

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

Water Current Newsletter

Water Center, The

1-1975

Water Current, Volume 7, No. 1, January 1975

Follow this and additional works at: https://digitalcommons.unl.edu/water_currentnews



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

"Water Current, Volume 7, No. 1, January 1975" (1975). *Water Current Newsletter*. 95.
https://digitalcommons.unl.edu/water_currentnews/95

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.

Water Current

Volume 6 Number 12

January 1975

FROM THE DESK OF THE DIRECTOR . . .

Impending water crisis . . . greater than the energy crisis . . . the next world crisis will relate to water shortages . . . Lately these and similar statements have been reported with increasing frequency.

Those of us in the water resources field have always known and understood that the wise management of water resources is vital to the well-being of the nation. Others, however, have not often paid heed to this message. People tend to take natural resources for granted until they become despoiled or depleted.

Because of this, it is heartening to see the mounting interest of some of our young people. This is illustrated by the following letter recently received by the Institute from two junior high school students:

Dear Sir:

"We are two eighth-grade students at St. Monica School in St. Louis, Missouri. Our Science Fair will be held in January 1975. We feel so strongly about the importance of water to plant, animal and human life that we plan to feature America's water from the 50 states."

"Therefore, we are asking you to please consider the enclosed request for information and a small sample of your drinking water."

"Thanking you in advance for your consideration of this request."

Sincerely,

Stephanie Betz
Donna Macke

If the importance of water is being stressed in our schools and if young people are beginning to understand the pervasive influence that water and water-related activities have on our lives, perhaps the message is finally getting across.

NEBRASKA WATER RESOURCES RESEARCH INSTITUTE

ON THE HOMEFRONT

CONFERENCE HELD ON RESEARCH IN ACTION

On December 5-6, 1974 the Nebraska Water Resources Research Institute sponsored a conference on "Research in Action -- Technology for Implementing Water Research Results." The objective of the conference was to develop techniques for getting quick and effective action from water research results.

Participants from all over the country attended the conference, and workshop sessions provided various suggestions and guidelines for translating research results into action. These techniques along with presented papers will be available in a conference proceedings currently in process.

For a copy of the proceedings, please contact: Warren Viessman, Jr., Director, Nebraska Water Resources Research Institute, 212 Agricultural Engineering Building, University of Nebraska, Lincoln, Nebraska 68503.

NWRRI RESEARCH SEMINAR

On Thursday, March 20 the Nebraska Water Resources Research Institute will sponsor a "Research Overview" at the Nebraska Center for Continuing Education. The purpose of the seminar is to present a brief review of the current research program of the Institute. Principal investigators will make presentations on present studies in progress, accomplishments to date and future research plans. The seminar is open to the general public, state and federal agency representatives, university faculty and students and other interested persons.

Five main areas of research will be presented: (1) irrigation; (2) water quality; (3) water resources modeling; (4) energy; and (5) basic research. Time will be allotted after each presentation for questions and discussion.

For further information on the seminar, contact: Nebraska Water Resources Research Institute, 212 Agricultural Engineering Building, University of Nebraska, Lincoln, Nebraska 68503. Telephone 472-3307.

REGIONAL NEWS

NEBRASKA FIRST IN NPDES PROGRAM

The state of Nebraska and the Department of Environmental Control (DEC) have set another record in connection with the National Pollutant Discharge Elimination System (NPDES) permit program.

Nebraska was the first state in Region VII to receive federal authority to issue the permit program. Now it has been revealed by DEC that Nebraska is the first state in the nation to meet the December 31, 1974 deadline for issuing the permits. To meet this federal deadline, DEC issued a total of 485 permits to industries and communities around the state. Those receiving these permits were found to be discharging pollutants into state waters. Receiving a permit allows the polluter to continue discharging but only under certain conditions. The conditions set forth in each permit establish a schedule so that the discharge of pollutants will decrease over a period of time. All dischargers must meet the federal deadline of "no discharge of pollutants" by July 1, 1985.

With the addition of 250 permits issued by EPA before DEC took over the program, a total of 735 permits have been issued in the state. Still to be issued by June 30, 1975 are several hundred agricultural permits.

FEDERAL HIGHLIGHTS

RESIGNATION AND RETIREMENTS FROM OWRT

Dr. Warren A. Hall, Acting Director of the Office of Water Research and Technology (OWRT), has resigned his position effective December 31, 1974 to accept the Elwood Mead Professorship of Engineering at Colorado State University. Dr. Hall was appointed Associate Director of the Office of Water Resources Research in September 1972 and became Director in September of 1973. Dr. Hall was previously professor of Engineering and Agriculture at the University of California at Riverside and was Director of their Dry Lands Research Institute from 1966-1970.

Three senior staff scientists with the Office of Water Research and Technology announced their retirement also effective December 31, 1974. Daniel L. Leedy, Herbert A. Swenson and Stanton J. Ware are retiring but will continue to work with the program on a part-time interim basis.

FUTURE WATER CRISIS NOTED

At his keynote address at the annual convention of NWRA, Gilbert G. Stamm, Commissioner of the Bureau of Reclamation, warned that it can no longer be taken for granted that water will be available in the future when and where it is needed. He noted that "today's approach to the problem of meeting future water needs is frighteningly close to our approach over the last decade to the problem of meeting future energy needs."

Stamm pointed out that there are several facts that should alert the public to the threat of a water crisis. "There was the drought of

1974 which forced farmers on non-irrigated lands to graze their cattle in what could have been prime corn acreage while their neighbors on irrigated land reaped bumper crops. And there are the higher and higher food prices at the supermarket. And, affecting people, of course, is the new demand for more water to produce energy at the same time the demand is rising for water for food, for fiber, for cities, for industry, for controlling pollution, for fish and wildlife, for recreation and for enhancing the environment. Add to this the growing world-wide demand for food."

The Commissioner admonished NWRA members to "avoid polarization which would attempt to force a choice between development and preservation, between water for energy and water for agriculture. We must search for acceptable common ground--recognizing that the growing needs and desires of mankind are diverse and must be met in a manner that not only will develop and manage our renewable resources for the multiple functions involved, but will do so in recognition of the public's desire ... yes, demand ... for a whole new set of standards." He said the nation must face the fact that work in water resources conservation, development and management is not over.

HORTON OUTLINES FEDERAL WATER POLICY

At the NWRA annual convention, Assistant Secretary of the Interior Jack O. Horton reviewed the federal water policy. "As the Administration's policy for energy is formulated and articulated over the next few months, it will become more and more clear that water for energy may well be the critical ingredient," Horton noted.

The Administration is now examining the optimum focal point for coordinating water-for-energy efforts. Horton also reported that the Water Resources Council, working in cooperation with the states and the basin commissions, has filed a preliminary draft of a program of water for energy self-sufficiency, with the final report due in March.

In reviewing other activities in the Department of Interior, Horton referred to the work of the technical task force which has recently completed an inventory of water availability and projected use in the Upper Colorado River Basin and said the same task force is completing a survey of water for energy production in the Upper Missouri River Basin.

A proposal to schedule a mini-summit conference on water resources in early 1975 is also being reviewed. Secretary Horton noted the conference might focus on: "the relationships between water resources and energy mineral development; the continuing contribution of irrigated agriculture to the world food crisis; the balance to be maintained between water quality, environmental enhancement and water development and use;

the environmental levels required to sustain optimum resource availability; and the financing and the payment choices." The conference would give prominence to the state governors and to municipal water problems as well as the traditional concerns. Horton stressed that much of the implementation for water resource development remains with the states.

CONFERENCES

SYMPOSIUM ON URBAN HYDROLOGY

The second Symposium on Urban Hydrology and Sediment Control will be held on July 28-31, 1975 at the University of Kentucky, Lexington, Kentucky.

Authors are invited to submit papers for presentation at the symposium. Papers giving research results and/or case studies on the following topics are invited: (1) quantifying rainfall, runoff, and/or sediment production in urban areas including model studies; (2) economic and legal problems associated with runoff and sediment control; (3) techniques for managing urban runoff and/or sediment; and (4) case studies of innovative systems for controlling urban runoff and sediment.

The deadline for receipt of proposed papers is April 15, 1975. Papers should be mailed to: the Office of Continuing Education, College of Engineering, University of Kentucky, Lexington, Kentucky 40506, Attention: Urban Hydrology Symposium.

For additional information on the conference contact Dr. C. T. Haan, Agricultural Engineering Department, University of Kentucky, Lexington, Kentucky 40506 (telephone 606-258-2986).

HOME WATER CONSERVATION CONFERENCE

Pennsylvania State University will conduct a three-day conference entitled "Water Conservation and Home Sewage Flow Reduction with Water-Saving Devices" to be held on April 8-10, 1975 at the Keller Conference Center, University Park, Pennsylvania. The purpose of the conference is to conduct a state-of-the-art review of water-saving devices with emphasis on research and development needs.

Topics to be discussed include: (1) impact of home water-saving devices on waste flows and sewage treatment; (2) new developments in water-saving devices; (3) workshop on future research needs; and (4) the future of water-saving devices.

For further information and registration form, please contact Mr. William Sharp, Institute for Research on Land and Water Resources, Land and Water Research Building, Pennsylvania State University (phone 814-863-0291); or William Sipple, Keller Conference Center (phone 814-865-9547), University Park, Pennsylvania 16802.

CORNELL CONFERENCE ON ENERGY, AGRICULTURE AND WASTE MANAGEMENT

The 7th Annual Cornell University Conference on Energy, Agriculture and Waste Management will be held April 16-18, 1975 at the Hotel Syracuse in Syracuse, New York. The purpose of the conference is to examine ways in which the most efficient and economical use of energy consumed in agriculture can be achieved.

Specific objectives include: (1) to assess the energy required for agricultural production; (2) to review the quantity of energy needed to provide adequate control of pollution from agricultural wastes considering especially the technology required to reclaim energy remaining in the wastes and the feasibility of generating energy from the wastes as an adjunct to achieving pollution control; and (3) to investigate the economics of energy in agriculture with respect to production, waste management and their inter-relationships.

For further information on the conference, contact: Dr. William J. Jewell, Conference Chairman, 202 Riley-Robb Hall, Cornell University, Ithaca, New York 14850.

SUMMER INSTITUTE ON WATER POLLUTION CONTROL

Manhattan College will conduct the 20th Summer Institute in Water Pollution Control May 19-23, 1975. Two one-week courses will be offered concurrently for advanced study in biological waste treatment and mathematical modeling of natural water systems. Enrollment, on a pre-registration basis, will be limited. Tuition for each of the five-day courses is \$275.

This continuing engineering education program is designed to enhance the competence of practicing engineers and scientists in governmental agencies, industrial concerns, consulting engineering offices, research organizations and academic institutions.

For further information contact: Donald J. O'Connor, Environmental Engineering and Science Program, Manhattan College, Bronx, New York 10471.

SHORT COURSE ON WATER RESOURCES

Case Institute of Technology announces its fourth annual one-week short course on "Hierarchical Approach in the Planning, Operation and Management of Water Resources Systems" to be held May 19-23, 1975. The conference is co-sponsored by the International Water Resources Association in cooperation with the American Geophysical Union, Section of Hydrology.

The short course will present a comprehensive survey of the applications of the hierarchical approach to large complex water resources systems. Selected topics will include: cost effectiveness analysis in water resources systems; modeling and systems identification in water resources; assessment

of water and related land resources; data management; discrete differential dynamic programming; regional water resources management via multilevel approach; uncertainties in flood frequency analysis; multiobjective functions in water resources; multiregional conjunctive use of ground and surface water resources; regional water quality control and management via multilevel approach; hierarchical approach for a total water resources systems modeling and optimization; and discussion on sensitivity, stability and irreversibility vs. optimality in water resources systems.

The fee for the short course is \$250 including notes and the book Multi-Objective Optimization in Water Resources Systems: The Surrogate Worth Trade-off Method.

For further details please contact Yacov Y. Haimes, Short Course Director, Systems Engineering Department, Case Western Reserve University, Cleveland, Ohio 44106, telephone (216-368-4076).

INDUSTRIAL WASTEWATER CONTROL COURSE

A short course on the engineering control of industrial wastewaters will be given at the Cornell University College of Engineering June 23-27, 1975.

Designed for engineers and others responsible for industrial wastewater control, the course is intended both to make them aware of the severe limitations that Federal and State regulatory agencies are imposing on all wastewaters discharged to natural waters and to sewers, and to improve their ability to produce effluents that meet the new standards.

Topics will include water pollution control legislation, regulations and standards; industrial wastewater disposal alternatives; effluent reclamation; biological and physical-chemical treatment process theory and application; solids disposal; synthesis and cost estimation of wastewater treatment systems.

For further information, write to Prof. R. H. Lance, Associate Dean, College of Engineering, Carpenter Hall, Cornell University, Ithaca, New York 14853.

INTERNATIONAL SYMPOSIUM ON THERMAL WATERS

An International Symposium on Thermal and Chemical Problems of Thermal Waters will be held August 29-September 1, 1975 at the University campus at Grenoble, France. The symposium is sponsored by the International Association of Hydrologic Sciences (IAHS), the International Association of Hydrogeologists (IAH), and the International Association of Volcanology and Chemistry of the Earth's Interior (IAVCEI).

The symposium program will consist of invited and offered papers on thermal-water distribution patterns, geothermal zones of the earth's crust, geochemistry of thermal waters in various regions, utilization of the heat or components of thermal waters and thermal pollution.

All U.S. participation in the program will be organized through the U.S. National Committee for the IAHS. Anyone wishing to offer a paper should submit four typed copies of an abstract of 200 words or less, in English and French, by February 1, 1975. Full papers of not more than 15 typed, double-spaced pages will be required from the selected authors by August 1, 1975.

Those desiring more information on the symposium or wishing to offer a paper should contact: Arnold I. Johnson, U.S. National Committee for IAHS, U.S. Geological Survey, National Center, MS 417, Reston, Virginia 22092.

RESEARCH REVIEW

Project Title: Seasonal Water Use of Irrigated Pasture Grasses Under Permanent-Set Irrigation as Related to Climatic Factors

Principal Investigator: James T. Nichols, Professor of Agronomy
University of Nebraska, North Platte Station

The overall purpose of this project is to evaluate different grasses for irrigated pasture production and develop recommendations on irrigation for optimum forage production and beef cattle gain. Specific objectives on water use are: (1) Investigate consumptive water use of different grasses under irrigation to determine peak use, total and seasonal use pattern, and portion of the soil profile where the most soil water is used; and (2) relate water use to the climatic factors of temperature, humidity, wind, and solar radiation.

Eight pastures consisting of single species stands of orchardgrass, reed canarygrass, meadow brome, smooth brome, Russian wildrye, tall fescue, Garrison creeping foxtail and intermediate wheatgrass were monitored for soil-water status with a neutron probe each week. Irrigation water was applied according to water deficit, precipitation received and growing conditions to maintain soil water within a range of readily available soil water according to the needs of each grass. Other production factors of fertilization and grazing management were maintained near optimum for each grass.

The 1974 growing season was characterized by weather conditions of high air temperature, wind travel, solar radiation and low relative humidity which contributed to high water use by all grasses. Specific relationships of climatic factors to water use by the eight grasses have not been established at this time.

During the first week of July, average daily water use (all water use and loss, not ET) for the eight grasses was: orchardgrass 0.37, reed canarygrass 0.39, meadow brome 0.38, smooth brome 0.30, Russian wildrye 0.37, tall fescue 0.45, Garrison creeping foxtail 0.36, and intermediate wheatgrass 0.39. This peak-use period is higher for most of these grasses than values reported in the literature for irrigated pasture.

Cattle gains per acre assimilate into one value an expression of the productivity of the total irrigated pasture environment, plus animal performance. It is also a product which determines the economic value of irrigated pasture production. Preliminary data analysis indicates wide differences in water-use efficiency when expressed as gain per unit of water applied. These values ranged from a high of 24.8 lb of gain/acre-inch of water for intermediate wheatgrass to a low of 12.6 for tall fescue. The total water (irrigation and precipitation) applied to these two grasses was 43.3 inches and 49.4 respectively.

Research on water use by different grasses used for irrigated pasture production will be beneficial for optimizing production of each grass, improving irrigation recommendations and conserving water resources.

PUBLICATIONS RECEIVED BY THE INSTITUTE

NWRRRI LIBRARY

1. Alternate Solutions to Water Resource Development--A Case Study, David R. Basco, K. M. A. Rahman, Texas Water Resources Institute, Texas A & M University, May 1974.
2. Development of a Dynamic Water Management Policy for Texas, W. L. Meier, James C. Helm, Guy L. Curry, Texas Water Resources Institute, Texas A & M University, June 1973.
3. An Evaluation of Obers Projections of Texas Agricultural Production in 1980, 2000, and 2020, J. P. Warren, W. L. Griffin, W. L. Trock, Texas Water Resources Institute, Texas A & M University, August 1973.
4. United States Participation in the International Hydrological Program 1975, United States National Committee for the International Hydrological Decade, National Academy of Sciences, 2101 Constitution Avenue, N.W., Washington, D.C.
5. Geologic and Hydrologic Control of Chloride Contamination in Aquifers at Brunswick, Glynn County, Georgia, Geological Survey Water-Supply Paper 2029-D, U.S. Government Printing Office, Washington, D.C., 1974.

PUBLICATIONS RECEIVED BY THE INSTITUTE

NWRRI Library

1. Biological Effects in the Hydrological Cycle - Proceedings of the Third International Seminar for Hydrology Professors, Department of Agricultural Engineering, Agricultural Experiment Station, Purdue University, West Lafayette, Indiana, July 18-30, 1971.
2. The Magnitude of Snowmelt and Rainfall Interception by Litter in Lodgepole Pine and Spruce-Fir Forests in Wyoming, James F. Reynolds, Dennis H. Knight, Reprinted in Northwest Science, Vol. 47, No. 1, 1973.
3. Temporary State Commission on the Water Supply Needs of Southeastern New York - Alternative Futures: A Re-Evaluation, Albany, New York, November 15, 1974.
4. Land - Use Issues, Proceedings of a Conference, Edited by J. Paxton Marshall and Peter M. Ashton, Publication 629, Cooperative Extension Service, November 1974.
5. Pesticide-Sediment-Water Interactions, H. B. Pionke, G. Chesters, Reprinted from the Journal of Environmental Quality, Vol. 2, No. 1, Jan.-Mar. 1973, 677 South Segoe Road, Madison, Wisconsin.
6. Determination of Organochlorine Insecticides in Soils and Waters, H. B. Pionke and G. Chesters, Reprinted from the Soil Science Society of America Proceedings, Vol. 32, No. 6, November-December 1968, 677 South Segoe Road, Madison, Wisconsin.
7. Interregional Impacts of Alternative Water Policies for Irrigation in the Western United States, Neil L. Meyer, Daniel W. Bromley, Water Resources Center, University of Wisconsin, Madison, Wisconsin, June 1974.
8. Sediments and Sediment-Water Nutrient Interchange in Upper Klamath Lake, Oregon, William D. Sanville, Charles F. Powers, Arnold R. Gahler, National Environmental Research Center, Office of Research and Development, U.S. Environmental Protection Agency, Corvallis, Oregon, August 1974.
9. Cost Sharing for Shoreline Protection, Harold E. Marshall, National Technical Information Service, U.S. Department of Commerce, Springfield, Virginia, August 1974.
10. Toward a Technique for Quantifying Aesthetic Quality of Water Resources, Edited by Perry J. Brown, National Technical Information Service, U.S. Department of Commerce, Springfield, Virginia, October 1974.
11. Some Political and Economic Aspects of Managing California Water Districts, James Jamieson, Sidney Sonenblum, Werner Z. Hirsch, Merrill R. Goodall, Harold Jaffe, Institute of Government and Public Affairs, University of California, Los Angeles, California, 1974.
12. Indexed Bibliography of Office of Research and Development Reports, by Publications Staff, Office of Research and Development, U.S. Environmental Protection Agency, Washington, D.C., July 1974.

13. Estimating Water Quality Benefits, David L. Jordening, Office of Research and Monitoring, U.S. Environmental Protection Agency, Washington, D.C., August 1974.
14. A Plan for Study of Water Resources in the Platte River Basin, Nebraska - With Special Emphasis on the Stream-Aquifer Relations, C. F. Keech, J. E. Moore, P. A. Emery, U.S. Department of the Interior, Geological Survey, Nebraska District, Water Resources Division, Lincoln, Nebraska, Jan. 1973.
15. Finite Element Programs for Analysing Flow Towards Wells, P.S. Huyakorn, C. R. Dudgeon, University of New South Wales, Water Research Laboratory, Manly Vale, N.S.W., Australia, March 1974.
16. Carrying Capacity in Regional Environmental Management, A. B. Bishop, H.H. Fullerton, A. B. Crawford, M. D. Chambers, M. McKee, Office of Research and Development, U.S. Environmental Protection Agency, Washington, D.C., February 1974.
17. The Development and Field Testing of a Basin Hydrology Simulator, Don W. Green, Ernest C. Pogge, University of Kansas Center for Research, Inc. Lawrence, Kansas, August 1973.
18. Water & Land Resource Accomplishments, 1973 - Summary Report, U.S. Department of the Interior, and Bureau of Reclamation, Washington, D.C.
19. Interdisciplinary Environmental Approaches, Edited by Albert E. Utton, Daniel H. Henning, Educational Media Press, P.O. Box 1852, Costa Mesa, California.
20. The Allocative Conflicts in Water-Resource Management, Agassiz Center for Water Studies, the University of Manitoba, Winnipeg, Manitoba, Canada.
21. Elkhorn River Basin Screening Model, Warren Viessman, Jr., Gary L. Lewis, Isaac Yomtovian, Jeanne Enevoldsen, Nebraska Water Resources Research Institute, University of Nebraska, Lincoln, Nebraska, May 1974.
22. Water - Man Cannot Live By Bread Alone, Southwest Water Supply Commission, Albany, New York.
23. An Agro-Power-Waste Water Complex for Land Disposal of Waste Heat and Waste Water, David R. DeWalle-Editor and Project Director, Institute for Research on Land and Water Resources, the Pennsylvania State University, University Park, Pennsylvania, June 1974.
24. Ninth Annual Conference on Water Resources Research, April 10 - 11, 1974, U.S. Department of the Interior, Office of Water Research and Technology, Washington, D.C.
25. Water Resources Seminar Series No. 3, Papers Presented July 1972 to December 1972, Water Resources Research Center, University of Hawaii, Honolulu, Hawaii, June 1974.
26. Water Resources Seminar Series No. 4, Papers Presented January to May, 1973, Water Resources Research Center, University of Hawaii, Honolulu, Hawaii, June 1974.

27. Proceedings of Groundwater Management and Recharge Workshop (Great Plains States), November 7-8, 1974, Garden City, Kansas.
28. Modelling of Water Resources Systems - Volume I, Asit K. Biswas, Editor, Harvest House Ltd., 4795 St. Catherine Street W., Montreal H3Z 2B9, Quebec, Canada.
29. Modelling of Water Resources Systems - Volume II, Asit K. Biswas, Editor, Harvest House Ltd., 4795 St. Catherine Street W., Montreal H3Z 2B9, Quebec, Canada.
30. A Two-Dimensional Multi-Stage Programming Model: With Application to Reservoir Systems, O. E. Rood, M. I. Dessouky, D. D. Meredith, U.S. Army Construction Engineering Research Laboratory, Champaign, Illinois, November 1974.
31. Hydrodynamics of Artificial Ground-Water Recharge, Richard R. Brock, Technical Completion Report, School of Engineering, University of California, Irvine, California, February 1974.
32. A Framework for Uncertainty Management in Water Resources Planning, National Technical Information Service, U.S. Department of Commerce, Springfield, Virginia, October 1974.
33. Proceedings of the Workshop on Research Needs Related to Water for Energy, October 20-22, 1974, Water Resources Center, University of Illinois at Urbana-Champaign, Urbana, Illinois, November 1974.
34. Feasibility of Overland-Flow Treatment of Feedlot Runoff, Richard E. Thomas, National Environmental Research Center, Office of Research and Development, U.S. Environmental Protection Agency, Corvallis, Oregon, December 1974.
35. Energy Consumption in Manufacturing, John Myers, B.A. Gelb, Neonard Nakamura, Noreen Preston, Paul A. Parker, Mark Wehle, Saul Levmore, Barry Kolatch, Elisabeth K. Rabitsch, M.F. Elliott-Jones, Hirohiko Chiba, A. D. Apostolides, Nancy Garvey, Ballinger Publishing Company, Cambridge, Massachusetts, 1974.
36. Management of Water and Related Land Resources to Enhance the Urban Environment, Mitchell Wendell, Harvey O. Banks, Environments for Tomorrow, Inc., 1432 Laburnum Street, McLean, Virginia, July 1974.
37. Planning, Management and Accountability in Water Resources Research, James C. Warman, Thomas J. Joiner, Water Resources Research Institute, Auburn University, Auburn, Alabama, November 1974.
38. Federal-State Water Resources: What Can Universities Contribute? Proceedings of a Conference, July 1968, University of Missouri, Columbia, Missouri, Edited by William S. Butcher, Universities Council on Water Resources.
39. The Universities Role in National Water Policy, Proceedings of a Conference, July, 1970, Blacksburg, Virginia, Edited by J. Ernest Flack, Universities Council on Water Resources.
40. The Role and Relevance of University Water Research, Proceedings of a Conference, Corvallis, Oregon, Edited by Donna Koenig, Universities Council on Water Resources.

41. Changing Education Needs in the Field of Environmental Resources, Proceedings of a Conference, Amherst, Massachusetts, Edited by Nyla Thomsen, Universities Council on Water Resources, July 1972
42. The University and Public Policy in Water Resources, Proceedings of a Conference, Texas Tech University, Lubbock, Texas, Universities Council on Water Resources, 1973.
43. Energy, Environment and Water Resources, Proceedings of a Conference, Utah State University, Logan, Utah, Universities Council on Water Resources, July 1974.
44. Water Use and Coal Development in Eastern Montana: Water Availability and Demands, Richard L. Stroup, Stuart B. Townsend, Montana University Joint Water Resources Research Center, Bozeman, Montana, December 1974.
45. Nebraska Irrigation Short Course - Proceedings, January 20 - 21, 1975, Cooperative Extension Service, Institute of Agriculture and Natural Resources, University of Nebraska, Lincoln, Nebraska.
46. Feasibility of Overland Flow for Treatment of Raw Domestic Wastewater, R.E. Thomas, K. Jackson, L. Penrod, National Environmental Research Center, Office of Research and Development, U.S. Environmental Protection Agency, Corvallis, Oregon, July 1974.
47. Dissolved Silica in Laurel Lake: Influx, Uptake, and Differential Accumulation During Summer Stratification, Michael Soukup, Water Resources Research Center, University of Massachusetts, Amherst, Massachusetts, June 1974.
48. Potential Fuel Effectiveness in Industry, Elias P. Gyftopoulos, Lazaros J. Lazaridis, Thomas F. Widmer, Ballinger Publishing Company, Cambridge, MA.
49. Perspective on Power, Edward Berlin, Charles J. Cicchetti, William J. Gillen, Ballinger Publishing Company, Cambridge, Massachusetts.
50. Metropolitan Denver and South Platte River and Tributaries Colorado, Wyoming, and Nebraska, Preliminary Draft, Plan of Study, Corps of Engineers, May 1973.
51. Water Resources Development, Department of the Army, Missouri River Division, Corps of Engineers, Omaha, Nebraska, 1973.
52. A Disaggregation Model for Time Series Analysis and Synthesis, Dario Valencia R., & John C. Schaake, Jr., Ralph M. Parsons Laboratory for Water Resources and Hydrodynamics, Dept. of Civil Engineering, Massachusetts Institute of Technology, June 1972.
53. Derivation of Hydrologic Frequency Curves, Guy Leclerc, John C. Schaake, Jr., Ralph M. Parsons Laboratory for Water Resources and Hydrodynamics, Dept. of Civil Engineering, Massachusetts Institute of Technology, June 1972.
54. Industrial Developments and the Environment: Legal Reforms to Improve the Decision-making Process in Industrial Site Selection, Special Committee on Environmental Law of the American Bar Association, August 1, 1973.

55. Report of Initial, Trial Procedure for Basin and State Prioritizing of Proposed Water Resources Activities - Fiscal Period July 1975 - June 1978, Missouri River Basin Commission, Standing Committee for Development of Priority Listings, January 1974.
56. Water and Related Land Resources, Niobrara River Basin, Nebraska, Prepared by U.S. Department of Agriculture, Economic Research Service, Forest Service, Soil Conservation Service, in cooperation with Niobrara River Association, Nebraska Natural Resource Commission, 1973.
57. Municipal Water Pricing: A Case Study, Lincoln, Nebraska, David F. Mazour, College of Agriculture, University of Nebraska, Lincoln, Nebraska, 1973.
58. The Role of Citizen Advisory Groups in Water Resources Planning, Madge Ertel, Water Resources Research Center, University of Massachusetts at Amherst, July 1974.
59. Water Salvage Potentials in Utah - Volume I - Open Water Evaporation and Monolayer Suppression Potential, Trevor C. Hughes, E. Arlo Richardson, James A. Franckiewicz, Utah Water Research Laboratory, College of Engr., Utah State University, Logan, Utah, July 1974.
60. Simulation of Steady and Unsteady Flows in Channels and Rivers, Roland W. Jeppson, Utah Cooperative Fishery Unit, Utah Water Research Laboratory/ College of Engineering, Wildlife Resources/College of Natural Resources, April 1974.
61. Component Description of Sediment-Water Microcosms, James Hill IV, Donald B. Porcella, Utah Water Research Laboratory, College of Engr., Utah State University, Logan, Utah, June 1974.
62. A Study of the Effectiveness of Water Resources Planning Groups - Final Report, Daniel H. Hoggan, Jim Mulder, Sarah Jane Taylor, Dennis E. Oaks, Brent Somers, Raymond L. Richardson, Utah Water Research Laboratory, College of Engr., Utah State University, Logan, Utah, March 1974.
63. Water and Energy Self-Sufficiency, A Staff Analysis and Selected Materials on Water Use in Energy Production, U.S. Government Printing Office, Washington, D.C., 1974.
64. Design and Assembly of an Automatic Hydrologic Data Acquisition System, Peter N. Turbide, Joseph M. Colonell, Francis A. Hill, Water Resources Research Center, University of Massachusetts, Amherst, MA, June 1974.

C. Y. Thompson Library

1. Theoretical and Applied Concepts of Water Resources for Social Welfare, Edited by Donald R. Street, School of Business in cooperation with Water Resources Research Institute, Auburn University, Auburn, Alabama, November 1974.
2. Methods for Identifying and Evaluating the Nature and Extent of Non-Point Sources of Pollutants, U.S. Environmental Protection Agency, Washington, D.C.
3. Processes, Procedures, and Methods to Control Pollution Resulting from all Construction Activity, U.S. Environmental Protection Agency, Office of Air and Water Programs, Washington, D.C.
4. Evaluation of a Computer Program for GC-MS Specific Ion Monitoring, Ann L. Alford, National Environmental Research Center, Office of Research and Development, U.S. Environmental Protection Agency, Corvallis, Oregon, June 1974.
5. Catalyzed Bio-Oxidation and Tertiary Treatment of Integrated Textile Wastewaters, Alvin J. Snyder, Thomas A. Alspaugh, Office of Research and Development, U.S. Environmental Protection Agency, Washington, D.C., June 1974.
6. A Study of Soil Water Potential and Temperature in Hanford Soils, J.J.C. Hsieh A. E. Reisenauer, L. E. Brownell, BATTELLE, Pacific Northwest Laboratories, Richland, Washington, 1973.
7. An Investigation of Ion Removal from Water and Wastewater, R. J. Starkey, Jr., M. E. Kub, A. E. Binks, K. K. Jain, Office of Research and Development, U.S. Environmental Protection Agency, Washington, D.C., August 1973.
8. Pesticides in the Illinois Waters of Lake Michigan, Robert A. Schacht, Office of Research and Development, U.S. Environmental Protection Agency, Washington, D.C., January 1974.
9. Brush Control Along Agricultural Drainage Ditches: Environmental Safety and Efficacy of Herbicide Formulations, D. James Morre, Purdue University Water Resources Research Center, West Lafayette, Indiana, September 1974.
10. Connecticut Water Law: Summary and Index of Statutes, Report No. 22, Institute of Water Resources, University of Connecticut, Storrs, Connecticut, Roy Deitchman, October 1974.
11. Research Needs Related to Recycling Urban Wastewater on Land - Proceedings, Institute for Research on Land and Water Resources, The Pennsylvania State University, University Park, Pennsylvania, July 1974.
12. Rotifers as Monitors of Heavy Metal Pollution in Water, Arthur L. Buikema, Jr. John Cairns, Jr., Gail W. Sullivan, Bulletin 71, Virginia Water Resources Research Center, Virginia Polytechnic Institute and State University, Blacksburg, Virginia.
13. Research Reports supported by the Office of Water Research & Technology under the Water Resources Research Act of 1964, Received during July - September 1974, U.S. Department of the Interior, Office of Water Research and Technology, Water Resources Scientific Information Center, Washington, D.C.

14. Electronic Devices for the Capture of Aquatic Invertebrates, Joseph L. Ervin, Robert C. Ball, Technical Report No. 40, Institute of Water Research, Michigan State University, 1974.
15. Water Use and Coal Development in Eastern Montana: Water Availability, Water Demands and Economic Impacts, Paul E. Polzin, Montana University Joint Water Resources Research Center, Bozeman, Montana, November 1974.
16. The Fate of Fertilizer Nutrients as Related to Water Quality in the North Carolina Coastal Plain, R. P. Gambrell, J. W. Gilliam, S. B. Weed, Water Resources Research Institute, University of North Carolina, 124 Riddick Building, North Carolina State University, Raleigh, North Carolina, August 1974.
17. Nutrients and Eutrophication in the Pamlico River Estuary, N. C. 1971 - 1973, John E. Hobbie, Water Resources Research Institute, University of North Carolina, 124 Riddick Building, North Carolina State University, Raleigh, North Carolina, August 1974.
18. San Luis Unit - Technical Record of Design and Construction - Volume VII, U.S. Department of the Interior, Bureau of Reclamation, Denver, Colorado, November 1974.
19. Riverine Recreational Development-Mathematical Modeling - Final Report, Richard M. Shane, Department of Civil Engineering, Carnegie Institute of Technology, Carnegie-Mellon University, Pittsburgh, PA, October 1, 1974.
20. A Community Decision - Managing the Binghamton Area Flood Plain, Department of the Army, U.S. Army Engineer District, Baltimore, Corps of Engineers, P.O. Box 1715, Baltimore, Maryland.
21. Effect of Prescribed Burning on Sediment, Water Yield, and Water Quality from Dozed Juniper Lands in Central Texas, Henry A. Wright, Francis M. Churchill, W. Clark Stevens, Texas Tech University, November 1974.
22. Coastal - Estuarine and Nearshore Processes, An Annotated Bibliography, Evelyn Sinha, Bonnie McCosh, Water Resources Scientific Information Center, Office of Water Resources Research, U.S. Department of the Interior, Washington, D.C., June 1974.
23. Assessment of the Potential of Clean Fuels and Energy Technology, Elton Hall, Paul Choi, Edward Kropp, Office of Research and Development, U.S. Environmental Protection Agency, Washington, D.C., February 1974.
24. Research and Development of a Selective Algaecide to Control Nuisance Algal Growth, B. L. Prows, W. F. McIlhenny, Office of Research and Development, U.S. Environmental Protection Agency, Washington, D.C., August 1974.
25. Waste Control and Abatement in the Processing of Sweet Potatoes, Charles Smallwood, Jr., Robert S. Whitaker, Newton V. Colston, National Environmental Research Center, Office of Research and Development, U.S. Environmental Protection Agency, Corvallis, Oregon, December 1974.

26. Implementation of a Computer-Based Information System for Mass Spectral Identification, James R. Hoyland, Maynard B. Neher, Office of Research and Development, U.S. Environmental Protection Agency, Washington, D.C., June 1974.
27. Ion-Selective Membrane Electrodes for Water Pollution Monitoring, G. A. Rechnitz, Office of Research and Development, Environmental Protection Agency, Washington, D.C., August 1974.
28. Crop Insurance and Information Services to Control Use of Pesticides, John A. Miranowski, Ulrich F. W. Ernst, Francis H. Cummings, Office of Research and Development, U.S. Environmental Protection Agency, Washington, D.C., September 1974.
29. Rum Distillery Slops Treatment by Anaerobic Contact Process, T. G. Shea, E. Ramos, J. Rodriguez, G. H. Dorion, Office of Research and Development, U.S. Environmental Protection Agency, Washington, D.C., July 1974.
30. Estimating Nutrient Loadings of Lakes from Non-Point Sources, Paul D. Uttormark, John D. Chapin, Kenneth M. Green, Office of Research and Monitoring, U.S. Environmental Protection Agency, Washington, D.C., August 1974.
31. Losses of Fertilizers and Pesticides from Claypan Soils, George E. Smith, Fred D. Whitaker, Office of Research and Development, U.S. Environmental Protection Agency, Washington, D.C., July 1974.
32. Environmental Applications of Advanced Instrumental Analyses: Assistance Projects, FY '73, Ann L. Alford, National Environmental Research Center, Office of Research and Development, U.S. Environmental Protection Agency, Corvallis, Oregon, August 1974.
33. Measurement of Residual Chlorine Levels in Cooling Water -- Amperometric Method, Ronald M. Manabe, National Environmental Research Center, Office of Research and Development, U.S. Environmental Protection Agency, Corvallis, Oregon, August 1974.
34. Shrimp Canning Waste Treatment Study, A. Frank Mauldin, A. J. Szabo, Office of Research and Development, U.S. Environmental Protection Agency, Washington, D.C., June 1974.
35. University of California Saline Water Conversion Research, University of California - Berkeley, University of California - Los Angeles, July 1974.
36. Reservoir Impact Study, D. Baumann, B. Cain, R. Clark, E. Cook, R. Schaffer, N. Simkowski, J. Stribling, College of Geosciences, Texas A & M University, College Station, Texas, November 1974.
37. Heavy Metal Concentration in Fish Tissue of the Upper Clark Fork River, Wayne P. Van Meter, Montana University Joint Water Resources Research Center, Bozeman, Montana, August 1974.
38. A Regional Model of the Future Demand for Transportation: The Case of Barge Transportation, U.S. Army Engineer Institute for Water Resources, Kingman Building, Fort Belvoir, Virginia, Brion R. Sasaki, October 1974.

39. Estimating the Value and Incidence of Recreation Benefits from a Beach Erosion Control Project, Michael R. Krouse, U.S. Army Engineer Institute for Water Resources, Kingman Building, Fort Belvoir, Virginia, October 1974.
40. Sources of Phosphorus Inputs from the Atmosphere and Their Significance to Oligotrophic Lakes, Thomas J. Murphy, University of Illinois, Water Resources Center, 2535 Hydrosystems Laboratory, Urbana, Illinois, September, 1974.
41. Shallow Ground Water in Selected Areas in the Fort Union Coal Region, Ground-water Subgroup of Water Work Group, Northern Great Plains Resource Program, U.S. Department of the Interior, Geological Survey, Washington, D.C., 1974.
42. A Study of Naturally Occurring Algicides Produced by Freshwater Algae, Denny O. Harris, Harry D. Caldwell, University of Kentucky, Water Resources Research Institute, Lexington, Kentucky, December 1974.
43. Mercury Recovery From Contaminated Waste Water and Sludges, Richard Perry, National Environmental Research Center, Office of Research & Development, U.S. Environmental Protection Agency, Corvallis, Oregon, December 1974.
44. Hydrogeochemical Investigation of Selected Watersheds in Southwestern Montana, Marvin R. Miller, Montana University Joint Water Resources Center, Bozeman, Montana, December 1974.
45. Surge Facility for Wet and Dry Weather Flow Control, Harold L. Welborn, National Environmental Research Center, Office of Research and Development, U.S. Environmental Protection Agency, Cincinnati, Ohio, November 1974.
46. Displacement of Persons by Major Public Works - Anthropological Analysis of Social and Cultural Benefits and Costs from Stream Control Measures (Phase 5), Philip Drucker, Charles Robert Smith, Edward B. Reeves, University of Kentucky, Water Resources Research Institute, Lexington, Kentucky, December 1974.
47. A Conceptual Model for the Movement of Pesticides Through the Environment, James W. Gillett, James Hill, IV, Alfred W. Jarvinen, W. Peter Schoor, National Environmental Research Center, Office of Research and Development, U.S. Environmental Protection Agency, Corvallis, Oregon, December 1974.
48. Water Recycle/Reuse Possibilities: Power Plant Boiler and Cooling Systems, Guy R. Nelson, National Environmental Research Center, Office of Research and Development, U.S. Environmental Protection Agency, Corvallis, Oregon, December 1974.
49. Continuous In-Plant Hot-Gas Blanching of Vegetables, Dr. Jack W. Ralls, Mr. Walter A. Mercer, National Environmental Research Center, Office of Research & Development, U.S. Environmental Protection Agency, Corvallis, Oregon, December 1974.
50. Cost of Transporting Water by Pipeline, Lockwood, Andrews and Newnam, Inc., Texas Water Development Board, Post Office Box 12386, Austin, Texas, March 1967.

51. Flood Damage Abatement in Kentucky, Francis H. Parker, Kentucky Department of Commerce, Division of Planning, October 1964.
52. Effects of Temperature on the Toxicity of Oil Refinery Waste, Sodium Chlorate, and Treated Sewage to Fathead Minnows, Curt C. Shifrer, E. Joe Middlebrooks, Donald B. Porcella, William F. Sigler, Utah Water Research Laboratory, College of Engineering, Utah State University, Logan, Utah, September 1974.
53. A continuous Flow Kinetic Model to Predict the Effects of Temperature on the Toxicity of Waste to Algae, James H. Reynolds, E. Joe Middlebrooks, Donald B. Porcella, William J. Grenney, Utah Water Research Laboratory, College of Engr., Utah State University, Logan, Utah, June 1974.
54. Measurement of Soil Moisture by Use of the Latent Heat of Vaporization, Duane G. Chadwick, Utah Water Research Laboratory, College of Engineering, Utah State University, Logan, Utah, July 1974.
55. Effect of Temperature on Algal Removal by Alum Coagulation, Muhammad Anis H. Al-Layla, E. Joe Middlebrooks, Donald B. Porcella, Utah Water Research Laboratory, College of Engineering, Utah State University, Logan, Utah, July 1974.
56. Slope Stability of Overburden Spoil Dumps from Surface Phosphate Mines in Southeastern Idaho, Roland W. Jeppson, Robert W. Hill, C. Earl Israelsen, Utah Water Research Laboratory, College of Engr., Utah State University, Logan, Utah, April 1974.
57. Ninth Annual Conference on Water Resources Research April 10 - 11, 1974, U.S. Department of the Interior, Office of Water Research and Technology, Washington, D.C.
58. Water Pollution Control Action--Reaction--Inaction, John S. Gladwell, William H. Funk, Proceedings of a joint water resources seminar of the University of Idaho and Washington State University, Spring 1974, Water Resources Research Institute, Univ. of Idaho, Moscow, Idaho.
59. Hydraulic and Flow Studies Related to Sediment Transport, Kentucky River, Kentucky, Bruce R. Moore, Michael R. Short, Thomas Wachs, University of Kentucky, Water Resources Research Institute, Lexington, Kentucky, 1974.

QUESTIONS AND INQUIRIES

Newsletter items and inquiries should be sent to: Jeanne Enevoldsen, Editor, Nebraska Water Resources Research Institute, 212 Ag. Engineering Bldg., East Campus, University of Nebraska, Lincoln, NE 68503; or phone (402) 472-3307.

NEWSLETTER ITEMS SOLICITED

The Water Current Newsletter will publish, without charge, announcements, programs for up-coming conferences, employment opportunities or other newsworthy items on hydrology, water resources or related topics. To insure timely publication, submit items before the 25th of every month.