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Water Center, The

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## Water Current, Volume 21, April 1989

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# Water Current

Water Center

University of Nebraska

April 1989

## U.S. Water Institutes/Centers Celebrate 25th Anniversary

Groundwater quality remains a major emphasis for study at water resources institutes and centers across the U.S. and this certainly is true for the Nebraska Water Center also, according to the Center director.

Director Roger Gold said that the Water Center at the University of Nebraska joined 54 other institutes/centers to celebrate the 25th anniversary of the institute research programs April 26-28 at the annual meeting of the National Association of Water Institute Directors (NAWID) in Washington, D.C.

Last year 249 research projects were sponsored nationally through the institutes/centers. Seventy projects focused on groundwater contamination and protection. Other major research included pollution by organic compounds, nitrate contamination of groundwater from agricultural activities and the flow and transport of contaminants in aquifers.

Seven projects of University of Nebraska researchers included groundwater contamination control, human pollution of surface water and improved methods to measure chemical leaching.

The Nebraska Water Center assists in training future scientists by providing funds that allow undergraduate and graduate students to work side-by-side with researchers in Water Center projects, Gold said.

Since the program was created in 1964, more than 40,000 students nationally have been involved in these projects. Many students are now professionals in related fields and many are leaders in water issues.

Originally, when the bill was signed by President Lyndon Johnson, the

institutes/centers were part of the Office of Water Resources Research in the Department of Interior. Since 1983 the program is a part of the U.S. Geological Survey.

An annual competitive research program is sponsored and individual projects are selected with the help of advisory panels. Projects are funded through federal, state and private funds. Nationally, non-federal funds

exceeded federal dollars by an average ratio of 1.5 to 1 in 1988.

Other major areas researched in the U.S. include: acid rain, contamination of ground and surface water by heavy metals, excessive nutrient levels in lakes that lead to eutrophication, innovative water and waste-water treatment technologies, flooding, drought, water conservation and water policy issues.

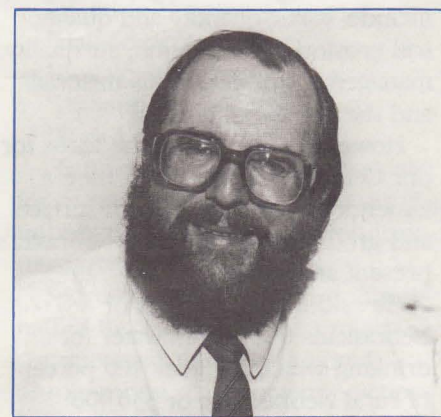
## United Kingdom Geophysicist Now Head of UNL Geology Department

by Pat Larsen

He does groundwater movement and radioactive disposal research internationally. He has an honors degree in geology from the University of London and a Ph.D. from the University of Exeter where he was on the faculty 23 years.

Now Eric M. Durrance is the chairman of the University Nebraska-Lincoln Geology Department. Durrance succeeds Sam Treves who was geology chairman 20 years. Treves will continue to teach and research in the Geology Department.

Although Durrance had not been in



Eric M. Durrance

Nebraska before last year, he was aware from the international literature of groundwater studies in Nebraska which have been conducted by Roy Spalding, associate director of the Water Center, and Darryll Pederson of the UNL Conservation and Survey Division and Geology Department.

"Groundwater quality, in general, is a common problem everywhere," Durrance said. He also said there is opposition to low-level radioactive waste depositories in the U.K., just as

(Continued on page 5)

### Happy Birthday

*The University of Nebraska  
Water Center is celebrating its  
25th anniversary this month.  
(See story on this page.)*



## Future Depends on Water Quality and Quantity

The economic future of Nebraska depends on its water quality and quantity according to Roger Gold, director of the Water Center at the University of Nebraska.

"There are many challenges for the future, but the future of water in Nebraska is bright," Gold said. He said that tremendous progress has been made, the course for change has been charted, and follow-through with research and facilities is required in order to ensure our future.

Gold, also director of Environmental Programs at UNL, said that investing in research now will impact future generations.

He said Gov. Kay Orr's research initiative on water quality will help provide economic development in Nebraska for: consulting industries, personnel development, analytical industries, equipment development, remediation technologies, new product development, best management practices and will help ensure water quality.

Nebraska's assets are its people, location, natural resources, climate and development potential, Gold said. He said that concerns of Nebraskans include: water quantity and quality, soil erosion and retention, air quality, management of hazardous materials and the habitat, in general.

However, Gold said, "The focus for our Center is on water. We have a tremendous potential in both surface and groundwater to enrich Nebraska's present and future."

He said that 82 percent of Nebraskans use groundwater for drinking which includes 100 percent of rural Nebraskans, or 330,000 families.

Gold cited problems of water quality:

—In 1985, the Nebraska Department of Environmental Control reported 136 groundwater contamination locations. These contaminations were from synthetic organics, pesticides, gasoline storage tanks, other hydrocarbons, nitrates and other contaminants.

—When the Nebraska Department

of Health tested 1,350 wells they found that 12 percent had bacterial contamination; 18 percent had nitrate contamination and 8.5 percent were contaminated by pesticides.

Moreover, in a national study by the Environmental Protection Agency, 74 pesticides were discovered in 38 states, including Nebraska.

The price tag of \$500 million annually for nitrogen in Nebraska comes from:

- 550,000 tons of fertilizer
- 540,000 tons of animal waste
- 44,000 tons as rainfall
- 5,200 tons of human wastes

Gold said 35 million lbs. of pesticides, worth approximately \$200 million, are applied annually in Nebraska. Crop producers use an estimated 90 percent of the pesticides as 91 percent of all corn acres are treated with pesticides in Nebraska. Urbanites use 4 to 5 percent of the pesticides he said, but apply 5 times more per acre.

"Contaminants are adversely affecting Nebraska's groundwater," Gold said.

The role and mission of the UNL Water Center is to promote research that will provide knowledge about contaminants, he said. Other goals of the Center are: to provide information, to facilitate a technology transfer and to educate Nebraskans of all ages about water.

"As a part of the Governor's Water Sciences Research Initiative, a Water Research Laboratory will be provided. Baseline studies will include legislative, pesticide and nitrate contamination, funding for graduate research assistantships and promotion of grant proposals," Gold said, "will be accelerated."

Multiple agency cooperation, he said, will be enhanced with the Nebraska Department of Environmental Control, the Natural Resources Commission, the Natural Resources Districts, the Department of Water Resources, Department of Health and several federal agencies.

## Nitrate Area Map "May be Out in June"

Groundwater nitrate problems are increasing in Nebraska. A new map will show new areas of nitrate contamination and increasing concentrations of nitrates, according to Mary Spalding, a research chemist in the Conservation and Survey Division at the University of Nebraska.

"Water sample data collected from Natural Resources Districts and other sources since 1984 will be used to construct the map," Spalding reported to a February Water Resources Spring Seminar. Research has connected fertilizer leaching and human and animal waste with livestock health problems in addition to human problems, she said.

Spalding said that fertilizer used in heavily irrigated and well-drained cornfields are a major contributor to drinking water contamination in the Central Platte region, in Holt County in north-central Nebraska and in the Sidney area of the Nebraska Panhandle.

*(Continued on page 5)*



**Mary Spalding**

**April 1989**

**Water Center**

**Roger Gold**  
**Director**

**Roy Spalding**  
**Associate Director**

**Pat Larsen**  
**Editor**

**Cindy LeGrande**  
**Office Manager**

**Audrey Schardt**  
**Editorial Assistant**

**103 Natural Resources Hall**  
**University of Nebraska**  
**Phone: 402-472-3305**  
**Lincoln, NE 68583-0844**



# Large Savings With Nitrogen Best Management Practices

Farmers in four Central Platte Valley counties saved about \$1.2 million annually by taking deep soil samples and testing irrigation water for nitrate.

This four-year annual savings in Dawson, Buffalo, Hall and Merrick counties followed a nitrogen management demonstration project on how to adopt the recommended practices. The project showed the economic and potential environmental benefits of the practices, according to researchers, Richard B. Ferguson, extension soils specialist at the University of Nebraska-Lincoln, and Kay Rockwell, evaluation specialist, UNL.

After four years of this educational project, a survey in the four county area was compared to York County that has similar agricultural practices. York County had not participated in the nitrogen management project that was conducted in cooperation with the Central Platte Natural Resources District.

"Since the mid-1950s, UNL researchers have been aware of increasing concentrations of nitrate in groundwater in the Central Platte Valley," Ferguson said. "Various studies indicated that, in part, elevated groundwater nitrate concentrations are associated with nitrogen fertilizer use in irrigated corn production."

He said that best management practices have been developed by UNL over the years to minimize nitrate leaching from irrigated corn. Practices include:

—Soil and irrigation water sampling



*Richard Ferguson explains research.*

for nitrate content,

—Adjusting fertilizer nitrogen rates according to nitrogen in the soil and irrigation water, and

—Irrigation scheduling to avoid excessive deep percolation of water.

In the five counties surveyed, most farmers used standard soil testing, or a 6- to 8-inch sample. York County, with 80 percent of the farmers soil testing, was lowest in soil testing; Merrick County with 98 percent, had the highest percentage of farmers taking routine soil samples. Most sampled yearly with fertilizer dealers taking soil samples, Ferguson, at the South Central Research and Extension Center, said.

Counties varied in the number of farmers who took deep soil samples for residual nitrate and were:

\*Buffalo-60 percent

\*Hall-54 percent

\*Merrick-42 percent

\*York-32 percent

\*Dawson-50 percent

Ferguson said the low adoption of deep sampling in Dawson County may reflect a greater amount of rangeland relative to irrigated cropland compared with the other counties.

"Most of the farmers who take deep samples for residual nitrate do so yearly and sample to a depth of three ft. They use the soil residual nitrate level to adjust their fertilizer nitrogen rates," Ferguson said.

Farmers who tested irrigation water for nitrate content were:

\*Merrick-74 percent

\*Hall-58 percent

\*Buffalo-46 percent

\*Dawson-26 percent

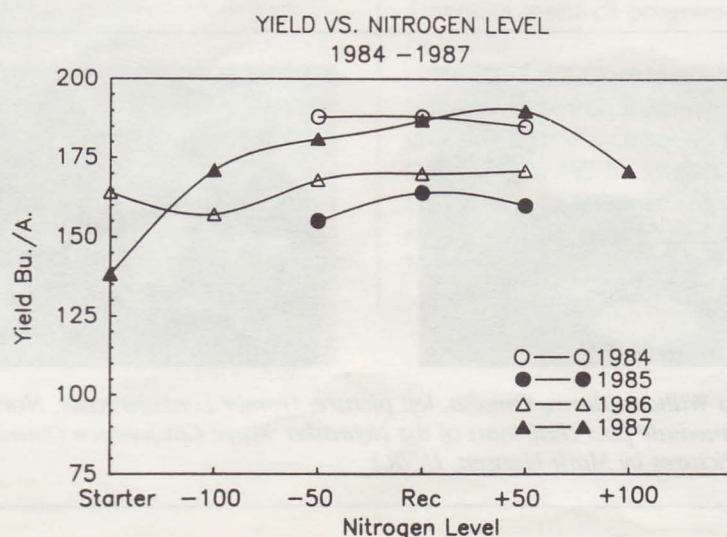
\*York-12 percent

"Farmers who test irrigation water for nitrates, test annually and use this information to adjust their fertilizer nitrogen rates,"

Ferguson said. "One-third to one-half of the farmers in the project counties said they had adopted nitrogen best management practices because of UNL's demonstration project."

Ferguson summarized: "The average percentage of farmers who took deep soil samples for residual nitrate in the four-project counties is 47 percent; only 32 percent of farmers in York County took deep soil samples.

The average percentage of farmers testing irrigation water for nitrate in the four-project counties is 51 percent. Only 12 percent of farmers in York County tested irrigation water for nitrate."





# Sandhills Voices Heard at Conference

The unique Sandhills need extensive protection and more research to plot their future, the 1989 Nebraska Water Conference panelists, said.

A highlight of the conference was the presentation of *An Atlas of the Sand Hills*, published by the Conservation and Survey Division, UNL.

Harold Andersen, chairman and chief executive officer of the Omaha World-Herald, received a plaque recognizing a \$50,000 grant from the World-Herald Foundation for the atlas publication.

Vince Dreeszen, former director of the Division, called for more research for the Sandhills, which are a "delicate ecosystem." He said that a book on the Sandhills was first published in 1971.

Ann Bleed, state hydrologist, expressed the need for more literature on the Sandhills in language for laypersons. Bleed, principal coordinator of the atlas, suggested a "series of small books or pamphlets for new findings about the area



*Varner presents award to Andersen.*

as researchers uncover additional information."

Small group respondents in a wrap-up session agreed on several needs for the future of the Sandhills:

- Better roads and communication
- A research data base
- Incentives for good stewardship
- A better educational system
- Sustainability of resources

- Economic incentives and development
- Public awareness
- More demonstration projects

In the geological review of the Sandhills, Jim Swinehart, Conservation and Survey Division, said the Sandhills were formed between 5,000 and 8,000 years ago when it was desert and had little vegetation. However, with wetter times 750 plants sprouted there and held the cover for the restless hills to stabilize.

If there is a global warming, it will be in the next century," Swinehart said.

"Water is the most abundant and important resource of the Sandhills," Dreeszen said. This 20,000 square miles of Nebraska could provide 40 ft. of water to cover the state of Nebraska."

"Water effects every citizen in Nebraska," Irvin Omtvedt, IANR vice chancellor, said, "we need to address the many complex issues facing us. It's not business as usual."

## Papio-Missouri River NRD Receives Progress Award

The 1989 Progress Award was presented the Papio-Missouri River Natural Resources District of Omaha by the Nebraska Water Conference Council at its annual awards banquet.

The district was cited for many achievements in water and land conservation and its highly successful educational programs, NWCC awards chairman Robert Petersen, of North Platte, said. Steven Oltmans, general manager, and William Mann of Omaha, chairman of the board, have provided outstanding leadership for this NRD, Petersen said.

"Since the January, 1989, merger of the Papio NRD and Middle Missouri Tribes NRD, it has major responsibility for soil

and water conservation and related programs for a major portion of lands adjacent to the Missouri River from Dakota County south through Sarpy County in Nebraska," Petersen said. He cited a few of the accomplishments of the Papio NRD in its 16 years of service:

- More than \$2.5 million in Conservation Assistance Program and Nebraska Soil and Water conservation funds have been distributed to approximately 750 land owners in Douglas, Sarpy and Washington counties. These funds helped build more than 770 miles of terraces and 240 miles of grassed waterways in the three counties;
- The District has constructed more

than 20 miles and maintains 52 miles of flood control levees and channel improvements in the three-county area;

—More than 25 sediment control dams have been maintained by the Papio NRD in the three-county area;

—District tree-planting crews have planted more than 160,000 trees;

—A pilot project to stabilize the banks along seven miles of the Elkhorn River was completed in 1988 and a new recreation site and boat ramp along the river will be open to the public this year; and

—A cost-share of more than \$1.5 million with the U.S. Army Corps of Engineers on recreation development at the new Chalco Hills Recreation Area.



*Robert Petersen, North Platte, left, presents awards to William Mann, Omaha, left picture; Homer Loutzenbeiser, North Platte, center; and Hal Schroeder, Lincoln, right, immediate past chairman of the Nebraska Water Conference Council at the Nebraska Water Conference Awards Banquet. (Pictures by Mark Hansen, IANR.)*



# Pioneer Irrigation Award Goes to Former NPPD Administrator

A 54-year affiliation with water-related organizations was recognized with the Pioneer Irrigation Award presented by the Nebraska Water Conference Council (NWCC) at its annual awards banquet.

"Homer Loutzenheiser has been a member of the NWCC since 1972 and is a past chairman of the Council," Robert Petersen, North Platte, awards chairman for the Council, said, about the award recipient.

Loutzenheiser, of North Platte, began his water resources career in 1935 helping build the South Platte River siphon at the east edge of Paxton for the Platte Valley Public Power and

Irrigation District. This district merged with Nebraska Public Power District in 1970 and he became assistant general manager of the North Platte Division until his 1980 retirement.

He was a director of the Nebraska Water Resources Association for 12 years and vice president in 1973. He has been the Nebraska director of the National Water Resources Association (NWRA) since 1979. In 1981 he received a life membership award in the Nebraska Water Resources Association.

In 1986, he received the NWRA Theodore Roosevelt President's Award for distinguished service and a life

membership award from the NWRA. In 1987, he received the Four States Irrigation Council "Head Gate" award for distinguished service.

While serving as assistant general manager of NPPD at North Platte, Homer's chief responsibility was for the hydro-electric and the irrigation delivery system which provides irrigation water for about 100,000 acres in the Platte Valley.

He also had major supervisory responsibility during construction of the two 650-megawatt coal-fired Gerald Gentleman Station built by NPPD at Sutherland in the late 1970s.

## Geophysicist

*(Continued from page 1)*

in Nebraska. Some groups are "very active," and exert considerable political influence.

Lobbying is the main activity of the opposition groups in the U.K. as no one wants waste disposal sites close to where they live. "However, a lot of the worries are based on inadequate knowledge about waste disposal," Durrance said. He faulted government authorities in the U.K. for a lack of public education programs about low-level, radioactive waste repositories.

"Because of my research experience I hope to be involved in monitoring the activities concerning radioactive waste disposal in Nebraska," Durrance said. "I perceive monitoring as involving duplication of some of the investigative work that is done by contractors, as well as scouting of programs and results."

Generally, Durrance wants to do fundamental research on recharge of the aquifer and the migration of both natural and artificial contaminants. Radon distribution and the natural radiation dose received by the Nebraska population are also included in his interests. He recently did a

study of radon distribution in Southwest England under a contract from the Manpower Services Commission in Britain.

Durrance's plans to wind down his current research contracts in groundwater and gas movement took him out of his Bessey Hall office to Canada in February and back to the U.K. and Europe in parts of March and June. He has contracts from the U.K. government and the European Common Market. Other contracts are related to his positions as consultant to the Atomic Energy Research establishment at Harwell in the U.K. and Atomic Energy of Canada. During these periods he will also be exploring ways of introducing joint European-American and Canadian-American research programs to Nebraska.

He cited the Governor's Water Sciences Research Initiative and the groundwater laboratory on East Campus that will be available in the summer as progressive steps in the study of groundwater quality in Nebraska.

## Nitrate Map

*(Continued from page 2)*

But besides nitrates in groundwater, she warned that active feedlots in some parts of the state and poor well construction and maintenance are additional causes for groundwater contamination.

Research has linked long-term use of water containing high levels of nitrate-nitrogen with stomach cancer, Spaulding said.

"A lot of people think the federal safety standard for nitrate-nitrogen in drinking water should be 20 parts per million," Spaulding said, "now it's 10." She said that with many test readings climbing in Nebraska, "we'll probably get there."

However, she said that humans are not the only creatures at risk from high nitrate levels.

She cited sway-backed hogs caused by a deficiency of Vitamin A. An oxygen-deficiency condition in infants, or the "Blue Baby Syndrome," is caused by high levels of nitrates in drinking water that also may cause stomach cancer, she said.

About the new nitrate map she said: "I think when you see it you'll be amazed at the number of new areas that have high nitrate contaminated groundwater. Areas that people didn't expect would ever be contaminated with nitrogen because the soils were fine textured and it was 60 to 100 ft. to groundwater exist now," Spaulding said.



## Research Hydrologist is Kremer Lecturer

A U.S. Geological Survey hydrologist, Michael Thurman, described two groundwater contamination studies when he presented the Kremer Lecture in February at the University of Nebraska-Lincoln.

Thurman, with the Central Region USGS Kansas District office, at Lawrence, spoke at the Spring Water Resources Seminar Series on "Organic Geochemistry of Groundwater Contamination by Secondary Sewage-Role of Oxidation Front in Transport Process."

A particular site in western Cape Cod, Mass., is an outwash and an unconfined aquifer in an area that was glaciated about 10,000 years ago. Thurman, who has been researching this site since 1983, said most of the drinking water in the area is taken from the aquifer, so any contamination has a direct impact on drinking water.

However, the particular field site discussed by Thurman was the Otis Air Force Base established in 1936, used during World War II and is now an Air National Guard Base. The sewage plant processes about a million gallons of waste water a day, he said, with "secondary treatment."

"This is the primary source of water contamination at the Base," Thurman reported. He said that part of his presentation was to point out "how to find things."

If you see a certain chemical pattern—what does it mean?

How can we interpret the data?

Thurman also spoke to water-related University of Nebraska faculty and graduate students at the East Campus Union. His topic was "Determination of Triazines in Soil and Ground Waters with Immunoassay and Gas Chromatography/Mass Spectrometry."

"Thurman's expertise is with contamination problems similar in scope and geochemistry to those commonly found in Nebraska's surface and ground waters," said Roy Spalding, Water Seminar series coordinator.

Spalding, Water Center associate director, said that the Kremer Lecture is an appropriate platform for these presentations.

(Continued on page 8)

## Calendar

May  
10-19

*International Association of Hydrological Sciences Third Scientific Assembly, Baltimore, Md. Contact IAHA Assembly, American Geophysical Union, 2000 Florida Ave., NW, Washington, D.C. 20009.*

May 11

*Abstracts due for contributed papers for the Petroleum Hydrocarbons and Organic Chemicals in Ground Water: Prevention, Detection and Restoration, presented by: The Association of Ground Water Scientists and Engineers, of NWWA American Petroleum Institute, Houston, Texas, Nov. 15-17. Contact National Water Well Association, 6375 Riverside Drive, Dublin, OH 43017.*

May  
11-12

*National Pesticide Research Conference, Pesticides in Terrestrial and Aquatic Environments, Richmond, Va. Contact Water Resources Research Center, Virginia Polytechnic Institute and State University, 617 N. Main St., Blacksburg, VA 24060.*

May 15-  
June 23

*Practical Approaches to Groundwater Hydrology and Contamination, Stillwater, Oklahoma. Contact Montie Mayes, Noble Research Center, Oklahoma State University, Stillwater, OK 74078.*

May  
15-26

*IICE Course N.2, Integrated Impact Assessment in Water Resources, Colorado State University, Fort Collins, Colorado. Contact Janet Lee Montera, Department of Civil Engineering, Colorado State University, Fort Collins, Colo. 80523.*

June 1

*Abstracts due for the Tracers in Hydrogeology: Principles, Problems, and Practical Applications, at Houston, Texas Astrodome Oct. 31-Nov. 1. Contact Susan Crites, National Program, AGWSE/NWWA, 6375 Riverside Dr., Dublin, OH 43017.*

Aug. 1

*Abstracts due for American Society of Civil Engineers Irrigation and Drainage Division 1990 Watershed Management Symposium in Durango, Colo. Contact R. Riggins, PO Box 4005, Champaign, IL 61824-4005.*

Aug.  
2-4

*Annual Nebraska Water Resources and Irrigation Tour to the Sandhills.*

## Public-Private Sectors Join in National Celebration

Washington D.C.,—For the second time in as many years the public and private sectors joined in the nationwide celebration of National Drinking Water Week, May 1-7, 1989, to pay tribute to that often taken for granted, but nonetheless precious commodity, safe drinking water.

A coalition of industry groups, government agencies and citizen organizations have embarked on a national education and information program to help increase public awareness and understanding of water issues.

As federal regulations, which grew out of passage of the Safe Drinking Water Act Amendments of 1986, go into effect in 1989 and beyond, the coalition hopes to focus public attention on changes that will be taking place in such areas as the monitoring and testing of drinking water, increased quality standards, treatment requirements, and public education.

While there is generally a high level of compliance with existing drinking water standards, the new regulations promise to be more rigid, and will cover a broader range of possible contaminants and health risks than ever before. As water professionals gear up to meet these requirements, they hope to inform the citizenry—which tend to take water for granted—of all that happens to it between the time it falls as rain into the nation's lakes, rivers, and reservoirs, to the time it comes out of the faucet at home.

These elements, together with the constant need to be aware of conservation of this precious life-sustaining resource, speak to the aptness of the theme selected for the national observance — "Drinking Water: On Tap For The Future."

Throughout the week schools, civic and service groups, water utility companies, industry groups and federal and state agencies will conduct a wide variety of information and education programs that run the gamut from open houses at water treatment plants to seminars, public meetings, tours of facilities, appearances on radio and TV talks shows, and discussions on water issues at club and citizen groups meetings, and local poster contests.



# Nebraska Unicameral Considers Water Legislation

J. David Aiken  
**UNL Water and Agricultural  
Law Specialist**

Several water and water-related bills have been introduced in the 1989 legislative session. The two most important issues are water transfers and exports and groundwater recharge fees.

## **Water Transfers and Exports**

Six bills deal with water exports and water transfers.

### **Water Sales and Exports.**

LB383 would authorize the sale of water and the export of water. The bill would make several significant changes to Nebraska water law, including (1) clarifying when groundwater may be used off site (2) authorizing the sale of water rights, and (3) establishing environmental review criteria for water appropriations, transfers, and sales.

**Ground water transfers.** Under current law, ground water cannot be used off-site for irrigation purposes, but can be used off-site for industrial and municipal purposes with a Department of Water Resources (DWR) permit. Under LB383, DWR permits would be required to transfer ground water across a section line for any purpose, unless the water would be used either for individual domestic purposes or to irrigate up to 160 acres in an adjacent section. Up to 60,000 acre ft. per year could be transferred.

**Water right sales.** Under current Nebraska law, surface water rights may be transferred only for the same purpose of use and within the same river basin. This means that irrigation water rights cannot be sold for municipal or industrial purposes, or for use within another river basin.

Under LB383, surface water rights could be transferred for any purpose in any location. In other words, irrigation appropriations could be purchased for industrial or municipal purposes or for instream flows, as well as for use in any river basin, including outside of Nebraska. DWR approval would be required. Most western states authorize water right sales.

**Environmental review.** Only surface water appropriations involving an interbasin water transfer are subject to environmental review, although all appropriation applications are

potentially subject to endangered species review. Under LB383, all new surface water uses and ground water transfers across section lines would be subject to a state environmental impact review, as would transfer of water rights (i.e. sale of water rights).

All adverse impacts would be required to be mitigated or compensated if mitigation or compensation were possible. Benefits of the proposed water would be required to clearly outweigh any unavoidable, uncompensated and unmitigated adverse effects. The DWR, in evaluating water export applications, would be able to favor instate uses to the extent legally permissible under the U.S. Constitution.

### **Salvaged water rights.**

Current Nebraska water law does not recognize the concept of salvaged water; i.e. water saved through conservation practices that otherwise would be lost for beneficial use. LB384 would allow water to be salvaged through conservation measures with DWR approval. Such salvaged water could then be used or sold by the original appropriator. Most western states recognize salvaged water rights.

### **Water rights transfers clearinghouse.**

LB385 would authorize the WMB to provide technical assistance in selling or transferring water rights. LB385 would depend on LB383's being enacted.

### **Water transfer projects.**

LB364 would authorize the Nebraska Water Management Board (WMB) to participate in water transfer projects and water right transfer projects. LBs 364, 383, 384 and 385 were originally proposed by the WMB in its study of water transfers and exports.

### **Water export criteria and study.**

LB710 and LB715 are bills introduced in opposition to LBs 383-85. LB710 would authorize a UNL study of the legal options to minimize the export of water from Nebraska. LB715 would authorize water exports from Nebraska only when the exports benefited Nebraska.

### **Ground water Recharge Fee**

Under existing law, new and existing irrigation project operators may obtain

a ground water recharge appropriation for water recharged through project operations. Operators of existing irrigation projects may then assess ground water irrigators a fee of up to 50 cents per acre irrigated for withdrawing recharged ground water. Operators of new irrigation projects may also charge irrigators for withdrawing recharged groundwater but are not subject to the 50 cents per acre limitation. LB45 would repeal the groundwater recharge authority for existing water projects, but not for new water projects.

***Commentary.** The recharged water withdrawal fee for existing water projects has always been a controversial feature of the groundwater recharge statutes, as ground water irrigators in the Tri-County district, among others, have opposed any legislation which could require them to pay a fee for pumping groundwater for irrigation.*

### **Other Bills**

LB121 would establish a state superfund for groundwater contamination cleanup, similar to the federal Superfund program. LB161 would authorize the Nebraska Department of Agriculture to assume state administration of federal pesticide use regulations. LB216 would authorize first class municipalities to prevent pollution of municipal water supplies up to 15 miles outside the city limits. LB251 would authorize the Nebraska Game & Parks Commission to designate natural areas. However, the rights of landowners to develop land so designated would not be limited. LB289 would establish a cleanup fund for petroleum leaks and spills.

LB619 would require Natural Resources Districts (NRDs) to obtain either landowner permission or a court order to conduct chemigation inspections. LB682 would increase the registration fees for underground storage tanks to \$55.

LB716 would establish a \$20 million water impoundment construction trust fund to be administered by the Water Management Board. Grants and loans would be made to political subdivisions (NRDs, irrigation districts, municipalities, etc.) for water project development.



# Bills in First Unicameral Session

STATUS REPORT ON BILLS before the 1st Session of the 91st Nebraska Legislature that may be of interest.

by Bob Kuzelka

Conservation & Survey Division, UNL

## LB NO. TITLE/SUBJECT

52	Low-level waste site determination process	<i>Ind. Postponed. AP Hrg 2/16</i>
118	Funding changes for county extension agents	<i>AP Hrg 2/16</i>
121	DEC/CERCLA Fund	<i>NR Hrg 2/1</i>
132	DWR Service Fee	<i>Engrossed</i>
160	Kearney State to U of N System (See LB 247)	<i>ED Hrg 2/21</i>
161 P	Pesticide regulation to NE Dept. of AG	<i>Gen. File (1/1/90)</i>
188	Sale of education lands	<i>Ind. Postponed</i>
199	Amend NE Soil and Water Cons. Act	<i>Ind. Postponed.</i>
216	Extend 1st class cities well protection	<i>Ind. Postponed</i>
247 P	Higher Ed Study (LB 160 Amended)	<i>Enr. &amp; Review</i>
270	Change NRD improvement project requirements	<i>Gen. File</i>
289 P	Remedial action on petroleum releases	<i>Gen. File</i>
301-7	Governor's budget bills	<i>Ap Hrg 3/17</i>
311 P	Amend waste water fund	<i>Select File</i>
364	Change Water Management Board Powers	<i>NR Hrg 3/1</i>
383-5	Water transfer study bills	<i>NR Hrg 3/1</i>
428	U of N Lab	<i>AP Hrg 2/16</i>
430	Rural economic development assistance (IANR)	<i>AP Hrg 2/16</i>
536	U of N Economic Development Center	<i>AP Hrg 2/16</i>
542 P	U of N risk loss trusts	<i>Gen. File</i>
545	Sale of DAS Lancaster County lands	<i>Gen. File</i>

619	Amend Chemigation Act	<i>Signed</i>
620	Hazardous waste site determination process	<i>NR Hrg 2/24</i>
621 & 2	DEC housekeeping	<i>Ind. Postponed</i>
623	Amend waste water fund	<i>Signed</i>
625	DEC Housekeeping	<i>NR Hrg 2/24</i>
672	Rural economic development (U of N & St. Coll.)	<i>AP Hrg 3/13</i>
682	Amend underground tank laws	<i>NR Hrg 2/8</i>
710 P	U of N water transfer study	<i>Enr. &amp; Review</i>
715	Water transfer bill (Lamb)	<i>NR Hrg 3/1</i>
716	Create water improvement fund for Wt. Mgn. Bd.	<i>AP Hrg 3/2</i>
755	Require drilling info to CSD	<i>Gen. File</i>
760	Rename state colleges	<i>Ind. Postponed</i>
761 P	More low-level waste changes	<i>Gen. File</i>
763	More low-level waste changes	<i>Ind. Postponed.</i>
807 P	Sale of education lands	<i>Gen. File</i>

**Committees:** AG-Agriculture; AP-Appropriations; BC-Banking, Commerce & Insurance; ED-Education; GM-Government, Military & Veterans Affairs; NR-Natural Resources; RV-Revenue; UA-Urban Affairs

**Bill Status:** Introduced; Referred to Committee Public Hearing; Placed on General File or Indefinitely Postponed; Enrollment & Review; Select File; Engrossed; Final Reading; Passed (25 votes) or Failed; Signed or Vetoes by Governor or Becomes Law without Governor's Signature; Veto Override (30 votes)

**Note:** Bills which appear as signed, failed, or indefinitely postponed will not appear in future status reports.

P and LB # indicates designated priority bill. Bills not now on select file or designated as priority have no chance of being passed this session.

## Kremer Lecturer

(Continued from page 6)

Spalding said that it's timely having Thurman as the Kremer Lecturer because of Gov. Orr's Research Initiative on Water Quality and the national and state Extension Water Quality Research Initiative.

"Thurman provided additional information on his research of groundwater contamination," Spalding

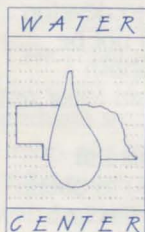
said, "that is very applicable in Nebraska."

The Maurice A. Kremer Lecture Series on Water, sponsored by the Institute of Agriculture and Natural Resources, UNL, has presented water resources experts since 1983.

The lecture series provides a forum to increase awareness of current and future water issues. "Alternatives are

discussed aimed at the wise management of one of Nebraska's most valuable resources—water," Spalding said.

The lecture series honors a Nebraska leader in water resources conservation and management, Maurice A. Kremer, who served in the State Legislature from 1962 to 1982 as chairman of the Public Works Committee.



University of Nebraska  
103 Natural Resources Hall  
Lincoln, NE 68583-0844

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