Borealis

the newsletter of the

Alaska Native Plant Society

PO Box 141613, Anchorage, Alaska October- November 2017

Join us at our Next Meetings!

Monday, Oct. 2, 6:00 p.m

POTLUCK & SLIDE SHOW

Regrouping after summer activities, members have an opportunity to share up to 10 photos of their activities this past summer. The food is shared by all and always wonderful.

Monday, November 6, 7:00 p.m

Main Topic: "Alpine Vegetation of Snowhawk Mountain -JBER"

Speaker: **Charlene Johnson**

Mini-Botany: TBA

Roseaceae Family Plant: *Rubus – the berries!*

Presenter: **Anjanette Steer**

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

"Like" Us on Facebook!

RECONNECTING

INDOOR BOTANY

Welcome to another indoor season of activities of the Alaska Native Plant Society! It was an incredible summer with warm weather and early flowering and berries galore. The ANPS field trips were a great success and there will be many pictures and stories to share at our season opening meeting on October 3.

THE OCTOBER MEETING BEGINS AT 6PM WITH A POTLUCK.

General membership meetings are open to the public and are held on the first Monday of every month from October through May. Various guest speakers give presentations on topics related to native plants and ANPS members give informative slide shows, plant family, and mini- botany talks. The October meeting starts earlier as it is a potluck where members bring 5-6 slides of their summer adventures to share.

Please be sure to **maintain your membership** in order to support the Society and receive the Borealis newsletter and field trip announcements. Membership is on a calendar year basis, so new membership and renewals will now count towards the 2018 calendar year. There is a membership form on the back page of this newsletter as well as on our website: www.aknps.org.

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LOOKING AHEAD

The main presentation for our December membership meeting, on Monday, Dec. 4th, will be a celebration of Verna Pratt's life -her founding and nurturance of our organization. If you would like to share photos or stories then, please contact Beth Baker or Annie Nevaldine to coordinate.

MAJOR TRAVEL: As you begin to think about future botany outings and workshops, you might want to pencil these potential outings and workshops into your plans. We'll keep you posted when and if we learn any more information.

Summer 2018: Newfoundland - Marilyn Barker
Summer 2018 or 2019: Southeast Alaska – Beth Baker

"Flora of North America" Gets Our Help With Fireweed

When you set a goal of producing a comprehensive, systematic account of all of the plant species of North America north of Mexico, you need all the help you can get! The Flora of North America Association (FNAA) has asked for our help and we've agreed. FNAA coordinates the work of 900+ botanists to synthesize all that we know about more than 20,000 species of plants native and naturalized here. Species descriptions include scientific and common names, taxonomic descriptions, identification keys, distribution maps, illustrations, summaries of habitat and geographic ranges, pertinent synonomy, chromosome numbers, phenology, ethnobotanical uses and toxicity, and other relevant biological information. The Flora will be available in print and on the web. (http://floranorthamerica.org/)

Eighteen volumes out of 30 are published with two or more volumes scheduled to be published a year. Gracing each volume are exquisite and accurate botanical illustrations drawn by professional artists. Every genus and about 1 in 6 species are illustrated. These lovely drawings enhance the technical descriptions and give readers a better idea of the characteristics of each species.

To help support the cost of the illustrations, FNAA is inviting individuals and organizations to sponsor one or more drawings. Acknowledgment is given to sponsors in a special section of the relevant Volume, along with a high quality reproduction suitable for framing and permission to reuse the image.

The Alaska Native Plant Society has chosen to sponsor the illustration of our native narrow leaved fireweed, *Chamaenerion angustifolium* subsp. *angustifolium.* Maybe you recognize it more by its old name *Epilobium angustifolium*, but you'll definitely recognize the illustration! It will appear in volume 10, the next volume to be printed. Perhaps you would like to sponsor an illustration. A basic drawing of the whole plant plus 1-2 details is only $200 and a full color fronticepiece (one per volume) is $1000.

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ALASKA NATIVE PLANT SOCIETY

State and Anchorage Chapter Officers

President	Beth Baker
Vice President	Dennis Ronsse
Secretary	Ginger Hudson
Treasurer	Mary Stella

Anchorage Chapter Program Coordinators

Membership	Mary Stella
Plant Family	Dennis Ronsse
Mini-Botany	Dennis Ronsse
Field Trips	Marilyn Barker

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

Join The WINTERBERRY PROJECT to Study Alaska's Berry Patches!

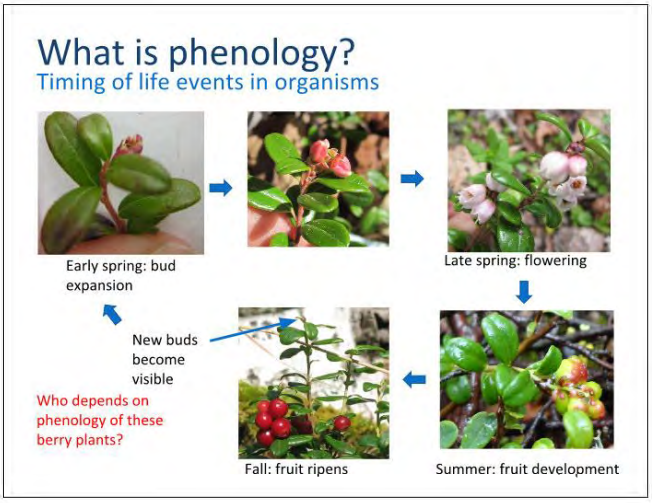
A team of scientists from University of Alaska Fairbanks is inviting you to join them and other citizen volunteers – individuals, school classes – anyone interested in berries in Alaska and other northern regions.

In the far North, springs are coming earlier, summers are warmer, and fall is arriving later. Shifting seasons may have an effect on when berries are available to people, birds, and small mammals that eat them. Many of Alaska's berry-producing plants hold on to their fruits into the winter and even spring, and these berries are very important to animals such as voles, foxes, and grouse.

Will a longer time between when berries ripen and when the snow falls mean more berries will rot or get eaten? Will this leave less for the animals that depend on these berries in winter and spring?

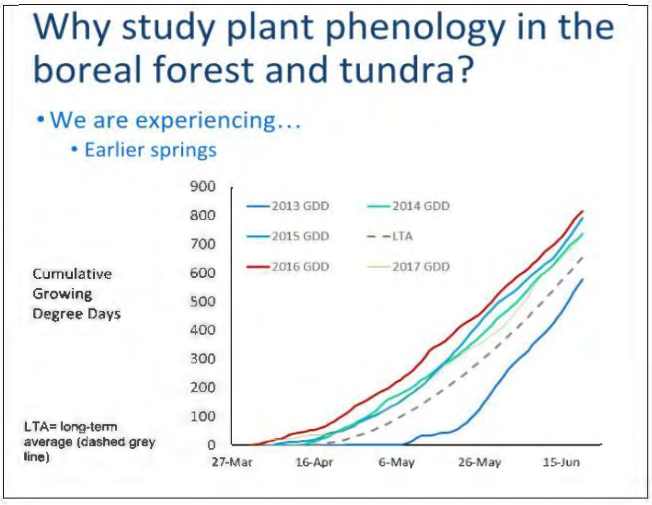
The project will focus on four key berry species, *Vaccinium vitis-idaea*, the lowbush cranberry, *Empetrum nigrum*,crowberry, *Rosa acicularis*, prickly rose and *Vibernum edule*, highbush cranberry, but volunteers may select other species important to them as well.

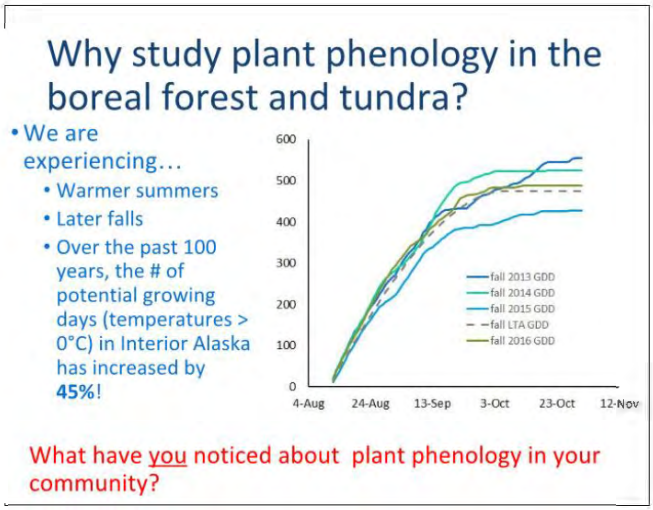
Through Winterberry, volunteers will track berries as they ripen and disappear through the fall and winter. In addition to the scientific research, the project hopes to run after-school activities to prompt creative thinking about the science behind the research.



Volunteers must be trained in the Winterberry Protocol. Anyone can sign up and complete training either in person or online. People must commit to watching a berry patch for two years.

Learn more about what we already know about berry phenology in Alaska, what the mysteries are, and how you can participate at their Winterberry Project website: https://sites.google.com/alaska.edu/winterberry/home?authuser=0





Federal Review of *Polystichum aleuticum*

In July, the federal government announced a review of the endangered species status of the tiny Aleutian shield fern, (*Polystichum aleuticum*) which "barely survives between the rocks and hard places of Adak Island and is the only plant in Alaska on the endangered species list."[1] The US Endangered Species Act requires a review of each species on the List of Endangered and Threatened Wildlife and Plants at least once every 5 years. A 5-year status review is intended to recommend if that species should remain on the "List".

As Yereth Rosen reported in the Alaska Dispatch News on August 15, 2017[1], there has not been much news about the fern to report in the last 12 years: "Because of its remote habitat on Adak's Mount Reed, the fern also is generally free of threats from human activity, though animals introduced by humans — caribou and Norway rats — are two of its biggest challenges. The fern itself has resisted cultivation efforts.

Adak is about 1,200 miles southwest of Anchorage and part of the sprawling Alaska Maritime National Wildlife Refuge, which puts the Fish and Wildlife Service in charge of safeguarding its ecosystem. The fern was listed as endangered in 1988 and is exceedingly rare — the 142 clumps growing in the moist, rocky recesses of Mount Reed are the only sites where the plant has been found.

The Aleutian shield fern was first documented in 1932 by a botanist who found it on Atka. Despite scientists' many searches, the fern has not been seen there since — or on any Aleutian islands other than Adak, and nowhere on Adak other than Mount Reed. The 142 known clumps on that rugged mountain are spaced out in four groups at elevations of about 1,100 feet and above.

As with any endangered species, the Aleutian shield fern faces some threats to its continued existence. The main threat is the product of a quirk of history associated with Adak's military past. The isolated island was, for decades, a Cold War-era U.S. Navy air station housing thousands of personnel and family members, and, before that, a World War II military station. In the 1950s, federal officials put a herd of caribou on the island, intending it as a source of meat for military personnel in that outpost. The caribou multiplied and now roam the island, grazing on plants and walking over trails traced through the tundra by their ancestors. Refuge managers have long worried that they might munch or trample the Aleutian shield fern. Hunts are strongly encouraged as a way to keep the population in check, but few hunters can afford the steep price of travel to Adak.

Finding out how much of a threat the free-ranging caribou pose was the point of a 2011 project that placed time-lapse and motion-sensor cameras on Mount Reed. The project captured some images of caribou tracks near the ferns. It also captured an unnerving image: the tail of a Norway rat zipping by the rare ferns. Rats are invasive in Alaska and have devastated ecosystems in the Aleutians and on islands around the world, so their proximity to the Aleutian shield ferns is potentially worrisome. Another potential threat is rock slides or some other form of site disturbance, always a possibility in the Aleutians, a region notorious for its frequent earthquakes and volcanic eruptions.

Isolation may help this species survive. Even for the 330 or so hardy souls who now dwell on Adak, the nation's westernmost municipality, Mount Reed is not accessible from the island's road system, and is off-limits to walkabouts because it sits above the town's water supply. It is likely that Aleutian shield ferns grow in other locations. The fern's rarefied habitat might exist on 17 islands besides Adak, according to a study by scientists from Texas State University and the USGS. The study, published in 2012 in the Journal of Wildlife Management, identified about 189 square miles of "highly suitable and moderately suitable habitat" scattered over Adak and the other 17 islands. Among the places that hold such habitat are very obscure islands like Gareloi and Igitkin, according to the study.

Could Aleutian shield ferns be cultivated in a greenhouse and planted somewhere, possibly at any of those locations? That is doubtful, according to experience to date. Attempts have been made at the University of Alaska Fairbanks, the National Arboretum in Washington, D.C., and Kew Gardens in the United Kingdom. The UAF project went the furthest, but after two years all specimens died, according to an Aleutian shield fern management plan issued by the Fish and Wildlife Service in 2007.

One thing that might change is the fern's species classification. It is known to be related to a fern, *Polystichum lachenense*, that grows in the Himalayas and some other high-altitude spots in eastern Asia. Whether that is actually the same thing as the Aleutian shield fern is the subject of an unresolved decades-long debate.In the past, the paucity of specimens hindered genetic testing, but work continues. They might turn out to be the same species, though separated by vast distances. If that is the case, it could have implications for the fern's endangered status. No matter how the genetics information turns out, however, the Aleutian shield fern will always be ultra-rare for Alaska."

[1]Yereth Rosen Alaska Dispatch News August 14, 2017: https://www.adn.com/alaska-news/science/2017/08/14/this-ultra-rare-plant-that-only-grows-on-adak-is-getting-new-attention/

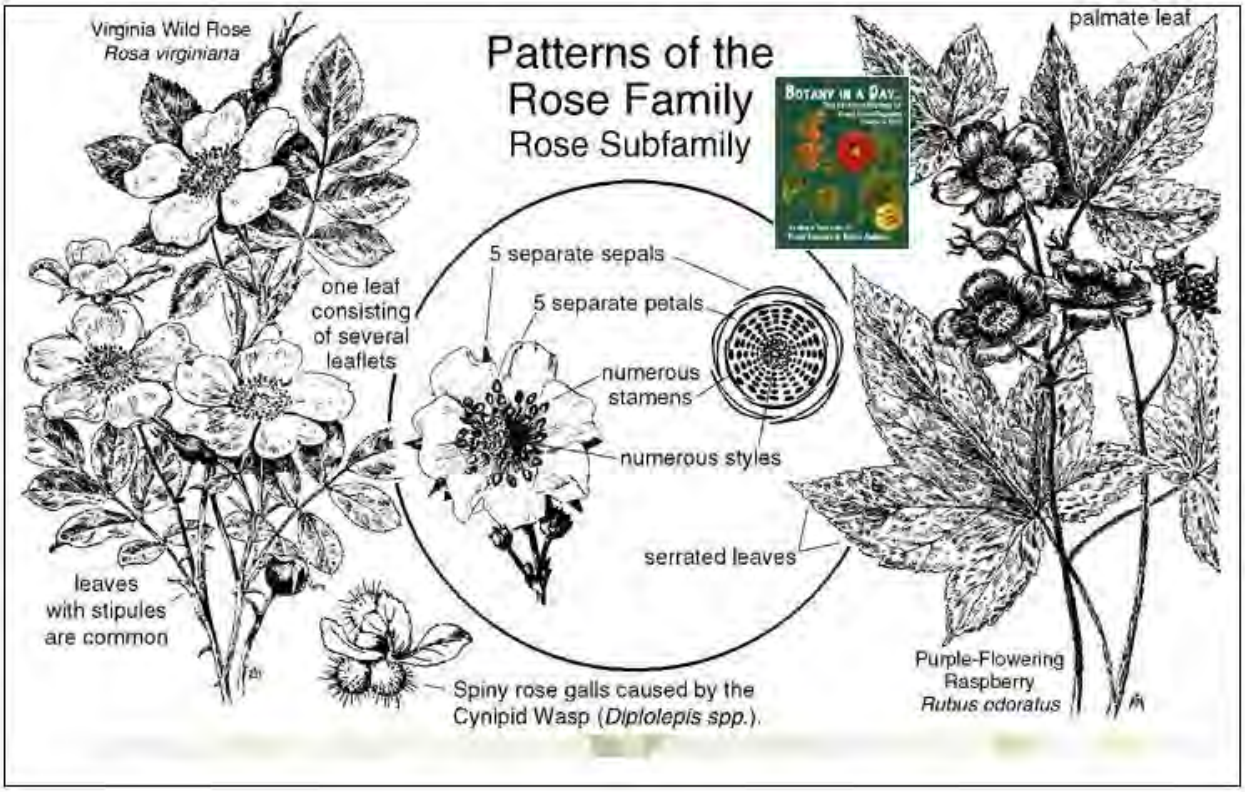
Rosaceae - **Plants of the Rose Family**

Roses have alternate leaves, which vary from simple to trifoliate, palmate, or pinnate. The whole leaves or smaller leaflets are frequently more or less oval-shaped with serrated edges, which is a good secondary pattern for recognizing the Rose family. As for the flowers, there are typically 5 (rarely 3 to 10) separate sepals and a similar number of petals. There are a minimum of 5 stamens, but often many more, usually in multiples of five. Many flowers of the Rose family, especially those of the Rose subfamily, have several to numerous simple pistils, or the pistils may be united at the base, with the styles separate, making a single compound pistil with numerous styles. Either way, the result is a distinctive, fuzzy-looking center surrounded by lots of stamens. Plants of the Rose family form many different fruits, varying from fleshy fruits to various false fruits, dry seeds, capsules, or follicles.

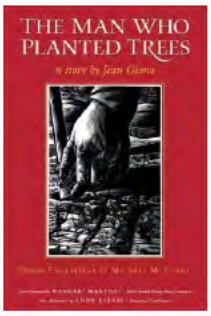
Worldwide, there are about 100 genera and 3,000 species. About 50 genera are found in North America. The Rose family produces many edible fruits. Tannins are common in the vegetation, giving astringent properties. Cyanide compounds are found in the leaves and fruits of some species.

In the early 1900s, botanists reclassified the former Spirea, Plum, and Apple families as subfamilies within the Rose family. In response, Robert Frost poemed, *"The rose is a rose and was always a rose. But the theory now goes that the apple's a rose, and the pear is, and so's the plum, I suppose. The dear [Lord] only knows what will next prove a rose. You, of course, are a rose - but were always a rose."*

This year, our Plant Docents and the Genus they will highlight include:
November - *Rubus* (berries) – Anjanette Steer
December – *Dryas* (Mountain Avens) – Zoe Meade
January - *Amelanchier* (Serviceberry) – Annie Ronsse
February – *Avens* (Geum) – Glenn Brown
March – *Luetkea* (Alpine Spiraea) – Charlene Johnson
April – *Potentilla* (Cinquefoil) – Forest Baldwin
May – *Malus* – Marilyn Barker

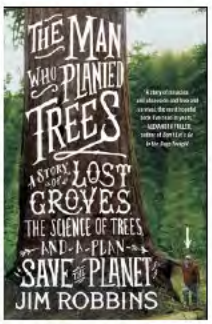


FROM OUR BOOKSHELVES



The Man Who Planted Trees
Jean Giono
Chelsea: Chelsea Green Publishing Company, 1985

A short story first published in 1953, about a man who spent his life planting one hundred acorns a day in a barren part of Provence in the south of France, ultimately leading to a complete transformation of the local landscape from one devoid of life, with miserable, contentious inhabitants, to one filled with the scent of flowers, the songs of birds, and fresh, flowing water.. Coinciding with the start of the First World War, the story unfolds over four decades. With its powerful environmental message the speculations about the real events that may have served as inspiration for it, Giono's fictional work remains relevant to twenty-first century readers.



The Man Who Planted Trees: A Story of Lost Groves, the Science of Trees, and a Plan to Save the Planet
Jim Robbins
New York: Spiegel & Grau, 2012

Inspired by Giono's tale from 1953, the book follows the endeavors of David Milarch, a former alcoholic nurseryman from Michigan whose near-death experience prompted him to attempt to find the best specimens of the U.S.'s 826 known species of trees and use them to propagate their offspring around the world.

In his vision, angels came to tell him that the earth was in trouble. Its trees were dying, and without them, human life was in jeopardy. The solution, they told him, was to clone the champion trees of the world—the largest, the hardiest, the ones that had survived millennia and were most resilient to climate change—and create a kind of Noah's ark of tree genetics. Without knowing if the message had any basis in science, or why he'd been chosen for this task, Milarch began his mission of cloning the world's great trees. Many scientists and tree experts told him it couldn't be done, but, twenty years later, his team has successfully cloned some of the world's oldest trees—among them giant redwoods and sequoias. They have also grown seedlings from the oldest tree in the world, the bristlecone pine Methuselah.

New York Times contributor Robbins spent more than 10 years following the efforts of David Milarch and his Champion Tree Project. "A 'champion' is a tree that has the highest combined score of three measurements: height, crown size, and diameter at breast height." The project's goal "was to clone the champion of each of the 826 species of trees in the United States, make hundreds or thousands of copies, and plant the offspring in 'living archival libraries' around the country to preserve the trees' DNA." Robbins was at first skeptical, unconvinced of Milarch's belief that the welfare of the entire planet lies within the old-growth trees that have lived for thousands of years. Yet over several years, listening to Milarch and talking to scientists, he came to realize that there is so much we do not yet know about trees: how they die, how they communicate, the myriad crucial ways they filter water and air and otherwise support life on Earth. It became clear that as the planet changes, trees and forest are essential to assuring its survival.

The story is easy to follow and is informed by both scientific knowledge and environmental efforts. It includes detailed descriptions of the role of trees in cleaning pollutants from the air as well as preserving our freshwater systems. The book emphasizes the interdependence of trees not only with their immediate ecosystems but with the planet as a whole.

Recap: ANPS SUMMER SEDGE WORKSHOPS: JULY 2017

The Teacher:
Dr. Anthony Reznicek, the curator of the University of Michigan herbarium, is the author of the most current *Cyperaceae* (sedge) key for Alaska which is considered the best ever compiled. He is an internationally recognized expert not just of Alaskan sedges but of all New World sedges. Having taught classes here in 2003 and 2005, he was well known to be an energetic and engaging teacher. It was hence not a surprise when all 10 spots for each class filled quickly. We in fact increased the number of students to 11 in each class to cope with the demand.

The classes:
Two 3 day seminars were held at the UAA herbarium. The herbarium kindly allowed us to use their facility including their microscopes and herbarium specimens at no cost. Dr Reznicek collected local sedges for teaching purposes on July 10 and July 14. A few club members were able to go with him which allowed them to obtain teaching in the field even before the classes formally began. Two and a half days of each class were spent with power point presentations with time to ID the individual sedges through the microscope. The last half of the 3rd day was spent in the field where characteristics of the sedges visible without a microscope were pointed out. Dr. Reznicek printed the most updated version of his key for each class member. He also brought books that students could use in identifying the sedges. Each student was given a copy of "Wetland Sedges of Alaska" by Gerald Tande and Robert Lipkin. His key and this booklet will be invaluable for students as they continue to increase their knowledge of the sedges.

The students:
Class participants came from a variety of backgrounds. Some were field professionals from the National Park Service Anchorage, the BLM Fairbanks, and the Fish and Wildlife Service. These organizations are facing financially hard times so having such an expert come to Anchorage allowed these agency personnel to learn about sedges from a true master at a fraction of what this course would cost had they flown out of state.

Some of the students were field professionals from the private sector such as members of the Alaska Biologic Research, a well-respected group of scientists who are hired to do research on the North Slope for a variety of public and private groups. One of the students has been with ABR for years and mentioned that she is the one to teach the new employees. The seminars will reach way beyond the lucky few who could take the class.

Some students were sponsored. The Society of Wetland Science gave scholarships paying the tuition for 4 students. Alaska has approximately 63% of America's wetlands. Wetland habitat is being lost quickly across the United States including here in Alaska. Students who took this class through the SWS will be better able to identify sedges, a key component of the wetland habitat. Hopefully this will lead to preservation of this important habitat.

Some students just had an interest in extending their knowledge of this interesting plant group. One had rarely used a key before. Without exception the assessments completed by students stated that they were very pleased with their learning experience. This speaks to Dr. Reznicek's teaching ability to go to where the student is and work with each one at their own level. Having a small class in an intimate setting allowed each student to learn well.

Community benefit:
Dr. Reznicek is an avid gardener especially of rock garden plants. He was more than willing to lecture to the public on July 13 at 7 pm even though he had just taught for three full days. Campbell Creek Science Center donated the space at no charge. BLM wanted to honor Verna Pratt that evening for her work with their gardens and in identifying BLM plants. (Due to their busy summer schedule their honoring of Verna was not as extensive as originally planned. They hope that the art piece to honor Verna will be in the butterfly garden by Sept 30, 1217 in time for their National Lands Days celebration.) Dr. Reznicek has visited Verna's garden and knew of her work at the national level with the rock garden society such that the honoring of Verna dove tailed nicely into his talk. Dr. Reznicek gave a most interesting talk on why plant names are changing due to the newly discovered genetic association and how these changes relate to an evolutionary tree of plants. The lecture was well attended by a number of different individuals interested in gardening and botany.

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, pleas 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

☐	**Full-time Student**	**$12**
☐	**Senior Citizen**	**$12**
☐	**Individual**	**$15**
☐	**Family**	**$20**
☐	**Organization**	**$30**

Name _____

Address _____

City: _____ State_____Zip_____

Telephone: (Home)_____(Work)_____E-Mail: _____

Membership is on a calendar year basis.

Would you rather receive the newsletter by e-mail instead of by snail mail?
It will save ANPS some postage and you'll always receive your newsletter in a timely manner.
Let us know when renewing or by e-mail to elfinwood@gmail.com.

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