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WATER RESOURCES NEWS

NEBRASKA WATER RESOURCES RESEARCH INSTITUTE
212 AGRICULTURAL ENGINEERING BUILDING

THE UNIVERSITY OF NEBRASKA
LINCOLN, NEBRASKA 68503

Volume 1 Number 7 November, 1969

F.Y. 1970 APPROPRIATIONS

The Appropriations Bill providing FY-1970 funds for the Office of Water Resources Research has been signed by the President. It provides $5,100,000 for the Sec. 100 annual allotment program, $3,000,000 for the Sec. 101 matching grant program, and $2,000,000 for the Title II program.

INTERDISCIPLINARY WATER RESOURCE SEMINAR

An Interdisciplinary Water Resource Seminar will be offered during the 1970 Semester. The success of the 1968 and 1969 Seminars and current inquiries motivated this decision. The average attendance the last two years was 50 persons, an indication of the desirability of inter-departmental cooperation and the need for a Water Resource Seminar. The intent of this Seminar is to bring together upper classmen, graduate students, professional persons, faculty, and others interested in water topics.

This semester the general theme will concentrate on the impact of large scale water resource developments. General topics are outlined below. Speakers will be announced at the beginning of the 1970 Spring Semester.

Students should enroll under their own departmental Seminar number to receive credit. A short paper will be required.

Please bring this notice to the attention of interested individuals who might desire to take the seminar for credit or to individuals who may desire to simply attend.

For additional information contact:

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Deon Axthelm - Telephone 472-2824
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Warren Viessman, Jr. - Telephone 472-3307
Director, Nebraska Water Resources
Research Institute

INTERDISIPLINARY WATER RESOURCES SEMINAR

UNIVERSITY OF NEBRASKA

Spring Semester 1970

East Campus - Room 110 Ag. Hall - 4 P.M. Monday

Coordinators: Don Edwards, Telephone 472-2824
Deon Axthelm, Telephone 472-2824
Warren Viessman, Telephone 472-3307

THE ECOLOGICAL, POLITICAL, SOCIOLOGICAL, LEGAL, ECONOMIC, AND TECHNICAL IMPACT OF LARGE SCALE WATER RESOURCE DEVELOPMENTS

Tentative Seminar Outline

DATE	TOPIC
February 2	I. STATE WATER PLAN
	II. FEDERAL WATER RESOURCE PLANNING
February 9	1) Water Resource Council
February 16	2) National Water Commission
	III. PLATTE RIVER PROJECT
February 23	1) The Proposed Project by the Corps of Engineers
March 2	2) Conservationists Look at the Project (Panel Presentation)
March 9	3) A Businessman's View
March 16	4) A Watershed Manager's View
March 23	5) Political Considerations
April 6	6) Ecological Considerations
April 13	7) Sociological Impact
April 20	8) Technical Factors
April 27	9) Technical Considerations (Panel Presentation)
May 4	10) Economic Impact and Considerations
May 11	11) Legal Considerations
May 18	12) Recreational Development

McCORMICK NAMED DEPUTY ASSISTANT SECRETARY

The Interior Department has announced the appointment of Robert L.L. McCormik as Deputy Assistant Secretary for Water Quality and Research. He will advise and aid Assistant Secretary Carl L. Klein in administering programs for the control, abatement, and prevention of water pollution, the economic conversion of saline water, and water resources research.

MATCHING GRANT PROPOSALS SUBMITTED FOR F.Y. 1971 CONSIDERATION

The following research proposals have recently been submitted to OWRR for consideration for F.Y. 1971 funding. Announcements will be made by March 1, 1970.

	Project Title	Principal Investigator
1.	Conjunctive Use of Ground and Surface Waters	Dr. Richard S. Harnsberg Mr. Ralph Fischer
2.	Influence of Fertilizer Practices on Water and the Quality of the Environment	Prof. Robert A. Olson
3.	Microclimate Modification for Improved Water Use Efficiency in Irrigation Agriculture	Dr. Norman J. Rosenberg
4.	Highly Distributed Hydrologic Network Response Simulation	Dr. Alvin J. Surkan
5.	Eutrophication of Small Reservoirs in the Great Plains	Dr. Gary L. Hergenrader Dr. Howard Wittmuss Dr. Mark J. Hammer
6.	Feasibility Study of the Exploitation of Electromagnetic Surface-Wave Measurements for the Mapping of the Water Table	Dr. Ezekiel Bahar
7.	Ecological Impact of Surface Water Impoundments in the Great Plains Area	Dr. C. Michael Cowan Nebraska Wesleyan University

NATURAL RESOURCES DISTRICT LAW

"One of the first and most critical items facing the Nebraska Soil and Water Conservation Commission in the next several months will be the establishment of the new Natural Resources District boundaries as prescribed by the legislation. An important guideline for boundary delineation is that districts must be formed on common problem area boundaries. The legislation further provides that there shall be between 25 and 50 districts and the boundaries shall be determined by September 1, 1970."

"Another significant date outlined is January 1, 1972. By this date, necessary orders will have to be issued to establish the districts and apportion the existing assets, liabilities and obligations of the merged districts. Each district must also be named by that date. The effective date of consolidation shall be on or before January 1, 1972."

These statements appeared in Special Report Series No. 1, October 1969, Nebraska Soil and Water Conservation Commission.

SENATE APPROPRIATIONS COMMITTEE

ON WATER RESOURCES RESEARCH

The Senate Appropriations Committee recently made the following comments relative to neglected areas of water research.

"Because of its appreciation of the importance of water to the continued development of our culture and civilization, indeed to our very survival, the committee has consistently supported funds for the Office of Water Resources Research. It believes, however, that one important phase of this research has been neglected; namely, the measurement of benefits resulting from water resource projects. To accomplish this purpose, in the formulation of future research programs consideration should be given to a study of existing water resource projects for irrigation, water supply, flood control, and multiple purposes, with a view to identifying the full range of benefits and effects on the economy of the project area. These benefits should then be compared with the projected benefits used to justify the project. After developing the available facts an assessment of the validity of the procedures used in project formulation and evaluation can be made, together with any appropriate recommendations for changes in the methodology used.

(Senate Appropriations Committee continued.)

"Water resource research is of limited value if the methodology of project formulation and project justification is so antiquated as to preclude the development of our available water resources.

"In this connection, the committee believes such a research project would be of assistance in carrying out the recommendations of the special panel, convened by the Secretary of the Interior to advise on operations of the Office of Water Resources Research, that concerted attention be given to research on opportunities for Federal-State water resources development and management to advance the Nation's high priority social goals."

EVALUATION PROCEDURES FOR WATER RESOURCES PROJECTS

The Water Resources Council has completed regional hearings on new water resources criteria proposed by a special task force. The recommended procedures call for evaluation of water projects on the basis of the following objectives: National income, regional development, environment, and well being. Several witnesses, including conservationists and the railroads, opposed the new criteria on the ground that they broaden total project benefits. Economists were divided between those who wanted to maintain the present system which places paramount emphasis on economic efficiency and the dollar value, and those who accepted the inclusion of other benefits of a nonmonetary value. The Council is expected to create an expanded task force and will review the testimony, make changes where necessary, and develop those sections of the task force report not yet completed. The Council is also testing the proposed new procedures on representative projects.

RESEARCH REVIEW

Project Title:	"Animal Waste Utilization for Pollution Abatement - Technology and Economics" Phase I
Principal Investigator:	Dr. Otis E. Cross
Dates:	July 1969 to June 1971

The basic objective of this research is to determine the maximum allowable rate of loading livestock manure on cultivated soil without pollution of surface runoff or underground water. Associated objectives are:

(Research Review continued.)

(1) To determine the magnitudes of surface and ground water pollution which can result from high rates of manure application on surface irrigated lands.

(2) To determine the changes in the physical and chemical properties of the soil resulting from high rates of manure applications on surface irrigated land.

(3) To determine the effects of very high loading rates on crop production.

(4) To determine the economic feasibility of high rates of manure application on surface irrigated land.

(5) To compare the costs and benefits of higher rates of manure application on surface irrigated lands to the costs and benefits of various alternative means of utilization or disposal of manure.

Calendar year 1969 will be spent in conducting the initial field experiments. Economic and technical data will also be collected and some preliminary analyses will be made.

NEW PUBLICATIONS RECEIVED BY THE INSTITUTE

(A list of all water resources publications held by the Institute is available upon request. Any publication may be borrowed for a two week period upon request.)

1) "Simulation of Monthly Runoff," Technical Bulletin No. 1, Hydrologic Engineering Center, Sacramento, California, November 1964,

2) "Hydrologic Studies in the Rocky Mountain Region," U.S. Department of the Interior, July 1968 to June 30, 1969.

3) "A Publication of the Educational Research and Methods Division of the American Society for Engineering Education," Vol. 2, No. 1, October 1969.

4) "Eutrophication Factors in North Central Florida Lakes," by P.L. Brezonik, W.H. Morgan, E.E. Shannon, and H.D. Putnam, University of Florida, August 1969.

5) "Water Resources Research Interests in the Colleges and Universities of Maine," by E.A. Imhoff, University of Maine, August 1969.

6) "Research Reports - Supported by Office of Water Resources Research Under the Water Resources Research Act of 1964," U.S. Department of the Interior, July-September 1969.

7) "Fourth Annual Report," Rhode Island Water Resources Center, University of Rhode Island, October 1968.

8) "How Much Underground Water Storage Capacity Does Texas Have?" by G. Brune, Presented at the 5th Annual American Water Resources Association Conference and 14th Water for Texas Conference, San Antonio, Texas, October 27-31, 1969.

9) "Effects of Polyfluorocarbon Coatings on Scaling in Evaporators With Continuous Feed $CaSO_4$ Solutions," by D.D. Kos and L.C. Tao, Department of Chemical Engineering, University of Nebraska, Reprinted from Product Research and Development, September 1969.

10) "Background Information for Framework Statewide Water and Related Land Resources Planning in Minnesota," St. Paul, Minnesota, Technical Bulletin No. N2, June 1969.

11) "Catalog of Information on Water Data, Index to Water Quality Stations," by K.F. Harris, J.R. Rapp, and E.B. Chase, U.S. Department of the Interior, Edition 1968.

12) "Radiotracer Study of Rapid Sand Infiltration," by T.F. Craft, Jr., Georgia Institute of Technology, August 1969.

13) "The Relation of Ion Movement to Fine Particle Displacement in a Sand Bed," by J.B.F. Champlin, Georgia Institute of Technology, June 30, 1969.

14) "Missouri River Channel Regime Studies," U.S. Army Engineer District, Omaha, Nebraska, November 1969.

15) "Initial Mixing of Thermal Discharges into a Uniform Current," by J.E. Edinger and E.M. Polk, Jr., Vanderbilt University, Nashville, Tennessee, October 1969.

16) "Flood Warning and Community Action," Nebraska Soil and Water Conservation Commission, State Water Plan, Publication Number 403.

17) "Project for Concentrated Research and Training in the Hydraulic and Hydrologic Aspects of Water Pollution Control," by P.A. Krenkel and F.L. Parker, Vanderbilt University, Progress Report, August 1, 1968 - September 1, 1969.

18) "Report on Water Management Studies on Public Lands of Western United States," U.S. Department of the Interior, Geological Survey, July 1, 1968 - June 30, 1969.

19) "1968-1969 Annual Report," University of Hawaii, August 1969.

20) "Bedload Formulas," by S. Shulits and R.D. Hill, Jr., Pennsylvania State University, December 1968.

21) "A Program for Outdoor Recreation Research," National Academy of Sciences, Report on a Study Conference conducted June 2-8, 1968.

22) "Georgia Laws, Policies and Programs Pertaining to Water Related Land Resources," by G.R. Elmore, Jr., Georgia Institute of Technology, June 1967.

23) "Water Research 1969 Summary," Michigan State University.

24) "A Ground Water Quality Summary for Alaska," by S.W. Kim, P.R. Johnson, and R.S. Murphy, University of Alaska.

25) "A Water Distribution System for Cold Regions," by R.S. Murphy and C.W. Hartman, University of Alaska, March 1969.

26) "Annual Report - 1969," A.O. Patterson, University of Florida, July 1, 1969.

27) "Bacterial Response to the Soil Environment," by Boyd, Yoshida, Vereen, Cada, and Morrison, Colorado State University, June 1969.

28) "Evaluation of the Effect of Impoundment on Water Quality in Cheney Reservoir," by J.C. Ward and S. Karaki, Colorado State University, Sept. 1969.

29) "Physical, Chemical, Bacterial, and Plankton Dynamics of Lake Pontchartrian, Louisiana," by D.H. Stern and M.S. Stern, Louisiana State University, Sept. 1969.

30) "Hydrology of Neogene Deposits in the Northern Gulf of Mexico Basin," by P.H. Jones, Louisiana State University, April 1969.

31) "Flood Damage Prevention," Tennessee Valley Authority, An Indexed Bibliography, 6th Edition, July 1969.

32) "Annual Report - 1969," University of Delaware, Sept. 1969

NEWSLETTER ITEMS

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