

May 2005

Nebraska Earth Systems Education Network – Spring 2005

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Spring 2005 Newsletter

Issue Number 39

Summer 2005 Sand Hills Biocomplexity Project Gets Underway - Monica Sanford

Four teachers have been chosen to participate in this summer's Sand Hills Biocomplexity Project. They will work with UNL researchers and student interns on various research projects. The teachers selected include: Polla Hartley, a science teacher from Spalding Academy, teaches grades seven through ten various science topics including Earth and environmental sciences, physics, chemistry, biology, and anatomy; Steve Ferris teaches Earth and life sciences at Lincoln High School; Susan Frack teaches science and health at Mickle Middle School in Lincoln. Joshua Wesley is coming from New Mexico, where he teaches fifth grade at Deming Public Schools. He will be living in the dorms for his six week stay. We would like to welcome these four teachers who will be joining the research efforts this summer. They will be using their experiences to develop curriculum units for use in their schools. This is all part of the ongoing effort to further earth science education among children, college students, adults, and the community at large.

Commentary: Careers in Science -- Thinking Outside the Box Continued: What Are Natural Resources and Environmental Sciences? - Monica Sanford

In the last NESEN newsletter the importance of encouraging young people who have an interest in science to look into earth, natural resources, and environmental sciences was made clear. But just what are these fields? What kinds of scientific issues do they examine? And what careers are available to scientists in these fields?

UNESCO defines natural resources as "Materials that occur in nature and are essential or useful to humans, such as water, air, land, forests, fish and wildlife, topsoil, and minerals." The environment is defined as "The complex set of physical, geographic, biological, social, cultural and political conditions that surround an individual or organism and that ultimately determines its form and nature of its survival."¹ Therefore, natural resource and environmental sciences are critical to the survival of the human species.

The School of Natural Resources at the University of Nebraska offers a number of cross disciplinary majors and minors which study such things as biological resources, water science, geospatial information systems, earth resources, climate & bio-atmospheric systems, and of course, human dimensions.

A degree in natural resources or environmental sciences can lead to a career with fish and wildlife management groups, the Bureau of Land Management, the Department of Environmental Control, U.S. Environmental Protection Agency, U.S. Forestry Service, environmental consulting and remediation, local natural resource districts, U.S. Natural Resource Conservation Service, Nebraska and other state Natural Resource Commissions, soil and water conservation districts, and soil and water testing laboratories. Graduates can consult on environmental planning and management, natural resource inventories, policy analysis, environmental protection, and sustainable practices. The opportunities are as great as the earth itself.

¹ http://www.unesco.org/education/tlsf/theme_c/mod13/www.worldbank.org/depweb/english/modules/glossary.htm#e site accessed on 4/27/2005, site sponsored by UNESCO and The World Bank Development Education Program

Nebraska Forestry Shortcourse offered June 20-24, 2005, Chadron State College, Chadron, Nebraska - Christine Meyer

The Forestry Shortcourse is a practical, intensive and fun learning experience for extension educators, natural resource professionals, teachers, college students, forest landowners and others. Through in-class and hands-on field sessions, you'll increase your knowledge and skills in the principles and practices of forestry, forest ecology and management, wildlife and forests, agroforestry and community forestry in Nebraska.

Specific Topics Include: Nebraska Forest Resources, Tree Anatomy and Physiology, Woody Plant Identification, Forest Ecology, Forests and Wildlife, Forest Products, Agroforestry, Silviculture, Forest Health, Forest Economics, Urban and Community Forestry, Fire and the Forest, Forests and Forage, Landowner Perspectives and Sources of Forestry Assistance.

The Forestry Shortcourse is held every two years, and registration is limited to 35 participants. The course will fill fast, so watch for upcoming Shortcourse brochure and mailing information for the 2005 session! Costs will be approximately \$250 for the week, which includes registration fees, a comprehensive training manual, all breaks and meals. The course can be taken for 2 UNL undergraduate or graduate credits (paid for at going UNL rate/credit hour).. A post-workshop project is required if taken for graduate credit. Scholarships covering registration costs may be available from your local Natural Resource District.

For more information and to ensure that you are on the mailing list to receive registration information contact Christine Meyer at 402-472-9869 (cmeyer3@unl.edu).

Geographic Educators of Nebraska (GEON) Summer Workshops - Charles Gildersleeve

MEVI: Middle East Virtual Insititure: Understanding the Landscape, Culture, and Politics of the Middle East, Past and Present June 27-July 12, 2005

This is a two week on-line workshop, with three days of onsite work/field study where participants will develop a lesson on Middle Eastern Geography. The workshop will consist of three days of meetings and independent work. The schedule includes the initial meeting on June 27 in Omaha; independent work from June 28 to July 10; and a final meeting on July 11 & 12 in Omaha.

A \$300 stipend will be awarded to participants who complete a lesson plan within 60 days of the end of the workshop. Mileage to and from Omaha for teachers beyond the metro area will be paid, as well as and 2 nights lodging. For more information contact: Eric Enholm at: (308) 385-5990 (W); ort (308) 381-8665 (H) of enholm@gips.org. Enrollment deadline is May 1, 2005.

Historic and Geographic Black Hills June 5-9, 2005

This workshop will be held at Chadron State College. It will include four assignments done in class and some due later in June. College Graduate credit is available for participation in this workshop. If interested, please contact Dr. Catherine Lockwood at Chadron State College, 1000 Main Street, Chadron, NE 69337. Interested parties may also call (308) 432-6275 or email clockwood@csc.edu.

Wetland Education Workshop (WETMAAP) June 9 & 10, 2005

This workshop is also at Chadron State College. The purpose of this workshop is to explore wetland change issues and to introduce teachers to wetland habitats mapping and aerial photography techniques. This program is Nebraska and National Standards' based, and officially meets No Child Left Behind Standards. Deadline for applications is May 20, 2005. Attendance limited to 20 teachers. Please contact Dr. Catherine Lockwood at Chadron State College, see above phone and e-mail for applications.

Blue-Green Algae a Known Health Risk - Steven Ress

Blue-green algae blooms sometimes smell bad and can look like thick paint spilled in the water. If you visit a lake that looks like it may have a problem, there are several methods of protecting yourself and others from the hazards:

- Avoid contact with the mats of blue-green algae.
- Never allow children or pets to play in or drink scummy water.
- Don't water ski or jet ski over algae mats.
- Don't use scummy water for cleaning or irrigation.
- If you come into contact with the toxic algae, wash thoroughly, paying special attention to the swimsuit area. Thoroughly wash the fur on pets that come into contact with the algae.

If you experience health symptoms, notify your physician, and also report the incident to the Nebraska Health and Human Services System at (402) 471-2937 or the Poison Information Hotline at (888) 232-8635.

(From *Environmental Update*, Nebraska Department of Environmental Quality, Winter 2004/2005).

Cooperative Extension Ready With Algae Test Kits - Steven Ress

This summer will likely see more toxic blue-green algae blooms, many of which were reported on Nebraska lakes and ponds last year and can be a serious threat to human health and to animals. Last spring and summer saw an explosion of toxic blue-green algae blooms on ponds and lakes across Nebraska, particularly in eastern Nebraska where recreational use of these water bodies can be very high.

Skin irritations and gastrointestinal problems are the main risks to people from algal toxins, but in rare cases, extremely high toxin levels can be fatal to people. The normal season for algae bloom complaints is June through September. Last year the toxins and blooms began appearing in May and persisted through September. Some lakes still had blooms and high toxin levels as late as December. With forecasts calling for similar weather patterns this summer blooms may be just as prevalent as last year. Higher public awareness of the problem could also result in more of the blooms being reported.”

Nebraska Cooperative Extension's lake management program is continuing a volunteer monitoring program to check lakes for blue-green algae. Free test kits will be available. For more information or a test kit call Hilary Hansen at (402) 472-8190 or go to the UNL Water Center web site at <http://watercenter.unl.edu>.

People should avoid swimming, water skiing, riding personal watercraft or similar activities involving physical contact or swallowing water from lakes with blue-green algae blooms. During a bloom, lake water becomes cloudy with a green or blue-green cast and blue-green streaks may be visible on the water's surface, said Kyle Hoagland, a lake ecologist who heads UNL's Water Center.

Winds can increase the danger of a toxic bloom by blowing algae to the leeward side of a lake where it concentrates in coves or along shorelines. Rapid algal growth is called an algae bloom. Blooms can appear and linger anywhere from days to weeks and can persist until the first hard frost in the fall. Some types of blue-green algae produce chemical toxins that harm people and animals. These colorless and odorless toxins may linger in the water for as long as two weeks after the bloom has disappeared.

Water and Natural Resources Tour Looks at LB962, Sand Hills, Pine Ridge Issues

Steven Ress

June's water and natural resources tour will focus on local response to LB962 (which seeks to reconcile ground water and surface water usage in Nebraska) a year after the bill became law, as well as irrigation and natural resources issues in Nebraska's Sand Hills and Pine Ridge. The tour is June 28-30, beginning and ending in Kearney.

“We’re planning stops at locations where we believe a good number of those signing-up for the tour will not have been before,” said tour co-organizer Michael Jess, associate director of the UNL Water Center. “The uniqueness and vastness of the Sand Hills and Pine Ridge areas should make for a fun and educational tour, as well.” He said.

Stops include the Kearney Canal diversion dam for discussion of over-appropriation of water resources and a moratorium on new surface water/groundwater diversions. Lake McConaughy visitor’s center near Kingsley Dam and lunch at the Bayside golf club on the south side of the lake are next before the tour heads toward Crescent Lake National Wildlife Refuge, north of Osh Kosh, for presentations on wildlife breeding and habitat restoration projects by the U.S. Fish and Wildlife Service and University of Nebraska. The remote refuge was established in 1931 and includes nearly 46,000 acres. It is dotted with numerous shallow lakes and has hosted nearly 275 species of birds through the years.

University of Nebraska associate forester Doak Nickerson will detail commercial logging operations in the Pine Ridge area, including a timber harvesting demonstration. The tour will also stop at Chadron State College for presentations on the college’s closed-loop heating and cooling systems, fueled by wood chips from the area’s logging industry and representatives of the Crow Butte uranium mine near Crawford discuss mine operations. Crow Butte is one of only two operating uranium mines in the United States.

Participants will tour the mine, near Crawford, visit the facility and it’s expansive groundwater well fields that are integral to mining uranium. Buses then head south to Box Butte Reservoir north of Alliance and then to a minimum. The tour’s final day will begin with a panel discussion of Pumpkin Creek litigation issues and municipal water issues for the City of Sidney

Registration price has not yet been set. To get on the water tour mailing list for registration materials, contact Kearney Area Chamber of Commerce event coordinator Sara Koperski at (800) 652-9435. Registration is limited to the first 85 registrants.

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The NESEN Newsletter is compiled by Monica Sanford and edited by Charles Flowerday of the Conservation and Survey Division, University of Nebraska-Lincoln. Information for the NESEN Newsletter can be sent to Monica Sanford at 9 NE Hall, Lincoln, NE 68588-0517 or msanford2@unl.edu. NESEN’s lead organizations are the 1) Conservation and Survey Division, 113 Nebraska Hall, University of Nebraska-Lincoln, NE 68588-0517; phone 402-472-3471; fax 402-472-4608; website <http://csd.unl.edu/csd.html> and the 2) School of Natural Resource Sciences, 303 Biochemistry Hall, University of Nebraska-Lincoln, NE 68583-0758; phone 402-472-9873.
