Flyways, Pathways & Waterways

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News from the Alaska Natural Resource and Outdoor Education Association

Phantom of the Tundra

by Frank J. Keim

Once, while cross-country skiing in the high tundra near Hooper Bay, I heard hooting in the distance. It was early May and the tidal fog from the Bering Sea was just beginning to thin out. I continued skiing across the now patchy snow and into the quickly receding fog.

Suddenly, in front of me, there was the luffing sound of great wings. At first, I couldn't see what it was, and I stopped and peered into the grayness. Then I saw it, moving with long smooth downward strokes of its wings, gliding for a few seconds across the exposed tundra tussocks, then stroking again. It looked more like a ghost, or phantom, than an owl. But an owl it was, and one of the largest snowy owls I had ever seen.

I watched the bird fly until it disappeared in the mist, then I skied in the direction of a tall nunapik, where I suspected the owl had been standing. I knew that at this time of year the males were setting up their territories and often stood on these oversize tussocks and loudly hooted their mating songs across the tundra, trying to attract potential spouses.

Sure enough, when I reached the nunapik there was owl junk everywhere— some scat, but mostly pellets composed of hair and bones. One of the pellets, or owl burps, as I call them, was huge and, when later dissected by my wife's students at the school, was found to have the remains of ten voles and lemmings in it. We counted at least ten complete miniature skulls in the tangle of hair and bone, and constantly oohed and awed as we examined its contents. It turned the morning into a very special memory for all of us.

While in Hooper Bay, I learned that they called the snowy owl by a very special name, "anipa", or "anipaq". The name apparently derives from the Norton Sound term for ground snow and probably means "big snow bird". I can t help but feel that it also relates to the Yupik verb "anirtur", which means to rescue or save one s life or soul, since the meat is said to be so tasty. I remem-

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ANROE News

Meet ANROE's New Executive Director, Eric Wade

I come to ANROE after a career in public education where I have worked as a teacher and administrator. Most of my career has been in the Mat-Su where I retired recently from an elementary school principalship. I am very excited about the opportunity to work for ANROE and help ANROE achieve its goals. The ANROE mission to promote and implement excellence in natural resource, outdoor and environmental education is of vital importance, and I am very pleased to be a part of this organization.

My first tasks as the Executive Director have been to get up to-speed and gain a solid bearing on the history and the mission of ANROE.† ANROE is the statewide leader in providing support to environmental educators.† ANROE began when a group of environmental educators in the mid 80s saw the need to provide support for effective environmental education in Alaska ANROE provided the first, and continues to be the only, organized statewide linkage between Alaska natural resource agencies and organizations developing education programs and materials, and the educators who deliver the programs across the state In 1992, ANROE became the official state affiliate of the North American Association of Environmental Educators.

In 2000, the Alaska Conservation Foundation provided ANROE financial support to hire an Executive Director and put into place systems to sustain the organization and encourage growth With ACF's support, ANROE is making plans and establishing goals for the future.

One of ANROE's primary goals for 2001 is to attract new members, re-establish relationships with former members, and spread the word about the support we offer to educators. If you are not yet a member, there is an application form in this newsletter If you are a member, please share this newsletter with a colleague.

President's Message

Janet Warburton

All organizations need to periodically take a big step back and with a magnifying glass look at who they are and what they are currently doing, then determine where they want to go. This is a difficult task but one that we owe to our customers. Yes folks - it's ANROE's time for a self-evaluation, and you can help!

As part of our continuing commitment to foster environmental education throughout Alaska, ANROE has developed a needs assessment that we plan to implement this spring. With this tool, we hope to learn more about what our members need, as well as learning how others in Alaska feel about environmental education and what they may need. ANROE will use this information to provide services to customers that we traditionally haven't been working with and to refine what we do deliver to our current members and customers.

Needs assessments also serve as self-evaluations. With this information, we will have a better baseline to gage our progress and successes. Several types of assessments will be sent out this spring, designed to target different audiences. We will be implementing the assessment in a variety of ways, mostly by using our members and Board to disseminate the questionnaires around Alaska. The more questionnaires we have completed, the better ANROE can work with communities and provide what they really need. More information about the assessment and questionnaires will be available soon on ANROE's web site at: http://www.anroe.org.

Good communication is based on a foundation of shared information. It is a powerful tool for enhancing knowledge and increasing understanding. This assessment will help increase our knowledge and understanding of the status of environmental education in Alaska. In turn, we will provide a summary report by this summer that will benefit other environmental education providers.

We hope that you will fill out our needs assessment as a member of ANROE, and also help us by sharing it with other educators and community members outside our organization. Through our combined efforts, we can all help ANROE grow into a more effective statewide organization.

Phantom of the Tundra continued from page 1

ber an admonition on the part of Hooper Bay elders not to kill snowy owls unless you re very hungry, for they could save your life if you re desperately in need of food.

There is an interesting saying in Yupik, "Ak a tamaani anguyiit anipaunguatullruut", which translates as, "Long ago warriors used to pretend to be owls". Because of their unique qualities of strength, silence and stealth, their yua or spirit was regarded as very powerful. They were respected equally by the Inupiat, who called them, "ookpik", and used them in stories as a way to keep their young children from wandering too far away from home.

"Anipaq" has a scientific name, *Nyctea scandiaca*, which in English means, nocturnal Scandinavian. It refers to the way the owl hunts during the night (although it also hunts by day), and the fact that the first specimen described by scientists was from Lapland, which is in northern Scandinavia.

While watching like a hawk (or should I say, like an owl) from its favorite tundra nunapik, the owl swivels its head from side to side, appearing to move it in almost a complete circle. Along with its night vision and excellent visual acuity, no vole or lemming within miles dares to surface above the snow for fear of becoming one of those hairy pellets. When rodents are scarce in the Arctic, snowy owls head south in large numbers and entertain bird watchers who otherwise wouldn't get the chance to view them. Some hungry snowies have been reported to attack and kill young peregrine falcons on their nest, but often have been killed themselves by the adult peregrines.

Both adult snowy owls build the nest, which they locate on a high spot in dry tundra. They simply scoop out a hollow on the ground and line it with moss and feathers.

In extremely good lemming years, up to 13 eggs may be laid over the space of several days. The female alone incubates the eggs and, after a month or so, the young hatch at different times. Within 16 days they begin leaving the nest, according to the order in which they hatched. When they leave they scatter over the nearby tundra where the adult male feeds them. When all have left the nest, both parents feed and protect the brood.

Since snowy owl young are so big, it takes them from 43 to 55 days after hatching to make their first flight. During this time, the adults will use the crippled bird act to lead intruders away, and the male actively defends his mate and young against enemies as big as foxes and wolves. When humans approach the nest or young, the adult owls will swoop low and strike with very sharp talons. Beware!

Environmental Education Blossoms In Villages

Sandy Scotton

When EPA Tribal coordinator Nathan Spees sent a blanket email out to Tribal Environmental Specialists around the state asking if there was interest in an environmental education workshop, the response was positive. The need was obvious. As a result, EPA, the Alaska Inter-Tribal Council (AITC) and ANROE collaborated to sponsor a workshop focused on educating youth in village communities. Thirty Tribal Environmental Specialists working with the IGAP (Indian General Assistance Program) gathered in Anchorage for three intense days of identifying teaching approaches and learning styles, adapting activities, and using a model to help plan an education program for youth in their communities.

In Alaska, the IGAP works to assist tribes to identify and address environmental issues in their communities. For many of the grantees, education is a key component of their programs. However, identifying the ways and means of creating an education program can be daunting to many, especially if the subject matter includes solid waste, pollution and contamination, and safe drinking water. Throughout the workshop participants were introduced to teaching approaches, planning tools, agencies, organizations and other resources that can assist them. Four programs that have been successful in Alaska were also spotlighted: GLOBE, Salmon in the Classroom, Teaching Our Many Grandchildren, a Learn and Serve program at Mount Sanford Tribal Consortium, and Caring for the Kenai.

The third day, the group completed training for Project Wild. Project Wild coordinator, Robin Dublin, and volunteer, Jim Sumner distributed a mountain of great materials for participants to take back and use in their villages.

The most important message woven into the three-day training was to use the materials, information, and activities as a framework to build individual community environmental education programs, and to adapt resources so they are regionally and culturally appropriate, and fit the needs of each community.

ANROE Conference Updated

Ben McLuckie

The ANROE Conference (http://www.anroe.org:88/ANROE_Conference) has been updated to give our members (that's you) more discussion features and more control over how one can participate. The ANROE listserv at anroe@mail.hcs.k12.ak.us is obsolete by comparison and has therefore been retired. We want to make the Conference a preferred place on the Internet for ANROE members to quickly and easily share information, ask questions, discuss ideas, and more.

Figure One

You must now log in the Conference to participate using an existing user account that I (as ANROE webmaster) have setup for you. If you have still not received an email of welcome giving your name and password then I never created an account for you. Just email me your working email address and I will set one up. Of the accounts I did create, I used the UserID portion of your email address as your login name and a random password. A "Forgot your password?" link is now provided if you forget yours. **(See Figure One)**

Figure Two

Once inside you will find a simple organization. Across the top is a toolbar of common commands; the left pane consists of an outline listing the conferences that expands to show all the titles of posted messages; and the right pane fills with the text of messages or other detailed information. Go More…→ Conference Profiles to get detailed descriptions of each conference. **(See Figure Two)**

Reading messages is a simple matter of clicking your way down into the outline on the left as the text of the message appears on the right. Posting messages is almost as easy: just choose your conference then click on the Post button from the toolbar. You can even attach files, pictures, movies, etc. **(See Figure Three)**

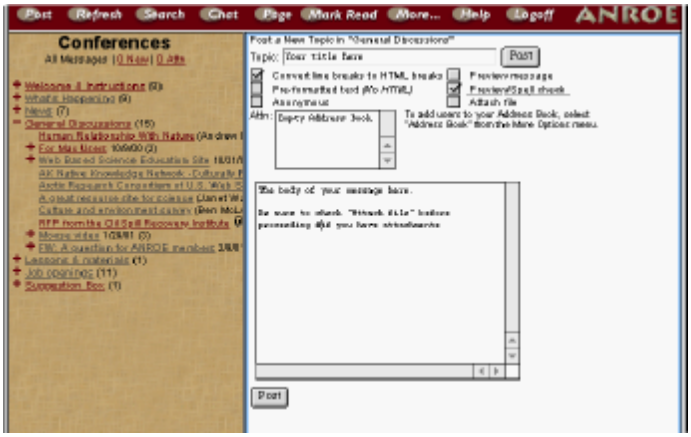

Figure Three

Now you can participate without ever visiting the web by subscribing your Personnel Profile to mailing lists of interest. Just log in from the web, then go More…→ Mailing Lists Choose the conferences you want to participate in via your email. **(See Figure Four)**

Figure Four

Alternatively, you can also participate through your newsgroup reader. You must create a new account for ANROE in your newsgroup reader (Netscape Mail and Outlook Express included) using anroe.org along with your login information. Newsgroups take the most steps to set up, but provide the best experience. Unlike mailing lists, newsgroups preserve the thread of messages and support attachments. **(See Figure Five)**

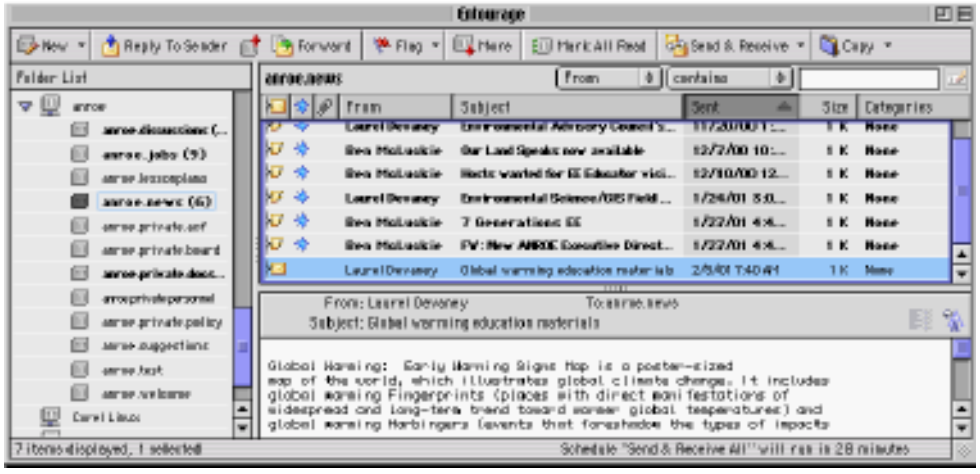

Figure Five

Take a few moments to explore the ANROE Conference and discover the host of other features. My postings under the "Welcome & Instructions" conference try to highlight the essentials you need to get started. You can also turn to the full online help from the Help button on the menubar.

Now it's your turn: log in to the ANROE Conference, start a discussion or post a teaching idea. With everyone contributing, we can the ANROE Conference a rich resource for natural resource educators.

Resources on the Web

Rekindling Traditions: Cross-Cultural Science and Technology Units

A group of six teachers across northern Saskatchewan have designed a project to integrate Aboriginal science and technology with the provincial science curriculum in the grades 6-11 science classroom. The teachers have developed cross-cultural science and technology teaching units which can be found at: http://capes.usask.ca/ccstu. At this site, they also include their challenges, successes, and advice about involving people in their communities. Unit topics include:

Snow shoes: Learning about traditional snowshoes (asÉmak) provides the context for learning concepts from Western science about structure, design, and pressure.

Trapping: This unit begins with a foundation in the Aboriginal science and technology of trapping. Students examine Western scientific ways of explaining forces, pressures, and energies, at work in the contemporary hunter's trap mechanisms. The unit includes the economic and political elements of trapping.

Nature's Hidden Gifts: This unit is designed to enrich the knowledge about local plants for both students and community members. Scientific ideas about how plants work and local stories are explored. Students produce a "published" book about the uses of plants found in their area..

The Night Sky: Aboriginal cosmology is validated through learning about the night sky from an Aboriginal point of view. This provides the context for learning astronomy concepts from Western science.

Survival in Our Land: Students explore outdoors education, structure and design by building emergency shelters using both Aboriginal and Western science and technology.

To obtain the file in Microsoft Word 97 format, or order the Rekindling Traditions CD, contact: Northern Lights School Division, Teacher Resource Department, Bag Service 6500, La Ronge, SK S0J 1L0, (306)425-3302

Education Resources From Sea Grant

The National Sea Grant Library (NSGL) has updated its Marine Education Digital Library at: http://nsgl.gso.uri.edu/edu.html. This unique resource allows educators to access many digitized (PDF format) Sea Grant documents related to curricular development, marine careers, classroom experiments, field trips and other marine activities for students. In addition to this library, the NSGL also provides online access to a searchable database (approximately 28,000 titles) at: http://nsgl.gso.uri.edu/searchguide.html. Those titles that aren't available digitally may be borrowed for a period of one month (at no cost) from the NSGL. For more information please contact Cynthia Murray, NSGL Coordinator, at cmurray@gso.uri.edu.

Opportunities for Educators

Junior Duck Stamp Contest

The Junior Duck Stamp Contest is a nationwide conservation education program sponsored by the U.S. Fish & Wildlife Service. The 2000-2001 contest marks the sixth year of this program in Alaska. Entries should be postmarked by March 15, 2001. Students in grades K-12 from any public, private, and home school are eligible to enter an original design of a duck, goose, or swan in its natural habitat. Entries must be on a horizontal 9" x 12" paper with an official entry form glued on the back. Alaska's Best of Show is sent to Washington D.C. to compete nationally. The first, second, and third place state winners each receive an expense-paid trip,- along with their art teacher and one parent- to attend the Federal Duck Stamp Contest in Washington D.C..

A limited amount of reference materials are available upon request.

For more information contact: Fred Deines, State Coordinator U.S. Fish and Wildlife Service 907-456-0409

Observing Locally, Connecting Globally

Summer Institute for Educators
Fairbanks, Alaska June 4 16, 2001

Observing Locally, Connecting Globally (OLCG) is a NSF-funded science education project based at the University of Alaska Fairbanks (UAF). The goal of this program is to provide Alaskan teachers and students with opportunities to engage in global change research focused on the local environment and connected to larger issues of global change. Participants will receive summer training and classroom support in the *GLOBE* curriculum *(Global Learning and Observations to Benefit the Environment)*; current best practices in science education; the integration of local/traditional knowledge into environmental studies; and collaboration with community and university scientists.

Anyone working with students is welcome. Priority will be given to people whose participation will add to or create a team at their site. We are especially encouraging teams from rural Alaska consisting of formal and informal educators, local experts in science or Native knowledge, and/ or administrators. We are also interested in teams of urban educators working with a large number of Native students. Cost: $75 Travel assistance and per diem available on an application basis Credit: 4 credits, NRM 595 or ED 595 For more information or an application please contact: Martha Kopplin 452-2000 ext. 431 mkopplin@northstar.k12.ak.us

Try This Activity!

Snow and Winter

Third Grader Insulation Lab

This activity was developed by teachers at Joy Elementary School in Fairbanks as part a series of teaching kits.

Materials:

Film canisters with a hole in the lid- one for each team of students, Plastic containers (large enough to hold the film canister and insulation), Thermometers for each team (preferably dial face), Data recording sheets, Timer, Insulating materials: This could be any of the following: Popped popcorn, foam packing peanuts, Shredded newspaper, fiberglass, saw dust, animal fur, spruce needles, dry leaves, cotton balls, cotton, wool, or acrylic cloth, straw or dry grass

Preparation:

Make a chart for students to record their time and temperature observations. Make another work sheet with the following questions: Which material do you think will be the best insulator? Actual best insulator; Which material do you think will be the worst insulator? Actual worst insulator; How do you know which insulator is best? What might explain why this one is best?

Procedure:

As a class, brainstorm a list of things humans use to keep themselves warm in winter. Have the students look at the winter gear they wore to school. Discuss the types of insulating materials represented, and add these to the list if needed.

Divide the class into small groups and have each choose an insulating material to test. Distribute the following to each student team: 1 film canister, 1 plastic container, 1 dial face thermometer, their chosen insulating material, time/temperature chart to record observations and the worksheet.

Have the students pack their film containers tightly with snow all the way to the top to ensure that all containers hold the same amount. Put lids on the canisters and insert the thermometers through the hole in the lids. Each group should read the initial temperature of their snow and record it on their charts.

Nest each film container in the larger container and fill the space between with insulation material. Make sure that the students put insulation material above, below, and all around their film containers. Set up one snow-filled film container with no insulation as a control. Place all the containers in the same warm location, and set a timer or record the time. Record the temperatures on the charts every 5 minutes. Continue for 30 minutes, or until all the snow melts.

While you wait, discuss why it is important to put the containers in the same place for the same amount of time. Have the students list the variables in the experiment (insulation, amount of snow, type of containers, location, etc) Ask the students which variable they are testing (insulation).

Have the students make a line graph showing the melting process for their insulation.

Discussion:

Make a large line graph that compares the time/temperature rates from each group. Compare actual results with the student predictions. Which group recorded the least heat loss? The greatest? Which proved to be the best insulator? Why were some materials better insulators than others? List the qualities of a good and poor insulator. In what situations would each of these insulators work best? Be sure that the students understand the importance of trapped air in insulation. Ask the students why trapped air is a better insulator than surrounding air. Ask the students why some of the good insulators might not be used as home insulation? (Too costly, they aren't durable, they create a fire hazard) Discuss how air acts as an insulator (double pane windows. Air trapped next to the skin by clothing or fur.

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Dues

Individual	$20.00
Low income/student	$10.00
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Sustaining	$100.00
Life (pay within 3 years)	$250.00

Cool! New members receive a free package of outdoor education resource catalogs. Make checks payable to ANROE and send to:

ANROE
P.O. Box 110536
Anchorage AK 99511-0536

ANROE T-shirts! Vivid purple cotton blend fabric with red lettering and white illustrations. $12.00 each, shipping included. Sizes: small, large, extra large.

ALASKA
NATURAL RESOURCE & OUTDOOR EDUCATION ASSOCIATION

Alaska Natural Resource and Outdoor Education Association
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Alaska Natural Resource and Outdoor Education Association (ANROE) is an incorporated educational organization that promotes and implements excellence in natural resource, outdoor, and environmental education for Alaskans. ANROE provides networking services, training, curricula development and review, and other support for people involved with natural resource education. *Flyways, Pathways, and Waterways* is published three times a year to provide information that supports natural resource, outdoor and environmental education in Alaska.

Subscriptions are free with paid membership in ANROE, or can be purchased for $15.00 per year. If you have information you would like to share with teachers and natural resource/outdoor educators, contact *Flyways, Pathways, and Waterways* editor, Laurel Devaney, Fairbanks Fishery Resource Office, (907) 456-0558, laurel_devaney@fws.gov

The ANROE logo, inspired by a western Alaska Eskimo mask, was designed by Joann Popham. Radiating from the moon's face, ringed with mountains and water, are Alaskan life forms. The hands symbolize escapement: Allow some to remain.

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