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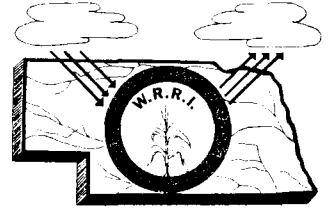
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WATER RESOURCES NEWS

NEBRASKA WATER RESOURCES RESEARCH INSTITUTE
212 AGRICULTURAL ENGINEERING BUILDING

THE UNIVERSITY OF NEBRASKA
LINCOLN, NEBRASKA 68503



Volume 4 Number 5

May, 1972

NEW PUBLICATION AVAILABLE FROM N.W.R.R.I.

The Nebraska Water Resources Research Institute has recently issued a new publication which is available to interested persons. The publication, entitled "Water Resources Publications Related to the State of Nebraska - Second Edition," is by Karen E. Stork and Nyla R. Thomsen. This publication may be obtained by writing: Dr. Warren Viessman, Jr., Director, Nebraska Water Resources Research Institute, 212 Agricultural Engineering Building, East Campus, University of Nebraska, Lincoln, Nebraska 68503.

NEUBERGER NAMED CHAIRMAN - MISSOURI RBC

Deputy Assistant Secretary of the Department of Interior, John W. Neuberger, was recently named the first chairman of the newly formed Missouri River Basin Commission. The Commission, established by Executive Order March 22, 1972, is one of seven established under the Water Resources Planning Act of 1965 to provide coordinated and comprehensive planning for the

development of water and related land resources. Membership of the Commission will consist of 10 State and Federal Agencies.

Mr. Neuberger came to Washington, D.C. in 1969 as an aide to Assistant Secretary of the Interior, James Smith, and was appointed to his present position in 1971. He was general manager of the Papio Watershed Advisory Board in Omaha, Nebraska from 1965 to 1969. Prior to that he was a soil and water specialist for the University of Nebraska Extension Service.

MUSKIE'S PULLOUT MAY SPEED UP THE CLEAN WATER BILL

Hope is revived for faster action on completion of water quality legislation passed by House and Senate since Sen. Edmund S. Muskie is bowing out as an active presidential contender.

Muskie's active campaigning was cited as a reason for the delay in the start of a House-Senate conference to work out differences in the two bills (H.R. 11896, S. 2770).

Assistant administrator for enforcement of the Environmental

Protection Agency, John R. Quarles, Jr., said the entire water pollution control program will be endangered unless Congress acts. Uncertainty about the outcome of the pending legislation has caused many cities to hold up sewage treatment projects, since they are waiting for the new law in hopes of getting additional funds.

Muskie is the key Senate negotiator for the Senate conference group and played a major role in shaping that body's bill.

UCOWR REPORT NEARING COMPLETION

The Universities Council on Water Resources (UCOWR) has been working on a cooperative project with the USDI Office of Water Resources Research to provide inputs to a proposed sequel to the "Brown Book," A Ten-Year Program of Federal Water Resources Research-1966. The Committee on Water Resources Research (COWRR) of the Federal Council for Science and Technology issued the 1966 report and will use inputs from the UCOWR report in any way they deem advisable in developing the sequel. The UCOWR report is intended to assist COWRR in the identification of technical needs and priorities in various research and related data categories and in a review of the adequacy of the over-all program in water resources research in relation to needs.

Principal Investigator for the study was Dr. Warren Viessman, Jr. of the University of Nebraska. The lead consultant was Dr. H. R. Stucky recently retired from the New Mexico State University.

CLEMSON DEVELOPING MANPOWER- TRAINING PROJECT TO AID EPA

A national manpower-training program is being developed by Clemson University to bolster the Environmental Protection Agency's (EPA) fight against water pollution. The program will eventually be set up at technical education and other two-year schools throughout the country to meet skyrocketing demands for highly skilled managers and operators of wastewater treatment plants.

The program is called CEWT -- an abbreviated acronym for "criteria for establishing and maintaining two-year post-high-school wastewater technology training programs." By 1973, the CEWT project expects to turn out some 150 graduates a year from schools throughout EPA's 10 administrative regions. The project has been funded since 1970 by \$250,000 in EPA grants.

U.S. AND RUSSIA TO COOPERATE ON WATER AND OTHER PROBLEMS

The Senate now must ratify the agreement signed in Moscow by President Nixon and Soviet leaders to cooperate in efforts to protect the environment.

The agreement calls for cooperation between the 2 major powers in the fields of water pollution, air pollution and other environmental problems.

Both countries agreed to exchange scientists and other experts, organize bilateral conferences, and join in other cooperative efforts.

To implement the agreement, a U.S.--U.S.S.R. Joint Committee on Cooperation in the Field of Environmental Protection was established. The Committee will meet annually, alternating between Washington and Moscow.

SUMMER WORKSHOP AT TORONTO

The University of Toronto, Institute of Environmental Sciences and Engineering, will sponsor an AAPSE Summer Workshop entitled "Interdisciplinary Education Programmes for Environmental Engineers" August 7-9, 1972.

For further information write: Dr. G. W. Heinke, Workshop Chairman, Associate Professor, Department of Civil Engineering, University of Toronto, Toronto 181, Canada.

HYDRAULIC DREDGING SHORT COURSE

A five-day short course on hydraulic dredging will be held from August 7 - 11, 1972, at Texas A&M University. Texas A&M staff members, experts from the federal government and the dredging industry will serve as instructors for the course. Topics to be covered include: review of hydraulics; dredge pump theory and application; soil mechanics; offshore dredging problems; dredging systems; instrumentation; dredge spoil disposal; and environmental considerations.

The fee for the course is \$200, which includes course attendance, lecture notes, mixer, and banquet. For more information, please contact Prof. R. M.

Sorensen, Department of Civil Engineering, Texas A&M University, College Station, Texas 77843.

DREDGING OPERATORS SHORT COURSE

A one-week short course for Dredging Operators will be given on the North Carolina State University at Raleigh campus in August, 1972. For details, please write Dr. Jerry L. Machemehl, Civil Engineering Department, North Carolina State University, Raleigh, N.C. 27607.

GOVERNMENT BUYING OF WASTE BONDS IS URGED BY TREASURY

Paul A. Volcker, Under Secretary of the Treasury, strongly urged Congress to approve a measure to allow the government to buy municipal waste water treatment bonds.

Volcker, appearing before the Senate Banking Committee, said the proposed Environmental Financing Act (S. 1015) would authorize the government to purchase only those bonds not readily marketable commercially.

The House has approved the proposal as Sec. 2 of the Water Pollution Control Act, but the Senate did not include it in its version. Those measures are in conference.

WRC ASKS CONGRESS FOR MORE MONEY TO STUDY WATER NEEDS

The Water Resources Council (WRC) is asking Congress to authorize a \$3.5 million increase in its appropriations to pay for

an assessment of the nation's water needs.

The request won the support of the House irrigation and reclamation subcommittee after the panel heard testimony by WRC Director W. Don Maughan.

Maughan, testifying for a bill (H.R. 14106) to authorize the increase, said both regional and national assessments of water needs were required under Section 102 of the Water Resources Planning Act but that sufficient money was not authorized for the purpose.

One hundred thousand dollars is being requested in the fiscal 1973 budget for preliminary work on the assessments, a supplemental \$1 million request will be submitted later.

Legislation now goes to the parent House Interior Committee.

NEW ORGANIZATION

An international organization called International Water Resources Association (IWRA) has recently been founded as a non-governmental, not-for-profit scientific organization. Headquartered in Milwaukee, Wisconsin, one of the major factors in the establishment of IWRA was the need for a Society to provide an international forum for discussing all aspects of water resources science and technology in an interdisciplinary manner. The establishment of IWRA is the result of the efforts of an international group of well known administrators, engineers, executives and scientists representing many disciplines of the water resources field.

For further information concerning objectives of the organization, for membership application forms, or for any other questions please contact:

Dr. G. M. Karadi
Secretary General of IWRA
E320, Science Complex Bldg.
University of Wisconsin
Milwaukee, Wisconsin 53201

REAL ESTATE LAKES TURNING TO MESSSES IN A YEAR

According to a Geological Survey report, real estate lakes-- those delightful little dots of water around which charming housing developments are built-- die all too soon.

Eutrophication eventually kills all lakes, according to Dr. David Rickert, author of the USGS report on real estate lakes. They go through a natural progression from clear water to a murkey swamp, then turn into dry land. But man's intervention speeds up the stages, and some lakes turn into smelly messes within a year.

"To be successful, the development of a real estate lake requires the advice and guidance of experts," says Rickert. Copies of the report, USGS Circular 601-G, "Real Estate Lakes," are available free from the Geological Survey, Washington, D.C. 20242.

ECONOMIC IMPLICATIONS OF POLLUTION CONTROL POLICY

Dr. Alan K. McAdams, Senior Staff Economist, Council of Economic Advisors, Executive Office of the President, spoke on cost implications of various

levels of water pollution control. Using data developed by the Council on Environmental Quality and the Environmental Protection Agency, McAdams developed the following relationships:

- to remove the first 87 percent of pollutants would cost about \$60 billion between now and 1982,
- to remove another 10 percent would cost an additional \$60 billion,
- to remove the final three percent would cost another \$200 billion.

These figures, said McAdams, suggest an exponential curve which shows that it costs about \$0.6 billion per percentage point waste reduction for early stage treatment (87 percent). For the next 10 percent, it costs about \$6 billion per percentage point. "When an economist looks at these figures," McAdams said, "he gets worried, particularly when Congress passed 86 to 0 a law which says let's go for zero discharge."

McAdams observed that he was not saying it would be inappropriate for a nation to make a choice to commit its resources this way--only that when it costs 100 times as much to move from 87 percent treatment to 100 percent, "maybe you ought to stop, look, and analyze before you jump."

CLOUD-SEEDING PROGRAM FOR SOUTHWESTERN OKLAHOMA

The Bureau of Reclamation will direct a three-year summer cloud-seeding research program over portions of southwestern Oklahoma, which coincides with a drought that threatens severe water shortages. The program commenced April 28 with the aerial seedings of suitable cumulus clouds.

While the emphasis will be on development of seeding techniques and evaluation of results, the program was planned with full recognition of the region's increasingly critical drought conditions and need for environmental protection.

The program will concentrate on the seeding of cumulus clouds over the watersheds that drain into Altus, Foss, and Mountain Park Reservoirs in southwestern Oklahoma. The experimental period will be approximately from May through mid-September.

Secretary Morton said the Bureau of Reclamation has awarded a contract for \$225,000 to Weather Science Incorporated, Norman, Oklahoma, to perform seeding during the first phase of the project.

NEW STUDY REPORTS RELEASED BY COMMISSION

Two additional study reports by the National Water Commission can be ordered from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22151.

A report on "Forecasting Water Demands," Accession Number PB 206 491 is available at the cost of \$6.00. The purpose of the report is to show the effects of changes in policy and technology on the demands for water. It describes economic models which enable forecasts to be made of demands for water for agriculture, steam-electric power generation, petroleum refining, and residential use.

The second report, "The Choice of Institutional Arrangements for Water Resources Development,"

Accession Number PB 207 314 is available at the cost of \$9.00. This report examines the elements that have entered into the development of the American water industry, with special reference to the California water industry. An assessment is presented of alternative approaches to policy problems in resource development.

RESEARCH REVIEW

Project Title: Ecological Impact of Surface Water Impoundments in the Great Plains Area

Principal Investigator: Dr. C. Michael Cowan, Assistant Professor of Biology, Nebraska Wesleyan University

Dates: July, 1970 to June, 1972

Two preliminary ecological systems models of the Platte River Valley are being constructed. One of these represents the Platte River and its surrounding area as it presently exists, the other represents the formerly proposed Platte River dam. The modeling attempts to consider the environment from a non-human perspective; that is, from the point of view of the plants and animals which inhabit the area. It is of course difficult to exclude some obvious man-related activities such as agricultural and recreational preferences.

Five basic categories are being considered, which include: plant production (agriculture), recreation, and the habitat availability for large mammals, birds, and fish. Data has been collected on the basis of resource (quantity) and desire. Using this information and a new

technique originally proposed for urban modeling it is hoped to arrive at some basic mathematical conclusions concerning the Platte River, Eastern Nebraska, and the impoundment of a large prairie river system.

NEW PUBLICATIONS RECEIVED BY INSTITUTE - MAY

1. "Planning for Dane County Water Resources Development and Management," December 1971, Water Resource Task Group 1971.
2. "Publications of the Institute," Mississippi State University, March 1972.
3. "Characteristics of Streamflow at Gaging Stations in Shell Creek, Elkhorn River, and Salt Creek Basins, Nebraska," F. B. Shaffer, U.S. Department of the Interior, Geological Survey, April 1972.
4. "Maximizing Storage in Combined Sewer Systems," for the Environmental Protection Agency, December 1971.
5. "Aerobic Treatment of Feedlot Runoff," T. J. McGhee, University of Nebraska, R. L. Torrens, Henningson, Durham and Richardson, R. J. Smaus, University of Nebraska, April 1972.
6. "Water Resource Problems and Research Needs of North Carolina," D. H. Howells, University of North Carolina, January 1972.
7. "Reagents for Determinations of Trace Impurities in Water," A. L. Caskey, F. N. Abercrombie, R. J. Antepencko, G. D. Carolson, R. A. Cos, P. C. Lindahol, Southern Illinois University, University of Illinois, February 1972.
8. "An Experimental Study of Eddy Diffusion Coefficients, Evapotranspiration and Water Use

Efficiency," R. J. Millington, D. P. Peters, University of Illinois, December 1971.

9. "Fate of Diquat in the Aquatic Environment," R. C. Hiltibran, D. L. Underwood, J. S. Fickle, University of Illinois, February 1972.

10. "The Role of Sediments in Eutrophication--A Preliminary Study," C. A. Moore, M. L. Silver, University of Illinois, January 1972.

11. "Activated Sludge Processing," for the Environmental Protection Agency, February 1972.

12. "Waste Treatment Lagoons--State of the Art," for the Environmental Protection Agency, July 1971.

13. "Experimental Evaluation of Fibrous Bed Coalescers for Separating Oil-Water Emulsions," for the Environmental Protection Agency, November 1971.

14. "Legal Problems of Coal Mine Reclamation," E. F. Goldberg, G. Power, the University of Maryland School of Law, for the Environmental Protection Agency, March 1972.

15. "Water Resources Data for Nebraska - Part 2. Water Quality Records," U.S. Department of the Interior, Geological Survey, 1970.

16. "Term Problem C. E. 314 - A Comprehensive Plan for Resource Use - Big Blue River Basin Nebraska, I. Yomtovian, N. Sorensen, D. Mazour, M. Kennedy, R. Ewalt, University of Nebraska, May 1972.

17. "Quality of Surface Waters of the United States, 1967 - Parts 7 and 8. Lower Mississippi River Basin and Western Gulf of Mexico Basins," Geological Survey Water Supply Paper 2014, 1972.

18. "The Use of Bluegill Breathing to Detect Zinc," J. Cairns, Jr., R. E. Sparks, Virginia

Polytechnic Institute and State University, for the Environmental Protection Agency, December 1971.

19. "Magnesium Carbonate, A Recycled Coagulant for Water Treatment," for the Environmental Protection Agency, June 1971.

20. "Phosphate Precipitation With Ferrous Iron," M. Ghassemi, H. L. Recht, Atomics International, for the Environmental Protection Agency, September 1971.

21. "The Use of Fish Movement Patterns to Monitor Zinc," J. Cairns, Jr., W. T. Waller, Virginia Polytechnic Institute and State University, for the Environmental Protection Agency, December 1971.

22. "Information Resource: Water Pollution Control in the Water Utility Industry," for the Environmental Protection Agency, November 1971.

23. "Soluble Phosphorus Removal in the Activated Sludge Process - Part II Sludge Digestion Study," for the Environmental Protection Agency, October 1971.

24. "Amenability of Reverse Osmosis Concentrate to Activated Sludge Treatment," for the Environmental Protection Agency, July 1971.

25. "Water Quality Criteria Data Book Volume 2 - Inorganic Chemical Pollution of Freshwater," for the Environmental Protection Agency, July 1971.

26. "Acid Mine Pollution Effects on Lake Biology," R. W. Smith, D. G. Frey, Indiana University, for the Environmental Protection Agency, December 1971.

27. "National Irrigation Return Flow Research and Development Program," J. P. Law, Jr., Robert S. Kerr Water Research Center, for the Environmental Protection Agency, December 1971.

28. "Eutrophication Factors in North Central Florida Lakes,"

H. D. Putnam, P. L. Brezonik, E. E. Shannon, University of Florida, February 1972.

29. "A User-Oriented Water Research Plan for Nebraska," W. Viessman, Jr., Director, University of Nebraska, April 1972.

30. "Proceedings Workshop on Poultry Processing Plant Water Utilization and Waste Control," edited by R. E. Carawan, North Carolina State University, September 1971.

31. "Analog Modeling to Determine the Fresh Water Availability on the Outer Banks of North Carolina," G. J. Kriz, North Carolina State University, April 1972.

32. "Design Characteristics for a National System to Store, Retrieve and Disseminate Water Data," U.S. Department of the Interior, October 1971.

33. "Complete Mix Activated Sludge Treatment of Citrus Process Wastes," for the Environmental Protection Agency, August 1971.

34. "Effect of Porous Structure on Carbon Activation," University of Colorado, for the Environmental Protection Agency, June 1971.

35. "Wastewater Demineralization by Ion Exchange," E. Kreuzsch, K. Schmidt, for the Environmental Protection Agency, December 1971.

36. "Use of General Equilibrium in Regional Water Resources Planning," Georgetown University, for the Environmental Protection Agency, January 1972.

37. "Problem Lakes in the United States," M. J. Ketelle, P. D. Uttormark, University of Wisconsin, 1971.

38. "Research Reports Supported by Office of Water Resources Research Under the Water Resources Research Act of 1964," July 1971 - March 1972, U.S. Department of the

Interior, O.W.R.R.

39. "Liquid Wastes From Canning and Freezing Fruits and Vegetables," for the Environmental Protection Agency, August 1971.

40. "Membrane Processing of Cottage Cheese Whey for Pollution Abatement," for the Environmental Protection Agency, July 1971.

41. "Whey Effluent Packed Tower Trickling Filtration," for the Environmental Protection Agency, September 1971.

42. "A Mathematical Model of A Final Clarifier," for the Environmental Protection Agency, February 1972.

43. "A Microbiological Survey in Lake Erie Near Cleveland, Ohio," for the Environmental Protection Agency, October 1971.

NEWSLETTER ITEMS

Newsletter items and inquiries should be sent to: Dr. Warren Viessman, Jr., Director, N.W.R.R.I., 212 Agricultural Engineering Building, University of Nebraska - East Campus, Lincoln, Nebraska 68503.