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Water Current

Millard W. Hall, Director
Volume 8, Number 4

Karen E. Stork, Editor
July/August 1976



That new movie, "Jaws" sure has kept the people off the beaches, hasn't it Marlene?
MARLENE??!!

The Director's on vacation,
He's relaxing out of town.
So we've no words of wisdom
No message to expound.

So to you from all of us. at NWRRI,
Whether you swim, fish or climb.
However you spend your vacation,
HAVE A HAPPY SUMMERTIME!



NEBRASKA WATER RESOURCES RESEARCH INSTITUTE

ON THE HOMEFRONT

CONFERENCE ON NON-POINT PLANNING

The Nebraska Natural Resources Commission and the Nebraska Water Resources Research Institute will sponsor a conference on "Public Participation in Non-Point Source Planning" (Sediment & Erosion/208), to be held August 26-27, 1976, at the Nebraska Center for Continuing Education, Lincoln, Nebraska.

The objective of the program is to present the members of the Sediment and Erosion Task Forces, members of the Thirteen Policy Advisory Committees of the 208 Area-wide Waste Management Planning, and the general public with background information in regard to planning endeavors of non-point source pollution and to develop public involvement feedback mechanisms.

The fee is \$15.00 per person which includes registration, coffee breaks, two luncheons and a family barbeque.

Topics to be discussed at the conference include the following: (1) EPA, NACD, and USDA's role in non-point source planning; (2) states' sediment and erosion programs; (3) a workshop to discuss agency and state roles and programs; (4) erosion and sediment causes, assessment and outcomes; (5) the universal soil loss equation; (6) the economic and social aspects of erosion and sediment; (7) public participation - yours, mine, theirs; (8) a working public participation program; and (9) public involvement techniques and principles.

An opening address will be given by the Governor of Nebraska, J.J. Exon.

For any additional information, please contact:

Mr. Ray Hartung
Nebraska Natural Resources Commission
7th Floor-Terminal Building
Lincoln, Nebraska 68508
Telephone: (402) 471-2081

CONFERENCE ON RURAL WATER PROBLEMS

The Nebraska Water Resources Research Institute is planning a conference on Rural Water Problems November 4-5, 1976 at the Villager Motel in Lincoln, Nebraska. The objective of the conference is to describe the current rural water situation, including both water supply and wastewater disposal and aspects of quality and quantity; discuss both the non-technological and technological aspects of rural water problems and the various impacts involved in changing or improving the current situation (institutional/legal, economic, social and environmental); and discern future research and related needs to solve various rural water problems.

A detailed program is currently being developed along with a list of invited speakers. It is anticipated that the fee for this conference will be approximately \$50 which will include a copy of the proceedings.

Also, it is anticipated that a block of tickets for the November 6 football game between the University of Nebraska and Oklahoma State University at Lincoln will be available on a first-come, first-served basis for conference attendees.

For further information on this conference or to request a copy of the program brochure, contact: Dr. Millard W. Hall, Director, Nebraska Water Resources Research Institute, 310 Ag. Hall, University of Nebraska, Lincoln, Nebraska 68583. Telephone: (402) 472-3305.

FEDERAL HIGHLIGHTS

EPA PROPOSES ALLOCATION OF WATER PLANNING FUNDS

A \$150 million appropriation made in fiscal year 1973, but withheld for three years by the Environmental Protection Agency (EPA), will now be distributed for use in areawide water quality planning and management activities. Such distribution was recently ordered by Judge John L. Smith, Jr. of the U.S. District Court for the District of Columbia.

Under a proposed formula for distribution of these funds, highly populated areas would be favored as 85 percent of the funds would go to designated Section 203 Areawide Planning and Management agencies on the basis of population. Fifteen percent of the funds would be distributed on the basis of land area. The existing distribution formula for the Section 203 program now stands at 75 percent on the basis of population and 25 percent on the basis of land area.

Other distribution options under consideration by EPA include distribution of funds for specific purposes, such as nonpoint pollution source control, on the basis of merit; and distribution on the basis of past accomplishments.

The proposed EPA regulations are published in the July 20 Federal Register. Comments must be received by EPA no later than August 20, and final regulations will be published by September 30.

HOUSE SUBCOMMITTEE CONSIDERS EASING IRRIGATION LIMITATION

A House subcommittee has been holding hearings on a bill (HR 13101) that would permit relaxation of the Bureau of Reclamation's long-standing 160-acre individual irrigation limitation. The concept behind the bill is "meritorious," stated Assistant Secretary of the Interior, Jack O. Horton.

This bill would only apply to areas with a frost-free growing season of less than 180 days. Wyoming is a good example of this. Irrigation of more than 160 acres of less productive types of farmland would be allowed.

The Ford Administration is opposed to the passage of this bill until further study can be completed. Asst. Sec. Horton said in his statement to the House Interior Subcommittee on Water and Power Resources, "The administration does not believe that sufficient consideration has been given to the overall impacts of this bill or to the broader question of what exactly should be changed or applied with respect to acreage limitations. I personally hope the impact study can be completed within a month, but I won't hold (Bureau of Reclamation Commissioner Gilbert G. Stamm) to that."

Bureau of Reclamation officials are supporting the proposal within the Interior Department. The Interior Department report to the subcommittee stated, "While consideration can be given to the economic productivity of a project farmer's land in establishing the project construction charge assessment, under general reclamation law, an individual farmer is limited to a project-irrigated holding of 160 acres regardless of the productivity of his land."

Commissioner Stamm opposed substituting higher limits, such as 200 acres, if the acreage limitation is removed in selected cases. He believes limitations should be set at an economic equivalent to 160 acres of Class I farmland. He also stated that 1.2 percent of all Bureau of Reclamation lands would be affected by the bill and there would be no increase permitted in the amount of water used in each irrigation district.

CONFERENCES

MUNICIPAL WATER MANAGEMENT CONFERENCE

A national conference on "Planning Alternatives for Municipal Water Systems" will be held October 10-14, 1976 at French Lick Springs, Indiana. The conference will present a comprehensive view of major current issues in municipal water management. Participants and speakers representing a wide variety of professional interests will be drawn from universities, consulting firms and government agencies. The conference is sponsored by the Holcomb Research Institute of Butler University.

Topics to be discussed will include:

- The impact of new legislation;
- Water quality considerations;
- Water quantity considerations;
- Management of water demand;
- Increasing system efficiency; and
- Water reuse.

Ample time will be allowed for discussion of the papers as well as for more informal interchange between sessions. For further information contact: David Holtz, Assistant Director, Holcomb Research Institute, Butler University, Indianapolis, Indiana 46208, (317) 283-9421.

SYMPOSIUM ON SOIL WATER PARAMETERS IN THE UNSATURATED ZONE

A Symposium on Soil Water Parameters in the Unsaturated Zone will be held during December 6-10, 1976 as part of the Fall Annual Meeting of the American Geophysical Union. The Symposium is sponsored by the Committee on Soil Water and is scheduled for the Jack Taar Hotel in San Francisco, California.

There will be two half-day sessions consisting of invited and voluntary contributions. Papers may be given on field measurements, analysis of field variability, or utilization of data. Particular attention should be directed to evaluate reliability of measurements and/or calculated results. Related studies for the soil surface or groundwater interfaces are welcome.

Those interested in contributing to the symposium are urged to send a one-page summary of their paper to Dr. A.W. Warrick, Department of Land, Air and Water Resources, University of California, Davis 95616.

IRRIGATION CONFERENCE SCHEDULED

The Seventh Technical Conference on Irrigation, Drainage and Flood Control will be held in Spokane, Washington, October 21-23, 1976. The three-day conference is sponsored by the U.S. Committee on Irrigation, Drainage and Flood Control, and cooperating societies include the Soil Science of America, the American Society of Agricultural Engineers and the American Society of Civil Engineers.

William Butcher, Director of the Office of Water Research and Technology, will provide the keynote address for the meeting which will focus on topics of interest to everyone involved in water resource development.

During the first two days of the conference, experts will discuss mass transfer of water; recharge of subterranean aquifers; economic evaluation of irrigation projects; subsurface drainage techniques; operation and maintenance of irrigation and drainage systems; and new developments in flood control, river training, irrigation and drainage. A one-day study tour will give conference participants an opportunity to see Grand Coulee Dam and the Third Coulee Powerplant, which is now under construction.

For further information contact the Executive Secretary, U.S. Committee on Irrigation, Drainage and Flood Control, P.O. Box 15326, Denver, Colorado 80215, or by phone 303-234-3006.

PUBLICATIONS

NEW LAND USE CLASSIFICATION SYSTEM ADOPTED

A new system for classifying land use and land cover has been adopted by the U.S. Geological Survey for its national land use mapping program, following four years of testing, review and revision of a system proposed in 1972.

The system was developed also to meet the needs of other Federal, regional, State and local agencies for an up-to-date, uniform and standardized method of classifying land use and land cover at a time when land, resources and the environment are critical issues facing land planners, administrators and decision makers.

"Knowledge about land use and land cover has become increasingly important as the Nation plans to overcome the problems of haphazard, uncontrolled development, deteriorating environmental quality, loss of prime agricultural lands, destruction of important wetlands, and loss of fish and wildlife habitat," Dr. James R. Anderson, Chief Geographer, USGS, and principal author of the new system, said. "Land use data are needed in the analysis of environmental processes and problems that must be understood if living conditions and standards are to be improved or maintained at current levels."

Anderson said two important features of the new system are:

- It will accommodate input of remotely sensed data, images and photographs taken by satellites and aircraft as well as data from other sources. Remotely sensed data usually are less expensive to acquire and can be obtained more quickly than data obtained during ground surveys and field mapping.
- It provides comprehensive classification of all types of land use and land cover at the more generalized levels of categorization, but is "open-ended" so that regional, State and local agencies may develop more detailed land classification systems to meet their particular needs while still remaining compatible with the USGS national system at the generalized levels.

The new system has nine categories in its basic "Level I" classification of land according to use or type of cover. These nine classes are urban or built-up land, agriculture, rangeland, forest land, water, wetlands, barren land, tundra and perennial snow or ice.

The USGS system further divides these nine basic classes into 37 more-detailed Level II categories, which are being used in a program now underway by the USGS Land Information and Analysis (LIA) Office to produce land use and land cover maps for the entire Nation within the next six years. If other Federal, regional, State, local or other land use mappers want even more detail, they can use the USGS system through Level II and then devise their own systems for subdividing those 37 categories into third, fourth, fifth or even further levels of detail, according to their own local or specialized needs and conditions.

Copies of USGS Professional Paper 964, "A Land Use and Land Cover Classification System for Use with Remote Sensor Data," are available, prepaid for 75 cents each, from the U.S. Geological Survey, Branch of Distribution, 1200 South Eads St., Arlington, Va. 22202.

UPDATED CATALOG LISTS AVAILABLE WATER DATA

Information on water data collected at more than 47,000 sites throughout the United States and bordering areas of Canada are listed in the latest edition of the Catalog of Information on Water Data, recently released by the U.S. Geological Survey.

Based on information supplied by more than 200 Federal, State, and local agencies as well as several universities and Canadian agencies, this edition is the sixth in the series produced by the Survey's Office of Water Data Coordination (OWDC).

This edition of the Catalog contains information on about 25,000 sites where measurements of streamflow or stage are made. Of these, 32 percent are on streams and the rest are located on lakes, reservoirs, estuaries, and canals. Almost 22,000 water quality measurement sites are listed, of which about 74 percent are on streams or other surface-water bodies, and 26 percent involve the groundwater resources.

As in the previous edition (1972), the information is presented in regional volumes, one for each of the 21 Water Resources Regions (as designated by the U.S. Water Resources Council), such as the Great Lakes, the Upper Colorado, and Alaska. Each regional volume consists of three parts: Part A - Streamflow and Stage, Part B - Quality of Surface Water, and Part C - Quality of Groundwater.

A limited number of any or all of the 21 separate volumes are available free from the Office of Water Data Coordination, U.S. Geological Survey, 417 National Center, Reston, VA 22092. Volumes related to local areas of jurisdiction also are available from USGS Water Resources Division District Offices located in most States and in Puerto Rico.

USGS RESUMES ANNUAL REPORTS

For the first time since 1963, the U.S. Geological Survey, Department of the Interior, has published an annual report providing a comprehensive description of the activities of the Federal government's largest earth science agency.

The 194-page highly illustrated fiscal year 1975 report, available for purchase by the public, summarizes USGS progress in identifying the Nation's land, water, energy and mineral resources; classifying the federally owned mineral lands and water power sites; and in supervising the exploration and development of energy and mineral resources on Federal and Indian lands, including the Outer Continental Shelf (OCS).

Copies of "United States Geological Survey Annual Report Fiscal Year 1975" may be purchased from the USGS Branch of Distribution, 1200 South Eads St., Arlington, Va. 22202, for \$3.40 per copy (prepaid; checks or money orders payable to the U.S. Geological Survey).

POSITIONS AVAILABLE

RIVER BASIN PLANNERS SOUGHT

The Missouri River Basin Commission currently has three openings for Assistant/Associate River Basin Planners. Qualifications desired include a BS or MS in environmental or socio-economic sciences or engineering with no or little relevant job experience. Relevant experience can be substituted for education. The applicant must be a citizen of the United States.

The duties of this position include participation in multiagency, interdisciplinary team efforts of multiobjective planning of water and related land resources in subregions of the Missouri River Basin. Formulation of plans in 29 subregions of the Missouri River Basin is a Commission responsibility which requires continuing coordination with Commission members and others in an iterative process to produce and update the comprehensive, coordinated joint plan for the Missouri River Basin.

The Commission also has one opening for a Senior River Basin Planner which requires six to eight years of experience directly related to duties of this position which are to lead multiagency, interdisciplinary teams in multi-objective planning of water and related land resources in subregions of the Missouri River Basin and/or coordinate related efforts and activities.

The closing date for applications is August 15, 1976. Interested applicants should send resume or inquiry to: Nicholas L. Barbarossa, Director of Planning and Technical Services, Missouri River Basin Commission, 10050 Regency Circle, Suite 403, Omaha, Nebraska 68114.

The Missouri River Basin Commission is an Equal Opportunity Employer.

OPENING FOR ASSISTANT PROFESSOR

The Department of Civil Engineering (Hydraulics-Hydrology), at the University of Michigan at Ann Arbor is now taking applications for an Assistant Professor to begin the academic year, 1976-1977.

The applicant must have a Ph.D. and have skills and interest in laboratory-oriented research. The civil engineering aspects of fluid mechanics should be stressed, based upon a strong mechanics background. An interest in numerical modeling is expected. Educational background should be such that contributions

to teaching and research are possible in at least two of the following areas; steady and unsteady hydraulic flow systems, coastal engineering, and hydrology. Some background in other areas such as sedimentation or erosion would be desirable.

Interested parties may send resume to Chairman, Department of Civil Engineering, The University of Michigan, Ann Arbor, Michigan 48109.

The University of Michigan is a non-discriminatory, affirmative action employer.

RESEARCH REVIEW

Project Title: The Production of Mucilage by Diatoms in McConaughy, Pawnee and Yankee Hill Lakes and the Role of this Material in the Aquatic Environment

Principal Investigator: James R. Rosowski
Associate Professor of Botany
School of Life Sciences

The role of diatom mucilage is being determined in this project through a study of algae, water chemistry and physical parameters of three reservoirs in Nebraska--Yankee Hill and Pawnee, small shallow lakes (completed 1965); and McConaughy, the largest lake in the state (completed 1941). Results to date are based on data collected primarily from July through December 1975.

The planktonic algae were identified as to species and their abundance quantified. Diatoms are a major component of the algal community in the lakes. Several planktonic diatoms were isolated into culture including Melosira, Fragilaria and Synedra; these and others will be the initial focus for study of mucilage origin, morphology and chemistry. Preliminary observations on the periphytic diatoms indicate that they are early invaders and remain dominant species on artificial substrates. Rhoicosphenia curvata produces large quantities of mucilage in the form of stalks, the material being liberated through a special perforated area.

Silica may become limiting to diatom growth in Yankee Hill and Pawnee Lakes, but not in McConaughy, where the levels were tenfold higher. In McConaughy, iron and ortho-phosphate fell to 0 levels at certain sites. N as nitrate fell to 0 levels in Yankee Hill and Pawnee, but not in McConaughy where the values were very high, never falling below 0.3 mg/l. Water from the North Platte River entering McConaughy had a N as nitrate high level of 9.6 mg/l. Dissolved oxygen was at times lacking in the hypolimnion of McConaughy (up to as much as the bottom 25 m in early September), but not in Yankee Hill or Pawnee. The Secchi disc transparency minimum was from 0.2-0.4 in the late summer in Pawnee and Yankee Hill respectively, and 5m maximum near the dam (late July) in the first collection at McConaughy.

In the next six months it is hoped that the major planktonic and periphytic diatoms will be isolated which occur in the summer and fall flora. During this time and into the second year of the project, the main additional activity will be in documenting the origin of diatom mucilage and its physical association with other organisms or substrates.

PEOPLE IN THE NEWS

O'MEARA TO HEAD NWRA

John W. (Pat) O'Meara will succeed Carl Bronn as Director of the National Water Resources Association (NWRA). Mr. O'Meara was formerly associate director of the Office of Water Research and Technology, and prior to that director of Interior's Office of Saline Water.

O'Meara noted that he intends to "vigorously" support water development in the 17 western states and that "some changes in the organization will probably be necessary to meet the enormous new requirements of water supply and water pollution standards."

O'Meara has never been directly connected with the association in the past. He is 55 years old and a native of Nebraska.

QUESTIONS AND INQUIRIES

Newsletter items and inquiries should be sent to: Editor, Nebraska Water Resources Research Institute, 310 Ag. Hall-East Campus, University of Nebraska, Lincoln, Nebraska, 68583; or phone (402) 472-3305.

NEWSLETTER ITEMS SOLICITED

The Water Current Newsletter will publish, without charge, announcements, programs for up-coming conferences, employment opportunities or other news-worthy items on hydrology, water resources or related topics.