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Nebraska Earth Science Education Network

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Winter 2003-2004 Newsletter

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Central Plains Severe Weather Symposium

The Central Plains Severe Weather Symposium, "Surviving the Storms – The Four Seasons of Severe Weather," will be held Saturday, March 20 from 9 a.m. to 5 p.m. This free event is at Lincoln's North Star High School.

The day's activities will include two keynote speakers: Jeff Piotrowski, a nationally known storm chaser who has been recognized for his stunning still and video weather images for more than 25 years, and Rick McCoy of the Van Wert Ohio Emergency Management, which provides improved severe weather detection and forecasting.

The symposium will also include a stratospheric balloon launch, weather exhibits and demonstrations by the National Weather Service, and chances to meet local broadcast meteorologists. The event is sponsored by the High Plains Regional Climate Center, National Weather Service, UNL American Meteorological Society, and Department of Geosciences and School of Natural Resources of UNL. For more information on the symposium, please visit http://www.hprcc.unl.edu/Nebraska/cpsws2004.html.

Celebrate Astronomy Day 2004

Kathy French, University of Nebraska State Museum

On April 18, there will be fun and educational astronomy activities for the entire family at the University of Nebraska State Museum (Morrill Hall) in the Ralph Mueller Planetarium, from 1:30 to 4:30 p.m. Exhibits and displays will line the lobby of the planetarium and the main floor of the museum. There will be displays of telescopes, computer astronomy and astronomical photos by members of the Prairie Astronomy Club. If you received a telescope as a gift for Christmas, birthday or other occasion, or if you have recently purchased a telescope, bring it and our volunteers will teach you how to use it more effectively.

Throughout the afternoon, there will be special demonstrations of such things as telescope mirror making, fighting light pollution (and good outdoor lighting), and help in learning the constellations. Students of the UNL department of Physics and Astronomy will be demonstrating principles of physics. The electronic display from the Space Telescope Science Institute - "ViewSpace" - (in the planetarium lobby) projects beautiful images from the Hubble Space Telescope, which provide an artistic and educational mosaic throughout the afternoon. Mueller Planetarium will be presenting showings of the planetarium shows, "Mars Update," "Ringworld" and "SkyQuest." There is an admission to the museum: $4 for adults, $2 for kids 5-18, and $8 per family. UNL students and staff free with ID. Planetarium shows are an additional charge. The Museum is located at 14th and U streets on the UNL City Campus.
A special speaker for Astronomy Day will be Nagin Cox, Deputy Team Chief, Mars Exploration Rovers, Jet Propulsion Laboratory, Pasadena, Calif. Ms. Cox will be speaking April 18 at 7 p.m. in the Nebraska (City) Union auditorium. Her free talk, "Mars Exploration Rovers - Hitting the Road on Mars," will reveal findings from the Mars Exploration Rovers.

There's more! This exciting day will conclude that evening with a FREE open house at the UNL Student Observatory on the parking garage west of Memorial Stadium, 9:30-11 p.m. A FREE "star party" will precede Astronomy Day during the regular hours (sundown to 11 p.m.) of Hyde Memorial Observatory on the evening of April 17. To find out more, visit: www.spacelaser.com

Tree Care Workshops

Christine Meyer, Nebraska Forest Service

The 2004 Tree Care Workshop series will be held from March 2 through March 11 at six locations across Nebraska. This year, the workshop will zero in on some of the tough decisions that arborists, landscape managers, nursery professionals, and others must make in the place we call Nebraska. Topics will include Tree Cultivars and Selections, Tree Decay and Risk, Pine Wilt, Soil Problems, and Pruning Trends. The dates and locations are as follows: March 2 – Norfolk; March 3 – Omaha; March 4 – Lincoln; March 9 – Scottsbluff; March 10 - North Platte;

March 11 – Hastings. For more information and registration forms, visit the Nebraska Forest Service web site at http://www.nfs.unl.edu/NFSCalendar.HTM .

Two-Day Event Planned for 2003 Tree City USA Ceremony

Christine Meyer, Nebraska Forest Service

An April 7-8 celebration will recognize Nebraska communities and individuals for their tree preservation and development efforts. This event honors Tree City USA communities and tree board members, educators, youth, media, businesses and community volunteers, said Chip Murrow, community forestry assistant at the Nebraska Forest Service at the University of Nebraska-Lincoln.

"Greening Nebraska's Communities" is the theme for the second annual Nebraska Community Tree Conference and the Tree City USA awards program is to be at the Cornhusker Hotel this year. An array of speakers will provide practical information on tree selection and care. Tree City USA awards will be presented on Wednesday afternoon; Community Forestry and Champion Tree awards will be recognized at the evening banquet. People from all communities interested in their tree resources are encouraged to attend. Attendance by board members is strongly encouraged. Gov. Mike Johanns and Nebraska State Forester Gary Hergenrader will present the awards. Awards include Tree City and Tree Line USA, Nebraska tree resource honor awards and Nebraska champion tree recognition.

"This event is designed to combine the Trees =n= Towns Conference and Tree City USA celebrations into one commemoration to acknowledge Tree City efforts and to reach communities that not yet a part of Tree City USA," Murrow said.

For a community to receive Tree City USA awards, it must have a tree board or department responsible for public trees, use $2 per capita on their tree resources, have an ordinance that deals with tree resources and have a formal Arbor Day celebration. For more information about the ceremony, meals, and lodging information or to register, contact Murrow at the Nebraska Forest Service, 103 Plant Industry, Lincoln, Neb. 68583-0815; call (402)472-1382, fax (402)472-2964 or email jmurrow2@unl.edu.

Fact Sheets Explore SEQ CHAPTER \h \r 1Water Transfer and Marketing, Management of Dakota Aquifer

Charles Flowerday, School of Natural Resources

Water transfer and marketing in Nebraska are featured in a free fact sheet published by the University of Nebraska-Lincoln's Conservation and Survey Division (CSD). Groundwater chemistry and management of the Dakota aquifer, the state's most important secondary aquifer, are examined in a second CSD fact sheet. *Water Transfer and Marketing in Nebraska*, by UNL water specialist J. Michael Jess, addresses the current state of Nebraska laws regulating transfer of surface water or groundwater.

In *Geology, Groundwater Chemistry and Management of the Dakota Aquifer in Nebraska*, UNL groundwater geologists David Gosselin and F. Edwin Harvey, and editor Charles Flowerday, all with CSD and the School of Natural Resources, use groundwater chemistry to assess the history of the water in the Dakota aquifer and explore management issues related to it.

The fact sheet series, called *Earth Science Notes*, provides four to six pages of information on diverse research topics involving Nebraska's natural resources. Copies of *Earth Science Notes* are available from Conservation and Survey Division, 113 Nebraska Hall, University of Nebraska-Lincoln, Lincoln, NE., 68588-0517; e-mail: csdsales@unl.edu or phone (402) 472-7523. Single copies are free; multiple copies are $2 each. If requesting multiple copies be sent by mail, add a $2 fee. Nebraska residents should add city and state sales tax.

CSD Redesigns Its Web Site to Coordinate with SNR Site

Duane R. Mohlman, Conservation and Survey Division/School of Natural Resources

In January, the new Conservation and Survey Division (CSD) web site debuted at *http://csd.unl.edu*. The green and blue color scheme is similar to the School of Natural Resource's (SNR) new web site, introduced in 2003 at *http://snr.unl.edu*. The color scheme reflects CSD's new role as the natural resources survey component of SNR. The site includes sections on geologic, water and soil survey, as well as on geographic survey, remote sensing and geographic information systems, represented by the Center for Advanced Land Management Information Systems.

The web site also features a new online CSD publications catalog. It can be queried by publication series, author or keyword in the title or description. Pending discussions with the Cooperative Extension Division, this publications database is a prelude to an on-line shopping cart that will include CSD publications and the extension publications of the former School of Natural Resource Sciences.

There also is a link to the Nebraska Department of Natural Resources' *Registered Groundwater Wells Data Retrieval* web page. During the 1990s, CSD automated the geologic logs part of this massive database, offering data on sediment size (gravel, sand, silt, clay) by depth on all registered water wells in the state and other key conditions of groundwater geology. Other items of interest under the "Water Survey" menu include hydrogeologic summaries of Nebraska's groundwater regions and short reports on domestic well-water quality in rural Nebraska.

As before, one can download a number of state and federal data sets, including the popular U.S. Geological Survey digital raster graphics (topographic maps), the Nebraska elevation data set and about 60 statewide geographic information system data sets. Another photographic and interpretive data base of interest is "Landslides in Nebraska," available from the geology part of the "Survey Areas" menu. The status of geologic mapping in the state can be viewed by selecting the "StateMap" menu item from "Geology" under "Survey Areas."

An updated *Glossary of Selected Geologic Terms* containing 438 terms is also available. If you are interested in agates and gems, look at these new data bases: the *Agate Page*, which contains 851 images, many with descriptions; the *Agate Bibliography*, with 4,673 citations; the *Agate Lexicon*, with 3,084 citations; and *Nebraska Gems*, with 97 images and descriptions. Roger Pabian, CSD emeritus research professor of geology, compiled this data during a 35-year career. Also available under the "Agates/Fossils" menu are data bases on "Fossil Fish from Nebraska" and "Nebraska's Invertebrate Fossils."

UNL Water and Natural Resources Lectures

Steve Ress, UNL Water Center/School of Natural Resources

Current water and natural resources issues are the focus of a series of free public lectures on the University of Nebraska-Lincoln's East Campus that began in January and run through April. The lectures are 3-4 p.m. each Wednesday through April 28, except March 17, at L.W. Chase Hall on UNL's East Campus.

More than half the speakers are from the School of Natural Resources. UNL scientists are covering topics ranging from emergency response and homeland security planning using geographic information systems to the geology of the Lewis and Clark expedition and from the future of the University of Nebraska State Museum to studies of bats.

Some lectures will feature outside speakers including: Steve Schwartz, Oklahoma State University, discussing wetland biodiversity; Casey Kruse of the U.S. Army Corps of Engineers talking about the biological needs of interior least terns and piping plovers in the Missouri River valley; and Randy Kolka of the U.S. Department of Agriculture Forest Service in Grand Rapids, Minn., discussing better understanding of ecosystems through multidisciplinary science. For a schedule of the remaining lectures, please go to: watercenter.unl.edu .

Lewis and Clark Book Celebrates Great Plains Geology Noted by Duo

George Green, School of Natural Resources

The National Park Service estimates that as many as several million people will likely retrace part of Meriwether Lewis and William Clark's famous trek across the Great Plains when the bicentennial of their epic journey begins this spring.

With assistance from two publications written by Robert F. Diffendal, Jr., University of Nebraska-Lincoln professor emeritus, and his wife, Anne P. Diffendal, a historical consultant and former archivist, these latter-day "explorers" will be able to locate sites of geologic interest that Lewis and Clark described in their journals.

Over the last three years, the Diffendals conducted extensive research along the Corps of Discovery's route, visiting all the identifiable sites noted in the explorers' journals from the Missouri River in southeastern Nebraska to the Yellowstone River in Montana.

This research culminated in two publications that catalog sites people can visit without intruding on private land, said Bob Diffendal, formerly research geologist with the Conservation and Survey Division, the state geological survey.

Lewis and Clark and the Geology of the Great Plains, their major publication, opens with a general discussion of the geology of the Great Plains as modern science now understand it. It then outlines an array of sites travelers can explore. It presents them with modern explanations and photographs alongside quotes from the journals of Lewis and Clark that describe these areas.

This arrangement, the former Institute of Agriculture and Natural Resources research geologist said, gives visitors a chance to see the sites the explorers passed and compare their observations with current understandings of sediment, landforms, waters, minerals and other resources. "People can say 'wow' – that is what they are talking about," he added.

A second, shorter publication entitled *Lewis and Clark and the Geology of Nebraska and Adjacent States* sticks to this format but only canvasses sites in or near the Nebraska reach of the Missouri. The publication surveys 21 sites, including six key locations across the river in Missouri, Iowa and South Dakota.

Lewis and Clark and the Geology of the Great Plains is $20 plus $3 shipping, and *Lewis and Clark and the Geology of Nebraska and Adjacent States* is $15 plus $2 shipping. Nebraska residents should add city and state

sales tax. Email requests to: csdsales@unl.edu; or by post to: Map and Publication Sales; 104 Nebraska Hall; P. O. Box 880517; University of Nebraska-Lincoln 68588-0517.

Newsletter compiled by Kylee Anderson and edited by Charles Flowerday, Conservation and Survey Division, University of Nebraska-Lincoln