



UNIVERSITY OF ALASKA FAIRBANKS BRISTOL BAY CAMPUS

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BRISTOL BAY ENVIRONMENTAL SCIENCE NEWS BRISTOL BAY ENVIRONMENTAL SCIENCE LABORATORY

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HIGHLIGHTS FROM ARCTIC AAAS

By Todd Radenbaugh

The American Association for the Advancement of Science Arctic Division (Arctic AAAS) held its 2011 annual meeting in Dillingham Sept 21 – 24. This was the first time the Arctic AAAS meeting was held off the road system in rural Alaska. As the 2011 President, Dr. Todd Radenbaugh organized the conference with much help from BBESL faculty and staff. Three of the fifteen sessions were chaired by BBESL faculty including Sustainable Energy (Tom Marsik), Citizen Science (Jodie Anderson), and Arctic Ecosystems (Todd Radenbaugh). Research and education presentations were made by BBESL personnel including

and on Saturday Mike Davis, Adam Kane and Todd Radenbaugh lead a Geography Field Trip of the region. The Thursday night Keynote Dinner featured a welcome by Senator Garry Stevens and an address by BBNC and NETC Director Pete Andrew.



Senator Stevens at Arctic AAAS Dinner

The meeting was attended by over 75 participants and featured more than 50 science presentations covering estuarine ecology, energy supplies, food security, mining, fisheries and climate change. Highlights of the conference included a Western Alaska Mining Panel Discussion as well as popular sessions about subsistence and citizen science, where data was generated at grass roots levels. More information can be found online at this link: <http://www.arcticaaas.org/meetings/2011/>



Western Alaska Mining Panel Discussion

Chet Chambers (energy conservation) and Dan Dunaway (calories of Nushagak estuarine fauna). On Friday evening the Sustainable Energy Initiative offered a popular Renewable Energy Tour

FIELD NOTES

By Dan Dunaway



Lota lota

Burbot

Burbot, *Lota lota* are a true freshwater cod. In parts of Alaska they may be called ling,

freshwater ling, lush, or lusk. They are usually a dark greenish mottled color and may get up to 60 pounds and over 4 feet long though most tend to be smaller. They are distributed across Alaska, Canada and Europe. They are predatory, and even more aggressive as they get bigger.

Their white meat is excellent



Resilience in a changing world

UAF Bristol Bay Campus is hosting WAISC 2012 March 28 – 30, 2012

Sponsored by NOAA, Alaska Sea Grant and the UAF Bristol Bay Campus, WAISC 2012 is being coordinated with the intention of bringing together scientists, educators, rural leaders, community members and subsistence fishers and hunters to discuss topics related to science and issues relevant to western Alaska.

For more information visit:

<http://seagrant.uaf.edu/conferences/waisc/>
(907)-842-5109
or toll free
1-800-478-5109

READING LIST:

By Chet Chambers

From Cradle to Cradle: Re-making the Way We Make Things By William McDonough & Michael Braungart

Teaming With Microbes: A Gardener's Guide to the Soil Food Web By Jeff Lowenfels and Wayne Lewis

Sustainable Energy- Without the Hot Air By David JC MacKay

Alaska's Predators: Their Ecology and Conservation By Bruce A. Wright

NATIONAL SPOTLIGHT:

Edward Lempinen AAAS Senior Writer published four articles: [Science magazine](#), In Fight over Alaskan Mine, Public Interest Turns to Science

[AAAS News](#), Researchers at AAAS Arctic Meeting Show How Energy Innovation Benefits the Alaskan Bush

[AAAS News](#), Controversial Mining Project to Be a Focus of AAAS Arctic Division Meeting in Rural Alaska

[AAAS News](#), Proposed Pebble Mine Has Alaskan Community Focused on Critical Science and Policy Issues

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2ND ANNUAL SOUTHWEST ALASKA GARDENING SYMPOSIUM 2012

By Michele Masley

The 2nd annual *Southwest Alaska Gardening Symposium: A Growing Idea* was held in Dillingham on September 15-17, 2011. This is the fourth gardening class this year organized by Michele Masley and Jodie Anderson, in collaboration with Rae Belle Whitcomb, Director, Bristol Bay Native Association Workforce Development. Over 40 participants attended from six villages in the Bristol Bay region. This year's symposium focused on preserving the fall harvest and interactive sessions were held on canning, preserving, drying and cooking home-grown vegetables, making sauerkraut, vege-

table nutrition and diabetes prevention, improving your garden soil, composting, sick

four residential gardens in the Dillingham area. Major financial support was provided by BBNA,

Program. The collaborative team is now organizing village-based gardening 'work parties' where residents who have attended these classes will come together to build and plant a garden. The first work party is planned for Manokotak School where a greenhouse will be installed through a Marston Foundation grant. Our overall mission is to bring together local gardeners, gardening experts and aspiring gardeners to exchange information and celebrate local food production for families and communities in southwest Alaska in the spirit of self-reliance and sustainability.



Gardening Symposium attendees pose at the Carscallan's Garden in Dillingham

plant clinic, identifying invasive plants and weeds, and tours of

UAF BBC, Marston Foundation, and BBAHC Diabetes Prevention

SUSTAINABLE ENERGY DATA COLLECTION

By Chet Chambers



Choggiung wind turbine at the end of the rainbow. Photo by Al Teich

The BBESL Sustainable Energy team is dedicated to helping our community become less reliant on fossil fuels. We approach this by offering related courses, engaging in community outreach and researching how various energy technologies apply to our region. One aspect of community outreach and research is the collection of data related to numerous renewable energy and energy efficiency projects in the Bristol Bay region.

BBESL staff has collected energy data from the campus' solar photovoltaic (PV) system, the Choggiung, Ltd. owned wind turbine installed at the Dillingham Courthouse and a residential solar thermal water heating system owned by the US Fish and Wildlife Service. Collaboration with local entities on renewable energy projects allows

the Sustainable Energy Program to analyze system performance and calculate the payback period, both of which are crucial to determining the feasibility of technologies in Bristol Bay.

In addition, data is currently



Solar Panels at UAF Bristol Bay Campus.

being collected on the energy performance of the Passive Office, our experimental super energy efficient model structure on the Bristol Bay Campus. So far the structure is performing as designed.

Our procedure is to collect data for at least a year, analyze our findings and make conclusions public. The team's goal is to provide a better understanding of applications and performance of renewable energy and energy efficient building technologies in Bristol Bay.

Sustainability Film Series

Since 2010, The Bristol Bay Campus has shown many sustainability related movies. Many of these films are specific to Alaska.

The movies have covered a wide range of subjects including climate change, sustainable energy, organic farming, local Alaskan food, green and natural building, and many others.

The movies are generally shown every month. Look out for flyers or announcements on the radio.

Call 907-842-5109 for more

New Equipment To Enhance The Bristol Bay Environmental Science Lab

BBESL recently purchased a compound teaching microscope, 4 standard compound microscopes along with other equipment for the Microbiology/Water Quality lab. The new equipment will enhance students' learning experience in basic microbiology and marine biology. The scientific equipment was funded by Icicle Seafoods.



Strange Happenings in Bristol Bay



Killer Whale on Nushagak Bay

Three Killer Whales (*Orcinus orca*) made their way more than 40 miles up the Nushagak River sometime in September. For reasons not fully understood, the whales stayed up river but eventually passed away. The bodies of two of the whales were pulled ashore and a necropsy was performed by NOAA Scientists.

A LOOK BACK AT SALMON CAMP 2011

By Asia Beder

The Bristol Bay Economical Development Corporation (BBEDC) has offered a five day Salmon summer camp for a number of years. In the past the camp has been open for only students in the Bristol Bay region however, this year, a grant



Salmon Camp on Lake Aleknagik

from NOAA allowed the camp to expand and allowed six High School students around Alaska to join in on the fun. Eleven students total attended the camp and came from Scammon Bay, Fairbanks,

Wrangle, Anchorage, Petersburg, Huslia, Twin Hills, Manokotak, Port Heiden, and Dillingham.

Salmon camp took place on Lake Aleknagik and included a variety of field activities. Skiffs were used to get around and explore different creeks in the area. While out the students used seine nets and fishing poles to catch salmon and char to collect data on and dissect. They also collected data on the creek characteristics, macroinvertebrates, and water quality for the different creeks we visited. At the base camp the campers learned about renewable energy and charged batteries for lights and computers using solar panels, a wind turbine, and a bike. Groups of students were also challenged with a project they chose and presented at BBEDC upon their return to Dillingham.

This camp was an awesome opportunity for the students to learn more about stream and salmon ecology, interact with new people, and explore an area that most of them had never been to before. It wouldn't have happened without



Salmon Camp on Lake Aleknagik

the commitment of the counselors especially Clint Reigh and Jenette LeClaire, Dr. Todd, our visitors from the Bristol Bay Campus, and Shawn Carey from NOAA who all played a part in this awesome camp!

October is Alaska Energy Efficiency Awareness Month

Energy efficiency is a hot topic in Alaska. For the second consecutive year Governor Sean Parnell has signed a proclamation declaring October as Alaska Energy Efficiency Awareness Month. Staff and faculty at the Bristol Bay Campus are engaging in numerous activities in Dillingham including the Dillingham Solar Tour, the Sustainability Film Series, and energy saving tips



MEET THE NEW BBESL STAFF



Adam Kane joined the UAF Bristol Bay Campus in August of 2011 as a Science Educational Liaison. He is originally from Milwaukee, Wisconsin and earned a degree in Automotive Engineering Technology with a minor in Manufacturing Engineering and Art from the University of Minnesota Mankato in

December of 2002. After school Adam decided to see a bit of the world and became a Peace Corps Volunteer teacher in Vanuatu. After completing his service in 2005 he continued his world travels, backpacking through more than 30 countries on 5 continents until heading north to Dillingham, Alaska in 2008 to work at the local public radio station. Apart from a few short trips abroad, Adam is still happy to call Dillingham his home.

He is excited to be part of the UAF BBESL team and hopes to bring his enthusiasm for science and all things tech into classrooms around Bristol Bay.



Dr. Heather Allen joined the UAF Bristol Bay Campus in August of 2011 as the Assistant Professor of Mathematics. She comes to Alaska on the heels of spending a year in the Middle East where she was assisting in the development of the first Community College in

Doha, Qatar. Prior to her time abroad, she lived and earned her degrees in East Texas at Texas A & M University. In 2001, she earned a Bachelor's of Science in Mathematics and Computer Science; 2005 she earned her Masters of Science in Pure Mathematics; and in 2011 she earned her Doctorate in Higher Education: Supervision, Curriculum and Instruction.

Heather and husband, Richard, love to hunt, fish, and spend time outdoors and are thrilled to be in Dillingham.



Salmon Camp 2011, Lake Aleknagik

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Spring 2012 Science Courses

- ENVI 101, Intro to Environmental Science, Dr. Radenbaugh
- ENVI 110, Intro to Water Quality 1, Dr. Radenbaugh
- BIOL 104, Natural History of Alaska, Dr. Radenbaugh
- ENVI 220, Intro to Sustainable Energy, Dr. Marsik
- ENVI 120, Home Energy Basics, Dr. Marsik
- ENVI 193, Building Ventilation and Energy, Dr. Marsik
- MATH 107, Functions of Calculus, Dr. Allen
- Math 050, Intermediate Algebra, Dr. Allen
- CTT 106, Construction Mathematics, Dr. Allen
- DEVM 066, Fast-Track Mathematics, Dr. Allen

Spring 2012 Registration begins November 14th, 2011

Call The Bristol Bay Campus To Register Early!
842-5109
1-800-478-5109



LETTERS FROM THE PROFESSORS



Dr. Tomas Marsik
Assistant Professor
Sustainable Energy

The Bristol Bay Environmental Science Lab team is staying busy. Now with Adam, our new team member, even more is getting accomplished. Here is a summary of our sustainable energy activities throughout the summer and early fall: We delivered 12.5 credits of instruction on energy efficient construction, taught renewable energy at the Salmon Camp, furthered research on the feasibility of the Passive House standard in Dillingham, finished our USDA Rural Business Enterprise Grant activities focused on providing energy audits and other technical assistance to small businesses, got another class approved as a catalog course, collected and analyzed data for several local renewable energy and energy efficiency systems, updated our website (check it out: <http://www.uaf.edu/bbesl/>), started upgrades of our bicycle generator and electric car, started lighting control upgrades for better daylight harvesting at UAF

BBC, were involved in several conferences, organized several sustainable energy tours in Dillingham, purchased many educational tools for K-12 outreach, developed fun energy experiments for high-schoolers, helped organize October – Alaska’s Energy Efficiency Awareness Month, and a lot more.

Yes, many things have been accomplished. But even more still needs to happen and everybody can help. Remember that by taking even small actions in your own life and becoming more sustainable, you are helping advance the cause of our program and benefiting your community. It is October, Alaska’s Energy Efficiency Awareness Month, and I want to encourage everyone to look around and find ways you can decrease your consumption of energy. It can be as simple as turning lights off when they are not in use. And remember to stick with it even when October is gone!



Dr. Todd Radenbaugh
Assistant Professor
Environmental Science

BBESL’s strong emphasis on local issues and commitment to interdisciplinary science helps to prepare students to effectively address difficult environmental issues. Students are introduced to a broad range of disciplines that allow investigations of complex interactions within the environment. For example; this summer was packed with productive and data rich programs including another successful high school Salmon Camp, internship program, field methods course (ENVI 260) and estuarine fauna sampling. Summer activities ended in September with a successful Arctic Division of the AAAS Conference. This was the first time the meeting was held in rural Alaska and

featured more than 50 science presentations many of which were from Bristol Bay residents. Highlights of the conference included a Mining in Western Alaska panel discussion as well as popular sessions about subsistence and citizen science, where data was generated at grass roots levels.

I’m excited at what has been accomplished at the BBESL and I’m looking forward to our growth in the future (literally, the lab will nearly double in size by next spring). Our next big event is the 2012 Western Alaska Interdisciplinary Science Conference and I hope that our regional students and scientists will step up again and together we can share and learn valuable information from each other. All this is part of an effort to help our region to become resilient and sustainable culturally, environmentally, and economically.

Bristol Bay Environmental Science Laboratory was established in 2007 to serve the biology and environmental science needs for the Bristol Bay region. Our mission is to increase science literacy and to provide the knowledge and skills necessary for individuals to take an active role in the management of the natural resources in and around Bristol Bay. We are your neighborhood science lab!