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Water Current

Speakers clear up “Muddy Mo” perspectives at conference

The U.S. Army Corps of Engineers’ “preferred alternative” to the current Missouri River Master Manual was the preferred target of presentations at the 25th Annual Nebraska Water Conference March 11-13 in Omaha. More than 200 people attended the conference.

The master manual is the system operating plan for the Missouri River. The manual was uncontroversial until the 1980s, when the worst drought since the construction of the reservoirs led to a drawdown on the reservoirs in the upper part of the Missouri Basin, said Richard Opper, executive director of the Missouri River Basin Association in Lewistown, Mont.



The Red Eagle Dancers of Lincoln, a Native American youth group, perform during the awards banquet March 12.

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The drawdown was prescribed in the manual, but the Upper Missouri Basin states were upset about the negative effects on the recreation industry. The effects of the drought and its implications for releases led the corps to plan a review of its manual in 1989, Opper said.

After several years, the corps identified its “preferred alternative,” which contains an increase in flows in the spring to meet fish and wildlife needs and an earlier end to the navigation season. Meeting resistance from various parties, the corps is still reviewing the manual.

Each year, the corps also releases an annual operating plan, which specifies releases for the current season. In March, the State of Missouri filed a lawsuit in the U.S. District Court in Kansas City against the corps’ Missouri River Division. The suit asks the court to require the corps to stop following its annual operating plan and instead follow the master manual.

This year’s plan would cut off the navigation season earlier than usual if the system’s six reservoirs held less than 52 million acre-feet of water July 1. The lawsuit alleges the annual plan would harm navigation, reduce water availability and violate environmental policy.

Chris Brescia, president of the Midwest Area River Coalition (MARC) 2000 in St. Louis, argued that navigation on the Missouri River is an essential part of U.S. infrastructure and enables the United States to compete in the world market. MARC 2000, a private sector industry coalition of agricultural producers, shippers and waterway carriers, began its involvement with the Missouri River when the corps released its preferred alternative, which the coalition opposes.

The corps’ analysis underestimates the amount of economic activity and traffic on the Missouri River, Brescia said, stressing that a reliable river operation plan

CONFERENCE.

Continued on Page 3.

Annual water conference brings new perspectives



Bob G. Volk

from the DIRECTOR

I am pleased to report that the 25th Annual Nebraska Water Conference on the Missouri River attracted an audience of over 200 people. Conference evaluations indicate participants were pleased with the speakers and the program.

Highlights to me were a discussion of the Missouri River Master Manual and its proposed revisions and presentations on river restoration projects. Historical and Native American views of the river were excellent and provided a perspective that I did not have before.

We have selected the High Plains and Ogallal aquifers as topic for next year's conference. Both water quantity and water quality issues will be covered.

Directions for the U.S. Geological Survey's competitive grants program have been set. Each of the 54 Water Resources Research Institutes in the nation will receive a base grant of \$20,000. Faculty at each university will compete for a combined pool of funds by region.

The North-Central Region, of which Nebraska is a member, will receive \$805,000 for this fiscal year. The University of Nebraska was chosen as the lead institution for this region, and we are currently designing a request for research proposals for the states in our region. A 2-to-1

match of state to federal dollars is still required, however, the maximum of funds one can request has been raised to a total of \$500,000.

I am pleased that I was afforded the honor of being elected president-elect for 1996-97 and president for 1997-98 for the National Institutes for Water Resources (NIWR). NIWR is a network of institutes in each state. The institutes conduct basic and applied research to solve water problems unique to their area. The institute officers are working hard with their federal partners and political leadership in Washington, D.C., to ensure that federal dollars will be available to states to assist in solving state problems.

In this issue of *Water Current* you will find an insert on Drinking Water Week, which is May 5-11. The insert is printed on white paper so you can duplicate and distribute it as needed.

Drinking Water Week is sponsored by the Blue Thumb Alliance. The Blue Thumb project has reached approximately 120 million people worldwide since it began in 1992.

If you'd like to find out more about how to promote Drinking Water Week in your community, contact Bettina Heinz, communications associate, at (402) 472-9549 or e-mail her at bhurst@unlinfo.unl.edu.

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CONFERENCE. Continued from Front Page.

is needed so that navigators can take advantage of the Missouri.

Tim Searchinger, senior attorney with the Environmental Defense Fund in Washington, D.C., spoke on behalf of the Missouri River Coalition. Citing corps figures, he said the economic benefit of the entire Missouri River system is \$1.3 billion. Of that, \$70 million come from recreation, and \$17 from navigation. Searchinger said he thinks the navigation benefit figure is too high.

Searchinger attributed the interest of MARC 2000 in the Missouri River to its navigation interests in the Mississippi River. Earlier cutoffs in the Missouri River navigation season could negatively affect navigation on the Mississippi, he said.

"If you cut off the season in November to minimize impacts on the Missouri, you maximize the negative impact on the Mississippi and vice versa," he said. Therefore, Searchinger argued, "small compromises" are not a possibility. He suggested to abandon navigation on the Missouri River entirely and instead to guarantee flows on the

Mississippi River, which is of greater economic importance to the navigation industry. The spring flows would help address environmental concerns.

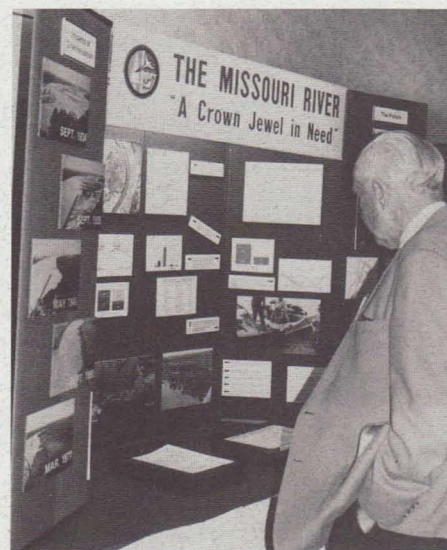
Citing the loss of fish and wildlife habitat and endangered species needs, Searchinger said a spring release is critical to fish and wildlife needs. Fish need a rising water table and certain water temperatures during their spawning period in order to reproduce, he said.

He outlined the coalition's proposed solution to Missouri River management, which focuses on restoration of the river. Restoration of extremely floodable areas is key to the proposal.

"We're not talking about removing agriculture from the Missouri River floodplains," Searchinger said. The areas involved would be areas "where people are not farming the floodplain but the river."

These areas would not necessarily have to be restored as wetlands. Rather, farmers could receive the same kind of benefits they receive for producing corn in the floodplain, and instead plant crops that are not destroyed by flooding or use grazing practices.

Federal support policies are one



This display by the Nebraska Game and Parks Commission describes the impact of channelization on the Missouri River.

of the main reasons why farmers "farm the river," he said.

Restoring these areas would be less expensive than levee repair, according to Searchinger. If not managed for navigation, "the river will restore itself," he said.

The conference was sponsored by the Nebraska Department of Water Resources and the Nebraska Water Conference Council, Conservation and Survey Division, Water Center/Environmental Programs, UNL.



Frank A. Smith receives the Maurice Kremer Groundwater Achievement Award of the Groundwater Foundation at the conference.

Water efforts recognized at awards banquet

Two individuals and one organization were recognized for their service in water-related areas at the Nebraska Water Conference.

Richard C. Hahn, president and CEO of Farmers National Co. in Omaha, received the Pioneer Award; and the Missouri River Division of the U.S. Army Corps of Engineers received the Progress Award. Both awards are given annually by the Nebraska Water Conference Council to recognize outstanding accomplishments in the water resources area.

"We're honoring Richard Hahn for his outstanding voluntary and professional work in the develop-

ment of Nebraska's water resources and in service to the Nebraska Water Conference Council," said Bob Volk, director of the Water Center/Environmental Programs unit, UNL.

Frank A. Smith, an associate professor emeritus in the Conservation and Survey Division, UNL, received the Maurice Kremer Groundwater Achievement Award. This award is given annually by the Groundwater Foundation, Lincoln, to individuals who have created a beneficial legacy of groundwater-related service in Nebraska.

global warming

Researchers find Plains at risk for climate change

LINCOLN, Neb. — The plains regions of Hungary and Nebraska are especially vulnerable to becoming extremely hot and dry, says Judit Bartholy, a meteorologist at Eötvös Loránd University in Budapest.

Bartholy recently visited Istvan Bogardi, civil engineer at the University of Nebraska-Lincoln. The researchers are working on a 5-year U.S. Information Agency project on the social and environmental consequences of rising carbon dioxide levels in the atmosphere.

"Our goal is to work together with policy-makers on environmental issues," Bartholy said.

Plains residents in both countries would be well-advised to consider lifestyle and agricultural production changes now, based on climate change research, she said.

Global change predictions presented through mass media usually show global averages, such as global average rise in temperature. However, a specific area may not see such a change, or may see a change of more dramatic proportions.

"There are very definite areas which are at high risk," Bartholy said. The Great Plains of Hungary and the Midwest (in the United States) are such areas, she said.

Bartholy and colleagues are not forecasting the climate, she stressed.

Instead, these researchers are involved in developing climate scenarios, which are based on conditional statements. For example, rather than predicting that the temperature in a given location will be 2 degrees higher in 5 years, Bartholy is looking at what changes are likely to occur when carbon dioxide in the atmosphere will have doubled. This research is based on physical and statistical models.

The baseline for carbon dioxide levels is the 1960s. "Carbon dioxide has been rising in the last 100 years, but we don't know the rate," Bartholy said, adding that carbon dioxide levels are likely to double in the atmosphere in the next 50 years.

Sponsored by UNL's Great Plains Center for Global Environmental Change, the Nebraska model considered precipitation data from Newport, Bartlett, Anselmo, Mason City, Bertrand, Seward, Genoa, West Point and Plattsmouth.

Preliminary results indicate that in winter, the probability of daily precipitation will slightly decrease, meaning it will rain or snow less often.

The variability of precipitation events will increase, however, meaning that the trend would shift to more extreme events such as blizzards or rain storms.

"The Great Plains will definitely become more dry," Bartholy said.

Results of her research indicate that in the Hungarian plains, the probability of rainfall will decrease and with it, the amount of rainfall. In other words, once carbon dioxide has doubled, it is likely to rain less often and not as much during a rain event, both in summer and winter.

It is important to consider the climate scenarios now because people need time to prepare for such changes, Bartholy said. Agricultural producers should consider the scenario and perhaps begin to switch to crops better suited to a drier climate, she said.

It is important to consider the climate scenarios now because people need time to prepare for such changes.

Although there are current efforts to curb carbon dioxide and other emissions into the atmosphere, these efforts will not show results for another 200 years or so, Bartholy said.

Carbon dioxide has a lifetime of 50 to 200 years in the atmosphere. While it is vital to plan for the distant future, it is also important to prepare for the time in between, the next 50 to 100 years, she said.

The climate change is part of the so-called "greenhouse effect." Methane contributes about 25 percent and chloro-fluoro carbon (CFC) gases about 17 percent to the effect, but carbon dioxide is the main culprit, contributing between 50 and 55 percent.

Global change literature, independent of the methods involved, agrees that temperatures will rise between 2 and 9 degrees Fahrenheit. In Nebraska, temperatures are likely to increase by 7 to 9 degrees in the winter and by 3 to 5 degrees in spring and fall.

"We should take serious this problem," Bartholy said. She considers it very difficult, it not impossible, to control population growth, which contributes to the greenhouse effect.

"It is somewhat easier to control ourselves," she said. "With good education and promotion, slowly we can teach people how to use less. From everywhere, the media, the TV, we hear the same. Use more. Buy more. Slowly, we should learn to use less and buy less."

"Slowly, we should learn to use less and buy less."

— Judit Bartholy

Otherwise, the consequences will be drastic, she said.

"I'm a person. I have children. I'd like to have space, air, life, for my children, too. We're not talking 100 years from now. We're talking 50 years, perhaps even our lifetime."

People tend to live for today, she said. For example, it's easier to take the car than to take public transportation.

"But we have to change these attitudes," she said.

Two watershed events in global warming research occurred in the form of two international conferences in Germany last year, Bartholy said. Researchers concluded that the dry continental and semi-arid spheres of the world, which includes Nebraska, Hungary and part of Arizona, are expected to be at high risk for climate change.

"Our research confirms this," Bartholy said.

The conferences also concluded that polar areas are heating up much faster than the rest of the Northern Hemisphere.

"We're absolutely sure there is a very big difference in the low latitudes and the polar area," she said. This development is likely to have a big impact on other regions. If the polar ice caps melt, more water would travel to the lower latitudes, possibly changing sea currents and raising sea levels. Flat islands in the Northern Hemisphere, such as parts of the Netherlands or Bangladesh, could disappear entirely.

Free environmental sciences software

More than 42 interactive color graphic software programs on environmental science and technology are available at low or no cost from Region 5 of the U.S. Environmental Protection Agency. Six of these programs are also available in Spanish.

The programs were developed by Purdue University in cooperation with USEPA. All programs are public domain and may be freely copied.

The programs include practical exercises for evaluating and reducing risk at farms and small businesses; complete courses in environmental assessment and comparative risk; an electronic encyclopedia of North American wetland land species and guides to residential water and energy conservation. Most were written for local officials or the general public but have proven popular for use by teachers and students up to college level.

These programs must be used on an IBM or IBM compatible computer with a hard drive and a high-density diskette drive. For more information, contact Alfred Krause at (312) 353-5787 or Krause.Alfred@epamail.epa.gov.

How to obtain EPA/Purdue Software:

1. On diskette or CD-ROM from Purdue University. Fee charged. CD-ROM costs \$25. Call (317) 494-1173 or write to The Farm Building Plan Service, Purdue University, 1146 AGEN Building, West Lafayette, IN 47907-1146.

2. From the Software for Environmental Awareness Web Pages. The Great Lakes National Program Office World Wide Web site carries the software. The files are in compressed form and can be uncompressed using PKUNZIP version 2.04c or later. Anonymous FTP is not yet available at this site. The URL is:

<http://glnpogis2.r05.epa.gov/glnpo/edu/sea/seahome.html>
For questions, send e-mail to reshkin.karen@epamail.epa.gov

3. On diskette from USEPA Region 5. The appropriate number of formatted 3.5" high density diskettes for each software program must be enclosed with each order. Do not send money. Programs take one diskette unless otherwise specified. To obtain order form, contact Karen Reshkin, USEPA Region 5, 77 W. Jackson, P-19J, Chicago, IL 60604-3590, (312) 353-6353 or e-mail reshkin.karen@epamail.epa.gov.

4. American Online subscribers may download some of the smaller programs in their entirety via modem. Use Keyword COL files, then enter Teacher File Exchange, and look in ASCII and Spanish File Exchange collections.

Pesticide guides, maps available

Pesticide users in Nebraska now have a little help determining application methods that best prevent groundwater contamination in their area.

The first part of a county map series called "Pesticides and Groundwater: An Applicator's Map and Guide to Prevent Groundwater Contamination" is complete.

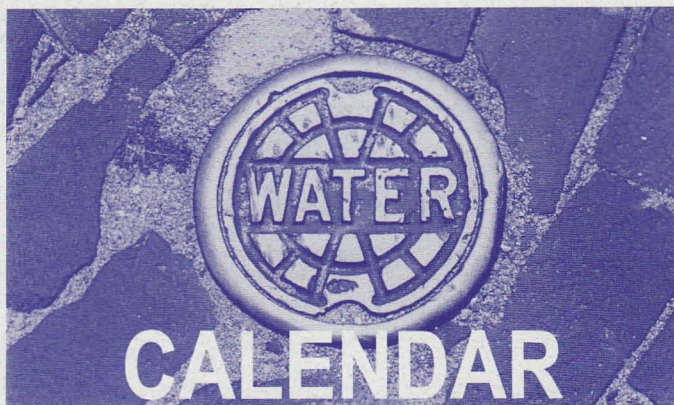
The series is being produced by the Conservation and Survey Division and the Department of Agronomy, University of Nebraska-Lincoln, and the Nebraska Department of Agriculture.

Each guide includes a color map of the relative vulnerability to contamination and a listing of pesticide types and their respective risks to groundwater contamination.

The guides are intended to provide pesticide users with general information and guidelines about what factors to consider when making pesticide application decisions.

Eight guides are available now: Adams, Box Butte, Buffalo, Cheyenne, Dawson, Hall, Hamilton, Holt, Kearney, Merrick and Phelps and Scotts Bluff. By September, 19 more county maps should be completed.

Copies of the guides are available free from the Conservation and Survey Division, Map Sales, University of Nebraska, 113 Nebraska Hall, Lincoln, NE 68588-0517.



APRIL

Nebraska Math and Science Awareness Month

April 12: Western Nebraska Groundwater Festival, Cheyenne County Community Center, Sidney. Contact Bruce Freeman, (308) 254-2377.

April 21-27: National Math and Science Week

April 28-May 5: Soil and Water Stewardship Week

MAY

May 1-2: Water Jamboree-West, Harlan County Reservoir, Alma. Contact Linda Dannehl, (308) 995-4222.

May 1-5: Symposium: Applications of Hydrogeology in Agricultural Water Quality Studies. In conjunction with North Central GSA Meeting, Ames, Iowa. Contact Geological Society of America, Meetings Department, P.O. Box 9140, Boulder, CO 80301.

May 2-3: North Central Section, Geological Society of America, 30th Annual

Meeting, Ames, Iowa. Contact GSA Meetings Department, P.O. Box 9140, Boulder, CO 80301.

May 5-11: Drinking Water Week. To obtain promotional materials, contact Blue Thumb Project, c/o American Water Works Association, 6666 West Quincy Ave., Denver, CO 80235, (303) 794-7711.

May 11: Capitol Groundwater Festival, Lincoln. Contact The Groundwater Foundation, 1-800-858-4844.

May 14: Environmental Awareness Day, Harlan County Reservoir, Alma. Sponsored by U.S. Army Corps of Engineers. Contact Jim Brown, (308) 799-2105.

JUNE

June 6-7: 10th Annual Watershed Conference. "The Watershed Illustrated: A Look at the James River." Springfield, Mo. Contact Watershed Committee of the Ozarks, (417) 866-1127.

June 8-12: "Watershed '96: Looking Ahead Together." Water Environment Federation (WEF) Confer-

ence and Exhibition, Baltimore, Md. Cosponsored with 15 U.S. agencies. Contact WEF, 1-800-666-0206.

June 10-14: Society of Wetland Scientists 17th Annual National Meeting, Kansas City Marriott Downtown, Kansas City, Mo. Contact Tom Taylor, (913) 551-7226.

JULY

July 7-10: Soil and Water Conservation Society Annual Conference, Keystone Resort, Colo.

July 30-Aug. 2: Universities Council on Water Resources meeting, San Antonio, Texas. "Integrated Management of Surface and Groundwater." Contact Wayne Jordan, (409) 845-1851.

SEPTEMBER

Sept. 9-12: Husker Harvest Days, Grand Island.

Sept. 14: Festival of Color. Lawn and Garden Open House sponsored by the UNL Department of Horticulture. University of Nebraska Research and Development Center, Ithaca.

Sept. 22-25: Rivertech '96. First International Conference on New/Emerging Concepts for Rivers. Chicago. International Water Resources Association. Contact Rivertech '96, IWRA, University of Illinois, 1101 West Peabody Drive, Urbana, IL 61801-4273. Fax: (217) 333-9561.

U.S. Geological Survey conducts water quality assessment in central Nebraska

The U.S. Geological Survey (USGS) began an assessment in 1991 of the quality of the surface and groundwater of the Platte River Basin downstream from the confluence of the North and South Platte rivers to its mouth.

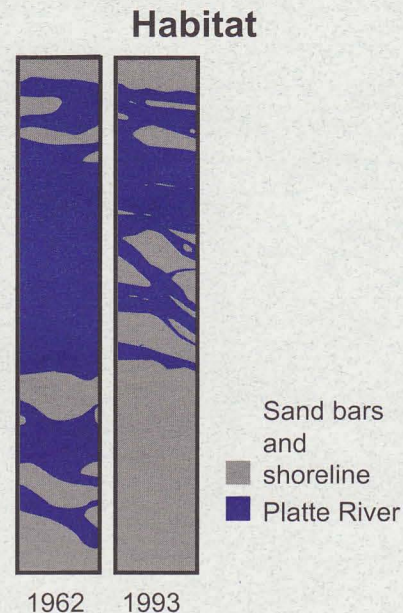
Researchers also collected biological samples and habitat data, including bed sediment and fish tissue for contaminant analysis and invertebrate and fish species.

In 1994, 15 additional study units were started in central Nebraska, and several others will begin in 1997.

With most of the sampling complete, USGS staff is working on the analysis and interpretation of the data and on the preparation of reports.

The data gained from the regional studies will be synthesized in a national report. Each study unit has a liaison committee that includes representatives from about 20 state, federal and local agencies and organizations with

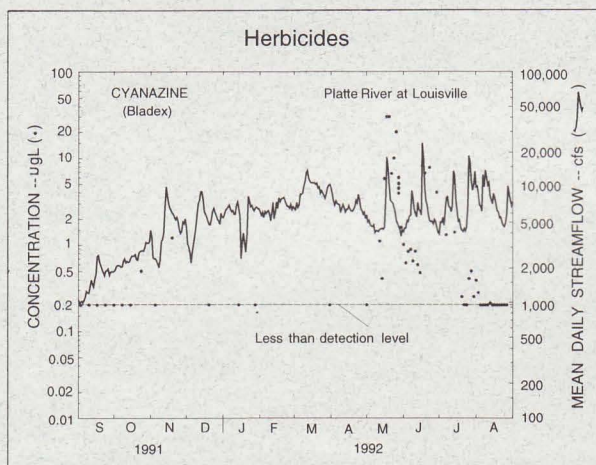
water and ecological interests. The Nebraska liaison committee meets twice each year to assist in planning and review of project results. Bob Volk, director of Water Center/Environmental Programs unit, UNL,



Species must adapt to change in habitat. The width of the Platte River at Grand Island has decreased, and sand bars have become vegetated islands in the past 30 years, changing the habitat in this reach of the Platte River.

serves on the committee. Some examples of the results have been selected for this article to show the types and analysis of data included in the Nebraska assessment.

— USGS Central Nebraska Basins Study Unit



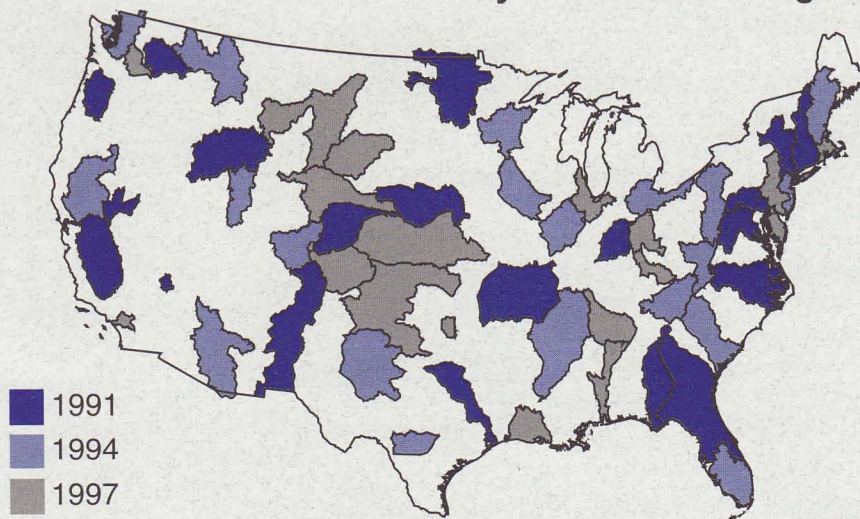
The largest concentrations of commonly applied herbicides occur during spring runoff. Average annual concentration of cyanazine in the Platte River at Louisville exceeded the health advisory level of 1 mg/L.

The water quality assessment in central Nebraska is one of 20 basin and aquifer study units in the country that initiated the USGS National Water Quality Assessment (NAWQA) Program. The goal of the program is to assess the conditions and trends in the quality of the nation's surface and groundwater.

The first years of the study consisted of intensive sampling, then activities decreased to sampling a few sites for a long period of time to describe trends.

Surface and groundwater samples were collected from 1992 to 1995 at selected sites on the Platte, many of its tributaries and in its valley.

U.S.G.S. National Water Quality Assessment Program



Here's your chance

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Return this survey to participate in a drawing for a Blue Thumb water bottle. Surveys must be returned to Water Center/Environmental Programs by May 15, 1996 by mail to address below (return whole page) or by FAX to (402) 472-3574. All surveys will be entered in the drawing; three water bottles will be given away.

- 1) What is the most useful feature of the *Water Current* to you?

- 2) What is the least useful feature of the *Water Current* to you?

- 3) Please rank in order of importance (usefulness to you), with 1 being the least important and 7 most important:
☐ Announcements of resources (e.g. publications, videos)
☐ Calendar
☐ Director's Note
☐ Faculty Features
☐ Features on water-related research
☐ Nebraska Water News Briefs
☐ Previews of events

- 4) Which topics would you like to see covered in future issues?

- 5) Do you read the *Water Current* every time you get it? ☐ Yes ☐ No

- 6) Do any other individuals read your issue of the *Water Current*? ☐ Yes ☐ No If Yes: How many?

- 7) Should the *Water Current* be published ☐ more often ☐ less often ☐ stay with 6 times/year

- 8) Should the *Water Current* ☐ have more pages ☐ have fewer pages ☐ maintain 8 pages

- 9) What is your occupation?

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