

EIGHTEENTH SOUTHERN WATER RESOURCES AND POLLUTION CONTROL CONFERENCE

North Carolina State University will host the 18th Southern Water Resources Conference on April 9th and 10th in Raleigh. The two-day meeting will be held in the Erdahl-Cloyd Union. Registration will start at 8:30 A. M. on April 9th and the Conference will open at 10:00 A. M. with a welcome by Chancellor John T. Caldwell.

The program is summarized as follows:

April 9th - Morning

Industry's Role in Environmental Control

Ralph E. Fuhrman, Executive Secretary, Water Pollution Control Federation, Washington, D. C.

Constructive Management for the Estuaries

Eugene T. Jensen, Regional Director, Middle Atlantic Region, Federal Water Pollution Control Administration, United States Department of the Interior, Charlottesville, Virginia

Luncheon

Food Processing Waste Problem - Today and Tomorrow

Walter A. Mercer, Associate Director of National Cannery Association Research Laboratories and Manager of the Berkeley Laboratory, Berkeley, California

Afternoon

Managing Water and Waste By Changing In-Plant Processes: Poultry Processing, An Example

W. M. Crosswhite, Associate Professor of Economics, North Carolina State University, Raleigh, N. C.

Waste Treatment and Control at the Live Oak Poultry Processing Plant

W. J. Camp, Chief Engineer, Gold Kist Poultry Company, Atlanta, Georgia

Pilot Plant Studies of the Treatment of Combined Wastewater from Domestic Sources, A Major Food Processing Mill, A Poultry Processing Plant, and Canneries

C. A. Willis, Consulting Engineer, O'Brien and Gere, Incorporated, Charlotte, N. C.

Federal Programs in Wastes from Industrial Processing of Raw Agricultural Products

S. R. Hoover, Assistant Deputy Administrator. Agricultural Research Service, United States Department of Agriculture, Washington, D. C.

Testing a Water Monitoring System for Pesticides in North Carolina

T. J. Sheets, Director, Pesticide Residue Research Laboratory, North Carolina State University, Raleigh, N. C.

Banquet

Meeting the Challenge of Water Pollution

The Honorable Joe G. Moore, Jr., Commissioner, Federal Water Pollution Control Administration, United States Department of the Interior, Washington, D. C.

April 10th - Morning

The Contribution of In-Plant Controls and Process Modifications to Pollution Abatement in the Pulping Industry

P. J. Kleppe, Research Associate, Department of Wood and Paper Science, North Carolina State University, Raleigh, N. C.

Recovery and Incineration of Kraft Mill Spent Liquor by the Fluidized Bed Process

D. C. Lea, Director of Research and Development, and J. H. Tomlinson, Supervisor of Environmental Control, Ecusta Paper Division, Olin Mathieson Chemical Corporation, Pisgah Forest, N. C.

Pollution Control for the Weyerhaeuser Company Plant at New Bern, N. C.

E. P. Haydu, Manager, Air and Water Quality, Weyerhaeuser Company, Longview, Washington

Modification and Enlargement of Waste Treatment Facilities at Cannon Mills, Kannapolis, N. C.

J. L. Brown, Jr., Sanitary Engineer, Cannon Mills Company, Kannapolis, N. C.

Water Pollution Abatement at American Enka Corporation

G. W. Allman and B. V. Hill, American Enka Corporation, Enka, N. C.

Parallel Treatment Studies of Textile Mill Waste

J. Pangle, Jr., Research Engineer, Dan River Mills, Danville, Virginia

Luncheon

Economic Measures for Dealing with Pollution

H. H. Macaulay, Alumni Professor of Economics, Clemson University, Clemson, S. C.

Afternoon

The Metropolitan Sewerage District of Buncombe County, North Carolina

G. Johnson, Engineer-Manager, Metropolitan Sewerage District of Buncombe County, Asheville, N. C.

Potential of the Ground Environment for Water Supply and Pollution Abatement, With Special Reference to the Southern States

H. E. LeGrand, Research Hydrologist, Geological Survey, United States Department of the Interior, Raleigh, N. C.

North Carolina Water Plan, A Progress Report

T. G. Harton, Chief, Planning Division, Department of Water and Air Resources, State of North Carolina, Raleigh, N. C.

Urban Hydrology Wastewater Treatment and Stream Pollution

E. H. Bryan, Professor, Department of Civil Engineering, Duke University, Durham, N. C.

Biological and Chemical Changes in Activated Sludge During
Aerobic Digestion

C. W. Randall, Assistant Professor, F. M. Saunders, Graduate Student, P. H. King, Associate Professor, Department of Civil Engineering, Virginia Polytechnic Institute, Blacksburg, Virginia

MOORE RESIGNS AS FEDERAL POLLUTION CHIEF

Joe Moore submitted his resignation March 11 as Commissioner, Federal Water Pollution Control Administration, upon being advised by Secretary Hickel that he wanted to appoint a new Commissioner.

David Dominick, a 31-year old legislative assistant to Senator Hanson (R-Wyo.) is reported to be Moore's replacement. Dominick is an attorney from Cody, Wyoming, who has been active in Republican party affairs.

RESEARCH WORKSHOP AT KINSTON

The Water Resources Research Institute sponsored a one-day Workshop on Water Resource Problems and Research Needs Related to Agriculture in the Coastal Plains of North Carolina in Kinston on March 14. The thirty-four participants included representatives from North Carolina State University, the Soil Conservation Service, North Carolina Wildlife Resources Commission, North Carolina Department of Water and Air Resources, North Carolina Association of Soil and Water Conservation Districts, State Board of Health, County Extension Chairman, Coastal Plains Regional Planning Commission, State Planning Task Force, State Department of Conservation and Development, Corps of Engineers, Geological Survey, Forest Service, and the Riegel Pulp and Paper Company.

The objectives of the Workshop were:

1. To explore and characterize problems associated with:
 - Land drainage,
 - Irrigation,
 - Agricultural chemicals,
 - Animal and human wastes, and
 - Farm water supplies.
2. To identify and define specific research needs directed to recognized problems.
3. To suggest priorities among identified research needs.

A summary of the principal conclusions and recommendations of the Workshop is now being prepared. After review by the participants, it will be released to the general public.

PROGRESS IN REMOTE SENSING FOR HYDROLOGIC STUDIES

The annual report of the Federal Council for Science and Technology on the

Federal Water Resources Research Program for Fiscal Year 1969 indicated that recent improvements in remote sensing devices by NASA and others have resulted in uncovering a number of promising means for data acquisition in connection with:

1. Pollution
2. Underwater discharge of groundwater into inland and coastal waters
3. Ice conditions in waterways
4. Evapotranspiration studies
5. Hydrologic systems analysis of lake systems and estuaries
6. Basin shape, drainage patterns, relief, and soil conditions that influence runoff and stream flow
7. Current patterns, temperatures and biological characteristics of lakes, rivers, and estuaries
8. Areal extent of large snow fields

Other highlights of the FCST report were:

1. Experiments with cotton irrigations in New Mexico showing that cotton on subirrigation grew faster, matured earlier, and yielded about 18% more cotton on 14% less water than on surface-irrigated plots.
2. Research on the reuse of sodium hydroxide in the wet-processing of textiles. "By focusing on low-cost, in-plant modification for recovery of caustic soda, promising methods are being developed," the report said, "whereby the recovered caustic material can be reused, stream pollution can be reduced, and textile plants can increase their profits."
3. Strengthening of Agricultural Research Service programs to include studies of waste water renovation by spreading of treated sewage for groundwater recharge.
4. The development of the granular activated carbon process as an adjunct to sewage treatment for full-scale applications requiring the removal of residual organic materials at a cost of 8.3 cents per 1000 gallons.

A PLAN FOR THE COASTAL ZONE

After nearly two years of study the Commission on Marine Science, Engineering and Resources under the chairmanship of Dr. Julius A. Stratton, released its final report to the President and Congress early this year. The Commission studied a wide range of marine problems from preservation of the coastal shores and estuaries to more effective use of the "vast resources that lie within and below the sea." Among a multitude of recommendations, the plan for national action included the following suggestions relative to the nation's estuaries and coastal zone:

Primary responsibility for managing the coastal zone should remain with the States--but that Federal legislation be enacted to encourage and support the creation of State Coastal Zone Authorities to carry out specified national objectives with regard to the zone. The Authorities should have clear powers to plan and regulate land and water uses and to acquire and develop land in the coastal zone. The legislation should give NOAA* primary responsibility for working with the States.

*Recommended new agency to be entitled "The National Oceanic and Atmospheric Agency"(NOAA).

Designation and support of university-affiliated Coastal Zone Laboratories to work on regional and local problems. These labs will perform services like those of agricultural research stations and extension services. They should be developed and supported by NOAA. In addition to the labs, representative coastal and estuarine sites should be set up "as natural preserves." There, necessary studies should be conducted "to establish a proper base from which the effects of man's activities can be determined and ultimately predicted."

Coastal waters have been polluted by wastes dumped into the rivers, the filling of marshlands, and the spreading of spoil from dredging. Research into these pollution problems must be speeded, and methods devised to handle waste collection and treatment. U.S. labs, universities, and industry must concentrate on this purpose. The work should begin "far upstream."

The plans for the estuaries and coastal zones will take time. Meanwhile, existing U.S. and State laws on water quality must be enforced strictly. States must move very slowly before approving operations that may alter the coastal zone until more information about the effects of these operations are known--and until State plans can be developed.

FEDERAL INSTALLATION POLLUTION CONTROL LAGS

A report released by the House Committee on Government Operations points out that budgetary stringency "resulting from the Vietnam conflict, and other competing demands for the Federal dollar" is hampering the Government's goal that remedial water pollution control facilities be completed by the end of fiscal year 1972.

Entitled "1966-68 Survey of Water Pollution Control and Abatement at Federal Installations," the report is based on a study by the Natural Resources and Power Subcommittee during the 90th Congress. It includes 1,954 facilities which have been or must be constructed to bring the Federal installations at which they are located into compliance with Federal directives for control of water pollution. The report also lists the amounts of their sanitary and industrial waste discharges; and the costs of facilities on which construction had been completed or was in progress in calendar years 1966-68.

Chairman Reuss pointed out that "the promulgation of State water quality standards increases the importance of the Federal Government's leadership role in setting an example for municipalities and industry by providing adequate water pollution control facilities. President Johnson's Executive Order on this matter was an excellent start. It is essential that it be fully and expeditiously complied with."

The committee report states that the Federal Water Pollution Control Administration's Division of Federal Activities Coordination "has not effectively performed its mission," and recommends that "more and better qualified personnel" be assigned to "more efficiently and effectively" accomplish the task of cleaning up water pollution at the Federal installations.

THE HUMAN ENVIRONMENT

On March 6, Senator Muskie's Subcommittee on Intergovernmental Relations heard testimony from Dean Harvey Brooks of Harvard, Professor Verome Weisner of M. I. T., Dean Chauncey Starr of U. C. L. A. and Dr. H. A. Simon, Carnegie-Mellon University, stressing the "exponential rate" of environmental degradation and the importance of effective programs for the preservation of environmental quality. The hearings are related to Senate Resolution 78 to create a Select Senate Committee on Technology and the Human Environment.

USGS REPORT ON WATER RESOURCES CONDITIONS IN NORTH CAROLINA

The February report by USGS on Water Resources Conditions in North Carolina disclosed stream flow above normal in the mountains and western Piedmont, slightly below normal in the eastern Piedmont, and deficient (lower 25% of record) in the Coastal Plain.

Ground water levels in selected observation wells rose throughout the state. They were above average in the mountains and Coastal Plain and below average in the Piedmont.

FEDERAL GRANTS FOR WASTE TREATMENT IN NORTH CAROLINA

The following grants for the construction of municipal waste treatment works in North Carolina have been announced by FWPCA:

	<u>Grant</u>	<u>Total Project</u>	
Durham	\$500,000	\$1,986,000	Intercepting Sewers Two Secondary Treatment Plants Two Tertiary Treatment Plants
Kannapolis	\$289,860	\$1,016,200	Intercepting Sewers
Lexington	\$410,100	\$1,367,000	Interceptor Sewer and Treatment Plant Expansion

WATER RESOURCES LEGISLATION IN THE NORTH CAROLINA LEGISLATURE

Bills Introduced

NONE

WATER RESOURCES LEGISLATION IN THE CONGRESS

Bills Introduced

- H.R. 6750 To amend the Fish and Wildlife Coordination Act to provide for the establishment of a council on Environmental Quality, and for other purposes.
- H.R. 6751 To amend the Federal Water Pollution Control Act to establish standards and programs to abate and control pollution by synthetic detergents.
- H.R. 6772 To amend the Federal Water Pollution Control Act to prevent pollution of water by oil, and to establish a revolving fund for the removal of oil discharged into or upon the navigable waters of the United States or adjoining shorelines.
- H.R. 6794 To amend the Oil Pollution Act, 1924, for the purpose of controlling oil
- H.R. 7325 pollution from vessels and for other purposes.

- H.R. 7011 To amend the Federal Water Pollution Control Act to authorize additional grants for the construction of facilities to remove pollution wastes from the Lake Michigan watershed.
- H.R. 7014 To amend the Internal Revenue Code of 1954 to allow an incentive tax credit for a part of the cost of constructing or otherwise providing facilities for the control of water or air pollution, and to permit the amortization of such cost within a period of from 1 to 5 years.
- H.R. 7367 To amend the Federal Power Act in order to provide for the regulation of the amount of project reservoir storage capacity that may be allotted for water quality control.
S. 1093
- H.R. 7602 Granting the consent of Congress to the States of Maryland, Delaware, and Virginia to negotiate and enter into a compact relating to the pollution of Chesapeake Bay.
- H.R. 7613 To amend the Federal Water Pollution Control Act, as amended, relating to the construction of waste treatment works, and for other purposes.
- H.R. 7907 To amend the Fish and Wildlife Act of 1956 to provide technical and financial assistance to the commercial fishing industry in meeting the requirements of the Wholesome Fish and Fishery Products Act of 1969.
S. 1091
- H.R. 7923 To authorize the Secretary of the Interior to conduct investigations, studies, surveys, and research relating to the Nation's ecological systems, natural resources, and environmental quality, and to establish a Council on Environmental Quality.
H.R. 8006
S. 1075
- S. 1101 To amend the Watershed Protection and Flood Prevention Act, as amended, so as to permit Federal cost sharing for certain uses of water stored in reservoir structures constructed or modified under such act.
- S. 1151 To provide protection for the fish resources of the United States including the fresh water and marine fish cultural industries against the introduction and dissemination of diseases of fish and shellfish, and for other purposes.

NEW PUBLICATIONS RECEIVED BY THE INSTITUTE

(These may be borrowed from the Institute for a two-week period or may be ordered from the organization issuing the publication.)

Water Resources Planning

"Computerized System for Wyoming Surface Water Records," September 1968, State Water Plan Report No. 1, Water Resources Series No. 13, Water Resources Research Institute, University of Wyoming, Laramie, Wyoming.

"Economic Analysis of the Development Potential of the Commercial Fisheries of the Coastal Plains Region," J. C. Hite and J. M. Stepp, Department of Agricultural Experiment Station, Clemson University, Clemson, South Carolina.

"Summary of the Geology and Ground-Water Resources of Pitt County, North Carolina," Carlton T. Sumsion, Hydrologic Investigations Atlas HA-291, U. S. Geological Survey, 1968, Washington, D. C.

"The Law of Water in New Jersey," Eva Morreale Hanks, Professor of Law, Rutgers School of Law.

"The Legal Implications of Atmospheric Water Resources Development and Management," prepared by: Weather Modification Law Project Staff, University of Arizona, College of Law, Ray Jay Davis, Principal Investigator, October 1968.

"Estimated Use of Water in the United States," Geological Survey Circular 556, by C. Richard Murray, Washington, D. C. 1968.

"Water Administration . . . A Suggested Institutional Model," by Clayton K. Yeutter, Department of Agricultural Economics, report No. 46, Nebraska Water Resources Research Institute, 212 Agricultural Engineering, University of Nebraska, East Campus, Lincoln, Nebraska 68503.

"Water Law Bibliography 1847-1965," Jacobstein and Mersky, Source Book on U. S. Water and Irrigation Studies: Legal, Economic and Political, Jefferson Law Book Company, Silver Spring, Maryland 1969.

"Water Resources Development in North Carolina," by the U. S. Army Corps of Engineers, U. S. Army Engineer Division, South Atlantic, 1 January 1969.

"Civil Works-Water Resources Development Program," Fiscal Year 1969, North Carolina Department of Water and Air Resources, Raleigh, North Carolina

Water Quality Management

"Development of Biological Indices to Pollution Levels in Streams Affected by Acid Mine Drainage and Oil Field Brine Wastes," February 1969, State of Ohio Water Resources Center, Ohio State University.

"Agricultural Utilization of Sewage Effluent and Sludge," An Annotated Bibliography, January 1968, FWPCA, U. S. Department of the Interior, by James P. Law, Jr., Research Soil Scientist, Water Quality Control Research Program, Robert S. Kerr Water Research Center, Ada, Oklahoma.

"Cooling Water Studies for Edison Electric Institute," The Johns Hopkins University, Baltimore, Maryland 21218.

(1) "Heat Exchange in the Environment," J. E. Edinger and J. C. Geyer, June 1, 1965.

(2) "Water Temperatures and Aquatic Life," C. B. Wurtz and C. E. Renn, June 1, 1965.

(3) "Field Sites and Survey Methods," J. C. Geyer, et. al., June, 1968.

"The Occurrence and Characteristics of Ground-Water Contamination in Massachusetts," Ward S. Motts, and Marvin Saines, Water Resources Research Center, Publication No. 7, University of Massachusetts, Amherst.

"Artificial Mixing of Density-Stratified Fluids: A Laboratory Investigation," by Lucien M. Brush, Jr., Francis C. McMichael, and Chin Y. Kuo, Research Project B-005-NJ, Water Resources Research Institute, Princeton, New Jersey.

Water Quantity Management

"Floods on Small Streams in North Carolina Probable Magnitude and Frequency," Geological Survey Circular 517, Raleigh, North Carolina.

"Floods on Boone and Winkler Creeks at Boone, North Carolina," by William J. Haire, Hydrologic Investigations Atlas HA-323, U. S. Geological Survey, Washington, D.C. 1968.

"Flood Inundation and Effects of Urbanization in Metropolitan Charlotte North Carolina," Geological Survey Water-Supply Paper 1591-C, Raleigh, North Carolina.

"Project Skywater," 1968 Annual Report, Vol. 1: Summary, U. S. Department of the Interior, Bureau of Reclamation, Office of Atmospheric Water Resources, January 1969.

"Project Skywater," 1968 Annual Report, Vol. II: Contractor Reports, U. S. Department of the Interior, Bureau of Reclamation, Office of Atmospheric Water Resources, January 1969

"Rainfall Interception by Annual Grass and Chaparral . . . losses compared," Forest Service, U. S. Department of Agriculture, Pacific Southwest Forest and Range Experiment Station, P. O. Box 245, Berkeley, California 94701.

"Urban Water Resources Research," A Study of American Society of Civil Engineers, 345 E. 47th Street, New York, New York 10017.

"ASCE Urban Water Resources Research Program," American Society of Civil Engineers, 345 East 47th Street, New York, New York 10017.

Tech. Memo. No. 1 - "Northwood Gaging Installation, Baltimore - Instrumentation and Data," L. S. Tucker, August 1, 1968.

Tech. Memo. No. 2 - "Oakdale Gaging Installation, Chicago - Instrumentation and Data," L. S. Tucker, August 15, 1968.

Tech. Memo. No. 3 - "Response Characteristics of Urban Water Resource Data Systems," J. C. Shaake, Jr., August, 1968.

Tech. Memo. No. 4 - "A Critical Review of Methods of Measuring Discharge Within a Sewer Pipe," H. G. Wenzel, Jr., September, 1968.

Tech. Memo. No. 5 - "The Nature of Changes in Urban Watersheds and Their Importance in the Decades Ahead," M. B. McPherson, December, 1968.

Miscellaneous

Fourth Annual Report, University of Idaho Water Resources Research Institute, "Water for Idaho," September 1968, Moscow, Idaho.

"Excerpts from the 1968 Annual Report of the Center," Publication No. 8, Water Resources Research Center, University of Massachusetts, Amherst.

"Catch a Million Fish," by Jim Tyler and Mike McKenzie, published by Division of Commercial and Sports Fisheries, N. C. Department of Conservation and Development, 1969.

"Federal Water Resources Research Program for Fiscal Year 1969," Federal Council for Science and Technology, Office of Science and Technology, Executive Office of the President, Washington, D. C. 20402, August 1968 (Price 35¢)

"Our Nation and the Sea," Report of the Commission on Marine Science, Engineering and Resources (For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. 20402 - (Price \$2.75)

"The Tsunami of the Alaskan Earthquake, 1964: Engineering Evaluation," by Basil W. Wilson and Alf Tørun, Technical Memorandum No. 25, May 1968, U. S. Army Corps of Engineers, Coastal Engineering Research Center, 5201 Little Falls Road, N.W., Washington, D. C. 20016.

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