

# RIZONA WATER & RESOURCES NEWS BULLETIN

NEWS BULLETIN 74-4

JULY-AUGUST 1974

## NEW WATER INFORMATION SERVICE AVAILABLE

Beginning October 1974, the University of Arizona will become the fifth terminal station in the Office of Water Research and Technology (OWRT) network for retrieval of the Water Resources Scientific Information Center (WRSIC) bibliographic data base. States to be served by the University of Arizona are: Arizona, California, Colorado, Hawaii, Nevada, New Mexico, Oklahoma, Oregon, Texas, Utah, and Washington.

The former General Information Processing System (GIPSY) has been converted to the Atomic Energy Commission's RECON system, a tie-in that permits a full production operation. Terminal equipment including a printer is now on order, and capability to respond to requests from the entire WRSIC bank will be developed therefrom.

This WRSIC bibliographic base on RECON covers water related aspects of the Life, Physical, and Social Sciences, as well as the engineering and legal aspects of the characteristics, conservation, control, use, and management of water resources.

The file of over 60,000 abstracts dates back to 1969. Bibliographic searches can be made by specifying author, keywords, or the WRSIC category code as shown on Table I.

The keywords used come from the *Thesaurus of Water Resources Terms*, 1971 (Government Printing Office).

Initially, no charge per retrieval will be in effect; however, after some experience with use, costs, and other operational contingencies, it may be necessary to opt for a charge per unit retrieved or a flat rate to be determined at a later date as is now the custom of other institutions offering this service. For the moment, however, no charge for retrievals will prevail.

The use of WRSIC's Water Resources Thesaurus is recommended for narrowing searches to provide more precise output. Staff members will be glad to assist those who have not had experience in the use of the Thesaurus.

Inquiries may be sent by telephone [(602) 884-2816] or mail to the Water Information Section, University of Arizona, Tucson, 85721, in care of Dr. Kenneth E. Foster, Office of Arid Lands Studies, or Dr. Kenneth J. DeCook, Water Resources Research Center. Prints will be shipped out promptly by mail.

Table I. Water Resources Category Code

- 01 NATURE OF WATER
  - A Properties
  - B Aqueous solutions and suspensions
- 02 WATER CYCLE
  - A General
  - B Precipitation
  - C Snow, ice, and frost
  - D Evaporation and transpiration
  - E Streamflow and runoff
  - F Groundwater
  - G Water in soils
  - H Lakes
  - I Water in plants
  - J Erosion and sedimentation
  - K Chemical processes
  - L Estuaries
- 03 WATER SUPPLY AUGMENTATION AND CONSERVATION
  - A Saline water conversion
  - B Water yield improvements
  - C Use of water of impaired quality
  - D Conservation in domestic and municipal use
  - E Conservation in industry
  - F Conservation in agriculture
- 04 WATER QUANTITY MANAGEMENT AND CONTROL
  - A Control of water on the surface
  - B Groundwater management
  - C Effects on water of man's nonwater activities
  - D Watershed protection
- 05 WATER QUALITY MANAGEMENT AND PROTECTION
  - A Identification of pollutants
  - B Sources of pollution
  - C Effects of pollution
  - D Waste treatment processes
  - E Ultimate disposal of wastes
  - F Water treatment and quality alteration
  - G Water quality control

**Table I (continued)**

- 06 WATER RESOURCES PLANNING
  - A Techniques of planning
  - B Evaluation process
  - C Cost allocation, cost sharing, pricing/repayment
  - D Water demand
  - E Water law and institutions
  - F Nonstructural alternatives
  - G Ecologic impact of water development
- 07 RESOURCES DATA
  - A Network design
  - B Data acquisition
  - C Evaluation, processing and publication
- 08 ENGINEERING WORKS
  - A Structures
  - B Hydraulics
  - C Hydraulic machinery
  - D Soil mechanics
  - E Rock mechanics and geology
  - F Concrete
  - G Materials
  - H Rapid excavation
  - I Fisheries engineering
- 09 MANPOWER, GRANTS AND FACILITIES
  - A Education—extramural
  - B Education—in-house
  - C Research facilities
  - D Grants, contracts, and research act allotments
- 10 SCIENTIFIC AND TECHNICAL INFORMATION
  - A Acquisition and processing
  - B Reference and retrieval
  - C Secondary publication and distribution
  - D Specialized information center services
  - E Translations
  - F Preparation of reviews

**WATER FOR ENERGY**

“Water for Energy Self-Sufficiency,” an interagency task force report on current programs relating to the availability of the Nation’s water for the goal of energy self-sufficiency by the year 1980, has been released by the U.S. Water Resources Council. The task force, chaired by Warren D. Fairchild, Director of the Water Resources Council, includes key representatives from the Federal offices and departments and State and regional entities which can contribute to the analysis and solution of our water for energy problems.

Included in this document is a summary of a recently held task force conference and an inventory of over 100 Federal energy and related programs. Also included is a tentative outline of information required and an interim work schedule to develop a report on needed actions to supply enough water for the Nation’s energy needs.

The Council’s efforts in the study are being coordinated with the Federal Energy Agency program designated as “Project Independence.” FEO has requested that the Water Resources Council assume the lead role and responsibility for determining constraints that water supply may have on future energy production.

The complete report identifying actions which can and should be taken in order to provide water for energy self-sufficiency is now available and can be obtained from: Water Resources Council, Washington, D.C. 20037.

**EPA AND FEEDLOT INDUSTRIES**

According to a report approved by the House Government Operations Committee, the Environmental Protection Agency should specifically define those feedlot operations required to apply for National Pollutant Discharge Elimination System (NPDES).

The report was prepared by the Government Operations Conservation Subcommittee and recommends that EPA survey the feedlot industry and define in terms of the number of animals handled in those operations what constitutes “concentrated animal feeding operations.” Section 502 (14) of the Federal Water Pollution Control Act stipulated that such operations be subject to the NPDES permit program.

Previously, EPA’s guidelines required the smallest feedlots to control discharges but finally exempted all but the largest operations.

Subcommittee Chairman Henry S. Reuss (D-WI) said, “EPA’s vacillation between these extremes has largely disregarded both the statutory requirements and the pollution potential of many feedlots.”

The report also recommends the Agriculture Department allocate \$8 million for development of feedlot waste control practices. It suggests the Department participate in a cost-sharing program for the development of methods for producing fertilizer from animal wastes. The report suggested the Interior Department should support research and pilot plant development to convert animal wastes to oil and other fuels.

**PUBLIC WATER RIGHTS TO BE REGISTERED**

The last session of the Legislature passed Senate Bill 1117, requiring all Public Water Rights to be registered with the State Land Department prior to June 30, 1977. Water rights presently of record with the Department, or to waters of the main stem of the Colorado River, or rights acquired by contract with the United States of America or court decree or other adjudication, are not required to be filed under this act. After the completion of the registration period, this will mark the first time in Arizona’s history that a complete set of records pertaining to Public Water Rights has been on file at one central location.

The Public Waters, as defined in the act, do not include percolating ground waters.

**UNOFFICIAL RAIN GAUGES IN ARIZONA**

The National Weather Service maintains the records for approximately 280 weather stations in the State of Arizona. These stations are operated by private individuals and various governmental agencies. There are probably at least twice that many observation points for which data are observed and recorded but never published. These observations represent a source of valuable data useful in understanding the water budget of the State of Arizona.

A preliminary inventory of the "unofficial" rain gauges in Arizona was recently completed by the Laboratory of Climatology at Arizona State University for the Arizona Water Commission. Approximately 460 additional gauges were inventoried by contacting every agency and individual who might know where rain gauges are located. Copies of the report are available from the Commission at 222 North Central Avenue, Suite 800, Phoenix, Arizona 85004. As a number of agencies or individuals who have an interest in observing the weather have undoubtedly been omitted, an updated version of the inventory will be published as necessary.

## LEGISLATIVE COUNCIL COMMITTEE ON FLOOD CONTROL

On September 4, the Legislative Council Committee on Flood Control held its first meeting. Senator Sandra O'Connor is chairwoman of the committee which will review the State's role in flood control and recommend any legislation they believe necessary.

The first meeting focused on the State's Floodplain Management Act, and the new federal Flood Disaster Protection Act of 1973, which amends the Flood Insurance Act of 1968.

Arizona law requiring local governments to enter into a floodplain management program was enacted as House Bill 2010 of the 1973 legislative session and was designed to preclude continued development in floodplains throughout the State. The concept of floodplain management is not new. Only recently, however, have effective floodplain management programs been implemented in the United States. Emphasis on floodplain management is now increasing rapidly at all levels of government.

With passage of Arizona's Floodplain Management Act, our State took a big step forward and can now be considered as one of the leading states in nonstructural flood control.

The act required that: (1) By October 5, 1973, the Arizona Water Commission develop and adopt criteria for establishing the 50- and 100-year floodplains. This was accomplished on schedule. (2) By February 4, 1973, each local jurisdiction delineate the floodplain where development is ongoing or imminent and thereafter as development becomes imminent. (3) After February 4, 1974, when delineations were to be completed, development in floodplains be prohibited unless a subdivision was 75% complete, a special permit is granted, or floodplain regulations are in effect. Floodplain regulations are to be adopted by each local jurisdiction to control development in the floodplain. Such regulations are to require that dwellings have minimum floor elevation above the 100-year level. Certain developments were to be exempted. Included were existing uses, public utilities, storage dams for watering livestock or wildlife, and tailing dams associated with mining or mineralogical operations. The law does not contain any provisions for penalty if local governments do not comply.

Major problems of implementation of the program have been encountered. The fundamental problem has been that the cities, towns, and counties in Arizona do not have the resources available to make the necessary delineations within their areas of jurisdiction.

Most agencies desire a meaningful floodplain management program and are willing to adopt regulations but because of

the lack of floodplain mapping such regulations would be meaningless. Delineations necessary before adoption of regulations require comprehensive hydrologic and hydraulic studies and detailed topographic mapping. Cost of such delineations may exceed \$5,000 per mile of stream.

To date only four cities—Phoenix, Scottsdale, Paradise Valley and Peoria—have adopted regulations pursuant to the law. One county, Maricopa, has also adopted regulations; however, much of the floodplain area in the county is not delineated and therefore development is not subject to regulations. Several other local agencies are actively pursuing the adoption of regulations. Among them are Pima and Santa Cruz counties and the cities of Flagstaff, Wickenburg, and Mesa.

While some cities and counties have complied with the law, such compliance has taken place only where floodplains had been delineated previously by a federal agency, most often the Corps of Engineers. The corps has authority and a program to provide this type of mapping to local governments upon request. Unfortunately, they have limited capabilities and the waiting time for such mapping is now several years. In the meantime, development in floodplains is certain.

The end result of the Flood Insurance Program, which is a number of years away, will be floodplain management for developed areas as envisioned in state law. Unfortunately, current efforts by the Federal insurance administrator fall way short of a meaningful floodplain management program. Mapping of delineated floodplains now being provided by the insurance administrator is very general. It does not show elevations and cannot be used to satisfy the requirements of state law. The only land use regulations required to be eligible for flood insurance, with the mapping now being provided, is that the local jurisdiction have a building permit system in effect and that the flood problem be recognized. Recognizing the flood problem only requires that structures be anchored to prevent flotation and positioned to minimize flood damage. It does not prohibit development in the floodplain or require dwelling to be elevated above specified elevation.

When the federal insurance administrator is able to provide comprehensive mapping and delineations, communities will be required to adopt very specific regulations. These regulations will meet the requirements of existing state law and in some cases will be more stringent.

The meeting concluded with Senator O'Connor asking committee members to review the testimony given and to formulate ideas in the possibility of providing State assistance to local cities and counties in meeting the requirements of the State's Floodplain Management Act and the Flood Insurance Program.

## CALL FOR PAPERS

A Symposium on Watershed Management will be held August 13-15, 1975, at Utah State University, Logan, Utah, sponsored by the American Society of Civil Engineers and several allied professional societies. The general theme is "Operational Watershed Management; Research to Application."

Papers are solicited on the general subjects of applied watershed management, critical reviews, state-of-the-art papers, new techniques, outlooks and methodologies, and field or planning experiences. Appropriate specific topics

might include timber, grazing, or agricultural management, weather modification, strip mining, diffuse pollution sources, sediment and water yield, on-site flood control, and environmental impact. However, all submissions will be seriously considered, regardless of the above listing.

Short versions or abstracts of papers to be considered for the Symposium should be prepared on no more than two sheets, single spaced, preferably in elite type, and should bear the paper title and the author's name and affiliation. They should be sent before 1 December 1974 to Kenneth G. Renard, U.S.D.A., Agricultural Research Service, Southwest Watershed Research Center, 442 East Seventh Street, Tucson, Arizona 85705.

August 13-15 – Symposium on Watershed Management, American Society of Civil Engineers. Utah State University,

Logan, Utah. Theme: "Operational Watershed Management; Research to Application." Paper submission, contact Richard H. Hawkins, College of Natural Resources, UMC 52, Utah State University, Logan, Utah 84322.

August 15-17 – Irrigation and Drainage Specialty Conference, American Society of Civil Engineers. Utah State University, Logan, Utah. Theme: "Irrigation and Drainage in an Age of Competition for Resources." Contact Robert W. Hill, College of Engineering, UMC 41, Utah State University, Logan, Utah 84322.

The Symposium on Watershed Management will precede the regular ASCE Irrigation and Drainage Division Specialty Conference, which will be held directly following on August 15-17. Information on paper submission will come through the various ASCE channels.

Please address your news items or comments on the News Bulletin to any of the three editors:

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