

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

Water Current Newsletter

Water Center, The

12-1993

Water Current, Volume 25, No. 4, December 1993

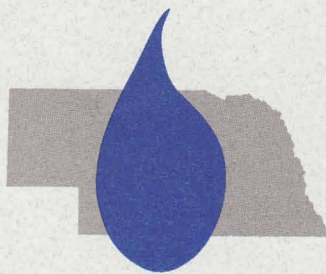
Follow this and additional works at: https://digitalcommons.unl.edu/water_currentnews



Part of the [Water Resource Management Commons](#)

"Water Current, Volume 25, No. 4, December 1993" (1993). *Water Current Newsletter*. 189.
https://digitalcommons.unl.edu/water_currentnews/189

This Article is brought to you for free and open access by the Water Center, The at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Water Current Newsletter by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.



Water Current

University of Nebraska Water Center/Environmental Programs

Vol. 25 No. 4
December 1993

Inside

Spring seminar
to feature
"Flat Water."
Page 3

Calendar of
water-related
events — Page 4

New surface
water specialist
joins faculty —
Page 5

Researchers
irrigate with
swine waste
water—Page 6

Platte River
atlas introduces
readers to Great
Bend region—
Page 7

Grew: politics change rationale for research

Research is important to the University of Nebraska-Lincoln. It's equally important to get out the word about research, according to UNL's new vice chancellor for research, Priscilla Grew.

Addressing the Water Policy Forum Oct. 5 at the Ak-Sar-Ben Aquarium, Grew talked about "research for the public." The annual forum for water-related faculty was sponsored by the NU Water Center/Environmental Programs unit. With the theme of "Getting the Word Out," this year's forum addressed the needs of researchers and news media in regard to research.

"Both parties can suffer if we don't succeed in getting out the word," Grew said.

The National Science Foundation in 1991 ranked UNL 69th in total research and development expenditures from all sources and 100th in awards of federal grants.

"The University is now a major player in research in the nation,"

Grew said.

Society's rationale for supporting research changes with politics, she said, noting that since World War II, the unspoken rationale for scientific research had been to

because people appreciate good quality water, she said.

The public wants public-service research, but the academic reward system does not recognize teaching and public



"The University is now a major player in research in the nation."

— Priscilla Grew,
UNL vice chancellor
for research

keep up with the Soviet Union, particularly in physics.

Today, researchers are often asked if their research will benefit the economy and create jobs.

"We're shifting nationally from a security rationale to an economic rationale," Grew said.

Water-related research has usually not been argued on a security basis, but an economic one. The public also supports water research

service research to the degree needed, she said.

Not all research should be designed to solve problems, however.

Basic research is also essential because problem-solving research alone will not lead to unexpected discoveries, she said.

"We have to have a blend," Grew said.

More on the Water
Policy Forum on Page 3.

From the Director



Bob G. Volk

Congratulations to Dr. Les Sheffield for receiving the Alumnus of the Year Award from the College of Agricultural Sciences and Natural Resources Alumni Association of the University of Nebraska-Lincoln. Dr. Sheffield is coordinator of Outreach Programs, Water Center/Environmental Programs. He has three degrees from the College of Agricultural Sciences and Natural Resources, a B.S. in agronomy in 1950, and a master's degree and Ph.D. in 1971 in agricultural economics. For over 20 years he has provided leadership for the Nebraska Water Conference Council and organized annual irrigation tours. He has had a distinguished career at the University of Nebraska in water management and use.

The Water Center/Environmental Programs unit has embarked on a major project to prepare a 16-page water tabloid to be inserted in many of Nebraska's newspapers in the spring. The tabloid's purpose is to inform Nebraskans of the many issues we face in the water area. Subjects will include wetlands, wells, drinking water, water rights, management, irrigation, pollution, pesticides and education. Our unit is working closely with Cooperative Extension, the Nebraska Department of Environmental Quality, Natural Resources Districts, and the Natural Resources Commission in developing this publication.

I would like to bring to your attention "50 Ways Farmers Can Protect Their Groundwater," a book prepared by the University of Illinois, College of Agriculture, Cooperative Extension Service. The book contains information from many Midwestern states, most of which has direct application to Nebraska farmers.

The publication may be purchased through the Office of Agricultural Communication and Education, 69NR Mumford Hall, 1301 West Gregory Drive, Urbana, IL 61801.

On Sunday, Nov. 14, our unit was asked to participate in the Nebraska State Museum's *Sunday Afternoon with a Scientist* program. Bob Kuzelka, Bettina Heinz Hurst and I demon-

strated a groundwater model, an interactive computer presentation on trash (what we throw away) management and gave out materials on water programs in Nebraska to museum visitors.

Husker Harvest Winners

The following individuals won a copy of "Flat Water: A History of Nebraska and Its Water" during the Husker Harvest Days drawings: Leonard Stroh, Lincoln; David Polivka, Brainard; and Tayna Plueger, Concord. Congratulations to the winners and thanks to all the participants.

Water Current

is a publication of the Water Center/Environmental Programs at the University of Nebraska-Lincoln.
Bettina Heinz Hurst — Editor

Water Center/Environmental Programs
103 Natural Resources Hall
P.O. Box 830844
Lincoln, NE 68583-0844
Phone: (402) 472-3305
Fax: (402) 472-3574

Bob G. Volk — Director
Roy F. Spalding — Associate Director and
Water Sciences Laboratory Director
Edward F. Vitzthum — Coordinator of
Environmental Programs
Robert D. Kuzelka — Assistant to the Director

This newsletter is published with partial financial support from the Department of the Interior; U.S. Geological Survey. The content does not necessarily reflect the views and policies of the Department of the Interior, nor does mention of trade names or commercial products constitute endorsement by the U.S. Government.

Needs of researcher, editor differ

To make their way into the Nebraska Farmer magazine, research-related stories need to be useful to farmers.

Don McCabe, managing editor of Nebraska Farmer, gave an editor's point of view on "Getting the Word Out" on research at the Water Policy Forum Oct. 5.

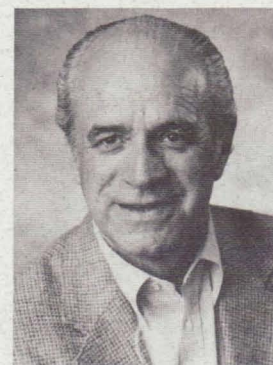
There is an enormous amount of information to be processed for editors and farmers, McCabe said. The magazine is

interested in stories told through the experience of a producer. Long references to departments, institutes and titles in university releases make stories cumbersome and boring, he said.

Michael Corbett, agrichemical toxicologist, presented a researcher's perspective at the forum. He criticized the pressure on researchers to do research that will generate economic revenue or solve problems. Many researchers are more interested in contributing to basic research, he said.

Corbett said as a researcher, his only responsibility in regard to publications is to publish in refereed, scientific journals. He said he considers the notion that academicians should be more accountable for their research dangerous to the advancement of knowledge.

More than 40 individuals attended the eighth annual forum of the Water Center/Environmental Programs unit.



Noted Nebraska historian Robert Manley will speak at the first seminar, Jan. 12.

1994 seminars look at state's water history

The theme for the 1994 Water Resources Seminar Series is taken from the book "Flat Water: A History of Nebraska and Its Water."

Starting in the University of Nebraska-Lincoln East Campus Union at 3:30 p.m. on Wednesday, Jan. 12, the 13 seminars will look backward and forward at the vital role of water as Nebraska's most important resource.

Most of the series speakers were contributing authors to the book. But they will address their topics from a perspective or scale that differs from their book contribution.

See the Calendar on Page 4 of this Water Current for more information.

Water Current
December 1993 • 3

Conjunctive use conference focus

Conjunctive use of groundwater and surface water will be the focus of the 1994 Nebraska Water Conference March 15-16 at the Cornhusker Hotel and Convention Center in Lincoln.

The development of a conjunctive use policy for Nebraska is still under-way. In fact, there is considerable debate about the need for such a policy.

The program for the conference will reflect this evolving policy status. The first morning will include presentations which will give a background on both the general topic and Nebraska's current conjunctive use policy. Reports will be made on pending policy proposals from the Governor's Water Council and in the Nebraska Legislature.

Warren Fairchild will

outline the conference topic as a policy issue during the March 15 luncheon. A Nebraska native, he served as executive secretary for the Nebraska Soil and Water Conservation Commission, later the Nebraska Natural Resources Commission. In 1970 he moved to Washington, D.C., where he had positions with the U.S. Bureau of Reclamation, Water Resources Council and World Bank.

The afternoon session will open with case studies on conjunctive use potential in the Republican River and Platte River basins. Conference attendees will form small discussion groups to explore conjunctive use policy options in these two basins. The discussion groups will be aided in their tasks by leaders and

resource persons from the state and nation.

Nebraska Governor Ben Nelson has been invited to speak to the conference at the March 16 breakfast. At the first morning session the findings from the discussion groups will be reported. A panel representing development, irrigation/power, municipal, environment and agriculture interests will respond to the reports. Fairchild will provide a conference summary. Nebraska State Sen. Chris Beutler has been invited to deliver a closing address to the conference at lunch.

Conference registration material will be mailed in January 1994. It will also be included in the February 1994 issue of Water Current. Call (402) 472-7527 for more information.

Variety of voices heard at symposium

Scientists and area residents, ranchers and government officials and individuals from other backgrounds came together at the first research symposium on the Environmental and Natural Resources of the Niobrara River Oct. 14-15 in Ainsworth.

More than 100 individuals attended the event.

Speakers expressed different interests in the Niobrara valley, ranging from ranching and farming to paleontology, education and recreation to tourism. Speakers also addressed the need to protect wildlife and nature and addressed water rights.

"We were very pleased with the number of people attending, their diversity and the interest they showed in the topics covered," said Robert D. Kuzelka, assistant to the director of the Water Center/Environmental Programs unit at the University of Nebraska-Lincoln and organizer of the symposium.

CALENDAR

January

• **Jan. 12:** UNL Water Seminar Series "Listen to the Land" — Robert Manley, 3:30 p.m. to 4:30 p.m., East Campus Union, Lincoln, Neb. Contact: Bob Kuzelka, (402) 472-3305.

• **Jan. 14:** Water Research Brown Bag Session, Department of Forestry, Fisheries and Wildlife (Aquatics), 11:30 a.m. to 1 p.m., East Campus, UNL, Lincoln, Neb.

• **Jan. 19:** UNL Water Seminar Series "Native Americans" — Rob Bozell, 3:30 p.m. to 4:30 p.m., East Campus Union, Lincoln, Neb. Contact: Bob Kuzelka, (402) 472-3305.

• **Jan. 26:** UNL Water Seminar Series "Climate," 3:30 p.m. to 4:30 p.m., East Campus Union, Lincoln, Neb.

February

• **Feb. 2:** UNL Water Seminar Series "Sharing Surface Water: A History of Regulation" — Mike Jess, 3:30 p.m. to 4:30 p.m., East Campus Union, Lincoln, Neb.

• **Feb. 9:** UNL Water Seminar Series "Groundwater" — Vince Dreeszen, 3:30 p.m. to 4:30 p.m., East Campus Union, Lincoln, Neb.

• **Feb. 11:** Water Research Brown Bag Session by Water Sciences Laboratory, NU Water Center/Environmental Programs, 11:30

a.m. to 1 p.m., East Campus, UNL, Lincoln, Neb.

• **Feb. 16:** UNL Water Seminar Series "Changes in Irrigation Technology" — Les Sheffield, 3:30 p.m. to 4:30 p.m., East Campus Union, Lincoln, Neb.

• **Feb. 23:** UNL Water Seminar Series "Industry," 3:30 p.m. to 4:30 p.m., East Campus Union, Lincoln, Neb.

March

• **March 2:** UNL Water Seminar Series "Resource Allocation During Scarcity" — Steve Schafer, 3:30 p.m. to 4:30 p.m., East Campus Union, Lincoln.

• **March 7-10:** National Agricultural Pesticide Management Conference and Workshop, St. Louis, Mo. Cosponsored by Conservation Technology Information Center, U.S. EPA, USDA Soil Conservation Service and others. For more information, call (317) 494-9555.

• **March 8:** Children's Groundwater Festival, 8 a.m. to 4:30 p.m., Central Community College and College Park, Grand Island. Contact: Nebraska Groundwater Foundation, 1-800-858-4844 or (402) 434-2740.

• **March 9:** UNL Water Seminar Series "Outreach: Water Education in Nebraska" — Bob G. Volk, 3:30 p.m. to 4:30 p.m., East Campus Union, Lincoln.

• **March 11:** Water Research Brown Bag Session by UNL Department of Electrical Engineering, 11:30 a.m. to 1 p.m., City Campus, UNL.

• **March 15-16:** Nebraska Water Conference, "Conjunctive Use — Sharing the Resource," Cornhusker Hotel, Lincoln, Neb. Contact: Les Sheffield, (402) 472-1773.

• **March 30:** UNL Water Seminar Series "Environment" — Charles Flowerday, 3:30 p.m. to 4:30 p.m., East Campus Union, Lincoln.

April

• **April 6:** UNL Water Seminar Series "Politics and Policy" — Steve Gaul, 3:30 p.m. to 4:30 p.m., East Campus Union, Lincoln.

• **April 8:** Water Research Brown Bag Session, Department of Plant Pathology, 11:30 a.m. to 1 p.m., East Campus, UNL, Lincoln, Neb.

• **April 13:** UNL Water Seminar Series "Farm Families: Vaseys and Germans" — Don McCabe and Douglas German, 3:30 p.m. to 4:30 p.m., East Campus Union, Lincoln.

• **April 20:** UNL Water Seminar Series "Future Uses and Controls of Nebraska Water" — Panel members Kent Wolgamott, Roy Frederick and John Janovy. 3:30 p.m. to 4:30 p.m., East Campus Union, Lincoln.

Surface water management interest of faculty member

by Bettina Heinz Hurst

During his childhood years in northern Wisconsin, Tom Franti spent much time fly-fishing with his family. The love of water developed during that time motivated him to pursue a career related to natural resources.

"It helped me develop a real love of water and natural resources," Franti said.

Franti, a surface water management engineer, joined the University of Nebraska-Lincoln faculty in the Biological Systems Engineering Department in August.

His position is assigned 75 percent to extension work and 25 percent to research, a combination that he finds appealing.

"If I had been asked to write an ideal job description, that would have been it," he said.

Franti will be responsible for educational efforts on enhancing surface water quality and quantity, soil and water conservation and soil erosion control.

Franti said he hopes to conduct research on issues that affect agriculture throughout the state.

"This position is intended to serve everyone in the state. It's a big challenge to look at so much diversity within a state, but that will be the fun and interesting part for me," he said.

One of the factors that attracted Franti to the position is the support agricultural programs enjoy at UNL.

"I was impressed by the support the faculty here seem to have from the administration. It seems there is a strong support for agriculture and the Biological Systems Engineering Department here all the way to the top," Franti said.

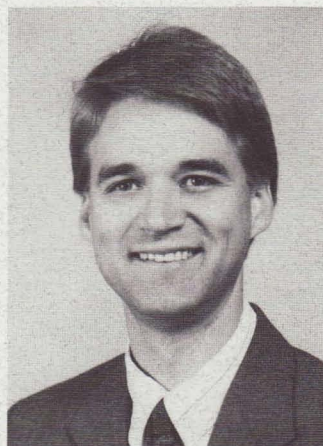
"We want clean water for many reasons: drinking water, recreation, good aquatic health and aesthetics."

— Tom Franti,
UNL faculty

Prior to coming to UNL, Franti was project manager and project engineer for STS Consultants Ltd., Green Bay, Wis., a firm specializing in geotechnical and environmental engineering and construction services.

"I frequently worked on landfill designs and construction. Soil properties, surface water and groundwater conditions, wetlands and wildlife habitat all need to be considered in selecting a landfill site," Franti said.

Franti graduated from the University of Wisconsin-Madison with a bachelor's degree in agricultural engineering in 1983. Graduate work for his master's degree



Tom Franti

followed at Iowa State University, where he conducted soil erosion research and worked on predicting measurement properties for soil erosion and modeling. He received his master's degree in 1985 and went on to Purdue University.

As a recipient of a National Needs Fellowship, Franti worked at the USDA National Soil Erosion Research Laboratory at Purdue. He specialized in soil and water research, emphasizing study and research in modeling hydrologic and hydraulic processes. In 1987, he received his doctorate there.

"With today's chemical-intensive agriculture, it is very important to develop practices that minimize the effects of chemicals entering water systems," Franti said.

"We want clean water for many reasons: drinking water, recreation, good aquatic health and aesthetics," he said.

Directory lists wetlands faculty

A new directory lists University of Nebraska faculty members who have expertise or interest in wetlands.

In addition to names and addresses, main areas of interest and relevant publications are listed in the directory.

The directory has been produced by the NU Water Center/Environmental Programs unit.

It is available free of charge from Water Center/Environmental Programs, 103 Natural Resources Hall, University of Nebraska-Lincoln, Lincoln, NE 68583-0844, (402) 472-3305.



Scientists examine irrigation with swine waste water

CONCORD — Five University of Nebraska researchers are determining guidelines for irrigating with swine lagoon effluent, or waste water, without causing nitrogen contamination.

Traditionally, the challenge has been to spread the waste evenly and thinly.

As pork producers increase herd size, their ability to use all the waste on their own ground decreases.

Today's hog producers may not have the time, land and interest to spread the effluent on row crop ground. The challenge is to dispose of the material, said Charles Shapiro, soils scientist.

A typical hog producer has about 500 head of hogs. Each pig produces about 1.5 gallons of waste per day, which amounts to 8,000 lb. of waste nitrogen in a year.

"We need to make sure that nitrogen is used in an environmentally sound manner," Shapiro said.

If further research confirms the researchers' projections, hog producers may want to get into the alfalfa business.

Many producers already use swine manure as a corn fertilizer. However, alfalfa may be an even better scavenger crop because it may use more nitrogen for longer periods during the year.

Shapiro and Bill Kranz, biological systems engineer, initiated an experiment with corn and alfalfa to address this issue at the Northeast Research and Extension Center near Concord earlier this year. Also



Charles Shapiro, soils specialist, and Bill Kranz, biological systems engineer, take nitrogen samples on their research plots. Photo — Bettina Heinz Hurst

involved in the project are Bruce Anderson, forage specialist; Mike Brumm, swine specialist; Tim Powell, farm management specialist; and graduate student Jeffrey Mueller.

The plots are irrigated with water from an anaerobic swine lagoon. The manure is generated by the swine research facility at the center.

"We hope to discover a lagoon water application rate that maximizes use of the lagoon effluent and minimizes nitrogen contamination of ground-water," Kranz said.

The lagoon effluent is applied through a sprinkler system that is designed to pump both effluent and clean water. Between the sprinkler lines the crops receive the same total inches of water. By pumping lagoon water only

through a center line of sprinklers a range of nitrogen treatments are achieved. By the end of the season from zero to 500 lbs. nitrogen per acre will have been applied.

At the end of August, differences in the plots were clearly visible. The corn closest to the sprinkler was dark green and tall, while the corn in the rows farthest away from the sprinkler was yellow and short. The same experiment is applied to alfalfa with three, four and five harvests per year.

This research is sponsored by the Nebraska Pork Producers Association, Inc., the University of Nebraska Water Center/Environmental Programs unit and the Agricultural Research Division of the Institute of Agriculture and Natural Resources.

Platte River atlas examines multi-faceted Big Bend area

by Charles Flowerday
Editor, Conservation and
Survey Division, UNL

A county commissioner's frustration with the university at which he taught led Allan Jenkins, associate professor of economics at the University of Nebraska-Kearney, to eventually edit "The Platte River: An Atlas of the Big Bend Region."

The project began with a conversation between Jenkins and a local county commissioner whose name Jenkins no longer remembers. The county commissioner said he paid taxes to support the university but rarely saw anything come from it that was of benefit to him. In the same conversation, Jenkins recalls, the commissioner spoke of the river, which he saw mostly as a ditch to deliver water to the cornfields of friends and neighbors. Although he lived in the area, he

mistook the flocks of plentiful snow geese stopping by the river each spring for pelicans.

Jenkins said he then realized the university could help the commissioner and the community by publishing a book about the river's history and its ecological systems. Trying to rally support at academic meetings, he received encouragement and something of a model in the spring of 1989 when the Conservation and Survey Division of the University of Nebraska-Lincoln published "An Atlas of the Sand Hills," a comprehensive look at the natural history of the Sand Hills region.

That atlas—using the term in its broadest sense to mean encyclopedic publication, not just a collection of maps—dealt more with the natural environment and less with the human systems of the region than the Platte River book, but the

two are similar in their sweeping approaches to analyzing the resources of an area and the people who use them. The Platte River atlas, with the multi-author Sand Hills book as a model, became an anthology of 31 articles by UNK faculty and students about everything from biology to art and economics to earth science, focused on the area surrounding the river between North Platte and Columbus, the so-called "Big Bend Region." Specifically, the 194-page atlas is organized into four sections described as "Geography, Climate, Biology," "History, Literature, Art," "Economics, Agriculture, Demography," and "Water, Law, People."

The last section includes profiles of individuals whose lives are entwined with the braided river that dominates the ecology and, to

Continued on Page 8.

Looking for resources information?

Individuals seeking resources information may want to consider contacting the state's Natural Resources Commission.

The Commission's Data Bank was created in 1969 by Nebraska's Unicameral. For over two decades, the Data Bank has gathered, processed, stored and updated soil, water and land resources information, such as data on rainfall amounts, temperature, well permits, ground and surface water sampling, soils, land uses and center pivots.

In recent years, the data bank has utilized Geographic Information System technology to process data.

Data Bank information is provided to the user at a minimal fee. For more details, contact the Nebraska Natural Resources Commission, Data Bank Section, 301 Centennial Mall South, P.O. Box 94876, Lincoln, NE 68509-4876, (402) 471-2081.

Mailing List Update

We are updating our mailing list. If you have a change of title, name, and/or address, or would like to have your name added or removed from the Water Current mailing list, please complete this form. If you know of individuals who might be interested in receiving our publications, please submit their names.

Please: ☐ revise my address ☐ delete me from your list
☐ add to your list

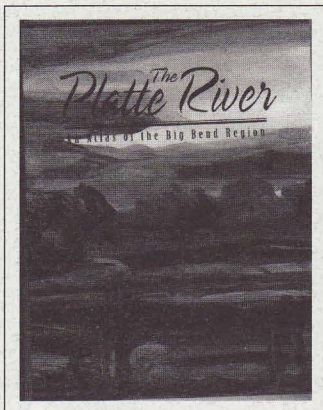
Name: _____

Address: _____

City, State, Zip: _____

Send update to:

Water Center/Environmental Programs
103 Natural Resources Hall, University of Nebraska-Lincoln
P.O. Box 830844 • Lincoln, NE 68583-0844
Phone (402) 472-3305; Fax (402) 472-3574



Continued from Page 7.

a large extent, the consciousness of the area. These profiles include people on both sides of the water-for-crops vs. water-in-the-river debate. Its many maps, charts, color photos and reproduced art illustrate an area whose very fertility of life has led to conflict about the proper management of the river and its floodplain and the lush life it affords.

While these conflicts are not papered over, the emphasis is on information, not confrontation. A person with literary interests or a person with biological interests can both find much to enjoy, as can someone with an interest in the area's economic development or history. At the same time, they are exposed to other aspects of the area besides the ones in which they are most interested. In addition, short poems and snippets of larger works adorn the main body of text.

One such excerpt from Wright Morris's "The Works of Love," contrasts with another from Nellie Snyder Yost's "No Time on My Hands." Both highlight the meaning of drought in a region with dependable moisture and

point to the need to supplement rainfall with irrigation.

Morris writes: "In the dry places, men begin to dream. Where the rivers run sand, there is something in man that begins to flow. West of the 98th Meridian—where it sometimes rains and sometimes doesn't—towns, like weeds, spring up when it rains, dry up when it stops."

Yost offers: "The mild winter of '94-'95 warmed into an early spring and gentle rains soaked the long-dried fields in time for plowing and planting. Good crops grew again on the rested land and new grass covered and healed the drouth scars on the prairie. Homesteaders, their faith in Nebraska restored once more, got busy with new plans—to be carried out

as soon as their debts were paid."

Ken Nikels, dean of UNK's department of graduate studies and research, said the atlas is intended for area residents, tourists and teachers.

While the atlas represents an extremely diverse compendium, it suffers somewhat from a lack of depth in some sections. What it can do most effectively is introduce a reader to authors or issues that he or she may pursue more extensively later. Such a pursuit is aided by the list of suggested readings at the end of each article.

To order the atlas, send \$20 plus \$3 for tax and postage to The Platte River Atlas, Office of Graduate Studies and Research, UNK, Kearney, NE 68849.

WATER CENTER/ENVIRONMENTAL PROGRAMS

103 Natural Resources Hall

University of Nebraska

P.O. Box 830844

Lincoln, NE 68583-0844

**NON-PROFIT ORG.
U.S. POSTAGE
PAID
Lincoln, Nebr.
Permit No. 46**



15% post-consumer recycled paper



It is the policy of the University of Nebraska-Lincoln not to discriminate on the basis of sex, age, disability, race, color, religion, marital status, veteran's status, national or ethnic origin, or sexual orientation.

