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Water Current Newsletter

Water Center, The

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Spring 1987

## Water Current, Volume 19, Spring 1987

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# Water Current

Spring 1987

Nebraska Water Resources Center

University of Nebraska-Lincoln

## Nebraskans Tour Arizona Irrigation Sites

When about 70 Nebraskans and two Texans went on the 1987 Nebraska Irrigation Tour to Arizona in early February, they observed Arizona's "last water hole" and heard about the "law of the river."

The week's bus trip featured stops along the "American Nile," the Colorado River, at the last water hole, a term coined by former Arizona Gov. Bruce Babbitt describing the Central Arizona Project, at the world's largest desalinization plant at Yuma, at the Parker Dam in California and saw the London Bridge at Lake Havasu City. The Texans, Mr. and Mrs. Charles Schlabs, farmers from Hereford, joined the group at Phoenix.

The first stop, and a highlight of the tour, was a visit to the Salt River Project, which supplies two-thirds of the water to city dwellers in Phoenix. Through a 13,000-mile canal, this oldest U.S. Bureau of Reclamation project channels the infrequent rain into a delivery-on-demand system. Furthermore, the SRP not only delivers water to growing cities, but it provides electricity. The annual budget is \$1.1 billion for this life-sustaining project that was envisioned nearly 100 years ago, started with the 1905 Theodore Roosevelt Dam and changed the future of a desert from primarily agricultural land to growing metropolises.

Bill Haskins, Doniphan, a board member of the Central Platte Natural Resources District, said that it seemed that "about every drop of the Colorado River is owned and used by someone." The Colorado River provides water for about 15 million people in seven states: Arizona, Wyoming, New Mexico, Utah, Colorado, Nevada and California — plus Mexico.

Right now, this "American Nile" is already overcommitted, with about 90

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## Awards Presented at Conference

Water marketing was explored when the annual Nebraska Water Conference was held March 17 and 18. Keynote speaker, David B. Bush, research specialist in the ag economics department at the University of Arizona, Tuscon, told about 200 participants that water marketing wouldn't solve all the problems of Nebraska agriculture. In his address, "Pots of Gold or Wooden Nickels? Dealing for Water in the West," Bush said that social goals, environmental impact and property rights should be studied when considering any water marketing option.

Bruce Driver, a Western Governor's Association consultant, said that interstate water marketing is here — it's a western reality. He said that it's a win-win situation. Farmers win. Cities win. Western water laws haven't changed, he said, they've just been "fine-tuned" to accommodate water marketing.

The introduction of Nebraska LB146 and LB151 in the 1987 State Unicameral sparked Nebraskans' interest in water marketing. The first bill would provide for a water study by the Water Management Board; the second would allow Nebraska to market its water.

City, state and federal officials agreed that the cost of water and a long-term water policy is important when prioritizing development. "We must increase the quantity and effective distribution of water and at the same time we must improve the quality of water we provide," William Klostermeyer, assistant commissioner for administration for the U.S. Bureau of Reclamation, said.

At the awards banquet, the Pioneer Irrigation Award was presented to Vincent Dreeszen, recently retired director of the Conservation and Survey Division, UNL. The Nebraska Water Conference Council

*(continued on page 2)*

### Reminder

**August 11, 12 and 13  
the Nebraska Irrigation Tour  
will travel through south-  
central and southwest  
Nebraska. This tour, headed by  
Les Sheffield, ag economics  
researcher, will be sponsored  
by the Nebraska Water  
Conference Council and the  
Four-State Irrigation Council.**



## The Director's Report

by William L. Powers

The Nebraska Water Resources Center, along with other units of the University of Nebraska, is undergoing adjustments as a result of recent budget reductions. The most visible of these has been the merger with the Conservation and Survey Division.

One effect of this merger has been that research staff formerly with the center are assigned to the Conservation and Survey Division. By combining the staff of the center with that of the Conservation and Survey Division, the water research program of the two units has been strengthened. This will also allow the director of the center to concentrate on ways to better foster and facilitate water-resources research and educational programs at the University of Nebraska-Lincoln.

As part of this evolution, it has been decided to ask the Board of Directors of the Universities Council on Water Resources to invite another university to serve as headquarters for the Council. The Director of the Nebraska Water Resources Center has served as the executive secretary for the council for almost 18 years.

The University of Nebraska and the Water Resources Center are proud to have been the host to this organization. However, it was felt that it is time to give another university the opportunity to serve as the home office.

This transition is expected to begin Sept. 1, 1987, shortly after UCOWR's 25th anniversary meeting in South Carolina. The University of Nebraska will remain active in the council and believes in the mission and goals of this organization. At the present time, the center director serves as a delegate to the council, and there are no plans to appoint a new delegate from UNL.

### *Awards (continued from page 1)*

cited his scientific integrity, innovative research in natural resources, commitment to groundwater development and management and his "benevolent influence" on public decisions on the wise use of these resources.

The annual Progress Award was presented to the Twin Loups Reclamation District and the Twin Loups Irrigation District. They were recognized for 29 years of unceasing effort to secure a dependable supply of irrigation water, improve recreation, enhance wildlife habitat and protect the environment along the lower North Loup River through construction of the Twin Loups Project.

Paul Fell, art director and editorial cartoonist for the Lincoln Journal since 1984, provided banquet entertainment when he caricatured national and state personalities. Nebraska Gov. Kay Orr was a luncheon speaker.

## Workshop Held on Water Research Needs

High on the list of water-quality research needs at a Nebraska Water Research Center workshop held here last November was water quality, specifically, the fate and transport of agricultural chemicals as they move through the groundwater.

Other research needs were outlined at this follow-up workshop that had addressed water problems outlined at a July session. The prioritized water-research needs are:

- Water quality,
- Water quantity,
- Technical and economic management of water resources, and
- Political, institutional and social management of water resources.

Furthermore, research on water quality has replaced water quantity as a top priority.

Additional water-quality research needs were: information on the health effects of various levels of contaminants in drinking water; the development of economical drinking water treatment systems; and the development of economical water-quality monitoring techniques.

Water-quantity research needs include: the development of wildlife-habitat criteria, techniques for measuring groundwater recharge from streams, lakes and reservoirs; improved management practices for deficit irrigation; and determining the consequences and benefits of flood-control practices.

Technical and economic management research needs include an examination of the incentives and disincentives for water-quality protection, an  
*(continued on page 4)*

### SPRING 1987

Nebraska Water Resources Center

Conservation and Survey Division

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## Texas Geologist CSD Director

Twenty years of geological experience in a state agency, in industry, and with universities is a part of the background of the new director of the University of Nebraska-Lincoln Conservation and Survey Division.

Perry B. Wigley, formerly of Houston, Texas, replaced CSD Director Vincent H. Dreeszen March 1. Wigley, former exploration manager, onshore North America, for Texas Eastern Exploration Co., Houston, developed and directed exploration programs in the Gulf Coast.

While program manager and assistant director of the Georgia Geologic Survey, Atlanta, his projects included the environmental geology of barrier islands, hazardous waste disposal, surface-mine reclamation, and groundwater protection.

He was also a professor of geology at Eastern Kentucky University, Richmond, and a visiting professor at the University of Waterloo, Waterloo, Ontario, Canada, where he conducted research in biostratigraphy. From 1973 to 1981, his firm, P.B. Wigley Geological Consultants, Inc., consulted in engineering, coal, and petroleum geology. Projects included site analysis for an electric power plant, oil prospect generation, and coal-reserve evaluation.

The Conservation and Survey Division, a part of UNL since 1871, is the result of combining the state geological survey, conservation and soil survey and most recently, the Nebraska Water Resources Center.

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### Job Opportunities

Nominations and applications must be received by May 15, 1987, for the position of the Director of the Wyoming Water Research Center, Laramie.

This center coordinates, conducts, and sponsors water research. The office is administered through the Office of the Vice President for Research and Graduate Studies. The Director of the Wyoming Water Research Center plans, implements, and coordinates the University of Wyoming water research program. He/she supervises and coordinates 18 professional and staff employees and an annual budget of about \$1 million.

Qualifications include: A Ph.D. degree (or equivalent degree and academic experience); several years of water-resources research experience and a record of effective interaction with governmental entities. Salary is commensurate with qualifications. This is an 11-month, tenurable position.

To apply: Send a letter of application, resume, and three letters of reference to:

Dr. Colin Kaltenbach, Chairman  
Search Committee for Center Director  
Wyoming Water Research Center  
P.O. Box 3067  
University Station  
University of Wyoming  
Laramie, Wyoming 82071

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## Group Sees World's Largest Desalting Plant

The Nebraska Irrigation Tour to Arizona participants heard that the Colorado River was perhaps the most salty river in the United States. The Colorado River provides water for people in seven states and Mexico.

And this high salinity – even surpassing the Ark. and Rio Grande Rivers particularly in the Lower Colorado River, affects about 10 million people and more than 1 million irrigated, crop-producing acres. Therefore, back in 1974 the Colorado River Basin Salinity Control Act authorized measures to remedy this situation.

Besides, international agreements with Mexico called for action when the United States and Mexico signed a treaty in 1944 that called for Mexico to receive 1.5 million acre-feet of Colorado River water annually. By 1961 salinity of the Colorado River had increased significantly. Mexico protested.

A plan evolved that led to the construction of the Yuma Desalting Plant and to the construction of the bypass drain in the United States and Mexico. This 53-mile-long bypass drain was completed in 1977 and channels 353 cubic feet of water a second via a concrete lining. It was a gift of the United States. Located about four miles west of Yuma, the Yuma Desalting Plant features a reverse-osmosis membrane desalting technique. It has a capacity of 73 million gallons of water a day.

The plant gets drainage from the Wellton-Mohawk Irrigation and Drainage District before the water goes back to the Colorado River. Another irrigation-efficiency tactic has reduced the 75,000 acres the Wellton-Mohawk District irrigates, to about 65,000 acres, and thus reduces drainage flows. Following through with plans that began in the early 1940s, 108,000 acre-feet of water will be reclaimed for productive use in a project built by the U.S. Bureau of Reclamation at a cost of nearly \$348 million.

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### Job Opportunities (continued)

The University of Guam Water and Energy Research Institute of the Western Pacific announces two faculty position openings for Fall, 1987 in:

- Sanitary/environmental engineering, and
- Geo-hydrology/groundwater engineering.

Assistant and associate professor rank with academic salary open depending on qualifications. Minimum qualifications include an earned Ph.D. and duties include research and teaching freshmen and sophomore engineering classes.

Appointment includes a three-year contract with up to \$3,000 in relocation costs. Send resume and names of three professional references to:

Dr. Leroy F. Heitz, Director  
Water and Energy Research Institute of the Western Pacific  
University of Guam  
UOG Station  
Mangilao, Guam 96923

This job description is on file at the Nebraska Water Resources Center.



### *Water Research (continued from page 2)*

examination of past demonstration projects on water-quality protection to see why demonstrated practices are or are not still being used, and examination of the impacts of private or public water marketing and development of more economical methods for removing nitrates from drinking water.

Political, institutional and social management research needs include an examination of the statutes on land use planning for water-quality control, an evaluation of the management and financial capacity of the Natural Resources Districts to perform water-related responsibilities, an evaluation of methods of conflict resolution to see how they might be used in Nebraska and an examination of the legal, political and institutional barriers to the development of a state water plan. The proceedings of this workshop will be ready for distribution soon.

### **Announcement**

A short course, "Design of Water Quality Monitoring Networks" will be offered June 8-12, 1987, at Colorado State University, Fort Collins, Colo. This short course is directed to those actively involved with the design, operation and/or management of a water-quality monitoring network with little, or no, background in statistics. For more information contact:

Thomas G. Sanders, Program Leader  
Environment Engineering  
Department of Civil Engineering  
Colorado State University  
Fort Collins, CO 80523  
Telephone (303) 491-8652



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### *Tour (continued from page 1)*

percent of the water earmarked to agriculture. But farmers are afraid that their allotment is drying up as the Phoenix and Tucson populations mushroom. A 330-mile canal to the Tucson area has a \$3.6 billion price tag with the federal government picking up the tab. It will be completed by 1992 when Tucson turns on the spigot.

Water allotments from the CAP go to:

- Municipal and industrial users: 640,000 acre-feet annually to 85 entities that include cities, power companies, mining companies and recreational users;
- Indian communities: 309,828 acre-feet annually to 12 Arizona Indian communities;
- Non-Indian agriculture: 23 entities that share water remaining from the first two allocations.

Frank Dragoun, general manager of the Central Nebraska Public Power and Irrigation District, summarized the tour:

"Some things we've seen can be adopted in Nebraska, such as the different ways to irrigate and save water, and the different methods of irrigation scheduling."

"We can better judge just how efficient our use of water is in Nebraska," Dragoun concluded.

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