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# Nebraska Earth Systems Education Network Newsletter – Fall 1998

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Teach  
Earth Science

# Nebraska Earth Science Education Network

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## FALL 1998 NEWSLETTER Issue Number 19

### Everything is Connected to Everything Else - Dave Gosselin, NESEN Director

Thank you to all the educators who took the time to participate in a variety of professional development activities offered this summer through NESEN. I feel very fortunate to have had the opportunity to help you improve your knowledge of the earth sciences. More importantly, I learned many things about education and what goes on in the classroom that further supports the concept that "Everything is Connected to Everything Else." The importance of earth science in the K- 12 classroom continues to grow as indicated by the national and Nebraska science education standards. Unfortunately, although an understanding of the earth is important, the question becomes, "Do we have the expertise among our current K- 12 educators to meet the requirements of the standards?" If the answer to this questions is no, what should be done? The most obvious answer is to enhance the professional development opportunities available for teachers. No one would argue that professional development is important, but the questions are, "Who should provide it?" and possibly more importantly, "Who should pay for it?" Although there are no easy answers to these questions, especially in these times of property tax lids and decreasing school budgets, we need to address them if our intent is to maintain and improve the quality of our educational system. All parties, including parents, administrators, school board members, parents, teachers, and college level educators, need to be involved in developing comprehensive, long-term plans for professional development. Without it, our education system cannot improve. Each of us can make a difference by starting discussions for improving the professional development system for K- 12 educators at our own institutions. Have a great academic year.

### Terrestrial Trivia: The Treasures in Your Trash

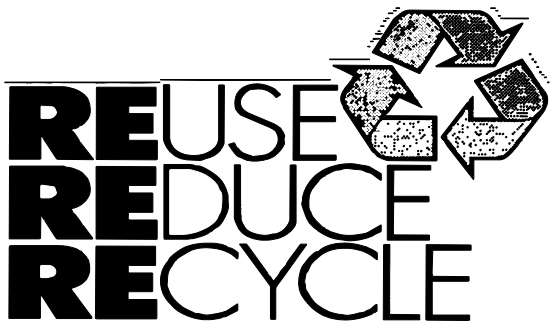
Consider the following statistics provided by the Environmental Defense Fund:

\*Americans throw away enough aluminum to rebuild our entire commercial air fleet *every three months*.

\*Every week, more than 500,000 trees are used to produce the *2/3 of newspapers* that are never recycled.

\*We throw away enough office and writing paper annually to build a wall twelve feet high stretching from Los Angeles to New York.

### What can educators do to reduce waste at their school?



\* **Insist** that students purchase recycled back to school products, especially paper (without spiral binders and plastic covers). Beware of products labeled recyclable. Advertisers have found it profitable to translate consumer environmental sympathies into sales by labeling their product with earth conscious symbols and slogans, even if their product and its packaging is not environmentally sound. Also, remember "recyclable" is not the same as "recycled."

\***Involve** students in recycling projects at school. Work with the cafeteria in developing a composting project. Get students in the habit of throwing away paper and aluminum in separate recycling bins.

\***Think** before you buy. While it's important to recycle more, avoiding compulsive buying is an even more effective way to cut down on waste.

## **NESEN's Summer in Summation:**

We at NESEN enjoyed working with everyone who attended our teacher workshops this summer. Our professional development workshops continue to be enthusiastically attended by teachers across Nebraska. Take a moment to read through the following workshop summaries and keep us in mind when you make your plans for next summer!

### **Earth Science in the Community**

This past June, NESEN, in cooperation with the American Geological Institute (AGI), hosted a professional development workshop entitled "Earth Science in the Community" (EarthComm). Twenty-three secondary level educators worked with NESEN Director Dave GosseB and Ed Robeck of Hastings College towards assisting AGI with the development of a dynamic new earth science curriculum. The special focus of the EarthComm Workshop was to discuss how we could implement a student-centered, inquiry- based and interdisciplinary approach to teaching earth science within the context of the National Science Education Standards. Our week-long EarthComm experience started us down the road toward planning and implementing new teaching strategies that will impress upon our students the significance of their role in the stewardship of the earth. As a follow-up to our EarthComm summer session, we are planning a weekend workshop in November to assess our progress. If you would Re more specific information about EarthComm, feel welcome to contact Dave Gosselin at 402.472.8919 or email: [gosselin@unlinfo.unl.edu](mailto:gosselin@unlinfo.unl.edu).

### **NESEN Summer Workshops**

Our 5th annual summer workshop series in July provided the opportunity for teachers to further their knowledge about earth science issues unique to Nebraska. The workshops combined geoscience expertise at UNL with the teachers' ability to translate information into practical classroom lesson plans. Participants enjoyed the hands on activities and thought provoking field trips that were included in the two day workshop sessions. In addition, teachers were supplied with resource materials that they can keep and use in their classrooms. We would like to commend everyone who participated this year!

### **Educating About Environmental Change**

"Process-Oriented Environmental Change Education" was the subject of a recent four-day workshop funded by the Great Plains Regional Center of the National Institute for Global Environmental Change. Thirteen teachers from both science and liberal arts backgrounds shared their different perspectives concerning the environment and worked towards the development of an original, interdisciplinary, educational unit addressing environmental issues. During the four-day workshop, NESEN Climate Education Coordinator Steve Meyer and Dave Gosselin modeled the scientific process for multi-disciplinary teaching teams who then used their expertise to expand the information into workable lesson plans. The challenge of working in diverse teams involved exploring and understanding objective versus subjective discourses about the environment, both of which are equally important perspectives. Thus, not only were teachers' scientific skills and terminology expanded, but also their understanding of how the humanities have contributed to environmental consciousness.

### **<http://nesen.unl.edu>**

Over the summer,, our NESEN computer experts made several terrific improvements to our website: Bell Solefak added a chat room to our NESEN main page which enables our website visitors to communicate with each other in a "real time" conversation. The chat page can be entered by clicking your mouse on the blinking "chat page" icon found on the NESEN main page.

Thanks to the digitizing work of Damon Strickland, you will soon be able to view videotaped segments of our June 1998 EarthComm teacher workshop.

Inspired by a recent Canadian fishing expedition, Derek Geise enhanced the graphic design of our website.

Brian Lange, recent LJNL chemical engineering graduate, wrote a computer program entitled "ClimProb for the Net" which gives scientists access to weather-related data at over 800 sites across the United States. ClimProb will make its Internet debut in September and teachers will be able to use ClimProb free of charge. For more information about ClimProb, contact Brian Lange at 402.472.0773 or Steve Meyer 402.472.8768.

### **IANR Celebrates 25th Anniversary**

The Institute of Agriculture and Natural Resources (IANR) at the University of Nebraska - Lincoln is celebrating its 251 year of excellence in providing education, research and service programs in the areas of food, agriculture, agribusiness, natural resources and human resources. IANR provides funding and support for numerous Cooperative Extension and other outreach programs, NESEN included, which reach more than 400,000 Nebraskans annually. For example, more than 108,000 youth, about a third of Nebraska kids, participate in 4-H youth development programs, which are part of the University of Nebraska Cooperative Extension. Further information about IANR's research and educational programs can be found via their website at <http://www.ianr.unl.edu>.

## Earth Science Week

Contact us for your free *Ideas and Activities booklet!*

Mark your calendars now for October 11 - 17 and plan to take part in the first annual Earth Science Week 1998. The American Geological Institute (AGI) is sponsoring the event which will give educators a focal point for highlighting the contributions that the earth sciences make to society. To help you celebrate with your students, AGI has published an Earth Science Week Information Kit that includes classroom activities on an environmental theme. Further suggestions for student activities can be found in the Earth Science Week *Ideas and Activities* booklet, and on a poster entitled *Soils*. In addition, three modules of middle-school curriculum activities will be available this fall, as well as the general interest booklet, *Sustaining Our Soils and Society*. Earth Science Week is about promoting the message that earth science is all around us. In that spirit, here are a few more ideas for classroom activities that you may find interesting:

### A Building Walk

Conduct a field trip around your town to learn about the type and properties of the building stones. While noting the building materials, also consider the construction method. What peculiar environmental factors (flood plain, extreme temperature, etc.) did the architect take into consideration?

### Make Paper

This is a creative way to demonstrate recycling. The process involves tearing paper (preferably from your class' recycling bin) into 1" or smaller strips and soaking them in water for 1-2 days. When the paper has formed a pulp-like consistency, scoop it out and spread the mixture evenly on a wire screen (a window screen works fine). If you are using different colors of paper, you can

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create a design with the wet paper. With 1-2 days of drying time, you will have recycled your old paper into an interesting work of art. You can also discuss the science behind the different levels of biodegradable material.

### Invite A Scientist

NESEN geoscientists are available to share their knowledge and enthusiasm about the earth and how it works. To arrange for a classroom visit, contact Dave Gosselin (402) 472-8919.

"The goal for Earth Science Week," says AGI President Susan Landon, "is to have every geoscientist in the country do something in his or her community to promote the earth sciences." If you would like to order any of the resources mentioned above, or if you want to find out more about Earth Science Week, contact Lyn at NESEN 402.472.0773 email: lharris@unlgradl.unl.edu., or visit AGI's website at <http://www.earthsciweek.org>. Alternatively, AGI can be reached by phone at 703.379.2480 or fax 703.379.7563.

## Nebraska ESIC Open House

The Earth Science Information Center (ESIC) at the Conservation and Survey Division at UNL is hosting an open house during Earth Science Week on Thursday, October 15' from 10:00 a.m. to 8:00 p.m. that will highlight the diversity of resources available through the ESIC. We will be offering a wide array of displays and activities in and around room 113 Nebraska Hall which are of interest to our NESEN members. Information and resources on everything from fossils and gemstones in Nebraska to landslides and soils will be available at low or no cost. Door prizes and refreshments will be provided. Free parking is available in the area 20 parking lot on the north side of the Reunion building. Be sure to visit the NESEN booth!

## STEDII

The Students and Teachers Exchanging Data, Information and Ideas (STEDII) weather project will continue for the 1998-1999 school year. The fall Focused Measurement Period (FMP) is scheduled for September 28 - October 11'. Tentatively, the winter and spring FMP dates are January 25-February 7 and April 26-May 9 1999. We will continue exchanging weather data between participating schools via our online data entry form at <http://nesen.uni.edu/stedii/stedii.html>. We will be contacting you soon regarding your new password for the STEDII data-entry page. Currently, we have approximately 60 schools participating. Some schools have accumulated almost three years of data for each of the FMP'S! This kind of data makes for an interesting study of the history and climatology of each school's area. Look for new STEDII projects (water/soil sample sharing, and water conservation) to be implemented this year.

## NATS

The Nebraska Association of Teachers of Science will be holding their fall conference October 22 through October 24 at Camp Calvin Crest near Fremont. A schedule of events will be mailed out near the end of August. Contact Kim Soper, 1998 NATS Program Chair, at HC 86, Box 1, Keystone NE 69144, 308.726.3158, or email: [Isoper@lakemae.net](mailto:Isoper@lakemae.net) if you have questions.

## **New Teacher Resources Available:**

The Conservation and Survey Division (CSD) Map and Publications Sales Office now has the following publications available. Additional information about these publications can be found on the CSD web site at <http://csd.uni.edu/csd.htm> and our Earth Science Information Center (ESIC) web site at <http://csd.uni.edu/esic/esic.html>.

### **The World Map**

Updated in 1996 to reflect the world's changing political boundaries, this large (56"x42") and colorful world map is available for only \$5 plus postage. The map was produced by the U.S. Department of Defense Mapping, Agency. (scale: 1:30,000,000).

### **Geologic Map of United States**

This three-section color map details the geology of the United States. Both east and west sections measure 41"x51"; and the map legend measures 32"x51". The \$10 price (plus postage) includes all three sections (I 974: 1:500,000).

### **Land and People: Finding a Balance**

This new 1998 teachers packet is an environmental study project for high school students which focuses on earth science resource issues in Cape Cod, Los Angeles, and the Everglades. The publication gives consideration to recently publicized concerns about water contamination, water shortages, and geologic and hydrologic hazards. The packet is free (\$2 for postage) and includes a teacher's guide, poster, materials covering each area, role-playing activities for students, photographs, and scientific data about population, geology, and water use.

Other teacher packets currently available from the CSD Maps and Publications Office include: *Caves; Exploring Maps; Global Change Map Adventures; Volcanoes!; and What Do Maps Show?*.

*An Atlas of the Sand Hills; Now with Insects!*

The new third edition (A.S. Bleed, and edited by C.A. Flowerday) has been updated with a chapter about insects particular to the Nebraska Sand Hills. The Sand Hills region, approximately 19,300 square miles of sand dunes across central Nebraska, is the largest sand-dune area in the Western Hemisphere and one of the largest grass-stabilized dune regions in the world. The 260 page paper bound atlas is available for \$20.

### **Niobrara Field Guide**

This educational circular highlights the geology of Niobrara State Park, Knox County, Nebraska, and adjacent areas. Also included is a brief history of the Park, Gavins Point Dam, and Lewis and Clark Lake. C.A. Flowerday and R.F. Diffendal, Jr., Editors.

**To order any of these publications, send your request, plus \$2.00 postage and sales tax to:** Map and

Publication Sales - Conservation and Survey Division

113 Nebraska Hall

University of Nebraska-Lincoln

Lincoln, NE 68588-0517

Phone 402.472.7523/Fax 402.472.4608/email: [esdsales@uni.edu](mailto:esdsales@uni.edu)

## **National Ocean Sciences Bowl '99**

The Consortium for Oceanographic Research and Education (CORE) in cooperation with the National Marine Educators Association and National Science Teachers Association, will present the second annual National Ocean Sciences Bowl (NOSB) in spring 1999. This academic competition for high school teams will challenge students to answer questions on biology, chemistry, geology, physics, history and economics of the ocean and ocean-related current events. The goal of the competition is to recognize and reward excellence among students interested in ocean studies and to help them become the next generation of oceanographers and marine scientists. Regional competitions will be held in 13 states in February 1999. For Nebraska teams, the closest regional competition will be in Boulder, Colorado. We will provide resources to support participating teachers and students. Prizes include an all-expenses-paid trip to the finals competition in Washington, D.C. on April 10- 12, 1999. For more information, contact Alex Weaver at the Cooperative Institute for Research in Environmental Sciences (CIRES) at 303.492.5431 or [k12@cires.colorado.edu](mailto:k12@cires.colorado.edu). The NOSB website is <http://core.cast.msstate.edu/nosbtop.html>.

*Unless indicated, our newsletter was written by Lyn Harris, Duane Mohiman, Dave Gosselin, and Mark Mesorch and edited by Charles Flowerday, Conservation and Survey Division, University of Nebraska-Lincoln. Information for our winter issue of the NESEN Newsletter can be sent to Lyn Harris, 9 NH, Lincoln NE 68588-0517, email [lharris@unl.edu](mailto:lharris@unl.edu). NESEN's lead organization are the Conservation and Survey Division, 113 Nebraska Hall, University of Nebraska-Lincoln, Lincoln, Nebraska 68588-0517. Phone 402.472.3471; FAX 402.472.4608, - Web Site <http://lcsd.unl.edu/lcsd.html> and the School of Natural Resource Sciences, 303 Biochemistry Hall, University of Nebraska-Lincoln, Lincoln, NE 68583-0758; Phone 402.472.9873.*