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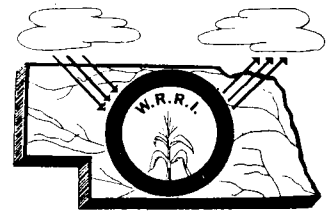
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WATER RESOURCES NEWS

NEBRASKA WATER RESOURCES RESEARCH INSTITUTE
212 AGRICULTURAL ENGINEERING BUILDING

THE UNIVERSITY OF NEBRASKA
LINCOLN, NEBRASKA 68503



Volume 3 Number 3

March 1971

OFFICE OF WATER RESOURCES RESEARCH ISSUES SIXTH ANNUAL REPORT

The 1970 annual report of the Office of Water Resources has been transmitted to Congress, Secretary of the Interior Rogers C. B. Morton recently announced. Activities and accomplishments summarized in the report are:

- *Research work of the Louisiana Institute has provided practical methods for solving problems of salt water encroaching into a municipal well field.

- *A study by the New Jersey Institute indicates that special aerator systems in the Passaic River would cost only about one-fourth as much to accomplish the same effect as present advanced waste treatment measures.

- *An ongoing study by the Conservation Foundation and the University of Miami is exploring ways in which development of an area may be accomplished without degrading the natural environment. Based on work completed thus far, one development plan already has been so modified as to retain certain natural environmental values.

- *Over 1,100 research project completion reports, publications and graduate theses were produced during 1970.

- *To aid in meeting future skilled manpower requirements, more than 2,000 students received training while serving as research project assistants.

- *OWRR's Water Resources Scientific Information Center published and distributed abstracts of nearly 13,000 water research accomplishment reports, and established an automated system for retrieving information from its complete file of abstracts.

This Federal-State program of water research and training is administered at the National level by Interior through the Office of Water Resources Research. OWRR is one of seven agencies under the supervision of James R. Smith, Assistant Secretary for Water and Power Resources.

SYMPOSIUM ON STATISTICAL HYDROLOGY

The subject symposium will be held in Tucson, Arizona, August 31 through September 2, 1971.

It is sponsored by the International Association for Statistics in Physical Sciences and the U.S. Department of Agriculture, in cooperation with the University of Arizona. General topics for the symposium include stochastic models for precipitation; stochastic models of sediment production, transport, and sedimentation; stochastic models of runoff; estimating extreme values; optimization techniques in modeling; and point sampling requirements for describing spatial variations of hydrologic parameters. Deadline for paper proposals, title and abstract, is May 1, 1971. Only a limited number of papers for complete presentation can now be accepted. Additional papers will be summarized at the meeting and published in Symposium Proceedings.

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GUIDE FOR INSTRUCTING TEENAGERS ON ENVIRONMENTAL PROTECTION

A 520-page classroom guide to instruct teenagers in the knowledge and skills of environmental protection has been developed for use in secondary schools, according to William D. Ruckelshaus, Administrator of the Environmental Protection Agency.

The guide entitled "A Curriculum Activities Guide to Water Pollution and Environmental Studies," was prepared by teachers and students from public and private schools during the summers of 1969 and 1970 at Tilton School, Tilton, New Hampshire. The project was supported by a Federal Water Quality Administration grant and a Ford Foundation grant. A total of fifty-seven teachers and sixty-eight students participated in the project.

Ruckelshaus said the guide was "by far the most complete and accurate of the few environmental curricula in use." The available supply of the guide has been distributed nationally by the Training Grants Branch of FWQA. Comments are being requested from school systems, universities, science educators, and scientific and conservation organizations for possible revisions later.

SALMON RETURN TO ONCE-POLLUTED STREAM

Salmon have returned to the Willamette River of Oregon, once so polluted that zero-oxygen blocks essentially eliminated the salmon fishing. Commercial Fisheries Review reports that the 1970 spawning run of coho and fall chinook salmon is greater than all previous migrations.

Oregon has implemented a plan for the development of a 200-mile Willamette River Greenway including a river part system of

recreation camps, river access system with boat launching sites, multi-purpose trails, scenic roads, and state and local parks. Federal Land and Water Conservation Funds have made available \$2.1 million for the purchase of land, scenic and recreation use easements. The total area is 22,443 acres.

WATER BANK ACT OF 1970

The Water Bank Act, P.L. 91-559, was one of the last pieces of legislation enacted by the 91st Congress.

The Act authorizes a federal program to prevent the serious loss of wetlands and to preserve, restore, and improve such lands which are to be administered by the Secretary of Agriculture. This will begin on July 1, 1971.

The Secretary has the authority to enter into agreements with landowners and operators in important migratory waterfowl nesting and breeding areas for the conservation of water on specified farm wetlands. Agreements shall be for periods of ten years. Payments are authorized.

NEBRASKA SECTION OF AMERICAN WATER RESOURCES ASSOCIATION FORMED

On March 9, 1971 a Nebraska section of the American Water Resources Association was established. The objectives of this Association are to provide a common forum in which to meet, discuss, exchange ideas, and assist all scientists, educators, scholars, technologists,

engineers, legislators, lawyers, planners, research workers, users, consultants, and other persons likewise concerned with the conservation, development, management, and utilization of fresh and marine waters and related resources together with their environmental aspects.

Officers elected are the following:

President - Dr. Dean Manbeck, Associate Professor, Agricultural Engr. Department, University of Nebraska.

President-Elect - Mr. Richard Dirmeyer, General Manager, Central Nebraska Public Power and Irrigation District.

Vice-President - Mr. Clarence Lewis, Bureau of Reclamation, Grand Island, NE.

Secretary-Treasurer - Mr. Kenneth MacKichan, District Chief, U.S. Geological Survey.

REPORT TO THE CONGRESS ON INDUSTRIAL WATER POLLUTION

A recent report, "Controlling Industrial Water Pollution--Progress and Problems," by the Comptroller General to the Congress, covering a study of fourteen waterways in five states--Georgia, Maine, Michigan, Ohio, and Washington --concluded:

More needs to be done in the reduction of pollution from industrial wastes.

Achievements vary from state to state.

Where state agencies had

limited funds and staff, personnel spent much time on the review of engineering plans for waste treatment facilities but did not perform other important activities, such as plant visits and water quality monitoring.

Effective planning has been hampered by lack of data on the types and extent of pollution from industrial wastes and lack of knowledge of effects on water quality.

Enforcement action is hampered by a lack of: Information upon which to act; Authority to enforce specific effluent restrictions, and; Authority to enforce dates set for implementing abatement measures without showing a violation of water quality standards or danger to health and welfare.

The report recommended that the Environmental Protection Agency (EPA) should: encourage the states to strengthen their staffs; develop, in cooperation with the states, an inventory of industrial sources of pollution; obtain data on trends in water quality and on progress being made by industry in meeting target dates for the construction of abatement facilities; and provide additional guidance to the Agency's regional personnel on enforcement procedures.

Recommendations to the Congress included: Federal authority to establish and enforce specific effluent restrictions; Expansion of Federal jurisdiction to all navigable waters, both interstate and intrastate; Failure to meet implementation schedules being considered cause for enforcement action; National

effluent charges to apply to all substances, other than domestic sewage, that detract from the quality of the water; Additional grant funds to states for administering water pollution control programs. Factors to be considered in awarding additional grant funds include whether a state is providing adequate manpower and is instituting measures for recruiting and developing personnel.

ENVIRONMENTAL PROGRAMS GET SIGNIFICANT BUDGET INCREASES

The Office of Management and Budget has made a special analysis of funding for Federal environmental programs which shows that the agencies concerned would get significant increases in fiscal 1972 over 1970 and 1971.

The special analysis is broken down into four major categories: pollution control and abatement activities, sewer and water programs, selected activities to protect and enhance the environment, and activities to understand, describe, and predict environmental conditions.

For pollution control and abatement, the President is seeking a 71 percent increase in budget authority over fiscal 1971, or to \$2,014,000,000. Eleven Federal agencies are involved directly, with some others to a lesser degree. Of the types of pollution, water pollution gets 80 percent of the total.

The Federal programs of grants and loans for the construction of sewer and water systems are to be

increased by 17 percent in outlays although the budget authority and obligations for these purposes will decline as they are merged into special revenue-sharing programs. The total outlay is \$446,000,000.

Selected environmental enhancement activities are up 27 percent in budget authority, 36 percent in obligations, and 16 percent in outlays. These include grants to State and local governments for acquiring land for recreational purposes, for preserving open space and historic properties, and for fish and wildlife refuges. Aid also is provided for research and planning, construction and maintenance of recreational facilities and wildlife refuges, and for promoting highway beautification. Six agencies are involved with a total outlay of \$846,000,000.

A ten percent increase in budget authority, and 13 percent increase in outlays are proposed for understanding, describing, and predicting the environment. The total outlay is estimated at \$917,000,000. More than half of the funding for this category supports environmental observation and measurement to describe and predict weather and ocean conditions and disturbances such as earthquakes. (Conservation Report)

NEW NATIONAL ENVIRONMENTAL LABORATORY PROPOSED

A National Environmental Laboratory, suggested by Senators Howard H. Baker, Tennessee, and Edmund S. Muskie, Maine, and supported by 27 other Senators,

would be empowered to establish as many as four large physical facilities "where the best minds in the country could be brought together to undertake research and development, technology assessment, and other multidisciplinary work relating to the environment," Baker said in introducing S.1113 on March 4.

Many public and private agencies and individuals are making significant contributions to environmental research, but this very fragmentation tends to reduce the possibilities for coordination between the groups doing such work. Studies undertaken by an ad hoc task force as the Oak Ridge National Laboratory, at the request of Senators Baker and Muskie, concluded that there does not exist a single, multidisciplinary structure capable of the kind of broad examination of environmental matters that is so clearly needed and led to introduction of a similar proposal to the 91st Congress.

The possibility that the work which would be carried out by such a new laboratory would duplicate work already being done is "a legitimate concern". This is a problem which would be addressed in hearings on the bill, expected to be held in midspring before the Subcommittee on Air and Water Pollution, of which Muskie is chairman and Baker a member. The proposal was drafted with this concern in mind, Baker said, with provisions designed to provide close cooperation and interaction with others engaged in related work.

MUSKIE HEARINGS TO RESHAPE WATER POLLUTION LEGISLATION

Starting March 15, proposed legislation that would reshape the Federal water pollution control program for years ahead was considered during 8 days of hearings by the Senate Subcommittee on Air and Water Pollution.

Major issues before the panel included: (1) increased authorizations for grants to states for construction of municipal waste treatment facilities; (2) revision of present rigid, statutory formula for allocating Federal funds to states for treatment plant construction; (3) creation of Environmental Financing Authority to aid municipalities finance their share of waste treatment construction costs; (4) stiffer fines for polluters who violate law; (5) extension of Federal-state water quality standards to all navigable waters, including intrastate, with requirement that standards include specific effluent limitations for individual sources of pollution; (6) authorization of legal actions by citizens against polluters.

SENATE HEARING ON AGRICULTURAL POLLUTION SET FOR KANSAS CITY, APRIL 2

Problems of water pollution from agricultural sources will be examined at public hearing held by Senate Subcommittee on Air and Water Pollution in Kansas City, Missouri, April 2. Vice-Chairman of the subcommittee, Senator

Thomas F. Eagleton, said pollution from agricultural runoff, pesticides, fertilizers and disposal of wastes from feedlots will be studied and proposed solutions analyzed for impact on agricultural economy and water quality. The Kansas City hearing is part of a series on specific problems of water pollution control.

PROFESSOR FOX CITES USE OF WATER PROGRAMS TO "INFLUENCE PATTERN OF LAND USE IN URBANIZING REGIONS"

A recent seminar held at Cincinnati on water and related land resources management, sponsored by the Interstate Conference on Water Problems and the U.S. Water Resources Council, produced varying opinions on the future of regional planning at the University. Irvin K. Fox, professor of regional planning at the University of Wisconsin, said water resources planning in the future will be shaped by several "emerging conceptions": "Most people today attach little importance to water programs as a means of controlling monopoly (of railroads) or of fostering new settlements. The emphasis upon water as a stimulus to regional economic development is declining. But new influences have come to the fore. These relate to water areas as amenities, the influence of water programs upon income distribution, and the use of water programs to influence the pattern of land use in urbanizing regions."

Sydney Howe, President of

the Conservation Foundation, emphasized that conservationists will scrutinize future water projects even more closely than they have in the past: "Environmentalists are accused of liking ducks, or fish, or other living things, more than people. This is an unfair comparison. What the responsible conservationists are saying is that people -- our society or its heirs -- will derive more from a duck or a fish, per se, than from a ditch or dam, per se." Howe also urged that project planning function be removed from water resource agencies and placed in an independent agency. President Nixon would then place the Corps' civil works planning functions in a new Department of Natural Resources.

NEW WATER RESOURCE GUIDELINES STILL IN AIR

In the face of opposition from the Office of Management and Budget (O.M.B.), the U.S. Water Resources Council's proposed new water resources guidelines are still in a state of limbo. In a recent eight-page article that appeared in The National Journal, it pointed out that "the stakes are high, and the little-publicized controversy holds far more significance for the Federal public works program than President Nixon's headline-grabbing cancellation on January 19 of the Cross-Florida Barge Canal***." The Water Resources Council wants the evaluation expanded to include such objectives as environmental enhancement, regional development, and social

well being. O.M.B. wants to retain economic efficiency (benefit/cost analysis) as the sole criterion.

Economists associated with Resources for the Future (R.F.F.), have opposed the new criteria. An article in R.F.F.'s latest Resources said inclusion of indices of performance other than economic efficiency could be detrimental: "As a result, it is no longer possible to speak of optimizing project design or ordering projects in unambiguous preference ordering, and the door is left open to the possibility of even greater confusion and manipulation by special interests than existed under the single national income criterion." The National Journal quoted W. Don Maughan, the Council's executive director, as denying the new criteria would mean the approval of more projects: "I think there will be better projects." Senator Jennings Randolph, West Virginia, chairman of the Senate Public Works Committee, was quoted as saying the Congress might draw up new criteria if O.M.B. continues its opposition.

NEW PUBLICATIONS RECEIVED BY INSTITUTE - MARCH

1. "Mechanized Surface Irrigation Systems for Rolling Lands," W. E. Hart, J. Borrelli, University of California, June 1970.
2. "Treatment of Sole Leather Vegetable Tanner Wastes," J. D. Eye, University of Cincinnati, Federal Water Pollution Control Administration, September 1970.

3. "Annual Report 69-70," Water Resources Center Research, University of Hawaii, 1970.
4. "Factors Influencing the Residential Utilization of Reservoir Shorelands in the Southeast," R. J. Burby, III, T. G. Donelly, S. F. Weiss, University of North Carolina, North Carolina State University, December 1970.
5. "Proceedings Workshop on Stream Channelization and Wetland Drainage," University of North Carolina, North Carolina State University, November 1970.
6. "Water Resources Research and California's Future," University of California.
7. "Use of Groundwater for Irrigation In Hamilton and York Counties, Nebraska," E. K. Steele, Jr., University of Nebraska, Conservation and Survey Division, February 1971.
8. "Conceptual Engineering Report Kingman Lake Project," U.S. Department of the Interior, Federal Water Quality Administration, August 1970.
9. "Water Resources Research in Virginia - Annual Report for Fiscal Year 1970," Virginia Polytechnic Institute & State University, 1970.
10. "Information For the Future: The West Side San Joaquin Valley Project," University of California, September 1970.
11. "Perception of Water Resources Information Sources and Educational Needs by Local Officials and Special Interest Groups," J. M. Stewart, D. H. Howells, North Carolina State University, University of North Carolina, January 1971.
12. "Water Quality Characteristics of the New Hope and Lower Haw Rivers, July 1966 - February 1970, With Estimates of the Probable Quality of New Hope Lake," C. M. Weiss, University of North Carolina, North Carolina State University, January 1971.
13. "Estimation of Lake Flushing Rates for Water Quality Control Planning and Management," W. Viessman, Jr., University of Nebraska, presented at Conference on the Reclamation of Maine's Dying Lakes, University of Maine, Bangor, Maine, March 24, 1971.
14. "A Status Report on the Activities, Programs, and Goals of the Nebraska Water Resources Research Institute 1964 - 1970," W. Viessman, Jr., University of Nebraska, March 1971.
15. "Vascular Aquatic Plants in Acid Mine Water of the Monongahela River, West Virginia," R. B. Clarkson, J. A. Moore, West Virginia University, 1971.
16. "Cooperative Water Resources Research and Training 1970 Annual Report," Office of Water Resources Research, January 1971.
17. "Selected Urban Storm Water Runoff Abstracts," The Franklin Institute Research Laboratories, July 1970.
18. "Cannery Waste Treatment Kehr Activated Sludge," U.S. Department of the Interior, Federal Water Quality Administration, September 1970.
19. "Proceedings First National Symposium on Food Processing Wastes," U.S. Department of the Interior, Federal Water Quality Administration, April 6-8, 1970.
20. "Pollution in Alabama," Auburn University, September 1970.
21. "Control of Spillage of Hazardous Polluting Substances," G. W. Dawson, A. J. Shuckron, W. H. Swift, Bettelle Memorial Institute, Richland, Washington, November 1, 1970.

22. "The Role of Aquatic Vascular Plants in the Eutrophication of Selected Lakes in Western Massachusetts," R. B. Livingston, P. A. Bentley, University of Massachusetts.
23. "Determination of the Feasibility of Removal of Algal Nutrients in Lake Water by Ion Exchange," O. T. Zajicek, University of Massachusetts.
24. "Disposal of Brines Produced in Renovation of Municipal Wastewater," U.S. Department of the Interior, Federal Water Quality Administration, May 1970.
25. "Reverse Osmosis Renovation of Municipal Wastewater," U.S. Department of the Interior, Federal Water Quality Administration.
26. "Twenty-Ninth Biennial Report of the State Engineer of New Mexico," S. E. Reynolds, State Engineer, For the 57th & 58th Fiscal Year, July 1, 1968 to June 30, 1970.
27. "Annual Report of the Institute For Water Resources Corps of Engineers, Department of the Army, 1970," February 1971.
28. "Use of Fungi Imperfecti in Waste Control," U.S. Department of the Interior, Federal Water Quality Administration, July 1970.
29. "Evaporation Losses in Sprinkler Irrigation," J. M. Myers, C. D. Baird, R. E. Choate, University of Florida.
30. "Phenolic Waste Reuse by Diatomite Filtration," U.S. Department of the Interior, Federal Water Quality Administration, September 1970.
31. "Sixth Annual Report of the State of Washington Water Research Center," Washington's Water/A Special report.
32. "Carbonate Bonding of Coal Refuse," Environmental Protection Agency, Water Quality Office, February 1971.
33. "Selective Withdrawal From a Stratified Reservoir," J. Imberger, H. B. Fischer, University of California, December 1970.
34. "Legal Aspects of Water Storage for Flow Augmentation," Environmental Protection Agency, Water Quality Office, August 1970.
35. "Effects of Oil Pollution on Waterfowl A Study of Salvage Methods," Environmental Protection Agency, Water Quality Office, L. A. Griner, December 1970.
36. "A Methodology Study to Develop Evaluation Criteria For Wild and Scenic Rivers," J. J. Peebles, University of Idaho, October 1970.
37. "Aerial Photographic Tracing of Pulp Mill Effluent in Marine Waters," F. J. Burgess, Oregon State University, August 1970.
38. "Distribution of Trace Elements in Impoundments," J. Nix, Arkansas Water Resources Research Center, Ouachita Baptist University, 1970.
39. "6th Annual Report," University of Rhode Island, October 1970.
40. "Criteria and Methods for State Water Resources Planning," T. L. Dobbs, O. Paananen, P. A. Rechard, January 1971, University of Wyoming.
41. "The Availability of Ground Water in Western Sussex County, Delaware," R. W. Sundstrom, T. E. Pickett, University of Delaware, July 1970.
42. "Chemical Treatment of Combined Sewer Overflows," Environmental Protection Agency, Water Quality Office, September 1970.