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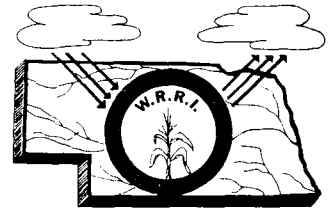
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WATER RESOURCES NEWS

NEBRASKA WATER RESOURCES RESEARCH INSTITUTE
212 AGRICULTURAL ENGINEERING BUILDING

THE UNIVERSITY OF NEBRASKA
LINCOLN, NEBRASKA 68503



Volume 1 Number 8

December, 1969

IRRIGATION SHORT COURSE

The Agricultural Engineering Department and the Agricultural Extension Service of the University of Nebraska will sponsor a two-day short course on Irrigation on January 12 and 13, 1970. For details contact Paul E. Fischbach at extension 2824.

SUMMER INSTITUTE ON WATER RESOURCES

- TITLE:** "APPLIED MATHEMATICAL PROGRAMMING IN WATER RESOURCES"
- DATE:** July 26 to August 7, 1970
- LOCATION:** University of Nebraska, Lincoln, Nebraska
- OBJECTIVE:** To provide in-depth training in the application of mathematical programming techniques to the analysis, design, operation, and planning of water resources systems. Approximately three full days will be devoted to each of the following topics: Linear Programming, Non-Linear and Dynamic Programming and Simulation. The course will be organized to present the basic theory underlying each of these approaches, and then fully develop the use of the approach with valid examples of applications to realistic water resources problems. Primary emphasis will be given to application.
- AUDIENCE:** Persons engaged in professional activities in Water Resources Planning, Design of Water Resources Systems, Water Resources Education, and the Operation of Water Resources Systems, will find this program of benefit. Previous knowledge of mathematical Programming techniques is not a prerequisite.
- MANNER OF PRESENTATION:**
The course will include a series of lectures with opportunities for discussion and individual

work. The University Computer Center will be available to participants.

- STAFF:
- Dr. Warren A. Hall, Director Dry-Land Research Institute, University of California, Currently Chairman of the Committee on Water Resources of the O.S.T.
 - Dr. Daniel P. Loucks, Assistant Professor of Civil Engineering, Cornell University.
 - Dr. Jon C. Liebman, Associate Professor of Environmental Engineering, Johns Hopkins University.
 - Dr. Frank E. Perkins, Associate Professor of Civil Engineering, M.I.T.
 - Dr. Benjamin C. Dysart III, Assistant Professor of Environmental Systems Engineering, Clemson University.
 - Dr. Donald M. Edwards, Associate Professor of Agricultural Engineering, University of Nebraska.
 - Dr. Warren Viessman, Jr., Director, Nebraska Water Resources Research Institute.

INFORMATION: For additional information, please write to:

Dr. Warren Viessman, Jr., Director
Nebraska Water Resources Research Institute
University of Nebraska
212 Agricultural Engineering
Lincoln, Nebraska 68503

- FEE: Approximately \$300 per person plus room and board. Exact fee will be indicated in the formal announcement to be made early next year. Please note that in order to provide adequate opportunities for use of computer facilities and for more efficient instruction, the attendance will be limited.
- SPONSORS: This program will be sponsored by the Nebraska Water Resources Research Institute, the Department of Civil Engineering, and the Department of Agricultural Engineering.

EVAPOTRANSPIRATION SEMINAR

The Great Plains Agricultural Council has announced a seminar on Evapotranspiration to be held at Bushland, Texas,

March 23-25, 1970. This program should be of considerable interest to those engaged in research in this important area. For complete details contact John Muehlbeier, 475-3682.

EVAPORATION REDUCTION

Hollow plastic balls assembled into floating mats are being tested by English engineers for controlling evaporation losses. Reductions of up to 88 percent have been noted as well as retarding effects on freezing according to A.W.W.A.

THERMOL POLLUTION RESEARCH PROGRAM

Research and demonstration grants and contracts are being awarded by the Federal Water Pollution Control Administration for projects relating to thermal pollution, with major emphasis on the effects of heat and its behavioral characteristics in water, the F.W.P.C.A. of the Department of Interior announced.

PUBLIC WORKS BILL

The House voted 600 million dollars to fight water pollution in F.Y. 1970. This represents a substantial increase from the original 214 million requested by the Administration. As a result, there will likely be more funds available for research in this critical area than originally anticipated.

UNIVERSITIES COUNCIL ON WATER RESOURCES RESOLUTION RELATIVE TO THE WATER RESOURCES RESEARCH ACT

At the 1969 meeting in Reno last July, a significant resolution relative to PL88-379 was passed by U.C.O.W.R. The November issue of the U.C.O.W.R. Newsletter indicates the following action relative to this resolutions:

"Changes in Water Resources Research Act. Perhaps the most far reaching decisions were contained in the resolutions suggesting that the Water Resources Research Act be amended. The resolution suggested that the Water Resources Research Act should be modified to increase the annual allotment program of Title I for \$100,000 to \$250,000 per year and that it should also be modified to allow educational programs for research interpretation and dissemination to be authorized under the Act. As well, a number of detail changes were suggested such as modifying the Act to make all reporting on a Fiscal Year basis and to permit fringe benefits to be charged to Allotment funds as is the case in all federal funds."

"These resolutions were transmitted to the Office of Science and Technology and the Office of Water Resources Research of the U.S. Department of the Interior, and as well, a number of interviews were held. The Office of Science and Technology subsequently brought the matter to Mr. Carl L. Klein, Asst. Secretary for Water Quality and Research, recommending that the Act be changed in the way suggested by UCOWR."

"Following on this, an interview was held with Mr. Carl L. Klein at which UCOWR Chairman, David H. Howells, and a number of other UCOWR representatives discussed the matter. Mr. Klein's response to this approach has generally been favorable and it is hoped that action will be initiated within the Dept. of the Interior requesting Congress to change the Water Resources Research Act."

"In parallel with these negotiations, discussions took place on November 9, between representatives of UCOWR and the Water Committee of the National Association of States Universities and Land Grant Colleges. UCOWR was asked to be represented at the Water Committee meeting by the Chairman, Dr. Daniel F. Aldrich, Jr., of the University of California, Irvine."

"It should be emphasized that what UCOWR is requesting is changes in the Act authorizes the appropriations under Title I. Under the present stringent fiscal situation it is unlikely that the appropriations would be increased up to this amount, but if the Act can be changed now to authorize appropriations up to this amount then when funds become available, it will be possible to have the allotment increased up to that figure. It is hoped that higher appropriations will occur in the not too distant future but for this to be possible, action must be taken now to have the authorization in the Act increased. The same kind of comment applies to suggested changes to allow a program of research dissemination. It is hoped that funds can be made available for this in due course, but a necessary step is to have the Water Resources Research Act modified now to allow that to happen in the future."

CAULFIELD TO CSU

Henry P. Caulfield, Jr., who was the Executive Director of the Federal Water Resources Council has become Professor of Political Science at Colorado State University. Mr. Caulfield will teach courses in Governmental Administration and Special Studies in Public Administration.

RESEARCH REVIEW

Project Title: "Evaluation of Methods for Improving Water Use Efficiency Through Simultaneous Determination of Field Evapotranspiration and Photosynthesis"

Principal Investigator: Dr. Norman J. Rosenberg

Dates: July 1969 to June 1971

The proposed research project involves field investigations of the influence of microclimatic modification on water use efficiency of irrigated crops. The influence of windbreaks and reflectant materials will receive particular attention.

Efficiency will be observed over long periods by means of lysimetric and neutron probe measurements of evapotranspiration and by plant sampling. Short period observations of evapotranspiration and photosynthesis under conditions approaching steady-state will be made to isolate the effects of weather variables on the water use efficiency.

Precision lysimetry will be used to provide a measure of transfer coefficient which may be applied to estimate short term CO₂ flux in conjunction with gradient measurement of that entity.

Experimental designs are proposed which permit concurrent tests of the validity of climatological and micrometeorological techniques for estimating evapotranspiration.

Project efforts during 1969 will include the initiation of field tests, data logging, and preliminary data analyses.

NEW PUBLICATIONS RECEIVED BY THE INSTITUTE

- 1) "Water Evaporation Suppression," by Gainer, Beard, and Thomas, Virginia Polytechnic Institute, August 1969.
- 2) "Some Water Quality Aspects of the Upper Roanoke River Basin With Special Emphasis on Temperature," by Estes and Cumming, Virginia Polytechnic Institute, September 1969.
- 3) "Temperature and Turbulence Effects on the Parameter in the Stochastic Model for Bod and Do in Streams," by Bosley, Cibulka, and Krutchkoff, Virginia Polytechnic Institute, November 1969.
- 4) "The Influence of Solar Radiation Reflectance on Water Evaporation," by D.K. Hollen, Virginia Polytechnic Institute, August 1969.
- 5) "Water Resource Observatory Solar Radiation Data Water Year 1969 and Prior," University of Wyoming, Water Resources Series No. 16, October 1969.
- 6) "Snowy Range Water Resource Observatory," by P.A. Rechar, University of Wyoming, Water Resources Series No. 15, September 1969.

- 7) "Annual Report - Virginia," 1969.
- 8) "Economic Considerations Relative to Water Quality," by W. Whipple, Jr., Rutgers - The State University, Oct. 27-30, 1969.
- 9) "Preliminary Mass Balance of Bod on Three New Jersey Rivers," by W. Whipple, Jr., Rutgers - The State University.
- 10) "Oxygen Uptake Rates of Benthic Deposits on the Upper Passaic River," by O.M. Donovan and J.V. Hunter, Rutgers - The State University, June 1969.
- 11) "Water Resources and the Chemical Industry in New Jersey - An Econometric and Engineering Analysis," by Granstrom, Dutta, DeRooy, Shieh, Kregel, and Su, Rutgers - The State University, October 1969.
- 12) "Hydrology of the Shallow Aquifers of Baton Rouge, Louisiana," by C.G. Smith, Jr., Louisiana State University, October 1969.
- 13) "Public Perception of Water Resource Problems," by C.A. Ibsen and J.A. Ballweg, Virginia Polytechnic Institute, September 1969.
- 14) "Graduate Programs in Environmental Systems Engineering at Clemson University," Clemson, South Carolina.

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.