaska and was married in Hope, then moved to Anchorage and bought a school bus to house his young family. He moved his family to Sterling, where he built a small cabin, followed shortly by his dream home, where he raised the children until they were grown. After his illness made living on his own difficult, he moved to Homer where he enjoyed his remaining years with his children and their families. His love for his children and grandchildren knew no bounds and were his personal greatest accomplishment and joy.

Dominique's legacy will also live on through his love for nature; mushrooms, plants, and insects in particular. He created beautiful photographs, pen and ink drawings, and watercolor paintings from broad landscapes down to (literally) microscopic details of insect terminalia. Dominique was an avocational but avid and passionate naturalist with broad interests in plants, fungi, insects, and anything else that was alive. He especially focused on willows, willow gall midges, and communities of parasitoids, hyperparasitoids, and other associates of willow galls.

He authored a field guide entitled Insects of South-Central Alaska which remains the only general field guide for Alaskan insects, he coauthored two scientific articles about willow gall midges, and he gave many presentations. Dominique collected biological specimens insatiably. His multiple donations to the UAM Insect collection over the years have resulted in 12,535 catalog records with many specimens that have yet to be cataloged. Among his donations was the first record of the rarely seen order Strepsiptera for Alaska.

Dominique was a finish carpenter by trade, and was well appreciated for his attention to detail. In this work, as in many facets of his life, he completed each task with perfection and pride. He never said, "I wish," this was never something that made sense to him. If he wanted anything bad enough to 'wish' for it, it was something he did.

He will be incredibly missed by those he left behind, and remembered for the fires ignited within all whom he touched. He was truly a wellspring of knowledge and inspiration.

If you would like to do something to honor Dominique, please consider making a donation in lieu of flowers to one of the endeavors that he personally supported: Doctors Without Borders, Amnesty International, NAACP, St Jude's, Greenpeace, or National Geographic Magazine.

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 or to renew, you can either use our convenient on-line method by going to https://aknps.org/membership, or 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**_____

RENEWAL REMINDER: ANPS membership is on a calendar-year basis unless you signed up for a recurring membership via PayPal.

October 2 Meeting – Campbell Creek Science Center and via Zoom:
Meeting ID: 938 2833 2935; Passcode: 362610

Alaska Native Plant Society
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