

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

---

Water Current Newsletter

Water Center, The

---

10-2000

## Water Current, Volume 32, No. 5, October 2000

Follow this and additional works at: [https://digitalcommons.unl.edu/water\\_currentnews](https://digitalcommons.unl.edu/water_currentnews)



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

---

"Water Current, Volume 32, No. 5, October 2000" (2000). *Water Current Newsletter*. 232.  
[https://digitalcommons.unl.edu/water\\_currentnews/232](https://digitalcommons.unl.edu/water_currentnews/232)

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.

## NU Researchers Track Endangered And Threatened Sturgeon in Platte River

By Steve Ress

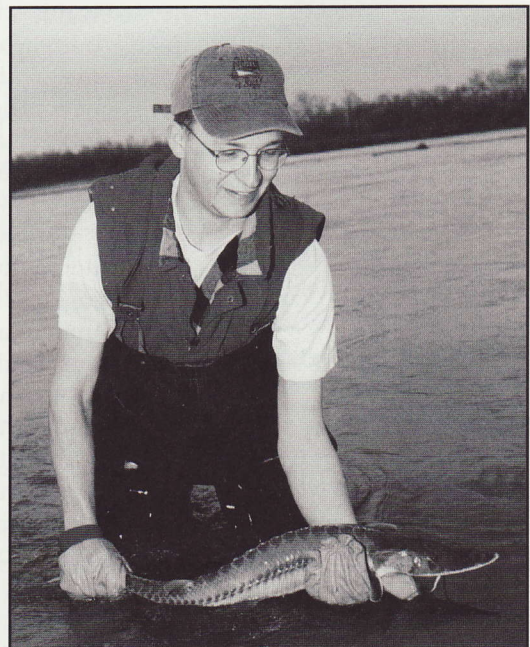
Continuing research by a University of Nebraska fisheries biologist and his students is yielding clues that endangered pallid sturgeons not only can live in the Platte River, they could possibly spawn there too.

"What we're learning is very encouraging, even if it isn't absolutely conclusive yet," said NU fisheries biologist Ed Peters, who has been leading a team studying the habits, habitat and movements of this federally endangered species.

What we want to learn is the specific habitat needs of these rare fish; whether they move back-and-forth between the Missouri River and the Platte River; and if they spawn in the Platte (River) as our research is beginning to indicate," Peters said.

In 1998 and 1999, Corey Reade, a fisheries and wildlife graduate student who has been involved in the study, netted larval sturgeon from the Platte River near Ashland. About the same time, U.S. Fish and Wildlife biologists recovered the very first pallid sturgeon larva from the Missouri River, near the Big Muddy National Wildlife Refuge. That location is downstream from where the Platte River empties into the Missouri.

"Taken together, the age of these larval sturgeon and where they were netted indicate that one of the places pallids (sturgeon) could possibly be spawning is in the Platte River," Peters said.



UNL Fisheries and Wildlife graduate student Corey Reade releases a pallid sturgeon into the Platte River. Reade is one of several students, staff and faculty members working with fisheries biologist Ed Peters to learn more about the habits and habitat needs of this federally endangered species (IANR photo by Brett Hampton).

The only known potential pallid sturgeon spawning area is in Montana's Yellowstone River, which feeds into the upper Missouri River.

"There must be other spawning areas, because dams along the Missouri block downstream fish from reaching the river's upper reaches," Peters said.

The discovery of the larva in the Platte, and other information Peters and his team have collected, have in part prompted the Nebraska Game and Parks Commission and the Pallid Sturgeon/Sturgeon Chub Task Force to fund a multi-year study into the habits and habitat of these elusive fish.

(Continued on page 8)

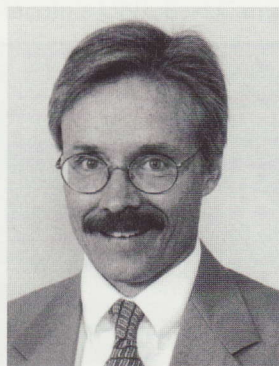
### INSIDE

- 3 ..... Meet the Faculty
- 4 ..... Lab Completes Groundwater Study
- 5 ..... Utility Deregulation Commentary
- 6 ..... Well Data on the Web
- 7 ..... Festival of Color
- 12 ..... 2001 Summer Water Tour



# Promises and Challenges of Embarking on New Journeys and Looking In New Directions

## from the DIRECTOR



Kyle D. Hoagland

Since introducing myself to you in the last issue of the *Water Current*, I have spent a significant amount of time meeting with our UNL water sciences faculty and staff, state and federal agency representatives and non-governmental and non-profit organization people to get their perspectives on new and improved directions for the Water Center. I've also asked for their ideas for change and about their frustrations with or

praises for prior practices. I have received some very thought provoking and candid answers to my questions, which has been extremely helpful. This is an ongoing process.

It has been a very interesting and invigorating two months!

I am now more convinced than ever that the University of Nebraska has a tremendous amount to offer in water sciences research, teaching and outreach. Many of you have given me great ideas for new directions, new programs and new ways of looking at what the Water Center's roles should be and what we have to offer in water sciences.

But we have two challenges. First, not many outside UNL (or even inside UNL in some cases) fully understand the breadth and depth of our faculty expertise in water, or the programs available to potential undergraduate and graduate students interested in obtaining degrees in the water sciences.

Secondly, it takes money to bring to fruition all of the new "initiatives" in water research and education that warrant our attention. Unfortunately, the supply of worthwhile ideas and funding opportunities seem to be moving in opposite directions.

Although it's early in the game for me, let me give you some notions of how we will at least begin to

address these challenges.

We hope to create a tighter networked, better informed and more involved NU water faculty by enhancing the *Water Current*, for one. You will begin to see some of these changes in this issue and more are forthcoming. As you thumb through this issue, you will notice several new features such as highlights of water faculty, a renewed commitment to covering the latest in water-related research news, new colors and brighter, glossier paper (that should improve graphic and photo reproduction).

Other changes are coming such as highlighting some of the work our often overlooked graduate students do, a revision of the Water Center's web site and encouraging direct faculty involvement on an internal advisory committee that will be charged with helping to set new goals and directions.

Plans are also underway to create a new recruitment brochure in the water sciences degree areas that will be targeted at state and regional high schools.

Support for the highly successful water tours, water seminar series, annual water conference, Festival of Color, Husker Harvest Days, educational open houses, The Groundwater Foundation's Children's

(Continued on page 6)

## WATER CURRENT

Water Center  
University of Nebraska-Lincoln  
103 Natural Resources Hall  
Lincoln, NE 68583-0844  
Phone: (402) 472-3305  
Fax: (402) 472-3574  
E-mail: [sress1@unl.edu](mailto:sress1@unl.edu)

<http://ianrwww.unl.edu/ianr/waterctr/wchome.html>

Kyle D. Hoagland — Director  
Roy F. Spalding — Associate Director,  
and Water Sciences Laboratory Director  
Edward F. Vitzthum — Chemigation  
Coordinator  
J. Michael Jess — Water Specialist  
Steven W. Ress — Editor  
Patricia A. Liedle — Editorial Assistant

*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.*



# Meet the Faculty

## Dr. F. Edwin (Ed) Harvey

**Research Hydrogeologist/ Hydrogeochemist and Assistant Professor, NU School of Natural Resource Sciences and Conservation and Survey Division** (courtesy appointment with Department of Geosciences) participating faculty with Water Sciences and Environmental Engineering programs. At UNL since 1996. Certified Professional Geologist, State of Nebraska.

### Education:

Ph.D. in Hydrogeology, University of Waterloo (Ontario) 1996; M.S. in Hydrogeochemistry, Purdue University, 1990; B.S. in Geology/Physics, Olivet Nazarene University, 1986.

### Samples of current research/ extension programs:

- Isotopic composition of Nebraska precipitation: implications for

investigating groundwater recharge.

- Isotopic evidence for Pleistocene glacial meltwater recharge to and regional groundwater flow reversals within the Dakota Aquifer, northeastern Nebraska with D. Gosselin. Funded in part by UNL Agricultural Research Division.
- Using rubidium for labeling corn tissues and insect pests for mark-recapture experiments with B. Siegfried, L. Meinke, D. Gosselin and T. Hunt. Funded by UNL Agricultural Research Division.
- Using water chemistry and stable isotopes to determine the impact of leakage from Sherman Reservoir on the Loup City sewer system. Joint project with G. Steele, U.S. Geological Survey. Funded by Loup City, NE.



Ed Harvey

- Physical and chemical hydrogeology of wetland fens in the Sand Hills of Nebraska with J. Swinehart. Funded by the Sand Hills Task Force and the Nature Conservancy.
- Hydrogeochemistry of eastern Nebraska saline wetlands with J. Ayers and D. Gosselin. Funded by the U.S. Environmental Protection Agency.

(continued on page 8)

## Dr. Steven D. (Steve) Comfort

**Soil Environmental Chemist and Associate Professor, NU School of Natural Resource Sciences.** At UNL since 1992.

### Education:

Ph.D. in soil science, University of Wisconsin-Madison, 1988; M.S. in soil science, University of Minnesota, 1984; B.S. in soil science and agricultural extension education, University of Wisconsin-Madison, 1981.



Steve Comfort

### Samples of current research/ extension programs:

- Remediating RDX/HMX contaminated soil at the Los Alamos National Laboratory.
- Permeable zerovalent iron barriers for remediating pesticide-contaminated soil under unsaturated transport.
- Field-scale remediation of metolachlor-contaminated spill site using zerovalent iron.
- Physical treatment and chemical oxidation/reduction treatability study for the Massachusetts Military Reservation.

### Other recent research:

- Comfort, S.D. 1996-1998. Application of Abiotic Treatments for Remediating Munitions-Contaminated Soil: Pilot-Scale Demonstrations. National Water Research Institute and NU Water Center/ Environmental Programs.

- Shea, P.J., S.D. Comfort, G.L. Horst, T.C. Zhang and R.A. Drijber. 1996-1998. Environmental Processes for Accelerated Bioremediation of Xenobiotics in Soil and Water National Science Foundation (NSF)-EPSCoR program.
- Zhang, T.C., P.J. Shea and S.D. Comfort. 1996-1998. Simultaneous transformation of atrazine and nitrate in contaminated water, sediment and soil by zerovalent iron-promoted processes Great Plains - Rocky Mountain Hazardous Substance Research Center. U.S. Environmental Protection Agency, Regions VII and VIII.
- Comfort, S.D. and P.J. Shea. 1993-1995. Predicting Pesticide Degradation and Transport Characteristics in the Vadose Zones of the Platte River Valley. U.S. Geological Survey 104 Program.

(continued on page 8)



## Eleventh Platte River Basin Ecosystem Symposium To Be held In Kearney February 27-28

The Eleventh Platte River Basin Ecosystem Symposium will be held at Kearney's Ramada Inn February 27 and 28, 2001 and presenter papers are being solicited through the middle of November.

Papers and posters should be related to the study, socio-economics, management and administration of ecological resources throughout the Platte River Basin, according to Platte Watershed Program Manager Gary Lingle.

Reports on completed research are encouraged and progress reports may be considered, he added. Presenters will have about 20 minutes to deliver their presentations and final papers for a published proceeding must be submitted at the symposium.

Presentation and/or poster topic and abstracts (including results) are due November 15. Electronic versions are preferred, though paper copies may be mailed or FAXed to

Lingle at Platte Watershed Program, 1400 E. 34th St., Kearney, NE 68847. FAX (308)234-6319 or e-mail [glingle@unl.edu](mailto:glingle@unl.edu).

The symposium is sponsored by NU Cooperative Extension; Platte Watershed Program; NU Water Center; U.S. Environmental Protection Agency, Region VII; U.S. Department of Agriculture/CSREES; and U.S. Fish and Wildlife Service.

## Water Sciences Laboratory Completes Creighton Groundwater Study

Faculty and staff from the Water Sciences Laboratory (WSL) at the University of Nebraska-Lincoln completed a groundwater research project at Creighton this summer.

Hydrochemist and WSL Director Roy Spalding and WSL Field Manager Mark Burbach delivered a written report on the project at the Lewis and Clark Natural Resources District (NRD) in Hartington. Attending that meeting were neighboring NRD directors and staff, NU extension educators, area landowners and crop consultants.

Possible solutions to the area's, in some cases, high non-point source groundwater nitrate contamination were discussed and Spalding and Burbach offered several courses of action the local NRD could pursue to help alleviate the contamination.

The problem was identified as a large plume of nitrate/nitrogen exceeding 30 parts per million (ppm). The U.S. Environmental Protection Agency recommends a maximum contaminant level (MCL) of no more than 10 ppm as the safe standard for nitrates in drinking water. The plume is located where in the next several years it could impact Creighton's municipal wells. The city has been operating a reverse osmosis plant

enabling it to provide drinking water below the 10 ppm MCL recommendation.

The WSL study of the plume noted that the source of contamination was excess commercial fertilizer that has leached past the cropping root zone. Soil samples gathered in the vadose zone (area below crop roots down to the water table) indicated that more nitrate/ nitrogen was moving toward groundwater. If this results in further increases in drinking water nitrate levels

Creighton's ability to meet safe drinking water demands could be severely impacted if remediation attempts aren't successful.

The local NRD will section-off an area around Creighton for designation as a Groundwater Management Area in order to target available resources in the area. Additionally, NU extension educators will work with local grain producers on best management practices designed to reduce nitrate leaching past the root zone.



Governor Mike Johanns meets with participants, exhibitors and the press in the University of Nebraska's Institute of Agriculture and Natural Resources building at last month's Husker Harvest Days in Grand Island. Estimates were that crowds were down somewhat this year over past shows, due in part to an early harvest. Many NU departments and units exhibited and answered questions at the annual, three-day event (photo: Steve Ress).



# Utility Deregulation Could Have Unforeseen Impacts on Water Resources and Ecosystems

by Hervey Scudder  
Northeast Center for Social Issue Studies

Electric utility deregulation, part of the economic restructuring that is taking place under globalization, has some unforeseen consequences with profound impacts in water resources.

Management of fragile ecosystems, such as watersheds, by distant utilities can jeopardize the health of rivers. With rivers treated strictly as profit centers for the generation of electricity by absentee owners, historic local interests in water resources are threatened and regional economics could suffer.

Usurping the public's historic rights to protect and benefit from natural resources also undermines the value of democratic institutions to the people in these watersheds.

The consequences of this sort of water resource exploitation are already evident in Haiti, Mexico and other countries, where watersheds producing electricity for export are among their poorest regions.

Driven by the expectation of lower electric rates, the U.S. is overlooking what might become to vast areas of rural America as their rivers are "WalMartized" by giant utilities unshackled by deregulation.

The upper Connecticut River valley is the first major region in the U.S. to experience the impacts of having its water resources managed for the benefit of a transnational utility thousands of miles away. The new

owner seeks to reduce its local tax liabilities by over 50 percent and thus weaken the economies of already hard-pressed rural communities.

Independent investigators have concluded that, as a transnational corporation, the corporation, the utility will have the right to appeal enforcement of environmental restraints to the World Trade Organization.

Local efforts to protect the public interests in the environmental and economic impacts have so far been rebuffed by both federal regulators and the courts.

Over the next 10 to 15 years, three-fourths of America's hydropower licenses could change hands. What is happening in the Connecticut valley could become a precedent for many other regions.

This same loss of local control is already underway in Maine and California.

The Northeast Center for Social Issue Studies (NECSIS) has researched the historic, legal, environmental and economic implications of globalization on our rivers.

Examples of the material which we have assembled on this field can be viewed at [www.necsis.org](http://www.necsis.org). NECSIS created its document library, both electronic and hard copy, as a resource for journalists, academic researchers and other concerned with the health of our natural resources and the communities which depend on them.

If interested in learning more, please contact this writer at (802)254-3645 or e-mail [windrush@together.net](mailto:windrush@together.net).

## Irrigation Well Data Available on the Internet

Irrigation well information is among the growing list of data available on the World Wide Web.

Information about the state's 81,407 registered irrigation wells is available at <http://nrcnt2.nrc.state.ne.us/cgi-win/wells.exe> on the Nebraska Department of Natural Resources web site. Data at this web site includes the well's registration status; natural resources district in which it was drilled; legal description of its location; dates drilled, replaced or abandoned;

number of acres irrigated; gallons per minute pumped; static and pumping levels; pump diameter and depth; and well depth. Information can be accessed by owner name, well location or other criteria.

The information is useful to well drillers and environmental or consulting engineers, as well as individuals. Since 1957, Nebraska law has required all irrigation, municipal, domestic and industrial wells be registered. Until now however, the information was available only by hard

copy at the State Office Building in Lincoln. Attempts were made to automate and make the information more accessible with punch-card mainframe computers, systems analysts and even through private consultants, but numerous problems were encountered.

*(Source: Mike Jess, Associate Director/Water Resources Engineer, NU Conservation and Survey Division/School of Natural Resource Sciences).*



# Jess Named Associate Director of NU Conservation and Survey Division

Assisting local governments to better understand how the system can work for them is a goal of water resources engineer J. Michael Jess, who was recently named associate director of NU's Conservation and Survey Division.

The university, Jess said, needs to do a better job of helping irrigation and natural resources districts get the information they need for far-sighted management of the state's natural resources.

"The division has been out in front with technical information, but this is a side of water issues directly

related to water and yet not to the physical aspects. It's working the government of water, or other natural resources, that needs some attention, he said.

Jess also believes the university can do more to help undergraduates become more adept at working in and with the local governments they will encounter when they leave the university.

Jess is also associated with the NU's School of Natural Resource Sciences and Water Center. He assumed the half-time associate directorship duties on July 1. He replaces Duane

Eversoll, who stepped down after nine years as CSD associate director in order to focus on scholarly service and research.

Jess joined the ranks of NU faculty in early 1999. He was director of the Nebraska Department of Water Resources from 1981 to 1999, having been appointed deputy director of the department in 1975.

In addition to his associate directorship duties, Jess will continue helping the Water Center plan its annual water tours, conferences and seminar series'.

## from the Director (continued from page 2)

Groundwater Festival and other activities will continue, as well.

These activities help in a major way to let people know who we are and what the Water Center has to offer.

With respect to the second problem of funding levels and sources, discussions are now underway to initiate a major fundraising campaign, which is something completely new for the Water Center. Additionally, we hope to announce new programs designed to attract top postdoctoral scientists and graduate fellows to UNL in the near future.

Our hope is that these and other proposed changes will better serve our constituents and readers and give you a more inclusive look into what is happening in water resources at NU.

We are very interested in your thoughts and input on all this. Please feel free to share your ideas by calling the Water Center at (402) 472-3305 or by e-mailing myself (khoagland@unl.edu) or Steve Ress (sress1@unl.edu).

I also was fortunate in September to receive an invitation to serve as the examiner (or what they would term an "opponent") for a dissertation defense at the University of Gothenburg, Sweden. The research focused on zinc and atrazine pollution effects on benthic algae in river systems throughout the European continent.

During the week-long visit, I gained an appreciation for both the water and resource contamination problems being experienced by another part of the world and an appreciation for a different system for training first-rate graduate students.

I also took time to attend the Nebraska Association of Resource Districts annual meetings in Kearney where I had the chance to talk with some of the NRD professionals the Water Center has been privileged to work with for many years.

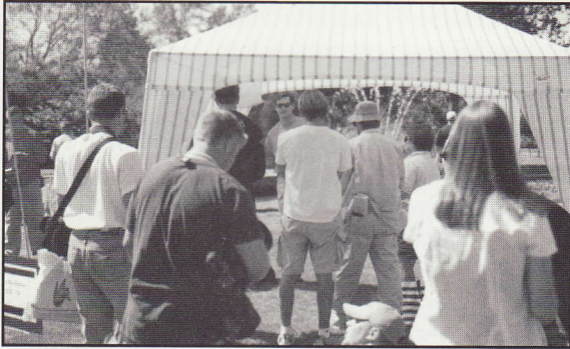
Other notes before I close for this issue:

— This year's water seminar series, being coordinated by Bob Kuzelka and Mike Jess, will examine "The Role of the Social Sciences in Water Resource Policy." The free lecture series begins Jan. 10, 2001 and lectures will be at UNL's George W. Beadle research center. The December *Water Current* will have more details.

— Festival of Color is changing to an every-other-year format. The next Festival will be in the Fall of 2002. Workshops focused on landscaping and turfgrass will be held at the Festival site in off years.

— Interest in NU research and extension programming remained exceptionally high at this year's Husker Harvest Days in Grand Island, despite a 10 to 15 percent drop in overall attendance (due in large part to an early harvest). Media interest in NU programming at this event was near peak levels, thanks in large part to coordination efforts by our communicator, Steve Ress.





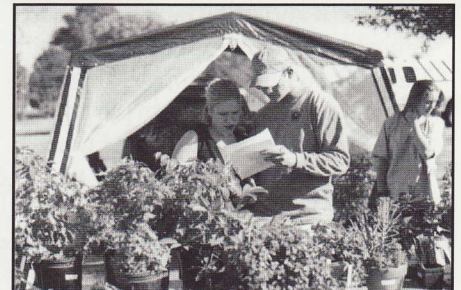
NU water quality specialist John Holz (center, rear) looks over a crowd beginning to gather for his talk at Festival of Color.



"Tent talks" cover a variety of topics and collectively are one of the Festival's most popular features.



NU landscape horticulture specialist Steve Rodie attracts a crowd for an afternoon talk at last month's Festival of Color, near Mead.



UNL Horticulture Club students were at Festival of Color raising money for club activities by selling plant material. They were one of many vendors at the annual horticulture and landscape display and open house near Mead last month.

# Festival of Color 2000



Getting landscaping ideas at Festival of Color.



NU plant pathologist John Watkins (left) entertained young and old with demonstrations on how scale-model railroads can be worked into rather unique landscaping schemes.



Volunteer Master Gardeners and participants discuss plantings at September's Festival of Color. This year's festival attracted crowds in excess of 6,000.



## Meet the Faculty

### Dr. F. Edwin (Ed) Harvey (continued from page 3)

- Using isotopes to investigate the occurrence of high nitrate levels in groundwater adjacent to Interstate 80 and the Western Canal near Ogallala. Collaboration with the Twin Platte Natural Resources District.

#### Samples of new/emerging research:

- Using oxygen isotope composition of modern and fossil beaver teeth to determine paleotemperatures in Nebraska with M. Voorhies, UNL State Museum. Funded in part by NUSNRS Interdisciplinary Funds.

- Hydrogeology of prairie pothole lakes in North Dakota: Implications for paleoclimate studies. Collaborating with S. Fritz, UNL Department of Geosciences.
- Water chemical controls on tonal quality and resonance properties of the glass harmonica. Collaborating with A. Nakashian.

#### Teaching:

Chemistry of Natural Waters Wetlands (team taught with K. Hoagland and D. Wysocki), Independent Study: Groundwater Chemistry, Special

Problems: Introduction to Chemical Hydrogeology; Special Problems: Groundwater/Surface Water Interaction (team taught with V. Zlotnik); Field Techniques in Hydrogeology and Environmental Geology (guest lecturer); Environmental Isotope Hydrology (under development).

<http://nesen.unl.edu/csd/staff/harvey/feharvey.html>

### Dr. Steven D. (Steve) Comfort (continued from page 3)

- Shea, P.J., S.D. Comfort, G.L. Horst, R.A. Drijber, W.L. Powers and T.C. Zhang. 1995-1997. Integration of Abiotic Treatments with Plant-based Strategies for Remediating Soil Contaminated with Organonitrogen Compounds. UNL Interdisciplinary Research Grant.

#### Samples of research/extension publications:

- Singh, J., S.D. Comfort and P.J. Shea. 1999. Optimizing Eh/pH for iron-mediated remediation of RDX-contaminated water and soil. *Environ. Sci. Technol.* 33:1488-1494.

- Bier, E.L., J. Singh, Z. Li, S.D. Comfort and P.J. Shea. 1999. Remediating hexahydro-1,3,5-trinitro-1,3,5-triazine-contaminated water and soil by Fenton oxidation. *Environ. Toxicol. Chem.* 18:1078-1084.
- Kreslavski, V.D., G.K. Vasilyeva, S.D. Comfort, R.A. Drijber and P.J. Shea. 1999. Accelerated transformation and binding of 2,4,6-trinitrotoluene in rhizosphere soil. *Bioremediation*. 3:59-67/
- Comfort, S.D., T.J. Franti and S. Smith. 1996. Pesticide runoff and water quality in Nebraska. Cooperative Extension Service. UNL Extension Circular. EC96-143.

- Kuzila, M.S., A.R. Martin, F.W. Roeth, P.J. Shea, N.B. Stolpe, S.D. Comfort. 1996. Pesticides and Groundwater: An Applicator's Map and Guide to Prevent Groundwater Contamination. Land Use Map. No. 33. UNL Conservation and Survey Division, Institute of Agriculture and Natural Resources, UNL.
- Comfort, S.D., P.J. Shea and F.W. Roeth. 1994. Understanding Pesticides and Water Quality in Nebraska. Cooperative Extension Service. UNL Extension Circular. EC94-135.

<http://www.ianr.unl.edu/snrs/index2.html>

## NU Researchers Track Endangered And Threatened Sturgeon in Platte River

(continued from page 1)

Goals of the study, which will continue into 2005, build on a similar project that Peters led in 1998 and 1999 for the U.S. Fish and Wildlife Service. The current research will help define the species' preferred habitat, develop a chronology of when the fish use the Platte River and estimate numbers of pallid sturgeon in the Platte River.

Sturgeon Chub, a candidate for federal threatened or endangered species classification, are included in this latest research, Peters said.

Previous studies have utilized hatchery-raised, three to six pound pallid sturgeons implemented with tracking devices which were then released into the Platte River.

In 1998 researchers released 74 hatchery-raised, 6-year-old pallid sturgeons weighing 3 to 6 pounds each into the lower Platte River. Radio transmitters were surgically implanted into 10 fish to track their movements. The following year, another 15 pallid sturgeon were similarly implanted and released.

(Continued on page 9)



Peters and graduate student Vaughn Snook, who has experience in radiotelemetry "tracked fish via radio signals" then monitored their movements for several months in the summer and fall.

"A problem with the radio transmitters is that once the fish leave the Platte River, which is relatively shallow, and enter the Missouri River, we lose the signal because we just can't pick it up in the deep waters of the Missouri," Peters said.

Several of the "lost" implanted fish were later tracked after they apparently reentered the Platte River from the Missouri.

In this latest research, several of the fish will be implanted with a second device called an ultrasonic transmitter that emits sound waves in much the same way that Sonar does.

"We should be able to track the fish in much deeper waters using that," said Peters. Both the ultrasonic and radio transmitters will emit a signal for about 600 days before their batteries go dead.

A permanent monitoring station at the Schilling Wildlife Management Area near Plattsmouth will also be established as part of the research. It will record the movement of implanted fish by noting the time a fish

passes the monitoring station and which direction it was moving in.

"We track the fish from the shorelines, in boats and from the air," Peters said.

At least 25 pallid and shovelnose sturgeon will be implanted with one or both the transmitters per year over the next five years.

"This would be a large enough sampling to really give us a good idea of where the fish are moving and whether or not they move into the Missouri River and then back into the Platte, possibly to spawn," said Peters. The more common shovelnose sturgeon are implanted with the transmitters and included in the research to help test tracking techniques and to compare where habi-

tat use overlaps with pallid sturgeon.

Results from Peters' previous research indicate that tagged and released pallids stay within about five miles of the stocking site and that most pallid sturgeons frequent intermediate depths in slow-moving water.

"Pallid sturgeon prefer slow water adjacent to fast water, particularly the downstream edge of sandbars where currents converge and create a pool of slow-moving water," he said. "We think it might be for feeding purposes," he added.

Platte River anglers often fish for the shovelnose sturgeon, the pallid's more common cousin, and might even

hook a lake sturgeon, which is endangered in Nebraska, Peters said. Anyone who happens to catch a rare pallid sturgeon should release it immediately and report their catch to the Nebraska Game and Parks Commission.

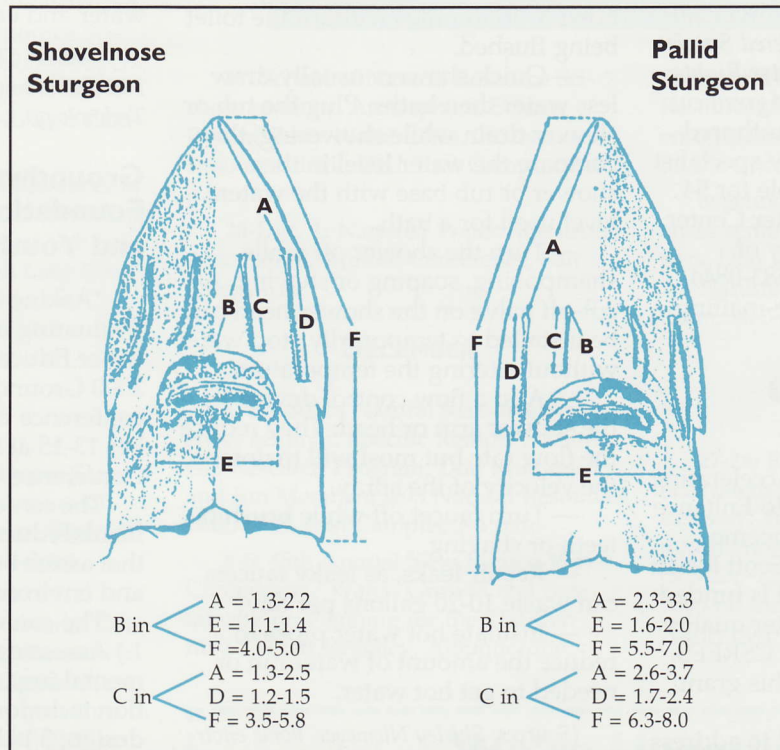
It is illegal to possess the endangered fish. Pallid sturgeon resemble the shovelnose but are a much lighter color, have smaller eyes, a longer, sharper snout and a smooth belly with no scales between the two rows of bony plates.

Any pallid sturgeon should be released even if an angler spots a radio antenna sticking out of its underside, but Peters would appreciate

a call at (402) 472-6824 to let him know where such fish were caught and released.

The Nebraska research coupled with similar studies in North Dakota, Montana, Illinois and Missouri should produce a clearer picture of pallid sturgeon movements and spawning activity. Results will help determine how best to reestablish the pallid sturgeon nationwide. The ultimate goal is to rebuild the pallid sturgeon's population enough to remove it from the endangered species list.

The Agricultural Research Division of NU's Institute of Agriculture and Natural Resources, the Nebraska Game and Parks Commission and the Pallid Sturgeon/Sturgeon Chub Task Force are funding this research.



It can be somewhat difficult to tell the difference between Shovelnose Sturgeon and the endangered Pallid Sturgeon. This diagram of the ventral surfaces of the heads of Shovelnose Sturgeon (on the left) and Pallid Sturgeon illustrate where differences can be measured.





# Water News Briefs

## Great Plains Natural Resources Journal

The Spring, 1999 edition of Great Plains Natural Resources Journal (Vol. 3/No.2) addresses the controversial issue of "Balancing Endangered Species Protection and Irrigation Water Rights: The Platte River Cooperative Agreement."

Copies of this journal, authored by UNL environmental law specialist J. David Aiken, are available for \$4 each by contacting the Water Center, P.O. Box 830844, University of Nebraska, Lincoln, NE 68583-0844, phoning (402)472-3305 or e-mailing sress1@unl.edu.

## CSREES Grant to NU Research Faculty

Members of the grant Accelerating Riparian Buffer Adoption to Enhance Water Quality and Farm Income include: David P. Shelton, Scott Josiah and Tom Franti. This grant is funded through the integrated water quality program administrated by CSREES. The amount awarded for this grant was \$225,000.

This project is designed to address water quality and other concerns using a three-component approach: 1) Major demonstration sites to showcase and evaluate a gamut of buffer maturities and types including plantings that have income-generating potential through the production of specialty bio-based products; 2) a peer-based outreach component to promote buffer adoption; and 3) a multi-faceted educational program.

## Water Wise in the Bathroom

Water is a valuable natural resource and must be used wisely. Most water used for the home goes to the yard to irrigate lawns, trees and gardens, followed by toilet flushing and showering.

Start efforts to reduce indoor water usage in the bathroom.

- Avoid using the toilet for a trash basket. Dispose of facial tissues, insects and other trash in the wastebasket.

- Reduce the flush volume by bending or adjusting the float rod downward or by purchasing special tank devices to reduce water usage.

- Check for leaks by putting a few drops of food coloring in the toilet tank. A leak will show up in the bowl in 15 minutes without the toilet being flushed.

- Quick showers usually draw less water than baths. Plug the tub or shower drain while showering, then compare the water level in the shower or tub base with the water level used for a bath.

- Turn the shower off while shampooing, soaping or shaving. A cut-off valve on the shower head can be installed to temporarily stop water without altering the temperature.

- Add a flow control device on the shower arm or head. They reduce the flow rate but most will maintain the velocity of the spray.

- Turn faucet off while brushing teeth or shaving.

- Repair leaks, as leaky faucets can waste 10-20 gallons per day.

- Insulate hot water pipes to reduce the amount of water ran or needed to get hot water.

(Sources: Shirley Niemeyer, home environment specialist; and Sharon Skipton, Douglas/Sarpy County extension educator).

## Modern Clothes Washers Reduce Water Use

Clothes washers typically have used 30-57 gallons of water per load. That means for all U.S. households, clothes washing uses about 2.2 trillion gallons of water per year. The U.S. Department of Energy estimates the national average for the water and sewer costs alone over the life of a clothes washer is about \$600 per household.

Newer, high-efficiency washers use about 30-50 percent less water and 30-60 percent less energy. Front-loading clothes washers (horizontal axis) and some top loading washers use less water. Newer top-loaders and front loaders with the Energy Star label use about 20 to 25 gallons per load.

Some high-end washers automatically sense the load size, dirtiness of the water and fabric type, and adjust the water level. Some new top-loaders with the Energy Star label use sensor technology to control incoming water temperature and use high-pressure rinses to spray clothes in order to reduce water consumption. Many models have water level controls to match the load size. Match the water level to the size of the load.

Some estimate about 3,000-7,000 gallons of water per year per household could be saved using the newer water and energy efficient models.

(Source: Cheryl Alberts, Educator Extra, NU Communications and Information Technology).

## Groundwater Foundation Conference and Youth Summit

"Asking the Right Questions: Evaluating the Impact of Groundwater Education" is the theme of the 2000 Groundwater Foundation fall conference that will be held November 13-15 at Nebraska City's Lied Conference Center.

The conference focuses on environmental education evaluation strategies that assess both program effectiveness and environmental impact.

The conference program includes: 1.) Assessing behavioral and environmental impacts; 2.) Building evaluation techniques directly into program design; 3.) Using evaluation techniques effectively; 4.) Implementing environmental education as a compliance tool; and 5.) Using evaluation as a way to secure funding and achieve program sustainability.

Speakers include Senator Bob Kerrey (invited); Peter Gros, co-host of Mutual of Omaha's Wild Kingdom; and Richard Wilke, Professor of Environmental Education in the College of Natural Resources, University of Wisconsin Stevens Point, among others.

The conference includes the designation of the 2000 Groundwater Guardian Communities, Affiliates and National Partners and a "Youth Environmental Health Summit."

For more information, or to register, contact the Foundation at (800)858-4844 or e-mail [info@groundwater.org](mailto:info@groundwater.org). Conference information is on the internet at [www.groundwater.org](http://www.groundwater.org).



## OCTOBER

**24-25:** Eleventh Annual South Platte Forum, Raintree Plaza Conference Center, Longmont, CO. For information, contact Jennifer Brown, Colorado Water Resources Research Institute, 410N University Services Center, Colorado State University, Fort Collins, CO 80523-2018. Phone 970-587-4778 or SouthPlatteForum@yahoo.com.

**26-28:** National Carbon Sequestration Conference, Missoula, MT. Contact Karen Reiter or Ted Dodge at (406)587-6965 or e-mail kreiter@mt.nrcs.usda.gov.

**27:** School of Natural Resource Sciences seminar: Biological Science Papers, Ron Johnson and Scott Hygnstrom, 203 Natural Resources Hall, UNL East Campus, 3-4 p.m.

**31-Nov. 4:** Combined Conferences of the American Society of Agronomy, Crop Science Society of America and Soil Science Society of America, Salt Lake City, UT. Information on the internet at [www.asa-cssa-sssa.org/olr99/](http://www.asa-cssa-sssa.org/olr99/).

## NOVEMBER

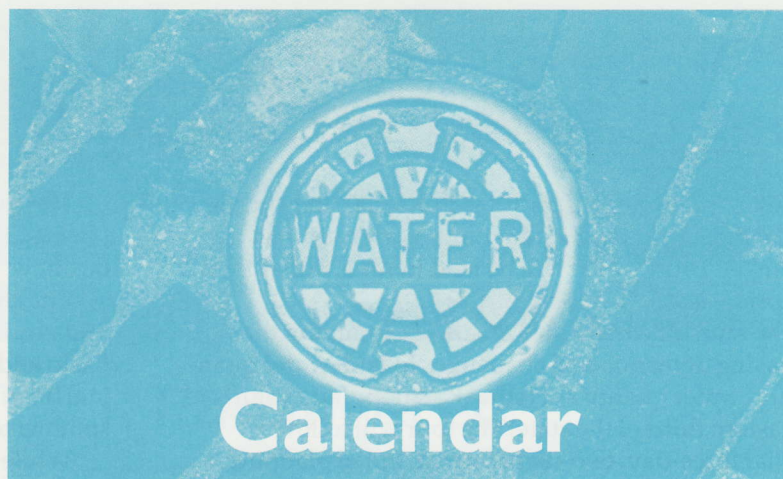
**3:** School of Natural Resource Sciences seminar: General Discussion of Atmospheric Resources, Blaine Blad, 203 Natural Resources Hall, UNL East Campus, 3-4 p.m.

**6-9:** 2000 International Research Conference on Methyl Bromide Alternatives and Emissions Reduction, Clarion Plaza Hotel, Orlando, FL. Address questions to Rosemary Obenauf at (559)447-2127 or [robenauf@agrc.cnchost.com](mailto:robenauf@agrc.cnchost.com).

**6-9:** Annual Water Resources Conference presented by the American Water Works Association, Miami, FL. For information, contact Michael J. Kowalski, AWRA director of operations at (540)687-8390 or e-mail [mike@awra.org](mailto:mike@awra.org).

**10:** School of Natural Resource Sciences seminar: Specific Atmospheric Science Research Program, Betty Walter-Shea, 203 Natural Resources Hall, UNL East Campus, 3-4 p.m.

**13-15:** "Asking the Right Questions: Evaluating the Impact of Groundwater Education," The Groundwater Foundation fall conference and Groundwater Guardian designation, Lied Conference Center, Nebraska City. For information, e-mail [cindy@groundwater.org](mailto:cindy@groundwater.org) or phone (800)858-4844 or (402)434-2740.



**17:** School of Natural Resource Sciences seminar: Atmospheric Science Papers, Betty Walter-Shea, 203 Natural Resources Hall, UNL East Campus, 3-4 p.m.

**28-Dec. 1:** National Water Resources Association, Annual Conference, San Diego, CA.

Sponsored by the New Mexico Water Resources Research Institute. For conference information, go to [wrrri.nmsu.edu](http://wrrri.nmsu.edu) on the internet.

**8:** School of Natural Resource Sciences seminar: Remote Sensing/GIS Papers, Don Rundquist and Jim Merchant, 2-3 Natural Resources Hall, UNL East Campus, 3-4 p.m.

## DECEMBER

**1:** School of Natural Resource Sciences seminar: Specific Remote Sensing/GIS Research Program, Don Rundquist and Jim Merchant, 203 Natural Resources Hall, UNL East Campus, 3-4 p.m.

**4-6:** 45th Annual New Mexico Water Conference: "Water, Growth and Sustainability: Planning for the 21st Century." Hyatt Regency, Albuquerque.

## FEBRUARY, 2001

**27-28:** Eleventh Platte River Basin Ecosystem Symposium, Holiday Inn, Kearney. To present, to register, or for information, contact Gary Lingle at (308)236-1235 or e-mail [glingle@unl.edu](mailto:glingle@unl.edu). Also on the internet at [www.ianr.unl.edu/ianr/pwp](http://www.ianr.unl.edu/ianr/pwp).

## We're Updating!!

We are updating our mailing list. If you have a change of address, title and/or name, or would like to have your name added to or removed from the *Water Current* mailing list, please let us know. Also, if you know of anyone who might be interested in receiving our publications, please give us their names and we will be glad to add them to our mailing list.

Change my address ☐ Delete me from your list ☐ Add to your list ☐

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

Send update to:

Water Center, University of Nebraska, 103 Natural Resources Hall,  
P.O. Box 830844, Lincoln, NE 68583-0844  
FAX (402)472-3574  
or e-mail changes to [sress1@unl.edu](mailto:sress1@unl.edu)

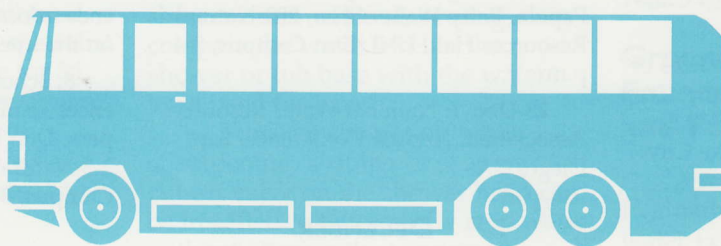


# Initial Planning Targets NE-KS Stops For 2001 Summer Water Tour

Initial planning targets stops in Kansas and southeast Nebraska for the 2001 Summer Water and Natural Resources Tour, which will be held in June, rather than the normal late July timeframe.

The tour will center on a theme of examining the increasing demands and challenges to both water quantity and water quality as Nebraska's population shifts to the eastern third of the state. The tour will follow a familiar three-day, two-night format. Initial planning calls for one bus to leave from Kearney and a second from Lincoln's UNL East Campus. The tour will depart on Monday, June 18 and finish at those two locations on Wednesday, June 21.

Though a final tour agenda won't be finalized until after the holidays, it is anticipated that tour stops could include NU's Agricultural Research and Development Center near Mead, The City of Lincoln's municipal well fields at Ashland, Mahoney State Park and SAC Museum, Wehrspann Lake and other projects in the Papio-Missouri Natural Resources District, the Metropolitan Utilities District in Omaha, ConAgra, the Union Pacific Railroad control center and possibly Kellogg's (all in the Omaha metro area), NPPD's Cooper Nuclear Station in Brownville, points of interest along the Missouri River and then into Kansas City. Overnights are anticipated in Nebraska City and Kansas City.



The return leg of the trip could include stops at Kansas' Tuttle Creek Reservoir and in the Blue River Basin.

The shift from July to June was made in part to avoid mid-summer heat and humidity in the Missouri River Basin and so the tour would not conflict with the normal timeframe for the Four States Irrigation Council summer tour.

While planning for the 2001 summer tour, discussions were also held about the possibility of a five to seven day tour out of the midwest, possibly to be held

sometime in 2002. Possible locations for such a tour include California's Imperial Valley, the Pacific Northwest, San Antonio Texas and the Edwards Aquifer and others.

Those participating in the 2001 tour of Ne-

braska and Kansas will be involved in determining whether or not an out-of-area tour may be offered in 2002, since tour planners want a fairly accurate gauge of the level of interest in this kind of tour before planning begins in earnest. Cost estimates for an out-of-area tour will be presented to participants on the 2001 tour.

For those wanting more information as tour planning progresses, or to be placed on the water tour's mailing list, phone the Kearney Area Chamber of Commerce at (800) 652-9435.

**WATER CENTER**  
**103 Natural Resources Hall**  
**University of Nebraska**  
**P.O. Box 830844**  
**Lincoln, NE 68583-0844**

**ADDRESS SERVICE REQUESTED**



Printed with soy ink on  
15% post-consumer recycled paper

**Non Profit**  
**U.S. Postage**  
**PAID**  
**Permit 46**  
**Lincoln NE**



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

