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Water Current Newsletter

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# Water Current

## Research Brief:

## Simple Iron Treatment Inexpensive Way to Remove Pesticides from Contaminated Soil

by Steve Ress

A relatively simple method of mixing iron into soil contaminated with pesticides could save millions of dollars for those faced with cleaning up environmental spills.

"There are always going to be spills that go unreported in large part because of the high costs associated with treating them. If a low-cost, low-tech way of cleaning up pesticide spills can be used as an alternative, more of them may be reported and dealt with and that's good for the environment," said Steve Comfort, a University of Nebraska soil environmental chemist.

As part of ongoing research on ways to clean up soil and ground water contaminated with potentially toxic

pesticides and ordinance compounds, Comfort and NU residue chemist Pat Shea recently struck upon a method of mixing pesticide-contaminated soil with fine-grained metallic iron and water. This approach can successfully eliminate up to 99 percent of the contamination, allowing the soil to be returned to its original site.

The NU Institute of Agriculture and Natural Resources (IANR) researchers were able to test their treatment method on a large scale last summer in southwest Nebraska.

The site was a farm cooperative where nearly five years ago an accidental spill dumped more than 750 gallons of metolachlor into a clay-lined waste lagoon at the co-op.

Metolachlor is one of the most commonly used farm herbicides in Nebraska, most often encountered under the Dual trade name.

"The water table is shallow at the site and analysis of ground water and soil from locations near the lagoon indicated high potential for groundwater contamination," Comfort said.

After the accidental spill, about 1,000 cubic yards of contaminated soil were excavated from the lagoon and held at the site, awaiting either removal or remedial treatment.

"The pesticide concentrations were high enough that they posed a risk of sustaining ground water contamination, as well as being potentially toxic to surrounding plant and animal life," Shea said.

As part of their demonstration project, the IANR research chemists placed the stockpiled, contaminated

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A tractor pulling the "Microenfractionator" mixed the bulk soil three times as a step in the decontamination process. NU researchers successfully used this method to substantially reduce metolachlor concentrations from soil in a waste lagoon in southwest Nebraska (photo: Steve Comfort).

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# A Dry-Spell or Multi-Year Drought? Elliott to Arrive in June; Awards to be Presented at NWCC Conference

## from the DIRECTOR

Edward F. Vitzthum

Scientists have long ago acceded to the fact that contemporary scholarship, regardless of the area, is interdisciplinary. Events of recent weeks, or perhaps more accurately, the lack of them, underscore this point forcibly.

Nebraska has been experiencing a particularly dry winter. Estimates varied between several reports issued at the end of January, but most were asserting that for that month alone, the moisture deficit was approximately six inches. Some are suggesting this trend will continue through the rapidly approaching spring months, others are suggesting that we may be on the leading edge of a multi-year drought cycle.

Whether or not these predictions are accurate, only time will tell. However, as the moisture continues to

be absent from Nebraska's winter weather, it underscores once again how dependent we are on that vital resource. It underscores too the importance of the University of Nebraska Institute of Agriculture and Natural Resources' School of Natural Resource Sciences as a mechanism through which climatology, meteorology, hydrology and numerous other disciplines can be focused on finding answers to the many questions that still remain about water.

And for those who may not yet have heard, Edward T. "Ted" Elliott will succeed Blaine Blad as director of the School of Natural Resource Sciences effective June 1. Most recently, Dr. Elliott has been a program officer for ecosystem studies with the National Science Foundation. He has held research and administrative positions at Colorado State University, where he also received a bachelor's degree in soil science and a master's degree in soil chemistry and microbiology.

Dr. Elliott also has been employed previously with both the U.S. Environmental Protection Agency and the Agricultural Research Service, U.S. Department of Agriculture.

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Three major awards - all related to water - will be presented at next

month's 29th annual conference of the Nebraska Water Conference Council.

Dr. Darrell G. Watts, a professor in NU's Biological Systems Engineering, will receive the organization's Pioneer Award, presented annually to an individual for outstanding accomplishments in the water resources area. The organization's Progress Award, presented to a group or agency or organization, will be awarded to Isco, Inc. of Lincoln. Isco is one of the leading manufacturers of a variety of water monitoring equipment and have been very supportive of a wide variety of environmental education groups and programs.

The Groundwater Foundation also will utilize the NWCC conference as the occasion for presenting its annual Maurice Kremer Groundwater Achievement Award. The foundation presents the award to individuals who have "created a beneficial legacy of groundwater-related service in the State of Nebraska." This year's recipient is Wayne Madsen, a well driller and long active in many water-related programs through the Nebraska Well Drillers Association.

Refer to the back page of this issue of the Water Current for more information about the March 6-8 conference that will be held at Lincoln's Cornhusker Motel. The next issue of the Water Current will also carry

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## Water Current

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## Research Brief:

# Restoring Sandpit Lake Quality Linked to Phosphorus Reduction Technique

by Steve Ress

University of Nebraska researchers are honing a promising, and nontoxic method of controlling blue-green algae that can clog sandpit lakes making them nearly unusable for recreational purposes.



University of Nebraska-Lincoln water quality specialist John Holz (left) and research assistant Stephan Penas (right) surface apply aluminum sulfate to Fremont State Recreation Area Lake No. 2. Treating sandpit lake water with the chemical has proven effective in removing phosphorus that blue-green algae use as a nutrient. Reducing algae blooms improves fish habitat and makes the lakes more useable for recreational purposes (photo: Kyle Hoagland).

"From a waterfront property owner's perspective, there's probably nothing more disheartening than a foul-smelling lake with poor water visibility that is regularly covered with a blue-green-colored scum," said NU water quality specialist John Holz.

Improving water quality, getting rid of noxious odors associated with blooms of algae and enhancing fish habitat were some of the reasons Holz and aquatic ecologist Kyle Hoagland embarked on the research.

The key to decreasing the amount of algae is to isolate and reduce the high levels of phosphorus contaminating many sandpit lakes. Phosphorus is a plant nutrient and principle food source for blue-green algae. Phosphorus can enter the sandpit lakes in a variety of ways: as chemical runoff from croplands or turfgrass and from septic systems near the lake, to name a few.

"When phosphorus is high, algae grow excessively, to the point where it can impair a lake for recreational purposes, including swimming, water skiing, fishing and boating," Holz said; "Plus it can significantly reduce the value of lakefront property."

For several years Holz and Hoagland have researched the use of aluminum sulfate in groundwater-fed sandpit lakes near Fremont. Aluminum sulfate is added to the water, where it binds with the phosphorus and settles to the bottom, forming a barrier that elimi-

nates the phosphorus as food for blue-green algae.

Results of their research have been gratifying.

"Our results show that a proper aluminum sulfate barrier prevented nearly 97 percent of all phosphorus from entering the lake from the sediments on the bottom. That increased water clarity by more than 130 percent and reduced the amount of algae in the lake by about 65 percent," Holz said. That increased the clarity of the water by nearly four feet. Monitoring lake water and aquatic life in conjunction with the research also indicates that aluminum sulfate has no toxic effect on fish or lake water.

The traditional method of treating algae-infested water has been to apply copper sulfate, which kills algae, as well as other aquatic organisms, but doesn't change the water's nutrient level.

"It's toxic and it doesn't treat the problem, only the symptom," Holz said.

Copper sulfate treatment is also temporary, usually having to be repeated several times per year to be effective in keeping algae blooms from reappearing. Aluminum sulfate, on the other hand, can remain an effective phosphorus barrier for seven or more years with just one application.

"Initially it's more expensive to apply than copper sulfate....about \$500 per surface acre....but it's far more



Seeing is believing. Jars of water taken from groundwater-fed sandpit lakes near Fremont show how treating the water with aluminum sulfate can help eliminate blue-green algae by removing the phosphorus it feeds upon. The treatment can improve water clarity by more than 130 percent according to NU aquatic researchers (photo: Kyle Hoagland).

cost effective in the long run since you don't have to repeat the applications but every five to seven years," said Holz.

Aluminum sulfate is applied to a sandpit lake by both injecting it into the water and spraying it on the water's surface. Once in the water, the chemical binds the phosphorus at the bottom of the lake, preventing the algae from feeding on it and also forming a barrier against more

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# UNL Hosting Science Day 2000 in April

University of Nebraska-Lincoln's science community hosts Science Day 2000 on April 15 from 9 a.m. to 4 p.m.

Activities will be held in conjunction with the State Science Olympiad competition. All activities take place at the UNL city campus. Middle and high school students and their teachers are invited to attend.

Events include the isolation of DNA from food, "The Science of Food," critter races, "The Forest: It's What's for Breakfast," the in-vitro fertilization of sea urchins, geo-science activities, paper chromatography, physics activities, and making silly putty.

For each of the 36 Science Olympiad events there will be an award of \$150 to the first place team's school science program. Six of the Science Olympiad events will hold a \$500 UNL scholarship for the first place winner(s) upon his/her registration into the awarding University department major. Trophies are awarded to the top five competitors in each event.

For more information on how to participate in next year's event, please contact Cindy Larson-Miller at 472-9305 or [clarson@unlserve.unl.edu](mailto:clarson@unlserve.unl.edu). Teachers and students can register for Science Day 2000 on-line at <http://www.geocities.com/ogrethefirst/index.htm>.

## Ensuring "Water for the 21st Century"

by **Andras Szollosi-Nagy, Director,**  
**Division of Water Sciences, UNESCO**

Following the decision of the United Nations General Assembly, the World Day for Water has been observed on March 22 since 1993. It is a day for reflection on problems related to water to be faced in the coming years and also a day for joy and celebration in recognition of the many important roles water plays in every aspect of our lives.

At its 19th session, the ACC Subcommittee on Water Resources, coordinating freshwater-related activities of agencies and programs of the UN family, entrusted UNESCO with the preparation of background material reflecting the lead-theme of the World Day for Water 2000. The theme selected is "Water for the 21st Century", focusing on the challenges to be faced by humanity in water resources development and management in the next century.

This theme was selected to coincide with the completion of the World Water Vision project and the Second World Water Forum to be held in The Hague (Netherlands) March 17-22, thus mutually enhancing efforts and impacts. The background material is designed to show the dedication of UN agencies and programs to water issues, but its primary objective is to provide reference material for those wishing to observe this day in national, regional and local contexts.

On the occasion of this celebration UNESCO, through the International Hydrological Programme (IHP) of the Division of Water Sciences, has prepared a web site at [www.unesco.org/science/waterday2000](http://www.unesco.org/science/waterday2000).

This site will be updated regularly not only with our material but also with contributions from all concerned and interested to contribute. The final version of the site will be ready by March 1. The site will contain

UNESCO's statement as well as those of the other UN water-related agencies. A great deal of water-related information can also be consulted on and downloaded from this site.

The site will be linked to other interesting water-related web sites and to the web sites of UNESCO's IHP, the World Water Vision project and the Second World Water Forum.

UNESCO, through the IHP of the Division of Water Sciences, and the World Water Vision exercise invite everyone to join us in the celebration of this day. Please celebrate this day and contribute your ideas and comments not only to improve our web site and information exchange but also to attain a better world for water in the 21st Century.

### From the Director

(continued from page 2)

wrap-up information and photographs from the annual event.

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A past recipient of both the NWCC's Pioneer Award and Groundwater Foundation's Kremer Award passed away this past month. All of us who have been associated with water research and education in Nebraska mourned the loss on January 11 of Dr. Leslie F. Sheffield. Dr. Sheffield is probably best remembered for his work in organizing many NWCC annual conferences and annual, summer water tours that visited many sites across Nebraska and the nation.



## Simple Iron Treatment Inexpensive Way to Remove Pesticides from Soil (Continued from page 1)

soil into long windrows using common earthmoving equipment and then mixed three times with a high-speed implement that its manufacturer has trademarked under the name "microenfractionator." The device combines the actions of homogenizing the soil, reducing the size of its particles and aeration. A tractor is used to pull the implement through the windrows of soil, as part of the treatment process, fine-grained iron particles are added to the mixing operation, along with water.

"The microenfractionator provided for uniform distribution of the iron within the windrowed soil and helped make the initial pesticide concentration more uniform," Shea said.

The mixed and treated windrows were then covered with sheets of

clear plastic and kept moist for the next three months.

Following the addition of the iron particles, along with some other amendments, such as acetic acid and aluminum sulfate, the metolachlor concentrations in the contaminated soil rapidly decreased, with chemical destruction rates between 72 and 99 percent within the first 90 days, said Comfort. Even one day after treatment, the soil began showing measurable decreases in metolachlor contamination.

Not only did the environment benefit from this process, the potential cost savings are huge.

Using the current, accepted practice of transporting and incinerating the 2.5 million pounds of contaminated soil would have cost more than

\$3.1 million. Using Comfort and Shea's approach was estimated at less than \$65,000, including the labor.

"The iron is the key. It shows the potential to very quickly and effectively promote the decomposition of a wide variety of pesticides," said Shea. An added bonus of this method is that people can be quickly and inexpensively trained to do it, using relatively inexpensive and readily available machinery and supplies, soil additives and techniques.

The IANR Agricultural Research Division research is ongoing and is being funded and sponsored in part by NU's School of Natural Resource Sciences and Water Center/Environmental Programs and a grant from the U.S. Geological Survey.

**Changes in Metolachlor Concentration (mg kg<sup>-3</sup>) Following Treatment with Iron**

Treatment	Initial Cone	Days after Application					
		28 days		60 days		90 days	
		Cone	% decline	Cone	% decline	Cone	% decline
Control	1,813	1638	10	2,035	-12	1,522	16
Fe <sup>0</sup> only	1,789	537	70	676	62	504	72
Fe <sup>0</sup> + acetic acid	1,740	162	91	375	78	90	95
Fe <sup>0</sup> + Al <sub>2</sub> (SO <sub>4</sub> ) <sub>3</sub>	1,656	103	94	53	97	40	98
Fe <sup>0</sup> + Al <sub>2</sub> (SO <sub>4</sub> ) <sub>3</sub> + acetic acid	1,402	34	98	25	98	13	99

## Restoring Sandpit Lake Quality Linked to Phosphorus Reduction Technique (Continued from page 3)

phosphorus entering the lake through the groundwater that supplies them.

Holz, now an NU Institute of Agriculture and Natural Resources (IANR) assistant research professor, began work on the project several years ago while he was one of Hoagland's graduate students. The two first confirmed their predictions for the aluminum sulfate's success by treating and monitoring 250-gallon plastic tanks filled with lake water.

Later research was conducted in contained areas of Lake Leba and Fremont State Recreation Area Lake No. 2, both near Fremont. Ultimately, 12,000 gallons of liquid aluminum

sulfate were added to an 11 surface-acre section of Lake Leba and 14,000 gallons to the 15 surface-acre Lake No. 2.

"The phosphorus that the algae require is contained in the sediments of the lake bottom. The aluminum sulfate binds with the phosphorus and prevents it from leaving the sediments," Holz explained.

That makes the sandpit lakes ideal for the research, since they are relatively closed systems where there is little surface inflow or outflow and little sedimentation.

The technique the two IANR researchers developed has proven so

promising that Holz was recently presented with a prestigious award in "Technical Excellence in Lake Restoration, Protection and Management" by the North American Lake Management Society.

Funding and support for the research has come from the U.S. Environmental Protection Agency, U.S. Geological Survey, Nebraska Department of Environmental Quality, NEBCO (a Lincoln-based company that owns Lake Leba) and NU's IANR, School of Natural Resource Sciences and Water Center/Environmental Programs.





# Water News Briefs

## Groundwater Workshops

The Groundwater Foundation will be offering workshops to promote understanding of drinking water source assessment and protection in four U.S. Environmental Protection Agency regions.

The workshops will focus on training local leaders and motivating community members to get involved in drinking water source assessment and protection process on the local level.

Workshop materials include a detailed workshop guide, overheads and handouts that can be used to put on a workshop. Among other topics, the workshop guides cover requirements of the 1996 Safe Drinking Water Act Amendments; how states develop plans for drinking water source assessment and what to look for in those plans; and how community members can get involved in the drinking water source assessment and protection process on the local level.

The EPA regions (and their respective states) where the workshops will be presented are: Region III (Delaware, Washington D.C., Maryland, Pennsylvania, Virginia, West Virginia); Region V (Illinois, Indiana, Michigan, Minnesota, Ohio, Wisconsin); Region VII (Iowa, Kansas, Missouri, Nebraska); and Region IX (Arizona, California, Hawaii, Nevada). Workshops are supported by grant funds from each of the four EPA regions.

For more information, contact Rachael Herpel at (800)858-4844 or e-mail [guardian@groundwater.org](mailto:guardian@groundwater.org).

## NEEA Plans June Conference

The Nebraska Environment Education Association (NEEA) is planning a conference for June 5-7 at Camp Calvin Crest, near Fremont.

NEEA president Harry Heafer said the theme is "A Current Event: Nebraska's Lower Platte River,

Meandering Through the Past, Present and Future."

"A panel will discuss water, water use and land use," Heafer said. Spearheading conference planning are Heafer and Syd Hime of the Lower Platte South Natural Resources District in Lincoln.

"The conference is for anyone who is educating youth and adults about the environment," Heafer said.

Presentations are being solicited for Monday and Tuesday afternoon concurrent sessions in the following, broad topic areas: The past, present and future of the Lower Platte River; The Lower Platte River's natural history, human history and regional impacts; and What the future might bring as land use and population growth become key issues.

Fifty-word presentation abstracts can be sent to Heafer at: NEEA, P.O. Box 85344, Lincoln, NE 68501. Submission deadline is March 1. For more information on the conference itself, contact Heafer at (402)441-8035 or e-mail [hheafer@ci.lincoln.ne.us](mailto:hheafer@ci.lincoln.ne.us). Conference brochures are expected to be available in March.

## The Law of the Missouri River

Water rights, management and policy will be explored in "The Law of the Missouri River" conference March 23-24 in Kansas City.

The conference, at Kansas City's Hyatt Regency Crown Center, is targeted to anyone involved in the regulation, use, acquisition and development of water rights on the Missouri River.

For information, phone (800)873-7130, e-mail [registrar@cle.com](mailto:registrar@cle.com) or write to CLE International, 1541 Race St., Denver, CO 80206.

## Festival Volunteers Needed

The sixth annual Earth Wellness Festival is looking for volunteers.

The festival will be held Thursday, March 23 at Southeast Community College-Lincoln from 9 a.m. to 4 p.m. Nearly 3,300 Lancaster County youth and 325 teachers will attend this event, which is dedicated to edu-

cating future stewards of the earth. Students use hands-on activities to learn the interdependency of land, water, air and living resources. They will identify human impact on our planet and help learn action steps to enrich the environment.

Some 85 presenters and 200 volunteers are needed to coordinate this educational event. If you want to be part of Earth Wellness Festival, call Harry Heafer (402-441-8035), Syd Hime (402-476-2729) John Chess (402-441-8027) or Arlene Hanna (402-441-7180) as soon as possible.

## Funding for Youth Water Festivals

NU Cooperative Extension continues to have funding from the Nebraska Department of Environmental Quality (NDEQ) to support youth water festivals in 2000. This funding is provided through the Section 319 Nonpoint Source Pollution Program administered by the Environmental Protection Agency-Region 7.

This funding can be requested by submitting a proposal, no longer than two pages (one page is preferable), to DeLynn Hay, Program Leader. The proposal must include the educational objectives of the festival, expected outcomes, number of participants and a budget summary. Funding of up to \$1 per participant can be requested. Special requests above the \$1 per participant will be considered for development of new activities or special one-time expenses. Provide detail to justify this additional funding.

Payment of grant funding will be after the event is completed and a bill is submitted to Cooperative Extension. An itemized bill listing expenses must be submitted. Three copies of festival announcements, event programs and news releases must be included with the bill. The bill will not be paid until an approved impact report on the festival is submitted.

Festivals supported by this funding must list NDEQ and EPA-Region 7 as cooperators or partners on all festival publicity, reports, newsletters and other materials. This can be accomplished by including the statement that "partial funding was provided by NDEQ and EPA-Region 7."



## FEBRUARY

23: Water Resources Seminar, "Certainty v Contemporary Needs for Change - the Dilemma Created by Interstate Water Rights," J. David Aiken, Water Law Specialist, UNL Department of Agricultural Economics. 3 p.m., Room 116, L.W. Chase Hall, UNL East Campus, Lincoln. Open to the public. For information, phone (402)472-3305 or e-mail sress1@unl.edu.

24-25: 18th Annual Water Law Conference: New Rules of the Game - Are Water Law Fundamentals Really Changing? U.S. Grant Hotel, San Diego, CA. For information, phone (312)988-5724 or FAX (312)988-5572.

27-Mar. 1: "Accomplishments to Date: Opportunities for the Future," the 14th Annual Water Environment Federation Residuals and Biosolids Management Conference, Boston, MA. More than 90 technical sessions on a variety of topics. For registration information, phone (800)666-0206 or e-mail Jerome Bruce at jbruce@wef.org.

## MARCH

1: Water Resources Seminar, Williams Lecture, "Kansas v Colorado: the Arkansas River and Origins of the Equity Doctrine," James E. Sherow, Professor of History, Kansas State University, Manhattan, KS. 3 p.m., Room 116, L.W. Chase Hall, UNL East Campus, Lincoln. Open to the public. For information, phone (402)472-3305 or e-mail sress1@unl.edu.

6-8: Nebraska Water 2000 - Management for the Future, Cornhusker Hotel and Burnham Yates Conference Center, Lincoln. Annual conference of the Nebraska Water Conference Council and third in a series of conferences exploring information, planning and management of Nebraska's water resources in the 21st century. For information, contact Tricia Liedle at (402)472-3305 or e-mail rkuzelka1@unl.edu.

12-17: 10th World Water Congress, Melbourne 2000. Sponsored by the International Water Resources Association. C/-ICMS Pty Ltd, 84 Queensbridge St., Southbank Victoria 3006 Australia. For information or a

registration booklet, phone +61 3 9682 0244 or FAX +61 3 9682 0288.

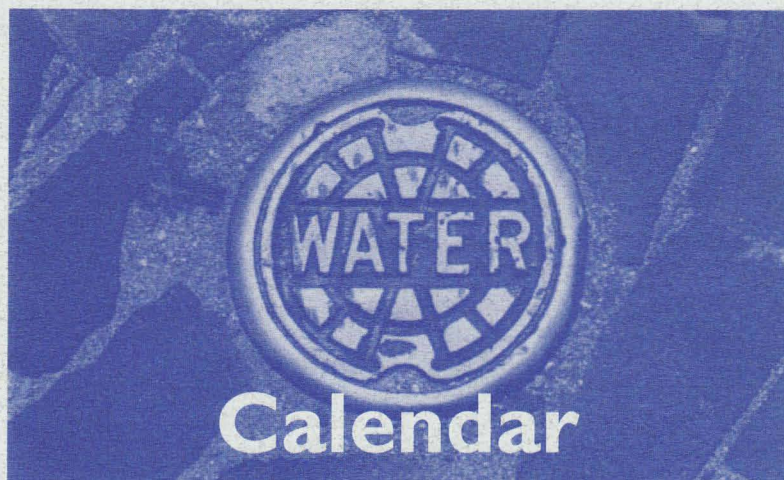
14: "Groundwater: A Grand Oasis," the children's groundwater festival, sponsored by The Groundwater Foundation, Central Community College and College Park, Grand Island.

13-16: Conference on Land Stewardship in the 21st Century: The Contributions of Watershed Management, Tucson, AZ. For information, contact Peter F. Folliott, University of Arizona-Tucson at (520)621-7276 or e-mail ffolpete@ag.arizona.edu.

17: Integrated Watershed Approaches: "TMDLs or Tylenol PM - Which is the more bitter pill to swallow?" American Water Resources Association, Colorado Section, annual symposium, Mt. Vernon Country Club, near Golden, CO. For more information, contact Tim Steele at (303)674-0266 or tsteel@exponent.com.

22: Water Resources Seminar, "The Decree in Nebraska v Wyoming," LeRoy Sievers, Knudsen Berkheimer Richardson and Endacott, Lincoln. 3 p.m., Room 116, L.W. Chase Hall, UNL East Campus, Lincoln. Open to the public. For information, phone (402)472-3305 or e-mail sress1@unl.edu.

22-24: Globe 2000, Bi Annual International Conference on Business and The Environment, Vancouver, British Columbia, Canada.



For information, phone (604)775-7522 or e-mail john.wiebe@apfc.apfnet.org.

23: Earth Wellness Festival, Southeast Community College, Lincoln. Hands-on environmental festival for fifth graders. For information, contact Soni Cochran at (402)441-7180 or e-mail scochran2@unl.edu.

23-24: The Law of the Missouri River: Water Rights, Management and Policy, Hyatt Regency Crown Center, Kansas City. Sponsored by CLE International. For information phone (800) 873-7130 or e-mail registrar@cle.com.

29: Water Resources Seminar, "Current Litigation in Nebraska v Wyoming (since 1986), LeRoy Sievers, Knudsen Berkheimer Richardson and Endacott, Lincoln. 3 p.m., Room 116, L.W. Chase Hall, UNL East Campus, Lincoln. Open to the public. For information, phone (402)472-3305 or e-mail sress1@unl.edu.

## APRIL

5: Water Resources Seminar, "Republican River Compact (1943), Don Blankenau, Legal Counsel, Law Firm of Kutak Rock, Lincoln. 3 p.m., Room 116, L.W. Chase Hall, UNL East Campus, Lincoln. Open to the public. For information, phone (402)472-3305 or e-mail sress1@unl.edu.

12: Water Resources Seminar, Kansas v Nebraska: the Current Dispute Over Compliance With Terms of the Republican River Compact (since 1998), David Cookson, Legal Counsel, Nebraska Attorney General's Office, Lincoln. 3 p.m., Room 116, L.W. Chase Hall, UNL East Campus, Lincoln. Open to the public. For information, phone (402)472-3305 or e-mail sress1@unl.edu.

17-19: National Watershed Outreach Conference, San Diego, CA. Sponsored by the U.S. EPA, UC Cooperative Extension and others. For information, contact Stacie Craddock at (202)260-3788 or e-mail at craddock.stacie@epa.gov.

19: Water Resources Seminar, Williams Lecture, "Experiences in Negotiating Interstate Agreements," James Cook, Legal Counsel, Nebraska Natural Resources Commission, Lincoln. 3 p.m., Room 116, L.W. Chase Hall, UNL East Campus, Lincoln. Open to the public. For information, phone (402)472-3305 or e-mail sress1@unl.edu.

*You Are Cordially Invited to Attend....*

### **The 2000 UNL Water Resources Seminar**

#### **"Cooperation and Tension: The History and Future of Nebraska's Interstate Agreements"**

*Free public lectures each Wednesday from 3 to 3:50 p.m. from  
Jan. 12 through April 19 (except March 8 and 15)*

*All lectures are in Room 116, L.W. Chase Hall,  
UNL East Campus, Lincoln*

**For a schedule of speakers phone (402)472-3305**



# Time Growing Short To Get Involved With Nebraska Water 2000 Conference

by Steve Ress

If you want to be part of presenting a water management agenda to the Nebraska Legislature's Agriculture and Natural Resources Committees there is still time to get involved.

Until March 1 you can preregister at reduced rates for the 29th annual Nebraska Water Conference, March 6-8 at Lincoln's Cornhusker Hotel. This year's conference concludes a three-year look at challenges, concerns and opportunities in Nebraska's water future under the theme of "Nebraska Water 2000."

"This water conference presents a unique opportunity for a wide variety of Nebraskans to gather and discuss water management issues. Attendees will participate in developing a prioritized list of water management issues to be presented to Nebraska's leaders," said conference co-organizer Bob Kuzelka, Assistant to the Director of NU's Water Center/Environmental Programs.

The list will be presented to the Agriculture and Natural Resources Committee of the (Nebraska) legislature at the conclusion of the conference.

Plenary speakers helping lead water management discussions include W. Don Nelson, a past advisor on policy and decision making on the staffs of four state chief executives in both Nebraska and Wyoming; Steven G. Oltmans, longtime water management specialist and current manager of the Papio-Missouri Natural Resources District; and Groundwater Foundation founder and president Susan S. Seacrest, a role model for citizen involvement in all areas of water protection, education and management.

Conference sessions focus on management challenges, issues and prioritizing.

The Nebraska Water Conference Council's annual

Pioneer and Progress Awards and The Groundwater Foundation's annual Kremer Award will be presented at Tuesday's luncheon.

Sessions on management issues focus on three panels looking at "Leadership and involvement," "Organization structure," and "Policy and decision making."

Management issues such as higher education, grassroots education and partnerships will be explored in the first panel. The second looks at federal primacy, state reorganization and state versus local control of water resources. The third will discuss marketing, conjunctive use, preferences, safe drinking water and resource development.

Following these panels, attendees will have a chance to expand and evaluate the initial list of issues they have heard and discussed throughout the day.

Governor Mike Johanns addresses Wednesday's breakfast and the remainder of the morning will be devoted to presenting and discussing the initial list of issues that attendees identified the day before.

The second draft of the agenda will be prioritized by conference attendees prior to lunch with invited members of the legislature, governors staff, agency directors and state political leaders.

Registration brochures giving details of the conference schedule and registration options are available by contacting Tricia Liedle, Water Center/Environmental Programs, P.O. Box 830844, University of Nebraska, Lincoln, NE 68583-0844, phoning (402)472-3305 or e-mailing sress1@unl.edu.

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