

# Borealis

the newsletter of the



PO Box 141613, Anchorage, Alaska

October/November 2012

Celebrating!

## Join us at our Next Meetings!

### **Saturday, September 29 – Public Lands Day – Campbell Creek Science Center –HELP, HELP, HELP!**

We desperately need people to come and volunteer their time. We are committed to 40 volunteer hours each year, which gives us a lower room rental fee, but we are a long ways from that goal. Sign in time is 8:30 to 9:00 A.M. Be sure to sign in with Louisa so that ANPS gets the credit. You can work on any project. They serve pizza, drinks, and cookies at noon and have a nice program following with door prizes. It is a fun workday and will greatly help ANPS in keeping down our annual costs.

### **Monday, October 1, 6:00 p.m**

#### **Annual Potluck and Slideshow**

Join us as we regroup after a summer of field trips and adventures. Share some food and up to 10 slides of summer activities! Plates, cups and drinks will be provided.

### **Monday, November 5, 7:00 p.m**

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

**Leader:** Annie Nevaldine

**Mini-Botany Botanist:** Adelbert Chamisso

**Presenter:** Beth Baker

For the latest information about ANPS events and field trips, go to [www.aknps.org/](http://www.aknps.org/)

## We're 30! And Still Be Trusted...

This year marks the 30<sup>th</sup> anniversary of the founding of the Alaska Native Plant Society! At our May meeting Beth Baker and Annie Nevaldine provided some historical background, including a rendition of our theme song! Did you know we had a theme song?

In early 1982, a group of 35 native plant enthusiasts met and discussed forming an Alaska Native Plant Society. By March, the Constitution and By-Laws were drawn up and spring meetings and summer field trips were planned. Verna Pratt served as the first President.

Frank Pratt was the first editor of the newsletter, "Borealis". The name was chosen via a Naming Contest, which was won by Robert Glock of Tacoma, Washington.

The early members chose *Linnaea borealis*, Twin Flower, as their emblem and had stickers and sew-on-patches made.

Invitations to join the group were extended to the public and the response was overwhelming. The rest is history!

Presidents of the Alaska Native Plant Association have included:

1. Verna Pratt
2. John Wenger
3. Lynn Catlin
4. Forrest Baldwin
5. Sally Karabelnikoff
6. Julia Ricketts
7. Marena Mooring
8. Marilyn Barker
9. Andy Anderson
10. Jean Poor
11. Mel Langdon
12. Anjanette Steer

We thank you all and look forward to another 130!

# “THE BOTANISTS” A Mini-Series Coming Soon!

Beginning with our November meeting, the mini-botany presentations this year will all be about botanists who have made an impact on our understanding of Alaska’s botanical world. Each month, a volunteer will give us a short presentation on someone whom you may or may not have heard about – but from you definitely have profited. The lives of these men (and unfortunately, they are all men this time around) span many centuries and many parts of the world. You may know them more by the plants which have been named after them.

Here’s a look at what’s coming:

November: **Adelbert Chamisso**, German poet and botanist  
Presenter: **Beth Baker**

December: **Georg Von Langsdorff**, a Prussian better known by his Russian name, *Grigori Ivanovitch* (1774-1852) Presenter: **Marilyn Barker**

January: **Edward Lhuyd** Welsh naturalist, botanist, linguist, geographer and antiquary (1660-1709)  
Presenter: **Annie Neveldine**

February: **Archibald Menzies** (1754-1842) Scottish surgeon, botanist and naturalist – think “menziesia”  
Presenter: **James Sowerwine**

March: **Eric Hultén**, Swedish botanist who produced “Flora of Alaska” and gave us “Beringia”  
Presenter: **Ginny Moore**

April: **Frank Karl Merten**, German botanist who has lent his name to a number of plants (1764–1831)  
Presenter: **Dorothy Williams**

May: **David Douglas**, a Scottish botanist who spent much time in the Pacific Northwest and from whom we get the common name Douglas fir, but whose scientific name *Pseudotsuga menziesii*, honors a rival botanist, Archibald Menzies (1799-1834)  
Presenter: **Anjanette Steer**

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## ALASKA NATIVE PLANT SOCIETY

### State and Anchorage Chapter Officers

President	Anjanette Steer
Vice President	James Sowerwine
Secretary	Beryl Wardlaw
Treasurer	Bernadine Raiskums

### Anchorage Chapter Program Coordinators

Membership	Bernadine Raiskums
Plant Family	Beth Baker
Mini-Botany	
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: [tgmoore@gci.net](mailto:tgmoore@gci.net)

## MYSTERY PLANT



This small plant prefers moist, mossy coastal forests. It can be found from British Columbia north throughout S. E. Alaska, Prince William Sound, The Aleutian Chain, Japan, Eastern Siberia and back into Alaska on the Seward Peninsula.

A similar sp. can be found throughout Eastern N. America. The shiny dark green leaves are three parted and toothed and are supported by two to three inch petioles. The small five parted flowers have five sepals that are pinkish on the underside and white above. The bright yellow thread-like rhizomes are its major characteristic

ANSWER ON PAGE 5.

## Plants of Bogs & Marshes - Intro

This year's Plant Family Study will be a little different than in previous years, as we will not be studying one particular family all year, but an ecosystem – wetlands.

In November, Anne Nevaldine will begin our study of plants of bogs and marshes by discussing *Spiranthes Romanzoffiana* (Hooded Ladies Tresses), *Platanthera dilatata* (Bog Candle Orchid), *Parnassia palustris* (Grass of Parnassus), *Andromeda polifolia* (Bog Rosemary) and *Swertia perennis* (Star Gentian).

We'll set the stage here with a more general introduction to wetlands in Alaska.

The State of Alaska includes approximately 63% of the nation's wetland ecosystems. Estimates place the total acreage at approximately 130 million acres or more than 40% of the State. Wetlands are areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include tundra, permafrost areas, marshes, bogs, and similar areas. Wetlands help maintain water quality by slowly filtering excess nutrients, sediments, and pollutants before water seeps into rivers, streams, and underground aquifers. They also offer a breeding ground and/or habitat for fish, wildlife, and plants.

Wetlands vary in appearance and habitat function depending upon where they are located and what conditions they exist in. Some are very open with large areas of water while others have almost no open water at all. What they have in common is the presence of shallow water that may be invisible because of the density of plant growth. The plants we'll be studying are located in marshes or bogs (peatlands).

### Marshes

A **marsh** is a type of wetland that is dominated by herbaceous rather than woody plant species. Marshes can often be found at the edges of lakes and streams, where they form a transition between the aquatic and terrestrial ecosystems. They are often dominated by grasses, rushes or reeds. If woody plants are present they tend to be low-growing shrubs. This form of vegetation is what differentiates marshes from other types of wetland such as swamps, which are dominated by trees, and bogs, which are wetlands that have accumulated deposits of acidic peat.

Marshes have soils that are less organic than other wetlands and they are characterized by emergent vegetation.

**'Emergent'** means coming out of the water: emergent plants have their roots underwater, often rooted in the sediment, and most of their leaves above water, such as cattails (*Typha spp.*). There is also submergent vegetation, which has its entire mass underwater, and floating vegetation, which has its leaves on the water surface and their roots dangling down below.

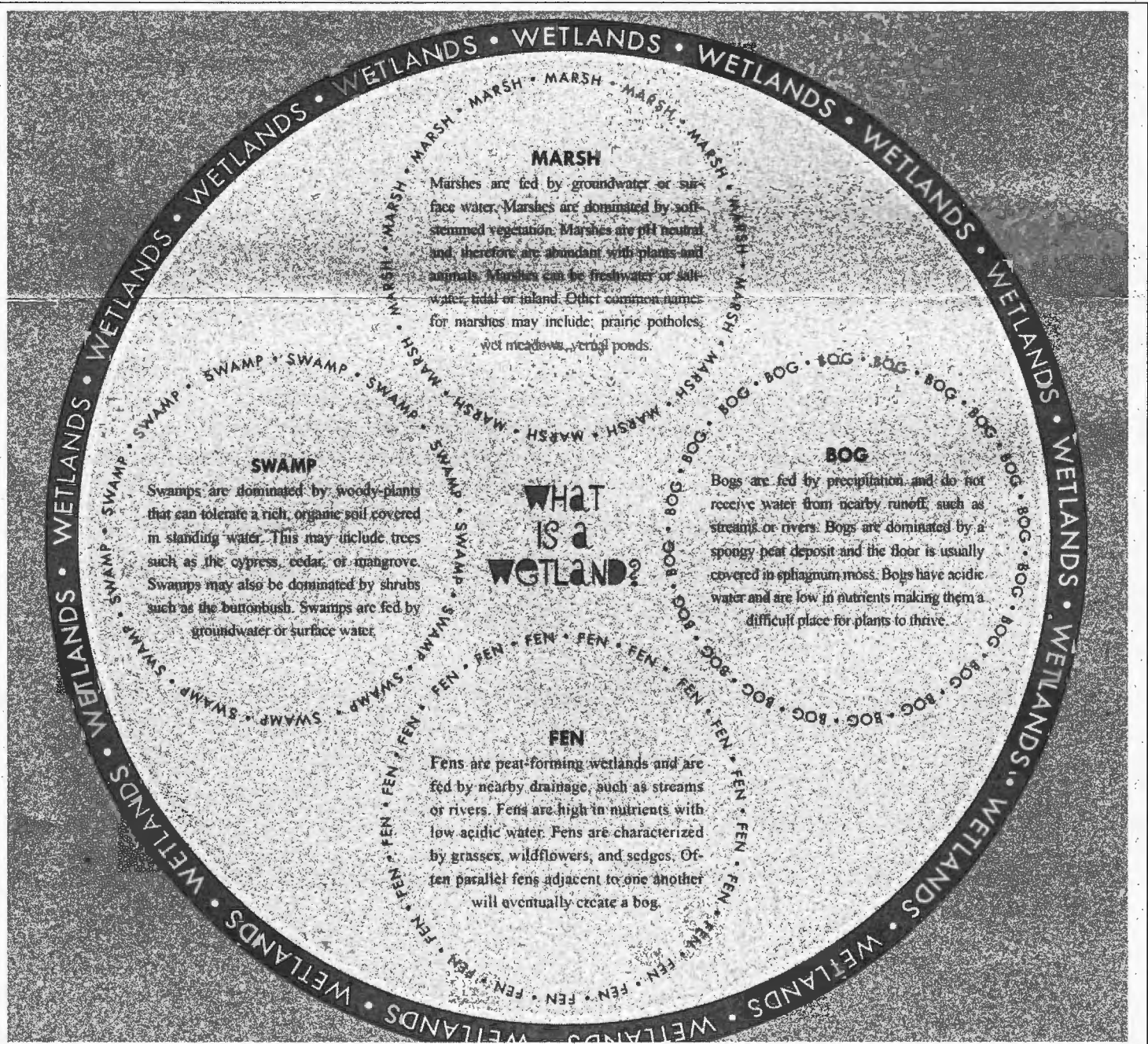
Marshes usually have an equal area of open water and vegetation. Marshes are prime duck habitat and also excellent muskrat territory.



## Bogs

A **bog** is a wetland that accumulates peat, a deposit of dead plant material, and thus is highly organic. Plant material does not break down very easily in waterlogged conditions and the plants that dominate bogs, such as Sphagnum mosses (*Sphagnum* spp.) or sedges (*Carex* sp.) are especially slow to decompose. Many peatland plants also produce chemical compounds that slow decomposition further, particularly the Sphagnum mosses. These non-vascular plants are known as 'peat mosses' because they form peat soils.

Bogs occur where the water at the ground surface is acidic and low in nutrients. In some cases, the water is derived entirely from precipitation, in which case they are termed *ombrotrophic* (rain-fed). Water flowing out of bogs has a characteristic brown color, which comes from dissolved peat tannins. In general the low fertility and cool climate results in relatively slow plant growth, but decay is even slower owing to the saturated soil. Hence peat accumulates. Large areas of landscape can be covered many meters deep in peat. This slow decomposition also results in soils that are very old. It can take as much as 1,000 years for a bog to produce as little as 15 centimeters of peat. Bogs have a distinctive group of plant and animal species, and are of high importance for biodiversity.



## Wetlands, Global Warming and Mapping

It is believed that the direct impacts of global warming will be most strongly felt in the Earth's high latitudes in various forms. Wetlands, in particular, are among the most vulnerable ecosystems, which can act as both major sinks and sources of atmospheric greenhouse gases depending on the warming trends and their feedbacks.

Some scientists have projected that much of Alaska's wetlands will disappear before the end of the 21<sup>st</sup> century. Profound effects on landscape processes are already occurring as a result of warming. Peat wetlands consisting of continuous and discontinuous permafrost constitute a dominant landform in the north, and contain as much as 30% of all terrestrial carbon, often locked in permafrost. A recent University of Alaska Fairbanks (UAF) study found that ebullition (bubbling) accounted for 95% of methane emissions from the edge of thaw lakes in North Siberia. Methane flux from thaw lakes appears to be as much as five times higher than previously estimated. UAF found that thawing permafrost along lake margins accounts for most of the methane released from the lakes, and reported that an expansion of thaw lakes between 1974 and 2000, concurrent with regional warming, increased methane emissions in the study region by 58 % (Walker 2006). Although the degree to which these methane emissions contribute to atmospheric methane has yet to be quantified, as global warming continues to thaw permafrost, the peat's release of carbon in the form of carbon dioxide and methane could increase the atmosphere's heat holding capacity.

The locations, types, and sizes of northern wetlands are not accurately known; it is difficult to identify and classify wetlands because they are often located in remote and hard-to-access places, they span very large regions (25% or more in Alaska and Canada), and appropriate remote sensing data and analysis techniques have not been available until recently.

Mapping of wetlands in the entire state of Alaska by using radar remote sensing was accomplished for the first time under the direction of Prof. Mahta Moghaddam. The process for generating the wetlands map was described in the article, *Mapping Vegetated Wetlands of Alaska Using L-Band Radar Satellite Imagery*, ([www.eecs.umich.edu/RADLAB/bio/.../wetlands-AK-submitted.pdf](http://www.eecs.umich.edu/RADLAB/bio/.../wetlands-AK-submitted.pdf)) This article, published in the *Canadian Journal of Remote Sensing*, vol. 35, no. 1, pp. 54-72, February 2009, was selected as the Best Published Paper in the journal for the year 2009.

### Cook Inlet Wetlands

Many wetlands in the Cook Inlet lowlands of Alaska have been classified and mapped as part of an ongoing project to better manage these valuable resources. Areas covered include the western Kenai Peninsula, the area around Seward, non-Chugach National Forest lands in the Kenai Mountains, and the most populous areas of the Matanuska-Susitna Valley.

You can view these maps in GoogleEarth by downloading a file (16 MB, .kmz format) or linking to it over the web. In the Kenai Peninsula Borough, you can view the maps along with current land ownership information at the Kenai Peninsula Borough's Geographic Information System website.

<http://www.borough.kenai.ak.us/GISDept/IMS/disclaimer.htm>

#### MYSTERY PLANT ANSWER:

*Coptis trifolia* / Goldthread

Ranunculaceae / Buttercup or Crowfoot Family



## FROM OUR BOOKSHELVES

***A Field Guide to Alaska Grasses*** (June 2012) by Quentin D. Skinner, Stoney J. Wright, Robert J. Henszey, Joann L. Henszey, and Sandra K. Wyman is distributed by the Alaska Plant Materials Center in Palmer. Published by Education Resources Publishing it can be browsed on line at <http://digital.ipcprintservices.com/publication/?i=116723&pre=1>

*A Field Guide to Alaska Grasses* includes 167 grass species and subspecies, and is written to supplement the taxonomic treatments presented in the "*Flora of North America, Volume 24*" (FNA, Vol.24) by Barkworth et al. (3007), as well as in *Flora of Alaska and Neighboring Territories* by Hultén (1968). Nomenclature, classification, species synonyms, and descriptions for Alaska grasses generally follow those in the FNA, Vol. 24. Species recognized in Hultén but considered synonyms in FMA are included because of past and accepted use in Alaska.

A natural extension of field guides for grasses of Nevada and Wyoming, previously produced by lead author Professor Quentin Skinner, the 408 page manual includes well-illustrated color plates of each of the 167 taxa covered, detailed descriptions of distinguishing features, distribution maps based on herbarium records in Alaska, keys to the tribes and genera of grass families. For more information, please contact the Alaska Plant Materials Center, 5310 S. Bodenbug Spur Rd., Palmer, AK 99645; 907-745-4469.

**English Garden Mysteries** by Anthony Eglin – reviewed by Elizabeth Ginsberg in the *Gardener's Apprentice* ([www.gardenersapprentice.com](http://www.gardenersapprentice.com)) and used with permission. The English Garden Mysteries are a series of books written by Anthony Eglin and featuring botanist Lawrence Kingston.

There is a fair amount of garden-themed mystery fiction. Some of the books are well written; the vast majority are not. I have just finished *The Lost Gardens* by Anthony Eglin, a book that combines good writing, a strong sense of place, a knowledge of horticulture and an appealing sleuth. Eglin is no P.D. James or Louise Penny, but his horticultural whodunit is a compelling read.

Lawrence Kingston, Eglin's English sleuth, is a retired botany professor who loves wine, interesting women and his sporty Triumph TR4. The lost gardens of the title are at Wickersham Priory, a long-neglected estate recently inherited by a young American woman. The American, Jamie Gibson, has also inherited a sizable fortune, part of which she uses to hire Kingston to lead the restoration effort that will return the Wickersham gardens to their former splendor. The restoration begins with a surprise, which, of course, begets other surprises and leads to several murders. Kingston pursues sleuthing and restoration simultaneously.

Eglin mentions the real-life restoration of the "lost" gardens of Heligan in Cornwall in both the text and the acknowledgements. I have made a note to myself to re-read Tim Smit's *The Lost Gardens of Heligan* sometime soon to wallow once again in that inspiring act of garden resurrection.

As is often the case with murder mysteries, the author and his sleuth seem to have more than a little in common. Both are handsome, garden-loving middle-aged men, born in England. Eglin migrated to the California wine country, while Lawrence Kingston stayed home in Great Britain. In *The Lost Gardens*, Eglin tips his hat to his American domicile by making his heiress a California-born wine maker.

English-born Eglin spent many years in advertising before defecting to indulge in his passion for gardening. In 1995 he started The Larkspur Company, co-producing a series of bestselling garden videotapes. The same year, he won *Garden Design* magazine's Gold Trowel Award for Best Rose Garden.

His book, "*The Blue Rose*," won France's prestigious *Prix Arsène Lupin* for mystery novel of the year. The other books in his series are "*The Water Lily Cross*," "*Garden of Secrets Past*" and "*The Trail of the Wild Rose*." The books are published in the United States by Thomas Dunn Books, St. Martin's Press.



# Sedges Have Edges....

Sedges have edges,  
Rushes are round,  
Grasses are hollow,  
Right up from the ground.

By Anjanette Steer

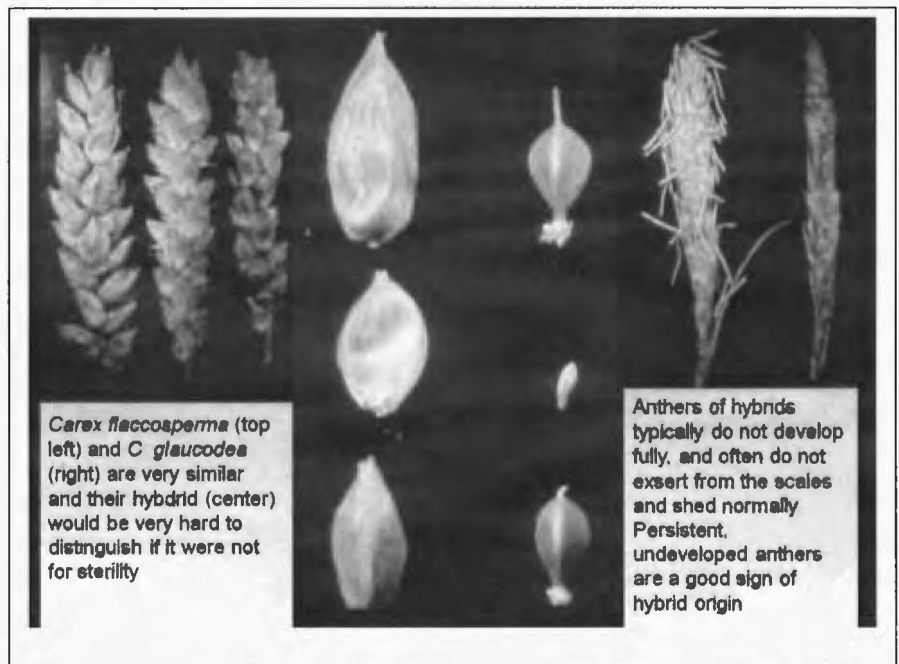
We all learned that little ditty back in intro botany classes; but once you know your specimen is a sedge, you'll need a little more knowledge to help you figure out which sedge.

Alaskan botanists were pleased to welcome back Dr. Tony Reznicek, from the University of Michigan, to Anchorage for two 3-day workshops in July. Each workshop was held at Alaska Pacific University with field sessions in area wetlands. Tony conducted similar workshops in 2003 and had since refined his Keys to Alaska Cyperaceae. This key is available online at <http://www.susanklein.biz/workshops.html>

Workshop participants worked through this key with *Carex* samples from South-central Alaska. Sedge ecology and morphology was reviewed. The achene or fruit of *Carex* species are adapted to disperse by water (inflated perigynia) or by aquatic animals. Many *Carex* species have weak facultative mycorrhizal associations, these plants have root hairs that are prominent such as those seen on *Carex limosa* species. *Carex* species have many different vegetative characteristics that allow them to be identified in the field into the Cyperaceae family instead of members of the Juncaceae (rush) or Gramineae (grass) family. A few of the more obvious identifying characteristics include: the ligule being fused to the blade, closed sheath, stems are triangular and the fruits are hard structures called achenes. Two Subgenera are recognized in the *Carex* genera— Subgenus *Vignea* and Subgenus *Carex*. All species in the Subgenus *Vignea* have 2 styles, spikes are sessile or short peduncled, and the inflorescence lacks sexual specialization, meaning few male flowers and a few female flowers can be found on each inflorescence. South-central Alaska sedge species found in the sub-genera *Vignea* include - *Carex tenuiflora*, *Carex mackenzii* and *Carex bonanensis*. These plants have 2 stigmas, one exception to this genera is *Carex macrocephala* which has 3 stigmas. Subgenus *Carex* contain species with two or three stigmas, local area species include *Carex rotundata*, *Carex rostrata* and *Carex utriculata*. Highlights of the course included learning field identification skills for a variety of *Carex* species. *Carex limosa* for example, has a blue-green tinge to the leaves, *Carex rostrata* has a creeping rhizomatous like growth form with numerous vegetative shoots and infrequently occurring inflorescences.

The new key is applicable to all sedge genera in Alaska. Let Dr. Reznicek know your thoughts after you have tried the key in the field: [reznicek@umich.edu](mailto:reznicek@umich.edu). His PowerPoint presentations for the workshop are also available at the website listed above. Thank you Tony for helping us decipher field characteristics to many of South-central Alaska sedges. We hope to have you back in Alaska again soon.

Editor's Note: Susan Klein has also posted on her website listed above. the two sedge presentations given by Dr. Reznicek this past summer. There is a lot of useful information, including the illustration shown here.



# 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 \$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.

## PLEASE CONSIDER HELPING ANPS AT NATIONAL TRAILS DAY!

Volunteer at the Campbell Creek Science Center to help us "pay off" meeting space rental all year.  
See front page for more details.



1200 15510555



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