Borealis

the newsletter of the

Alaska Native Plant Society

PO Box 141613, Anchorage, Alaska | December/January 2016-17

Join us at our Next Meetings!

Monday, Dec. 5, 7:00 p.m

Main Topic: "Climate Change, Treeline Shift"
Speaker: Roman Dial

Ericaceae Family:
Endangered Species: *Polystichum aleuticum*
Presenter: Mary Stella

Monday, January 2, 7:00 p.m

Main Topic: "Patagonia"

Speakers**: Dennis & Anne Ronsse**

Endangered Plants: *Mertensia drumondii*
Leader**: Mike Monterruso**

Ericaceae Family Plant: *Phyllodoce* and *Cassiope*
Presenter: **Annie Ronsse**

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

"Like" Us on Facebook!

Annual Wrap-up

Getting Down To Business

At our December monthly meeting, as well as having a very interesting educational program, the ANPS will be taking care of some organizational business.

1. **Election of Officers**: Officers of the Board are elected for a two year term and nominations and elections take place in the fall of the calendar year preceding the changeover.

   A Nominating committee, composed of Annie Nevaldine, Glenn Brown, and Mel Langdon has provided a slate of potential officers that consists of the current officers who have all indicated a willingness to continue in their positions (page 4). As always, additional nominations may be made from the floor.

2. **Vote on changes to Constitution and By-laws**: The original ANPS Constitution and By-Laws were signed into service in 1984. They have held us in good stead, but the current Board has recommended some changes that should make the document more accurately reflect the organizational practice. A copy of this document has been provided on the following pages. You will see in this mark-up that the recommended changes are in red and recommended deletions are crossed out, while recommended additions are underlined. Please take time to read the document and be prepared to vote on the recommended changes at the December meeting.

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A Reminder from Fred Meyer Nonprofit Community Rewards Program

"Make sure your supporters have their Fred Meyer Rewards Card linked to your organization! After the June 2016 customer re-enrollment period our customers who did not re-link their card with a nonprofit on Community Rewards were dropped from the system on July 1."

Make sure your Rewards Cards are linked to our organization by following the link www.fredmeyer.com/communityrewards. Read more about the Community Rewards program there and on Page 4 of this newsletter.

CONSTITUTION AND BY LAWS
OF THE
ANCHORAGE CHAPTER, ALASKA NATIVE PLANT SOCIETY

This organization, known as the Anchorage Chapter of the Alaska Native Plant Society, a non-profit organization, shall abide by the Constitution of the parent organization.

ARTICLE I. Objectives

1. To study and conserve Alaska native plants.
2. To encourage preservation of Alaska native plants in their natural environment
3. To collect, disseminate, and compile information pertaining to Alaska native plants.
4. Association of people for their mutual enjoyment of native plants through programs and field trips.

This Society is organized exclusively for charitable, scientific, literary, or educational purposes within the meaning of Section 501(C)(3) of the Internal Revenue Code.

Notwithstanding any other provisions of these articles, the Society shall not carry on any other activities not permitted to be carried on by an organization exempt from federal income tax under Section 501(C)(3) of the Internal Revenue Code.

ARTICLE II. Membership

Membership shall be open to any person or organization interested in the objectives of the Society and desiring to belong to the Anchorage Chapter. Members, with current dues paid, shall be entitled to one vote in business matters. Dues shall be provided for in the standing rules.

ARTICLE III. Officers and Duties

Elected officers shall be President, Vice-President, Secretary, Treasurer, and one Chapter Representative to the State Board of Directors if the State Board is Active. The Chapter Representative may be one of the above cited officers. Duties; The President shall preside at membership and executive board meetings, call board meetings when necessary, appoint chairpersons of standing committees, appoint a 3 member nominating committee in May of even years, and make other appointments as needed. The Vice-President shall conduct the business of the Society during the absence of the President. The Secretary shall record the minutes of the board meetings ~~and regular meetings~~, and initiate and respond to correspondence~~, and assure that the general membership is informed of chapter activities~~. ~~The Treasurer shall collect all monies and dues, forward membership dues to the State Treasurer for proper disposal, pay all bills and keep a ledger showing receipts and expenditures and present a copy to the board; and, when deemed appropriate, read these reports at meetings.~~ The Treasurer shall collect all monies and dues; forward membership dues to the State Treasurer when applicable for proper disposal; pay all bills; keep a ledger showing receipts and expenditures, present a copy to the board, and when deemed appropriate, read these reports at meetings; and file any and all required reports to the IRS.

ARTICLE IV. Nominating Committee and Elections

The Nominating Committee shall provide a slate of officers to the Secretary by October 1 of even years. Additional nominations may be made from the floor. ~~This slate of officers shall be sent to each member before the election.~~ Officers shall be elected in November, take office the following January, and serve for ~~one~~ two calendar years; except for the Chapter Representative to the

State Board when active, who shall be elected in November of the odd numbered years and shall serve for 2 calendar years. All officers must be members of the Alaska Native Plant Society. Vacancies shall be filled by appointment by the Board of Directors.

ARTICLE V. Executive Board

The Executive Board shall consist of all elected officers (President, Vice President, Secretary, Treasurer), the immediate Past President, ~~and~~ the chairpersons of the ~~Program~~, Education and Field Trip Committees, and any other committee chairperson(s). The Board shall provide full direction to all business between general membership meetings, outline yearly goals and programs*^,^ and take action to assure that the records of the Treasurer are reviewed annually. Standing rules shall be set by the Board and reviewed annually. Quorum for an Executive Board meeting shall be one-half of the members of the Board. The presiding officer shall vote only in cases of a tie vote.

~~**ARTICLE VI. Quorum**~~

~~A quorum shall consist of 20 members.~~

ARTICLE ~~VII~~ VI. Excess Funds

Money not needed to meet normal operating expenses of the Chapter or remaining in the treasury upon dissolution of the Chapter shall be used for any of the following purposes;

To obtain Alaska native plant seeds for replanting scarred areas.

To establish and/or maintain a garden of Alaska native plants.

To fund scholarships for qualified individuals to study Alaska native plants and/or related subjects.

To fund a special grant in support of the objectives and goals of the Society.

ARTICLE ~~VIII~~ VII. Parliamentary Authority

Robert's Rules of Order, Revised, shall be used in all cases not covered by this constitution and the by-laws.

ARTICLE ~~IX~~ VIII. Amendments

These Constitution and By-laws may be amended at any regularly scheduled meeting, provided that a quorum of 15 members is present. EXCEPT THAT, Article I (objectives) and Article VII (Excess Funds) may not be changed, as they are direct copies of articles of the State Constitution and By—laws of ANPS, and are the basis upon which the Society's Non-Profit status was acquired.

This Constitution and By-Laws was adopted on Nov. 5, 1984

Verna E Pratt, President

ANPS Native Plant Seed Sale - 2016

The following seeds, collected by ANPS members, will be available for sale starting in January. All proceeds will go to the Alaska Native Plant Society.

Aconitum chamissonianum, 5to6 ft., tall, large light blue flowers. Easy, scatter seeds outside in winter.

Caltha leptsepala, Mountain Marigold, scatter outside in winter. Likes wet conditions

Dodecatheon jeffreyi, Sow outside in winter. Likes wet conditions

Fritillaria camschatcensi Chocolate lily, sow outside.

Gentiana glauca, Glaucous gentian; 3in. Sow outside.

Leptarrhena pyrolifolia, Leather-leaf Saxifrage, 10 in., Sow outside

Papaver alboroseum. Pale pink poppy. 3 in. Does best in open ground

Swertia perennis Star Swertia, flowers violet blue, 12 in.

Valeriana sitchensis, Sitka Valerian 2 ft., flowers pink-tinged

Vi*ola langsdorfii*, Alaska Violet

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ALASKA NATIVE PLANT SOCIETY

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

What do biomaterials and an Alaskan polypore fungus have in common?

At the November ANPS general meeting, Dr. Philippe Amstislavski, Associate Professor at UAA, described a research project that has developed into a technological innovation that could become an Alaskan resource. He and fellow UAA scientists are using Alaskan fungi to create biodegradable insulation for Alaskan buildings. The research team includes civil engineering professor Joey Yang, and Maria White, an undergraduate chemistry major. They are developing a "biofoam" by feeding mycelium a proprietary nutrient-rich mixture. The mycelium of these cold-resilient fungi bounds the matrix and produces a foam-like, lightweight, insulating composite.

Styrofoam and other plastic foams that are petroleum-based have widely used applications insulation, food service, and packaging. According to the EPA, Styrofoam takes 500 years to degrade in the environment and generates over 50 hazardous chemical byproducts when combusted, making disposal a difficult and costly task.

The demand for an environmentally-friendly Styrofoam substitute has dramatically increased in recent years. As of June 2013, over 200 cities across America have passed legislation that prevents local companies from using Styrofoam food packaging. Both New York City and the state of Massachusetts have proposed eliminating the substance from their respective areas completely.

Insulation from White Rot Fungus Medium

Fungal materials, such as those created by Dr. Amstislavski's team, serve as an attractive alternative to these products for several reasons. They contain no toxic chemicals, are formaldehyde free, locally made materials, customizable, environmentally safe, fire resistant, VOC free, and 100% sustainable and compostable. Because it is formed from entirely organic substrates, the material easily decomposes in its natural environment.

The key player in this innovative study is a common white rot fungus that grows on many Alaskan birch and alder trees. Unlike the mushrooms we buy in the store for our culinary pleasures, in these fungi, it is the hidden mycelium structures that are being "farmed". Mycelium is the vegetative part of a fungus, consisting of a mass of branching, thread-like 'hyphae', or microscopic hollow tubes composed of chitin. Mycelium acts as a natural self-assembling glue to bond agricultural byproducts together into a rigid material. It gets its strength from the chitin, the same material in the exoskeleton of crabs.

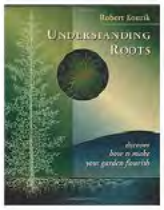
This branching network of rootlets, which are microscopic, hollow tubes. that are made from chitin.

What's special about UAA's effort, Amstislavski says, is that the fungus from which the mycelium comes is local, it grows fast and can thrive in cold temperatures. It is the essence of a renewable resource for Alaska. Eventually this mycelium-based insulation could be used anywhere conventional plastic insulation is used now. This type of packaging material has already been adopted by major companies to securely ship furniture, computers, and wine.

Mycelium is incredible stuff. It builds topsoil. It digests petroleum. It can be used to kill termites and carpenter ants. It can be used to make fuel and cure diseases. Watch Paul Stamets' TED presentation: *https://www.ted.com/talks/paul_stamets_on_6_ways_mushrooms_can_save_the_world*

FROM OUR BOOKSHELVES

This month's book choices will keep with the inspirations we gained from our November speaker Dr. Philippe Amstislavski about the magic of what is living in the soil beneath our feet.



Understanding Roots
Author : Robert Kourik
Publisher : Metamorphic Press 2015-08-24

Synopsis from the Publisher: "*Understanding Roots: Discover How to Make Your Garden Flourish*" uncovers one of the greatest mysteries underground -- the secret lives and magical workings of the roots that move and grow invisibly beneath our feet. Roots, it seems, do more than just keep a plant from falling over: they gather water and nutrients, exude wondrous elixirs to create good soil, make friends with microbes and fungi, communicate with other roots, and adapt themselves to all manner of soils, winds, and climates, nourishing and sustaining our gardens, lawns, and woodlands.

"*Understanding Roots*" contains over 115 enchanting and revealing root drawings that most people have never seen, from prairies, grasslands, and deserts, as well as drawings based on excavations of vegetable, fruit, nut, and ornamental tree roots. Every root system presented in this book was drawn by people literally working in the trenches, sketching the roots where they grew.

The text provides a very detailed review of all aspects of transplanting; describes how roots work their magic to improve soil nutrients; investigates the hidden life of soil microbes and their mysterious relationship to roots; explores the question of whether deep roots really gather more unique nutrients than shallow roots; shares the latest research about the mysteries of mycorrhizal (good fungal) association; shows you exactly where to put your fertilizer, compost, water, and mulch to help plants flourish; tells you why gray water increases crop yields more than fresh water; and, most importantly, reveals the science behind all the above (with citations for each scientific paper).

And this one hasn't even hit the book store yet, let alone the book shelves! But you'll want this 3rd episode from our very own "Lord of The Root World". You can pre-order it and give it as a Christmas present (to me!!)

Teaming With Fungi – What Every Gardener Needs to Know About Mycorrhizal Fungi
Author: Jeff Lowenfels
Publisher: Timber Press
Publication Date: January 2017

Improved drought tolerance, resistance to disease, and increased fruiting are just a few of the ways mycorrhizal fungi can enhance plant performance. Anchorage's own garden guru, Jeff Lowenfels, clearly explains exactly how beneficial fungi can make or break a plant's success, and how to best optimize the advantages. Applicable to all types of cultivation—from agriculture to horticulture and ornamental gardens to legal cannabis propagation—*Teaming with Fungi* reveals the key role mycorrhizal fungi play in growing successful plants.

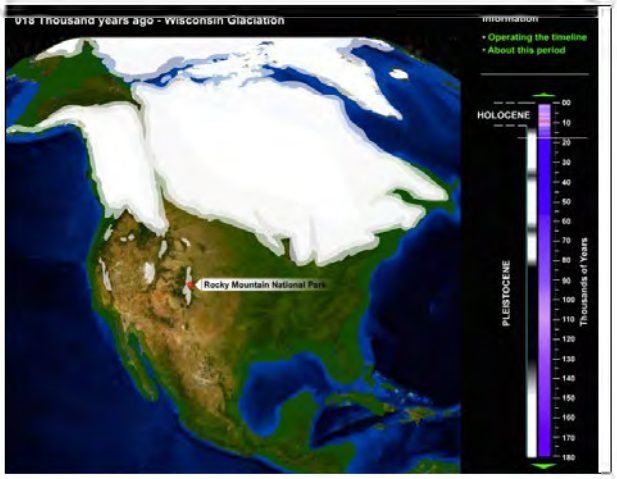
A popular national garden writer and leading proponent of gardening using concepts of the soil food web, Jeff Lowenfels is the former president of the Garden Writers of America. In 2005, he was inducted into the GWA Hall of Fame, the highest honor a garden writer can achieve. His is the author of *Teaming with Microbes: The organic Gardeners's Guide to the Soil Food Web and Teaming with Nutrients: The Organic Gardener's Guide to Optimizing Plant Nutrition*.

From What We Gather – Around the Web

The Invasion of Non-native Earthworm Decreases Native Plant Diversity

By *Shireen Ganza* in Earth September 13, 2016

Earthworms are welcomed in gardens around the world; they aerate the soil and consume dead vegetation to form worm castings that enrich the soil and help plants grow. But it's a different story in the forests of northern North America where a non-native species of earthworm from Europe, brought by early settlers, are creating conditions that decrease the diversity of native plants, according to a new study published September 3, 2016 in the journal *Global Change Biology*.



The impact of non-native earthworms has been previously documented on a site-by-site basis. The study led by Dylan Craven of the German Centre for Integrative Biodiversity Research takes a broader view. He said: "The earthworm invasion has altered the biodiversity and possibly functioning of the forest ecosystems, because it affects the entire food web as well as water and nutrient cycles."

During the last ice age, northern United States and Canada were blanketed in an ice sheet. Glaciers severely eroded the land, destroying almost all native earthworms. When the glaciers began their retreat, about 12,000 years ago, the land was gradually recolonized by a forest ecosystem that did not include earthworms. Settlers from Europe introduced earthworms back into to these northern areas. The earthworms have since been disrupting forest ecosystems.

Craven and his team looked for a generalized pattern of how forest plant species diversity changed with the presence of European earthworms. They used previously-published data from 14 sites in the Upper Midwest, the Mid-Atlantic, and an area between Indiana and Alberta. They found that the diversity of understory forest plants decreased significantly, not just with increasing density of the introduced earthworms, but also with a larger variety of earthworm species occupying different soil layers.

How are earthworms affecting forest ecosystems that evolved without them? At the top soil layer, earthworms convert fallen leaves to humus. That's a good thing if you're growing a garden, but, in a natural forest, it causes a fast-tracking of the release of nutrients instead of allowing the leaf litter to break down more slowly, as it would without the earthworms.

Also, as they burrow through the ground, earthworms disrupt the mutually beneficial symbiotic relationship between fungi and plants. Some deep-burrowing worm species change the pH of upper soil layers by mixing in alkaline soil from deeper in the ground. Burrows carved out by earthworms also speed up the drainage of rainwater, drying the soil faster.

All of these changes adversely affect native plants that did not evolve in such conditions. Earthworms also consume the seeds and seedlings of some plant species, influencing what grows in the forest understory.

In some locations, grasses, with their fine root systems that quickly absorb nutrients, dominate the forest floor. Non-native invasive plants that evolved in soils containing earthworms gain an even stronger foothold in these forests.

Bottom line: European earthworms, introduced by early settlers, are changing the physical and chemical characteristics of soil in northern North American forests, creating a decreased diversity in native plants.

See: Earthworm Invasion;

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.

Alaska Native Plant Society
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