

Borealis

the newsletter of the



PO Box 141613, Anchorage, Alaska

April - May 2014

Honoring Our Own!

Join us at our Next Meetings!

Monday, April 7, 7:00 p.m

Main Topic: "The Red Riddle: Fall leaf reddening in bearberry, fireweed and *Cornus Canadensis*"

Speaker: Margie MacNeille, UAAf

Plant Family: *Bogs & Marsh Plants: Scirpus*
Leader: Beth Baker

Mini-Botany: *Northern Plant Success: Wintergreen leaves, Annual/Perennial*
Presenter: Anjanete Steer

Monday, May 5, 7:00 p.m

Main Topic: "Some Far Northern Plants of Alaska: Barrow and Atkasuk".

Chasing plants in a strange and often challenging environment.

Speaker: Forrest Baldwin

Plant Family: *Plants of Bogs & Marshes: Eriophorum*

Leader: Joan Tovsen

Mini-Botany: *Northern Plant Success: Compensation for poor soil*

Presenter: Greg Kalal



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

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Verna Pratt, Alaska Woman of the Year

None of us needs to have some organization remind us of the great treasure we have in local ANPS member Verna Pratt, but it is exciting to have her so recognized by the Alaska Women's Hall of Fame, that recently inaugurated her into the Class of 2014. You can go to their website www.alaskawomenshalloffame.org to read her impressive bio. Just don't believe all you read – she has been around a long time, but we doubt she was born in 1915!



In 2009 Verna and her husband, Frank, were the first persons awarded a Lifetime Achievement Award from the Anchorage Chapter of the Alaska Master Gardeners Association. On that occasion, it was humorously pointed out that they were being recognized: "For your ability to teach and teach and teach and run up mountains with people following you." Anchorage garden columnist Jeff Lowenfels perhaps best describes Pratt's reputation and contribution to knowledge

about Alaska's native plants and wildflowers in these words: "In the wildflower world around the country, everybody knows Verna Pratt,"

Follow Verna this Summer!

There is no better Alaska plant field guide than Verna (in person and print!) and you may be interested in attending a summer class being offered twice this summer, for two full days each, by Alaska Geographic:

Wildflowers of the Chugach

July 12 & 13, 2014 or July 19 & 20, 2014

For more information, contact them at <http://www.alaskageographic.org>

MYSTERY PLANT

This tiny plant (2 to 3 inches in bloom) is one of the first to bloom in the spring. The small rosettes of leaves send up a spindly stem with an umbel of tiny five-petaled, yellow eyed, fragrant flowers.

The leaves turn red and die as the seeds mature, which suggests that these plants are probably biennials. They can be found throughout most of Alaska in dry, rocky, sunny places below treeline.



Answer on Page 7.

It's spring--let's go hiking!!!

The first outing for the 2014 season will be a hike through the Alaska Botanical Gardens.

Meet up at 2 pm, April 13, at the garden entrance. Patricia Joyner, from the Alaska Community Forestry Program, (Alaska Dept. of Natural Resources/Division of Forestry) will lead us as we look for the plants that distinguish the boreal forest from Alaska's other forest type, the coastal forest. What are the similarities and differences? Why are the forest plants in Anchorage so different from those in nearby Girdwood? How do you know what tree it is if the leaves aren't even out yet? Mark your calendars and dress for the weather whatever April brings us. The hike will be approximately 1.5 to 2 hours in duration.

For any questions please call the hike co-ordinator Beth Baker,



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ALASKA NATIVE PLANT SOCIETY

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Membership	Bernadine Raiskums
Plant Family	Beth Baker
Mini-Botany	Beth Baker
Field Trips	Marilyn Barker

Newsletter ("Borealis")

Editor Ginny Moore

FAX:

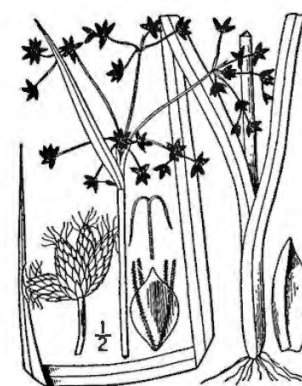
Borealis is published bi-monthly, fall through spring. Articles may be sent to Ginny Moore, , Anchorage, AK 99516. Phone or FAX: , E-mail: elfinwood@gmail.com

Plants of Bogs & Marshes – *Scirpus*

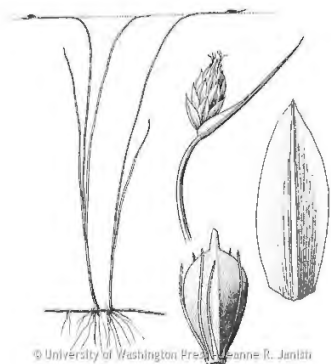
In April, Beth Baker will continue our discussion of plants of bogs and marshes by focusing on the genus *Scirpus*. The plant genus *Scirpus* consists of a large number of aquatic, grass-like species in the family Cyperaceae (the sedges), many with the common names **club-rush** or **bulrush**. The taxonomy of the genus is complex. Recent studies by taxonomists of the Cyperaceae have resulted in the creation of several new genera, including *Schoenoplectus* and *Bolboschoenus*. At one point this genus held almost 300 species, but many of the species once assigned to it have now been reassigned, and it now holds an estimated 120 species. Of the five *Scirpus* species listed in Hultén as being present in Alaska at least 4 are considered to be in the *Schoenoplectus* genus.

Many species are common in wetlands and can produce dense stands of vegetation, along rivers, in coastal deltas and in ponds. Although flooding is the most important factor affecting its distribution, drought, ice scour, grazing, fire and salinity also affect its abundance. It can survive unfavorable conditions like prolonged flooding, or drought, as buried seeds. *Scirpus* species are often planted to inhibit soil erosion and provide habitat for other wildlife. They are also used in some herbal remedies; the plant's rhizomes are collected in the autumn and winter and dried in the sun before use. *Scirpus* species are used as food plants by the larvae of some Lepidoptera species.

Scirpus microcarpus is known by the common names **panicked bulrush**, **smallfruit bulrush**, and **barberpole bulrush**. It is native to North America, and can be found throughout the northern and western regions. It grows in many types of moist and wet habitat. It is a perennial herb growing from a long rhizome system. Rhizomatous. Stems 30–100 cm, rarely clustered. Leaves: blades 5–12 mm wide; basal sheaths reddish. Inflorescence open, compound-umbelliform. Spikelets 3–6 mm long. Scales 1–2.5 mm long, dark green; tip rounded to apiculate. Flowers: bristles 3–6, straight or curved, spinulose, ca. as long as the achene, white turning brown; stigmas 2. Achene 2-sided, whitish, 1–1.5 mm long



S. microcarpus

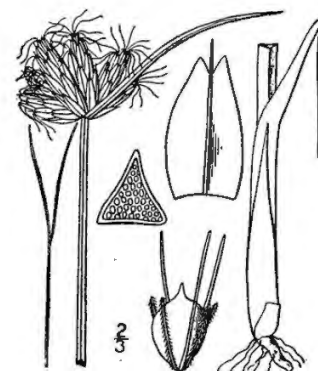


S. subterminalis

Scirpus subterminalis (syn. *Schoenoplectus subterminalis*) is known by the common names **water bulrush** and **swaying bulrush**. It is native to North America, where it is known from many areas across Canada and the United States. It grows in moist and wet habitat, and often grows in shallow water, sometimes entirely submerged. It is a perennial herb forming mats or tufts of very narrow cylindrical stems easily exceeding one meter long. There is a rhizome and sometimes tubers grow on it. When the plant grows in water only the inflorescences and the tips of the leaf blades break the surface. The inflorescence is generally a single cone-shaped spikelet at the end of the stem accompanied by a stiff, stemlike bract.

Scirpus americanus (syn. *Schoenoplectus americanus*) is known by the common names **chairmaker's bulrush** and

Olney's three-square bulrush. It is native to the Americas, where it is known from Alaska to Nova Scotia and all the way into southern South America. It grows in many types of coastal and inland wetland habitat, as well as sagebrush, desert scrub, chaparral, and plains. Stems 40–150 cm, 3-sided with concave sides. Leaf blades short, flat or folded, 2–8 mm wide. Inflorescence compact, of 2 to 15 sessile spikelets. Spikelets 6–15 mm long. Scales 3–4 mm long, glabrous, reddish to purplish-brown; awn ca. 0.5 mm long. Flowers: bristles 5 or 6, ca. as long as achene; stigmas 2 or 3. Achene 2- or 3-sided with rounded edges, brown, ca. 3 mm long



S. americanus

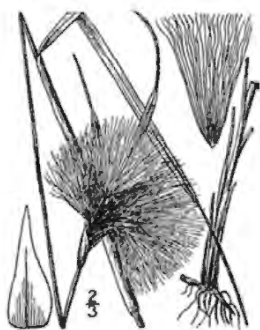
Scirpus validus (syn. *Schoenoplectus tabernaemontani*) is commonly known as Softstem Bulrush because the stems are filled with spongy air cavities. Stems terete, 80–150 cm, filled with spongy air cavities. Leaf blades reduced to scales. Inflorescence usually open with small clusters of spikelets on tips of spreading to erect peduncles. Spikelets 5–12 mm long. Scales 2–3 mm long, glabrous, ciliate, tan to reddish with short, dark red, parallel lines; awn ca. 0.5 mm long. Flowers: bristles 6, ca. as long as achene; stigmas 2. Achene 2-sided, dark brown, 1.5–3 mm long

Plants of Bogs & Marshes – *Eriophorum* – Cotton Grass

In May, Joan Tovsen will continue our study of the plants of bogs and marshes with some information on *Eriophorum*. These are the "cotton grasses" which are not grasses but members of the Cyperaceae/sedge family

There are reportedly up to 14 species of cotton grass in Alaska. The genus is easily identified by the white woolly tuft at the top of the stem which looks like a ball of cotton. *Eriophorum* translates as wool (erion) bearing (phoros). They may be found in extensive beds, and often form tussocks. When it comes to determining the exact species, even the Taxonomist Extraordinaire Eric Hultén said "Taxonomically *Eriophorum* is a very intricate genus; hybrids between taxa are apparently no uncommon." If you carefully read the descriptions and examine the drawings of several species listed below, you will see that variations can be minor.

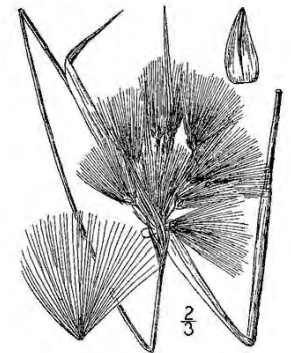
Uses: Bases can be eaten raw or added to soups, casseroles or stir fries. Inupiat preserve the underground stem for winter use in seal oil. Tundra mice collect the underground stems and cache them for winter use. Before winter the children hunt for these "mouse nuts". Reportedly taste sweet. The rootstock has been used to treat colds and coughs. The flowers' woolly down was spun as fiber and candlewicks, makes an attractive dried flower.

*E. angustifolium**Eriophorum angustifolium*

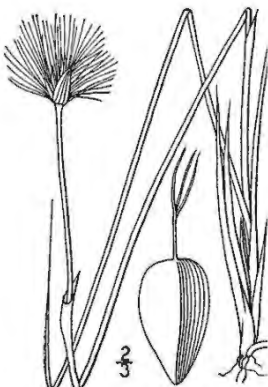
Rhizomatous. Stems 15–50 cm. Leaves: flat; blades 2–5 mm wide. Inflorescence 2 to 8 nodding, pedunculate spikelets; bracts 2 or more, leaf-like as long as the inflorescence. Spikelets 1–2 cm long in fruit; lowest scale smaller than the spikelet. Fertile scales brown to greenish black with a pale midvein not reaching the tip, 5–10 mm long. Bristles white. Achene 2–5 mm long, minutely apiculate

Eriophorum viridi-carinatum

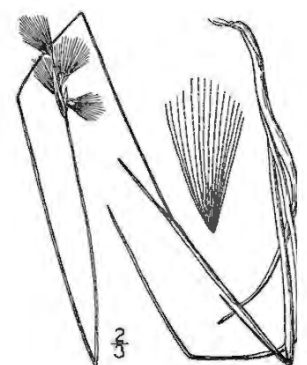
Rhizomatous. Stems 25–60 cm. Leaves: flat; blades 2–5 mm wide. Inflorescence 2 to 10 nodding, pedunculate spikelets; bracts 2 or more, leaf-like, as long as the inflorescence. Spikelets 15–30 mm long in fruit; lowest scale ca. as long as the spikelet. Fertile scales 4–6 mm long, greenish black with a pale midvein that reaches the tip. Bristles whitish. Achene 2–4 mm long, minutely apiculate

*E. viridi-carinatum**Eriophorum callitrix*

Caespitose. Stems 7–25 cm. Leaves: upper leaf blades rudimentary; lower blades V-shaped or triangular in cross-section, ca. 1 wide. Inflorescence a solitary, erect spikelet; bracts absent. Spikelets 1–2 cm long in fruit; lowest scale ovate, ca. as long as the spikelet. Fertile scales blackish with hyaline margins, 7–12 mm long. Bristles white. Achene ca. 2 mm long

*E. callitrix**Eriophorum gracile*

Rhizomatous. Stems 15–60 cm. Leaves: upper leaf blades rudimentary; lower blades V-shaped or triangular in cross-section, 1–2 mm wide. Inflorescence a solitary, erect spikelet; bracts absent. Spikelets 15–35 mm long in fruit; lowest scale lanceolate, shorter than the spikelet. Fertile scales brown to black with pale margins, 4–7 mm long. Bristles becoming tawny-brown. Achene 2–3 mm long, apiculate

*E. gracile*

Alaska Cotton has always been a welcome sight along roadside ditches and boggy trails and often collected for winter bouquets. Tourists love it, as well, and would probably be picked to extinction if it were more accessible without donning tall boots.

FROM OUR BOOKSHELVES



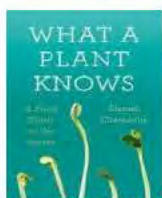
Seeing Flowers
By Robert Llewellyn
and Teri Dunn Chace
Timber Press
September 2013

Whether or not you participated in the Plant Taxonomy classes presented by Marilyn Barker in the fall and spring, you're going to love exploring some of the plant families included in the Angiosperms in this new book, *Seeing Flowers: Discover the Hidden Life of Flowers*, photographed by Robert Llewellyn and written by Teri Dunn Chace. Published in September 2013 by Timber Press, this book examines 28 of the most common families of flowering plants, and is a captivating combination of art, literature and science.

In this coffee-table book, with over 300 photographs, Robert Llewellyn reveals details that few have ever seen: the amazing architecture of stamens and pistils; the subtle shadings on a petal; the secret recesses of nectar tubes. He achieved this seemingly infinite depth of field by taking numerous shots of the same blossom and stitching them together using software originally designed for microscopes. One reviewer wrote: "The photos in this book are so good they look like drawings."

Each chapter is accompanied by an essay by Teri Dunn Chace, a horticultural writer and editor. She says "This is not purely a botany or science or gardening book —not at all. Flowers do not exist in a vacuum. They are part of history and culture. That is why I included some interesting stories about them, tucked in some weird and intriguing factoids, and opened each chapter with a literary quote. I've got quotes from Shakespeare to Pablo Neruda to a relatively unknown Vietnamese poet.....Yes, I am a botanist and a horticulturist, yes, I have made a career out of writing and editing material about plants and gardening. But I love just looking at flowers ...sniffing them, crawling among them in my garden, bending over them on a hike, admiring them over someone's fence, picking bouquets, going into a florist shop. But I am also a lover of literature and art. So I set out to appreciate flowers from every angle I could think of. To be honest, it's tricky...it's like trying to capture a butterfly in a net!"

About borage, Teri writes, "All the plants have flowers in shades of true blue, which is not always easy to find in the plant world. In some of the species, the presence of anthocyanins makes the distinctly red or pink buds open light purple and gently age to blue. [...] Botanists believe the color change is a signal to pollinators (mainly bees) that the nectar and pollen has become depleted, a chemical 'no vacancy' sign."



What A Plant Knows
By Daniel Chamovitz
Scientific American
May 2012

How does a Venus flytrap know when to snap shut? Can it feel an insect's spindly legs? How do flowers know when it's spring? Can they actually remember the weather? And do they care if you play them Led Zeppelin or Bach?

From Darwin's early fascination with stems and vines to *Little Shop of Horrors*, we have always marveled at plant diversity and form. Now, in *What a Plant Knows*, the biologist Daniel Chamovitz presents an intriguing and refreshing look at how plants experience the world. Highlighting the latest research in plant science, he takes us into the lives of different types of plants, and draws parallels with the human senses to reveal that we have much more in common with sunflowers and oak trees than we may realize. He explains how a willow knows when its neighbors have been

taken over by a group of hungry beetles, and why an avocado will ripen in a paper bag with a banana (it's the pheromones). He shows how plants know up from down, and settles the debate, once and for all, over whether or not plants appreciate that music you've been playing. Covering touch, sound, smell, sight, and even memory, Chamovitz considers whether it's too much to ask if plants are aware.

What a Plant Knows is a rare inside look at what life is really like for the grass we walk on, the flowers we sniff, and the trees we climb. It is a true field guide to the senses for science buffs and green thumbs, and for anyone who seeks a greater understanding of our place in nature. Maybe you shouldn't read this if you're vegan: once you have some idea of how a plant's sensory system works, there'll be no food left for you. The rest of us will just try to keep off the grass a little more often.

News From The North - To Your Health!

The March meeting of the Fairbanks ANPS offshoot group focused on human use of some native plants. Kimbo Maher spoke about birch and birch tapping. Tapping and sap harvest directions are on her blog at

<http://kimbosnorthernvittles.blogspot.com/2012/04/harvesting-spring-birch-sap-aqua-vitae.html>

You can also find a great recipe for birch syrup toffee at:

<http://www.foodnetwork.com/recipes/paula-deen/english-toffee-recipe/index.html>

Amy Tippery also provided numerous recipes for libations created from our native plants.

General Liqueur Recipe

3 lbs berries

3 c. water

750 ml ever-clear or vodka

6 c. sugar

Crush berries well in a large heavy bowl, add alcohol and cover. In saucepan, heat water until just boiling and add sugar. Dissolve, cool and add to bowl. From here transfer into sealed containers for 6 weeks, inverting containers several times a day. Strain and bottle. Not meant to be aged, but will be good for years.

Suggested plants:

Sweet

- Tall Raspberry
- Trailing Raspberry (*R. arcticus*)
- Cloudberry
- Blueberry
- Strawberry

Bitter

- Soapallie
- Highbush Cranberry
- Lingonberry

Other

- Rose hip
- Saskatoon
- Crowberry
- Pumpkin berry
- Gooseberry /Current (cassis)

General Tonic Recipe

Simmer plants in 4 c. water until half reduced. Remove plants. Add to 4 c carrier (vodka or Everclear, cider vinegar, glycerin) Bottle into sterile glassware.

General Herbal Liqueur

Boil 3 c. water with 6 c. sugar until dissolved. Add plants, turn off heat and cool. Add 750 ml vodka or everclear. From here, transfer into sealed containers for 6 weeks, inverting containers ≤ 1 /day. Strain and bottle.

Suggested plants for both:

Relaxation

- Pineapple weed (4C)
- Valerian root (4T)
- Lousewort (*Pedicularis* spp) (4T)
- Rose petal (4C)

Stimulants

- Spruce tips (4C)
- Tamarac Tips (3 C)
- Mentha* spp. (4C)
- Juniper berries (2C)

Pain/Spasms

- Willow bark (4C)
- Coltsfoot (*Petasites* spp.) (2C)
- Fireweed (6C)
- Elderberry (*Sambucus* spp.) flowers
- Highbush Cranberry bark (2C)

Tonics

- Nettles (6c)
- Burnet (*Sanguisorba*) flowers/leaves (3C)
- Alaska Rhubarb (*Polygonum* spp.) (2C)
- *Saxifraga* spp. Leaves (4C)
- Strawberry/Raspberry leaves/Rose hips
- Soapberry (2C)



Sanguisorba menziesii

The Fairbanks group meets on the 2nd Wednesday of each month – contact Amy Tippery for more information: actippery@alaska.edu or

From What We Gather - around the web

More on Mosses and Lichens

At our February meeting, Sarah Stehn, a botanist at Denali National Park, took us on a tour of mosses and lichens of interior and south-central Alaska. Even if you were able to attend her talk, you'll appreciate a couple of websites that will enhance your understanding of these tiny organisms:

- A Virtual Tour of Mosses and Lichens of Denali National Park, similar to the content of Sarah's talk to ANPS: <http://go.nps.gov/dena-mosses-lichens>
- More information specifically on lichens: <http://www.waysofenlichenment.net/ways/readiings/index>
- For more of an online textbook: <http://www.bryoecol.mtu.edu>

Thanks to Beth Koltun for providing these information links!

NPS scientists Carl Roland and Josh Schmidt, together with UAF's Jill Johnstone, show climate drives seedfall and seed viability in white spruce

Mast-seeding conifers such as *Picea glauca* exhibit synchronous production of large seed crops over wide areas, suggesting climate factors as possible triggers for episodic high seed production. Rapidly changing climatic conditions may thus alter the tempo and spatial pattern of masting of dominant species with potentially far-reaching ecological consequences. Understanding the future reproductive dynamics of ecosystems including boreal forests, which may be dominated by mast-seeding species, requires identifying the specific cues that drive variation in reproductive output across landscape gradients and among years.

This study used annual data collected at three sites spanning an elevation gradient in interior Alaska, USA between 1986 and 2011 to produce the first quantitative models for climate controls over both seedfall and seed viability in *P. glauca*, a dominant boreal conifer. They identified positive associations between seedfall and increased summer precipitation and decreased summer warmth in all years except for the year prior to seedfall. Seed viability showed a contrasting response, with positive correlations to summer warmth in all years analyzed except for one, and an especially positive response to warm and wet conditions in the seedfall year. Finally, they found substantial reductions in reproductive potential of *P. glauca* at high elevation due to significantly reduced seed viability there. The results indicate that major variation in the reproductive potential of this species may occur in different landscape positions in response to warming, with decreasing reproductive success in areas prone to drought stress contrasted with increasing success in higher elevation areas currently limited by cool summer temperatures.

To read more, check out their new publication at <http://t.co/ctYaUCLRpZ>.

For more information about how NPS monitors white spruce and other vegetation in Alaska, visit <http://science.nature.nps.gov/im/units/cakn/vitalsign.cfm?vsid=37>

State quarantines five aquatic weeds

The Alaska Division of Agriculture is establishing a quarantine (PDF) to prevent the spread of five invasive species of aquatic weed, the division said Wednesday in a press release. The state will set up measures to stop the entry of these five species at the state's boundaries, and to prevent their spread within the state. According to the state, the problem is relatively recent one. But in a short time, invasive weeds have already wreaked havoc in some of the state's waterways, including in Anchorage and on the Kenai Peninsula. The quarantine applies to Canadian waterweed, Western Nuttallii (both of which are elodea), Brazilian waterweed, Hydrillia, and Eurasian watermilfoil.

For more information: <http://plants.alaska.gov/invasives/pdf/ExteriorQuarantineofAquaticInvasiveWeeds.pdf>

ANNUAL MEMBERSHIP APPLICATION/RENEWAL

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

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

STATUS New RENEWAL

CATEGORY

- | | | |
|--------------------------|-------------------|------|
| <input type="checkbox"/> | Full-time Student | \$12 |
| <input type="checkbox"/> | Senior Citizen | \$12 |
| <input type="checkbox"/> | Individual | \$15 |
| <input type="checkbox"/> | Family | \$20 |
| <input type="checkbox"/> | Organization | \$30 |

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