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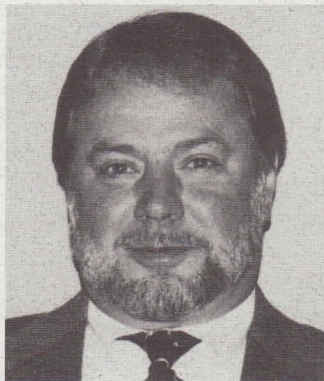
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Water Current

Nonpoint Source Contamination

*EPA official identifies roadblocks
to successful NPS management*



Gale Hutton

Keynote speaker Gale Hutton called nonpoint source (NPS) pollution "the nation's most critical remaining unaddressed contamination problem" at a November 1994 workshop in Kearney.

The Environmental Protection Agency (EPA) official called attention to NPS contamination at a two-day NPS management workshop sponsored by the Nebraska Department of Environmental Quality/EPA Region 7.

Hutton headed the Water Quality Division of the Nebraska Department of Environmental Quality for 10 years. In November 1994, he left his position to direct the water quality section of the EPA Region 7 in Kansas City, Kan.

Production agriculture, construction sites and urban runoff are sources of NPS contamination. Of these, agricultural production is probably the most important NPS source in the state and nation, Hutton said. Regulations can help prevent contamination from construction sites and urban runoff.

"But the key issue is production agriculture," Hutton said.

Hutton commented on the status and prospects of Section 319 of the

Clean Water Act. When the act was reauthorized and amended in 1987, it contained a new NPS initiative, Section 319.

"I'm very optimistic about 319. The direction we're heading holds some hope and some promise," Hutton said, noting that nearly 100 projects are funded through the 319 program in EPA Region 7, which includes Nebraska.

Much remains to be done.

"We're not there; we're not nearly as far as we should be," he said.

Hutton identified several "speed bumps" slowing down 319 management based on his longtime involvement in Nebraska environmental policy. Officials could learn from negative experiences with the Section 208 Water Quality Management Plan for the State of Nebraska, which was passed in 1979, Hutton said.

In the past, too much time was spent trying to rationalize that soil conservation equals NPS management, and that programs for NPS prevention are already in place through the Soil Conservation Service, according to Hutton. Soil conservation programs address

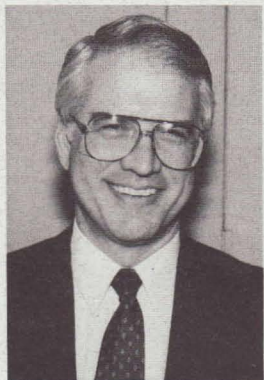
**"NPS is the nation's
most critical remaining
unaddressed
contamination problem."
— Gale Hutton**

Hutton. Continued on Page 3.

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NSF grant to allow launch of statewide science program



Bob G. Volk

from the DIRECTOR

Our grant has been approved! Several issues ago I briefly told you about a grant submitted to the National Science Foundation (NSF) for teacher education. It was approved by NSF and University of Nebraska-Lincoln administration in December.

The NSF portion of the grant is \$1.1 million over a four year period. We are currently seeking required matching funds.

The overall purpose of the grant is to develop an interdisciplinary approach to science education focused on water. We will produce a distance learning program (using Nebraska's Neb*Sat satellite system) for Nebraska science teachers with the dual goals of improving science education and improving environmental education. The programs will be focused on water and will cover a wide variety of water-related issues (groundwater, surface water, water analysis, water pollution, chemistry and physics of water, water conservation and such).

The direct audience is Nebraska science teachers who participate in the Satellite Educational and Environmental Research distance learning programs. Science teachers will be hired to assist in program organization and development. We will start broadcasts this fall.

Other principal investigators on the project are Marion O'Leary, head

of the Department of Biochemistry, Elizabeth Kean, associate professor in the Center for Curriculum and Instruction, and DeLynn Hay, assistant professor in the Department of Biological Systems Engineering. We will be soliciting schools and locations for program delivery. Please contact us if you have questions about the program.

Our annual Water Conference has been finalized, and we have arranged for an outstanding panel of speakers. The conference will offer you the opportunity to learn more about the wide variety of water issues facing our state and the nation. Registration forms for the March 13-15 conference are available through our office.

Our unit also received a grant from the State of Nebraska Environmental Trust Fund to assist us in producing a 16-page educational insert on Nebraska's surface water.

The publication, "Water — Understanding a Resource," will be inserted in the Omaha World-Herald, Lincoln Journal Star and the Scottsbluff Star-Herald newspapers in March. It contains stories on irrigation, power production, wildlife, recreation, drinking water and similar issues with a special pull-out section featuring a map of Nebraska's main rivers and reservoirs.

Water Current

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NPS pollution management may change

Hutton. Continued from Front.

sediment problems, but not nutrient and ag chemicals contamination.

"Soil conservation does not equal NPS prevention," Hutton said.

Too much time was spent sorting out responsibilities between local, state and federal agencies, he said, noting that the 319 program was started with the negative legacy of Section 208 in mind. Section 319 was started in a climate of distrust in government, he said.

Efforts to transfer previous work on point source pollution had to be reevaluated, Hutton said, because NPS is such a widespread and diffuse contamination that point source strategies simply don't work.

"We've been somewhat reactionary," Hutton said.

Whereas point source pollution management consisted of work with groups and agencies, NPS pollution management consists of working with a multitude of individuals. These individuals are expected to bear the economic burden of NPS pollution prevention, a factor that hasn't been successfully considered, Hutton said.

"We haven't sold the individuals on the benefits of NPS," he said, noting that current incentives may

Clean Water Act

The Clean Water Act was first passed by Congress in 1972. It has been modified several times and is up for renewal this session.

In 1993, Sens. Max Baucus (D-Mont.) and John Chafee (R-R.I.) introduced S. 1114, the Water Pollution Prevention and Control Act of 1993, a bill to amend and reauthorize the Federal Water Pollution Control Act (the Clean Water Act).



not be sufficient to help individuals overcome resistance to change.

Efforts to prevent NPS contamination are hampered by the fact that NPS pollution is a low-interest topic that lacks a sense of urgency or crisis. Society has failed to look at the big picture and to consider the long-term issues and consequences of NPS pollution, such as the effect on ecosystems, Hutton said.

Although these observations may sound fairly pessimistic, it is important to understand them, he said.

On the positive side, every state

has some successful NPS pollution prevention projects. Drinking water quality is the driving force behind successful NPS projects, Hutton said, and in Nebraska, great strides have been made in regard to NPS and groundwater because of drinking water concerns.

Although Section 319 is likely to change during Clean Water Act reauthorization, Hutton said he thinks it will continue as a force.

"I don't think the citizens are going to let anybody off the hook," he said.

Congress will keep funding the 319 program, and when it revisits the Clean Water Act, the federal government will take on a much more aggressive role in NPS pollution prevention and Best Management Practices development, he predicted.

A welcome change would be an expected holistic focus on watersheds and ecosystems, he said. It is likely that changes to the Clean Water Act will reflect a demand for greater accountability in documenting successes and for financial accountability, he said.

Personally, Hutton said, he thinks it is time to rethink the totally voluntary approach. Although he is not advocating total regulation, he said it is important to move people into the desired direction through federal laws. Educational efforts should be focused on elementary and secondary students, he suggested, and officials need to target local governments to apply resources where the greatest environmental gains can be expected.

Stork named to water council position

Karen Stork, administrative assistant in the Conservation and Survey Division, University of Nebraska-Lincoln, was named program coordinator of the Water Conference Council, UNL, in 1994.

The Water Conference Council was formed in 1972 when then-University of Nebraska President D.B. "Woody" Varner appointed 25

UNL individuals to the council. In 1973, the group expanded to include 50 representatives of the public and private sectors. The council meets once a year and co-sponsors the annual water conference and tour.

Stork has assumed some of the responsibilities previously executed by Les Sheffield, coordinator for outreach programs in the Water

Center/Environmental Programs unit, UNL. Sheffield retired in 1994.

As part of her new duties, Stork is involved in helping organize the annual Nebraska Water Conference and the annual Water Resources Tour. She also maintains the records of the Water Conference Council and helps organize the annual meeting of the council.

Thoughts on Water

Winning entries
of the
1994 Water Current
Nebraska High School
Essay Contest

First Place

Man, woman, rich, poor, American, English or African, there is one thing that we all have in common — we cannot live without water.

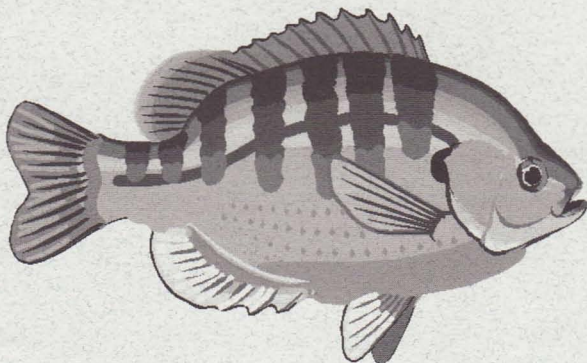
Water affects our bodies, our homes, our world. As our world population grows, conflicts are arising between farms and cities over our dwindling water supply. The farms need water for healthy, green crops, healthy livestock and creamy, rich milk.

Farmers are running out of water to use on their crops due to growing urban demand, according to the *California Bee* writer Jim Mayer. Even in California, where the drought was once thought of as "only temporary," it now looks as if it is here to stay.

The Ogallala Aquifer, the biggest aquifer in the world, is being used faster than it can be replenished. Even the floods that hit Nebraska last year were not enough to replenish the aquifer. So, that means that if it keeps being used faster than it can be replaced, it will soon run out.

The cities need water for homes, power and business. Due to the growth in population, more water than ever is being used in homes. People are not watching how much water they use. People ignore a leaky faucet for a month and then complain about the water supply diminishing. People need to conserve. Which is more important: saving a few bucks by not fixing a leaky faucet or having food for the future?

Businesses are wasting water, also. Some offices have fountains in the lobbies that just keep using more and more water. What is



wrong with this picture? What is more important: a pretty fountain in the lobby or leaving water for our children?

Major industries are also threatening our water supply. They use it for food processing, manufacturing, etc. Not only are they using a lot of water, but they are polluting it also. Every day thousands of gallons of waste are dumped into our waterways and rivers. Industries must find ways to recycle and protect the water that they use.

The cities that are located by powerful rivers are now using them to get power. This is one way to make use of water without depleting it. These hydroelectric generators use water to get energy for the cities. As we use up the little water that we have, the rivers become weak to support the generators.

Many times we forget that our environment also needs water to survive. The trees and forests need their share. The trees give off oxygen and we need oxygen to breathe. Even the microscopic organisms need water. Though they are small, they are still important because they are still part of the food chain.

The plants that we eat even need water. The more water that we use the less is there for the crops. We have to evaluate our values. What is more important: a green lawn now or food for the future? The irrigation systems cannot last forever. What are we going to do if the irrigation systems fail?

Starting right now we must find ways to conserve and share our water. Right now, we must not compete with each other for our water, but find ways to stretch out our water and make sure that there is enough to go around. One thing is for sure, no matter who or what you are, we all need water.

Kristin Tillman
Ninth Grade
North High School, Omaha

(Winners received a water-related book)

Second Place

Water is the combination of one oxygen atom and two hydrogen atoms, but it means a whole lot more than that to all living things.

If water is so important than why don't we recycle it and keep it safe for all living things?

In this paper I will talk about the conflicts between farms, cities and the environment that deal with water.

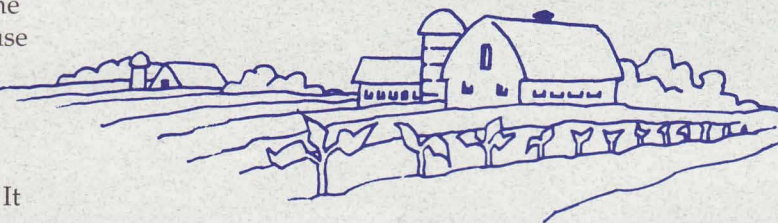
Selfishly I would rather have the water come to my house and not even care what happens after that. It cannot be done that way. I

believe there should be strict laws about what can be "dumped" down the drain. A city must have huge amounts of water each day. This water is used for drinking, use in people's homes, and industry. Industries dump chemicals into rivers, lakes and streams. This causes many animals to get in danger of extinction. Animals were here before us and we should work with them not against them. Strict laws should be put on what you can dump into water and large industries should only be allowed a controlled amount of water a year. This would help the conflict between cities and the environment.

Farms and cities are in great conflict over water. Farms use thousands of gallons of water to irrigate crops; this water cities could use for other things. What the people don't realize is that by not giving enough water to farms, we will cut our food supply. Farms are wasting a lot of the water that they use to irrigate their crops. Using conventional sprinklers is very inefficient. They spray water on the leaves where it is not needed. New irriga-

tion systems are being installed at different locations that lie directly on the soil and spray water where it's needed, at the roots. This would greatly reduce the amount of water wasted in irrigation.

The use of pesticides is making the water we drink unfit. When it rains, the pesticides are washed into the water supply and contaminate the drinking water. To prevent this, farmers should use natural fertilizers like compost. If farmers were more responsible and cities could start better water conservation there would be much less of a conflict.



Farms tap and dam water supplies that support many ecosystems. When this happens the water's current is slowed and the depth is lowered. This kills many life forms that cannot adapt. Again, chemical pesticides are a culprit in contaminating water supplies. It affects many animals directly and indirectly even us. If 100 yards upstream there is a farm using chemical pesticides, it can get into a cow's system that drank that water. In turn we eat the cow and get sick. Farmers must clean up their act or just filtering our water will do less good.

In conclusion I believe that being more careful about our planet would help the problem. In specific, I think these things would do the most good: recycling the water we use, using less water, making stricter laws on dumping and getting away from chemical pesticides. Doing these things would help resolve the conflict between farms, cities and the environment.

Gary LaFayette
Ninth Grade
North High School, Omaha

New video shows how to sample water

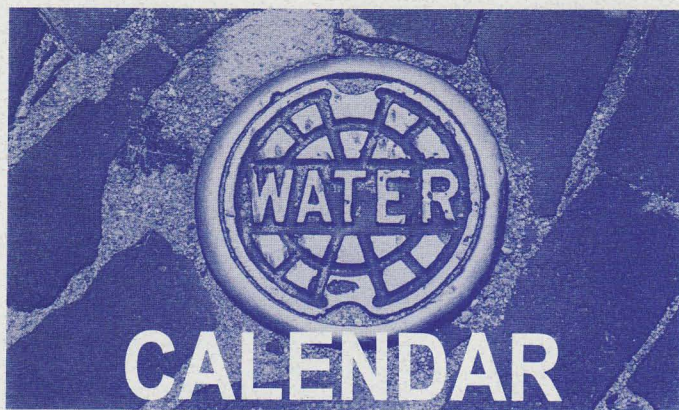
The Northeast Nebraska Resource Conservation and Development (RC&D) Council has developed a video titled, "Do You Know What You're Drinking? Is Your Water Safe?"

The video explains the need for annual testing of private well water supplies for nitrate and bacteria. It shows how to take a water sample and informs about nonpoint and point-source pollution.

Cost of the video is \$10 plus \$1.50 for shipping and handling.

The council is also distributing a free stand-alone fact sheet on water sampling to all 50 communities, Cooperative Extension offices, Natural Resources Districts and the Santee Sioux Tribe within the Northeast Nebraska RC&D.

The area includes Antelope, Cedar, Dixon, Knox, Pierce and Wayne counties. For more information, contact Jan Jorgensen, RC&D Coordinator, RR 2, Box 67, Plainview, NE 68769-9504, (402) 582-4866.



FEBRUARY

Feb. 15: Water Resources Seminar. "Waste Minimization through Recycling," Gene Hanlon, recycling coordinator, City of Lincoln. 3 p.m. to 4 p.m., 116 L.W. Chase Hall, UNL, and via satellite.

Feb. 22: Water Resources Seminar. "Waste Minimization Through Composting," Steve Owen, landfill manager, City of Lincoln. 3 p.m. to 4 p.m., 116 L.W. Chase Hall, UNL.

Feb. 28 - March 1: Platte River Basin Ecosystem Symposium, Kearney, Neb. call (402) 472-0891 for information.

MARCH

March 1: Water Resources Seminar. "Remediation and Hazardous Waste Treatment," Gary Keefer, associate professor, UNL Department of Civil Engineering. 3 p.m. to 4 p.m., 116 L.W. Chase Hall, UNL, and via satellite.

March 7: Nebraska Children's Groundwater Festival, Grand Island. Contact The Groundwater Foundation at (402) 434-2740 or 1-800-858-4844.

March 8: Water Resources Seminar. "Constructed Wetlands for Wastewater Treatment," Ted Streckfuss, U.S. Army Corps of Engineers. 3 p.m. to 4 p.m., 116 L.W. Chase Hall, UNL, and via satellite.

March 9-10: "Western Water Law." Second Annual Conference on Water Rights and Water Quality, Denver. Sponsored by CLE International. Contact CLE International, Suite 100, 1541 Race St., Denver, CO 80206, 1-800-873-7130.

March 10-12: Nebraska Environment Education Association Conference, Hastings. Contact Kristin Gottschalk, Wahoo, (402) 443-4675 (phone)

March 13-15: Annual Nebraska Water Conference, "Water: Understanding a Resource," Burnham Yates Conference Center and Cornhusker Hotel, Lincoln. Contact Water Center/Environmental Programs, UNL, (402) 472-3305 (phone).

March 24: Earth Wellness Festival. A County-Wide Event for Fifth-Graders. 9 a.m. to 4 p.m., Southeast Community College,

Lincoln. Contact Arlene Hanna or Soni Ericksen, 444 Cherrycreek Road, Lincoln, NE 68528-1507, (402) 441-7180 (phone).

March 29: Water Resources Seminar. "Livestock Waste Management," Rick Koelsch, extension livestock waste management specialist. 3 p.m. to 4 p.m., 116 L.W. Chase Hall, UNL, and via satellite.

APRIL

April 5: Water Resources Seminar. *Kremer Lecture*. "Radioactive Waste Disposal and Storage," Gene Crump, director, Low-level Radioactive Waste Commission. 3 p.m. to 4 p.m., 116 L.W. Chase Hall, UNL, and via satellite.

April 12: Water Resources Seminar. "Municipal Solid Waste Disposal and Storage," Dale Jacobson, Jacobson-Helgoth Consultants. 3 p.m. to 4 p.m., 116 L.W. Chase Hall, UNL, and via satellite.

April 19: Water Resources Seminar. "Environmental Risk Analysis and Management," Wayne Woldt, extension waste management specialist, UNL. 3 p.m. to 4 p.m., 116 L.W. Chase Hall, UNL, and via satellite.

April 23-26: "Water Conservation in the 21st Century: Conservation, Demand, and Supply." Salt Lake City. Contact J. Paul Riley, Utah State University, Logan, UT 84322-4110, (801) 750-2783 (phone).

April 26: Water Resources Seminar. "Introduction to Farm-A-Syst," DeLynn Hay, extension water resources specialist, UNL. 3 p.m. to 4 p.m., 116 L.W. Chase Hall, UNL, and via satellite.

April 27-28: Joint regional meeting of the North- and South-central sections of the Geological Society of America, University of Nebraska, Lincoln, Neb. For more information, contact the GSA Meetings Department at 1-800-472-1988, extension 113.

April 27: "The Variability of Large Alluvial Rivers — Implications for Geological Interpretation." Banquet address by Stanley A. Schumm, Colorado State University. GSA Regional Meeting, University of Nebraska, Morrill Hall, Lincoln, Neb.

MAY

May 8-10: "Planning for a Sustainable Future: The Case of the North American Great Plains," Lincoln. Contact Donald Wilhite, International Drought Information Center, P.O. Box 830728, University of Nebraska, Lincoln, NE 68583-0728. (402) 472-6707 (phone), agme002@unlvm.unl.edu (e-mail).

May 14-18: American Institute of Hydrology Annual Meeting, Denver. Contact AIH, (612) 379-1030 (phone). Contact AIH, 3416 University of Hydrology, 3416 University Avenue SE, Minneapolis, MN 55414-3328, (612) 379-1030 (phone), (612) 379-0169 (fax).

Water — Understanding a Resource

Annual water conference deadline near

National, state and local experts will tackle policy issues involving water at the annual Nebraska Water Conference March 13-15 at the Cornhusker Hotel in Lincoln.

Workshops and discussions will offer participants the opportunity to take part in current policy debates by expressing their views and asking questions.

Registration deadline for the conference is March 10.

Participants may choose to attend two information sharing sessions from the selection of the following topics: agricultural chemical management and regulation; solid waste management; wetland delineation; initiative and comprehensive plan; Nebraska pesticide assessment

survey; groundwater protection management; and drinking water safety and standards.

An information fair the evening of March 13 will show how to access water information through a variety of electronic media.

Main speakers include Nancie G. Marzulla, president and founder of Defenders of Property Rights, a non-profit public interest legal foundation based in Washington, D.C.; Robert Perciasepe, assistant administrator for water with the U.S. Environmental Protection Agency; and State Sen. Chris Beutler, chair of the Natural Resources Committee.

The conference is sponsored by Nebraska Water Conference Council, Conservation and Survey Division, Water Center/Environmental Programs, Institute of Agriculture and Natural Resources, College of

Law, University of Nebraska-Lincoln and Valmont Irrigation.

All *Water Current* subscribers will receive a conference program and registration form in the mail.

To request a program and registration form, please contact Water Center/Environmental Programs, University of Nebraska, 103 Natural Resources Hall, Lincoln, NE 68583-0844. Phone: (402) 472-3305, Fax: (402) 472-3574, E-mail: bhurst@unlinfo.unl.edu.

Registration deadline is March 10.

A limited number of grants to cover registration only cost (\$50) are available. To be considered, applicants must be non-paid representatives of a non-profit organization and must apply before March 1 by submitting a registration form and letter of request. The grants are funded by Valmont Irrigation.

Sheffield receives Headgate Award

The Four States Irrigation Council honored Les Sheffield with its annual Headgate Award at its annual meeting Jan. 12 in Fort Collins, Colo.

Sheffield retired in July 1994 from the University of Nebraska-Lincoln, where he had served as associate professor of agricultural economics and coordinator of outreach programs for the Water Center/Environmental Programs unit.

"I will value very highly for the rest of my life this very prestigious award," said Sheffield, who served more than 38 years as a UNL faculty member.

Planning for a Sustainable Future: The Case of the North American Great Plains *Conference to highlight examples of sustainable development*

"Planning for a Sustainable Future," a symposium May 8-10 in Lincoln, will merge participants' practical experience with research to formulate policy and research recommendations for a sustainable future in the Great Plains.

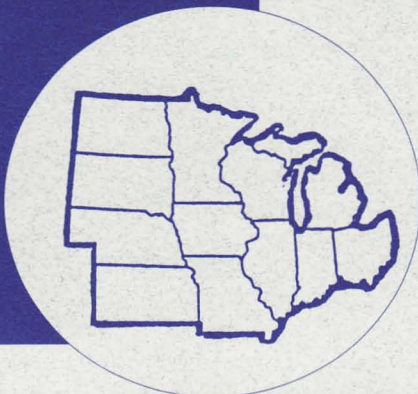
The symposium will include discussion on how to achieve sustainability despite what some scientists see as a changing climate, an issue that is especially relevant in the ecologically sensitive, semi-arid Great Plains region. The Planning Committee will present the symposium's recommendations to the President's Council on Sustainable Development and to the government of Canada's Sustainable Development Agenda.

Speakers will include Sen. Bob Kerrey, D-Neb.; Molly Olson, executive director of the President's Council on Sustainable Development; and others with expertise in economic, social, environmental, political and meteorological aspects of sustainability. The symposium is jointly sponsored by several agencies of the U.S. and Canadian governments as well as the University of Nebraska-Lincoln.

Registration is \$150 per person before March 15. For more information, contact Kelly Smith, International Drought Information Center, P.O. Box 830728, University of Nebraska, Lincoln, NE 68583-0728. Phone: (402) 472-6705, Fax: (402) 472-6614, E-mail: agme033@unlvm.unl.edu.

NORTH CENTRAL REGION

WATER QUALITY PROJECT WORKSHOP



Water quality initiative projects have been under way throughout the United States during the past five years.

Together, the Hydrologic Unit Area, Demonstration, Water Quality Incentive and Management Systems Evaluation Area projects represent one of the most extensive efforts ever undertaken to address U.S. water quality problems.

Implementing these projects has required unprecedented interagency cooperation and coordination. These efforts have involved a number of U.S. Department of Agriculture agencies, such as the Agricultural Stabilization and Conservation

Service, Cooperative States Research Service, Soil Conservation Service, Extension Service, and the U.S. Environmental Protection Agency, U.S. Geological Survey along with numerous state and local agencies and organizations.

A Water Quality Project Workshop focused on these projects Jan. 30 - Feb. 1 in Kansas City.

Workshop goals were to examine how effective teamwork of agencies has been and how it can be improved for the future and to analyze project results in relation to resources invested.

Participants had the opportunity to discuss water quality projects comprehensively, including both broad issues such as water and nutrient management, sediment control and pesticides and specific aspects of projects such as planning, field operations, implementing Best Management Practices and financing.

The workshop was co-sponsored by Cooperative States Research, Education and Extension Service, Natural Resources Conservation Service, Farm Service Agency, U.S. Environmental Protection Agency Regions 5 & 7 and U.S. Geological Survey with support from Water Center/Environmental Programs, University of Nebraska-Lincoln and Conservation Technology Information Center.

WATER CENTER/ENVIRONMENTAL PROGRAMS

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