

Borealis

the newsletter of the



PO Box 141613, Anchorage, Alaska

March 2006

Join us at our Next Meetings!

Monday, March 6, 7:30 p.m.

Campbell Creek Science Center

"White Spruce of Boreal Forests "

Speaker: Prof. Bjartmar Sveinbjörnsson

Conditions and performance of white spruce
above and below the forest limit across the
boreal landscape in Alaska

March Plant Family Study

Presenter: Ken Johnson

Mini Botany: "Cook Inlet Vegetative Types"

Andy Anderson-Smith

Monday, April 3, 7:30 p.m.

**Start Planning For
Summer Field Trips Now!**

**Planning Forms Enclosed –
Fill & Return Soon!**



**For the latest information on all
Alaska Native Plant Society events,
check out our website at:**

[http:// AkNPS.org](http://AkNPS.org)

Rediscovering A Rare Plant

YUKON DRABA (*DRABA YUKONENSIS* PORSILD)

From: B.A. Bennett, NatureServe, Yukon

Yukon Draba or Yukon Whitlow-grass (*Draba yukonensis* Porsild) has more common names than populations. It is only known from a single site in the vicinity of Haines Junction outside of Kluane National Park. It was first collected in 1944 by Hugh M. Raup and his wife L.G. Raup. In 1957 it was collected again by Dr. Wilf Schofield and H.A. Crum from just outside their tents while camping near the Alaska Highway.

This was likely the same site as where Raup had collected it 13 years earlier. At that time the collection was called *Draba oligosperma*, a species which still grows in abundance in the area. It wasn't until 1975 that the species *Draba yukonensis* was recognized and its description was published by Alf Erling Porsild, based on the collection made by Dr. Schofield. That is all that was known about the species until 2005.

In 2000 a very enthusiastic amateur botanist from New York City decided to come to the southwest Yukon and volunteer to look for plants on behalf of Kluane National Park & Preserve. With the knowledge of the approximate location and a short description of the way to separate this species from 28 other species of *Draba* in the area, Phil Caswell began searching.

His search came up fruitless, but he did discover that arctic ground squirrels feed on the seed heads of *Draba*, often consuming the entire above ground portion of the plant. Phil's search raised the interest of locals and park staff alike. But still no plants were found. Each year 100's of *Draba* collections were examined from the area. Many new locales of other globally rare *Draba* species such as *Draba scotteri*, *Draba ventosa* and *Draba porsildii* were found but *Draba yukonensis* remained elusive.

In the fall of 2004, *Draba yukonensis* was listed as Globally Historic (GH); the only species with this designation at that time in Canada. This is one step away from being declared extinct.

(continued on Page 2)

It was felt that after four years of searching and 47 years with no new collections, the population type locality must have been lost; still there was hope that somewhere a new population of this distinctive species would be found. In the spring of 2005, Wilf Schofield provided precise directions to his original collection site, which despite being near to the Alaska Highway had not altered much in the subsequent 48 years. Just as these new instructions were being emailed to the Parks office, Phil and longtime park warden Lloyd Freese were on the search for the elusive endemic *Draba*. Phil was showing Lloyd its closest look alike, *Draba cana*, when Lloyd showed Phil some freshly collected plants. To their great surprise they had rediscovered the secret stand of *Draba yukonensis*, in the same location that it had been found by others half a century before.

At that time 18 plants were counted in two small populations, not counting the 3 that had been inadvertently collected. However 4 days later only 13 plants could be found. It was thought that perhaps some had been overlooked on only 8 plants could be found. Photographs were taken of all the individuals to capture some of their individual characteristics.

Arrangements were made to attempt to collect the maturing seed and propagate them in the greenhouse of the University of Alaska in Fairbanks. There was some concern that if these plants were indeed the last of their kind, and the original description that referred to them as biennials was correct, collecting the seed could further jeopardize the population. However, when the plants were surveyed again in late June to look for mature seed it was discovered that all the plants had now disappeared. They had likely become forage for the arctic ground squirrel.

In the fall of 2005, Dr. G.A. Mulligan with the Department of Agriculture and Agri-food in Ottawa was reviewing collections at the National herbarium (DAO). He discovered a fourth collection made by G.W. & G.G. Douglas, in June 27th, 1973. Two specimens of *Draba yukonensis* were mixed with nine specimens of *Draba cana*; once again apparently from the type locality. It remains to be seen whether the species has survived. Further attempts to find individuals will be made in the spring of 2006.

Sadly, soon after confirming the identity of his long sought quarry, Phil Caswell passed away on November 12, 2005. He will be sorely missed by his friends and colleagues, especially those who had the pleasure to work with him over the last 20 years in Yukon and Alaska. The second count as they are difficult to see and the vegetation had advanced over the long days of the Yukon summer. By early June the plants had gone to seed but by now



Draba yukonensis is extremely rare and, at barely 15 cm tall, easy to overlook.



Join Our Expedition!

A Summer Foray is being planned to Caine's Head State Recreation Area south of Seward. This science expedition is co-sponsored by Alaska State Parks and the Alaska Native Plant Society.

It is scheduled for June 23-25. We will water taxi to Caine's Head early on Friday 23 June, We have a cabin reserved for June 23-4 and will return to Seward early evening on Sunday the 25th. Our goal is to inventory the vascular plants on both the Caines Head Trail and the Alpine Trail. We will document all species not currently documented at either the UAA or UAF Herbaria.

If you are interested in participating on this foray, please contact Carol Griswold at c_griz@yahoo.com or Marilyn BARKER at afmhb@uaa.alaska.edu

Eleocharis – The Spike Rushes

Eleocharis is from the Greek words for “marsh” and “grace”, an allusion to the marshy habitats characteristic of species of the genus. The genus *Eleocharis* is a small genus in the sedge family. The 6 Alaskan species are all found in damp, wet sites, particularly muddy sites. Spike rushes look superficially like grasses. They have round stems and perfect flowers (having both stamens and carpels). That is where the similarity ends. Spike rushes have a single apical spike and their leaves are 3-ranked (grasses are 2 ranked). The spike rushes also lack other ornamentation such as long silky hairs; this forms a significant difference from another of their look-alikes, the cottongrasses.

Individual flowers are subtended by a solitary scale. The scales are spirally arranged in the spike. The perianth consists of 3-12 short bristles, there are 3 stamens. The unique feature is the pistil. It is terminated by a bulbous persistent style base called a tubercle. This tubercle is even persistent on the apex of the achene, since it is distinctive for each of the species it is important for identification.

Economically one species of the genus stands above all others, *Eleocharis tuberosa*—the Chinese water chestnut produces an edible corm rich in sugar and protein.

The most common local species of *Eleocharis* are *E. palustris* and *E. acicularis*. These green, grass-like perennial herbs can be recognized by the oval-shaped, brownish-flowering spikes at the tips of smooth, round stems. These spike-rush species grow individually or in clumps along shorelines or in shallow water, sometimes forming ankle-high turf-like mats. *Eleocharis acicularis* often looks hair-like when growing underwater. *E. acicularis* is shorter, 6-7 cm tall with 3-4 mm spikes and has a minute conical-triangular tubercle; *E. palustris* is usually 10 cm or more in height with spikes 10 to 13 mm long with a variable tubercle.

E. kamtschatica is probably the easiest of all to identify. First it prefers coastal saltmarsh for a habitat, and second, the tubercle is huge, almost as large as the achene.

The three other species, *E. nitida*, *uniglumis* and *quinqueflora* are less common.

Three of the six species are on the heritage programs rare vascular plant tracking list: *Eleocharis kamtschatica* (G4 S2-3), *Eleocharis nitida* (G3-4 S1) and *Eleocharis quinqueflora* (G5 S1). The latter, *E. quinqueflora* can be seen in Baxter Bog.



Eleocharis acicularis



Eleocharis palustris



Eleocharis nitida



Eleocharis uniglumis



Eleocharis kamtschatica

Eleocharis quinqueflora

Rhynchospora and *Blysmus*



Rhynchospora alba

Rhynchospora: the Beaked Rush

In Alaska we have only one Beaked Rush, *Rhynchospora alba*. The plants are loosely tufted and 15-35 cm tall. The flowers are perfect, with no elongating silky bristles. The inflorescence consists of 1-4 dense head-like clusters, each 2-3 flowered with 2-4 empty basal scales. The scales are white, fading to brown with age.

The Beaked Rush is found typically in bogs and peaty soil. Though not common, this plant can be found in Baxter Bog.

Blysmus: Salt-marsh flat sedge, Red Clubrush

In Alaska we have only one species *Blysmus*, *B. rufus*. *B. rufus* grows near seashores and on saline soils. Plants are 5 to 30 cm tall, easily identified by their spikes. The spikes are comprised of 2 rows of spikelets, appearing flattened as if ironed. *Blysmus rufus* is on the Heritage Program rare vascular plant list, with a G5 S1 ranking. The only "dot" on Hulten's distribution map for this plant is in Anchorage!



Blysmus rufus

A Botanist Goes To The Movies

by Sarah Gage

Please don't get nervous; you'll get to grade yourself! But see if you can identify the movie in which the following botanically oriented character appears:

1. This timid botany professor compares his bride to the delicate windflower, *Anemone nemorosa* (1941).
2. A fern taxonomist-heiress is married for her money (1971).
3. A scientist is charged with preserving Earth's botanical heritage in a greenhouse-spaceship (1972).
4. The male cousin has worked as a mycologist, among other professions (1975).
5. This couple, on a plant collecting trip to Earth, gets separated from their offspring (1982).
6. A horticulturist marries an illegal alien to obtain a greenhouse apartment (1992).
7. A greenhouse volunteer has bad luck with childcare (1992).
8. An ethnobotanist with a gray ponytail, working in the Brazilian rainforest, finds and then mislays the cure for cancer (1992).
9. Giant reptiles terrorize a palaeobotanist (1993).
10. A toothless, stringy-haired plant fanatic wades a swamp in search of a rare orchid (2002).

(Answers may appear in the next newsletter.)

ALASKA NATIVE PLANT SOCIETY

2006 FIELD TRIP PLANNING WORKSHEET

Return this form to: Anjanette Steer E-mail: sheepmtl@ak.net, Tel:
Mail: HC 03 Box 8490, Palmer, Alaska 99645

Leader: _____

Telephone: _____ FAX: _____ E-Mail: _____

Field Trip to: _____

Date: _____ Day of Week: _____ Time Allotted: _____

Meeting Time: _____ Meeting Place: _____

Driving Distance/Car Pooling, etc. _____

Reservations by (date): _____

Level of Difficulty _____ Minimum Age: _____

Description of Trip: _____

Special Instructions: _____

Climate Change Transforming Alaska's Landscape

Ancient lakes and wetlands are being replaced by forest

Lakes and wetlands in the Kenai Peninsula of south-central Alaska are drying at a significant rate. The shift seems to be driven by climate change, and could endanger waterfowl habitats and hasten the spread of wildfires.

In a paper published in the August 2005 issue of the NRC Research Press' Canadian Journal of Forest Research, Eric Klein and his colleagues **document a significant landscape shift from wetlands to woodland and forest in the Kenai Peninsula Lowlands.**

The trend fits within a global picture of drying wetlands in northern latitudes, with similar changes already appearing in lower latitudes. Klein, a biologist who did his graduate research with Alaska Pacific University, says the transformation of Alaska's landscape corresponds with an increase in temperatures over the past 100 years. "When you look at the climatologic data, it shows a warming trend. This is just one of the physical manifestations of that trend that is hard to refute."

The researchers compared aerial photos of the Kenai Peninsula taken in 1950 and 1996. Combined with extensive field study and analysis of vegetation, the research confirms that the Kenai Peninsula is becoming woodier and dryer. In the areas studied, wooded areas increased from 57 percent to 73 percent from 1950 to 1996, while wetland areas decreased from 5 percent to 1 percent.

The results confirm what the researchers could see for themselves. "It's very clear when you fly over closed basin lakes, many of which are the kettle ponds left after the glaciers receded," says Klein. "They have a kind of apron, or area between the water and mature forest, and you can see it getting larger as the water goes down."

Global temperatures have increased by about 0.6°C over the past 100 years. The rate of temperature increase from 1976 to the present has been double that from 1910 to 1945 -- greater than at any other time during the last 1,000 years.

Over the past 30 years, temperatures in the Kenai Peninsula have increased 0.7°C. In the last 15 to 25 years, species such as dwarf birch, blueberries and black spruce have grown up in areas where wetlands had existed for 8,000 to 12,000 years. "These areas used to be soggy bogs with sphagnum peat moss, and no shrubs or trees," says Dr. Ed Berg, an ecologist with the U.S. Fish and Wildlife Service. "The evidence for this is that when you dig down into the peat, you don't see any stems or shrubs. Had they grown there in the past, they would have been preserved because peat preserves things very well."

Wetlands are hotspots for biodiversity. The shift to woodland and forest means loss of many types of wetland vegetation and fewer habitats for migratory birds. The greater forest cover also creates a continuous swath of vegetation that helps wildfires to spread more quickly.

Similar drying is happening outside the Kenai Peninsula. "It's certainly happening in Alaska on a very broad scale," says Dr. Berg. "Much of the interior is showing the same kind of drying pattern."

If the warming trend continues, Alaska's lakes and wetlands will continue to disappear, creating a dryer landscape in the long term.

Klein says that Alaska's transformation is another piece of evidence in the climate change puzzle. "The bottom line is that a change is happening," he says. "There is an overall environment shift occurring in Alaska, and especially in the northern hemisphere. I think it's a bioindicator of climate change and what is happening to the planet as a whole."



Mystery Plant:

A small tufted plant which likes to grow in dry, rocky places in the mountains.

The entire plant is glandular pubescent. Leaves are opposite, nerveless and ciliated. Flowers are white with 5 petals. Sepals are green and shorter than the petals. When mature the seed capsule is longer than the petals. Seeds are glabrous or slightly tuberculate.

Clue: stems are often 2 flowered giving rise to its specific epithet.

ALASKA NATIVE PLANT SOCIETY State and Anchorage Chapter Officers

President Andy Anderson
Vice President Ken Johnson
Secretary Cara Wardlaw-Bailey
Treasurer Sue Jensen

Anchorage Chapter Program Coordinators

Main Program Luise Woelflein
Plant Family Verna Pratt
Mini-Botany Marilyn Barker
Field Trips Anjanette Steer

Newsletter ("*Borealis*")

Editor Ginny Moore

FAX:

Borealis is published bi-monthly October through May. Articles may be sent to Ginny Moore, Anchorage, AK 99516. Phone or FAX: or E-mail: tgmoore@gci.net



To **Daisy Lee Bitter**, our guest speaker in January for an entertaining and educational on coastal edible plants;

To **Estrella Campellone, Cara Wardlaw Bailey and Marilyn Barker** for providing mini-programs.

To **Kris Abshire** for agreeing to reschedule her Palmer Hayflats talk to the May meeting!

YOU MAKE IT HAPPEN!

Mystery Plant Answer

Minuartia biflora
Caryophyllaceae

PLANT ID CLASS in MAY:

UAA class "Local Flora" Biology 075 will be running again in May 4-25.

There are 2 sections, a day section and an evening section. Contact: Marilyn Barker or UAA for more information.

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

- Full-time Student \$ 5
 Senior Citizen \$10
 Individual \$12
 Family \$18
 Organization \$30

Name _____

Address _____

City: _____ State _____ Zip _____

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

Membership is on a calendar year basis.

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



HAVE YOU RENEWED YOUR MEMBERSHIP??

Don't Miss The Summer Field Trip Calendar!