ARIZONA WATER RESOURCES NEWS BULLETIN

NEWS BULLETIN 75–5 SEPTEMBER–OCTOBER 1975

"WRSIC" ABSTRACT SERVICES AVAILABLE AT UNIVERSITY OF ARIZONA

The Water Resources Scientific Information Center (WRSIC) bibiliographic data base is available for computerized retrieval on the Energy Research and Development Administration's RECON system through the University of Arizona on a no-cost basis. States being served by the University of Arizona are Arizona, California, Colorado, Hawaii, Nevada, New Mexico, Oklahoma, Oregon, Texas, Utah, and Washington.

This WRSIC bibliographic base 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, management, and pertinent items of legislation regarding water resources.

The file of more than 86,500 abstracts dates back to 1969. Bibliographic searches can be made by specifying author, keywords or the WRSIC category code.

The keywords used come from the *Water Resources Thesaurus, Second Edition, 1971.* The use of WRSIC's *Water Resources Thesaurus* is recommended for narrowing searches to provide more precise output. Assistance on this is available for those who have not had experience in the use of the *Thesaurus.*

Instructions for Using the No-Cost WRSIC Abstract Service

1. What kind of information does a search provide? – Each WRSIC abstract record consists of Title, Source, Author, Citation and Descriptor terms relating to the study area requested. All or any part of the record can be produced in answer to an inquiry. Unless otherwise requested, the entire record will be sent.

2. What is the scope of information in the WRSIC data base? – The scope of information available covers ten water resource categories ranging from the nature of water to information on manpower, grants, and facilities. Input comes from a wide range of sources, including federal water agencies, the WRSIC-supported "centers of competence" in specific subject areas, established discipline-oriented abstracting and indexing services, the 53 Water Resources Research Institutes, and the grantees and contractors of OWRT and other federal agencies.

3. How can you request a search of the data base? – An inquiry should be sent to your respective State Water Resources Institute or (in Arizona) to:

Water Information Section – RECON
Water Resources Research Center
University of Arizona
845 North Park Avenue
Tucson, Arizona 85719
Phone (602) 884-2816

Telephone queries will also be accepted, provided the caller supplies all information indicated on the following Inquiry Form.

WRSIC COMPUTER NETWORK INQUIRY

Name _____

Address _____

_____

_____ Zip _____

Telephone _____

Affiliation _____

State the problem or question fully. Circle the words or concepts which you consider most important. Underline terms you consider of secondary importance. EXAMPLE: What information is available to describe the effects of groundwater recharge on water quality parameters such as *fluorides, nitrates,* and *soluble salts.*

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Authors, comments or considerations: _____

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ARIZONA WATER COMMISSION • WATER RESOURCES RESEARCH CENTER
OFFICE OF ARID LANDS STUDIES

RESEARCH PROPOSALS DUE IN JANUARY

According to Sol Resnick, Director of The University of Arizona's Water Resources Research Center, January 10, 1976 is the deadline for submittal of Title II research proposals to the Office of Water Research and Technology (OWRT) for funding during a transition quarter (July 1, 1976 through September 30, 1976) and the new FY 1977.

Fiscal Year 1977 (October 1, 1976 through September 30, 1977) will be the first full year under the new federal budget year prescribed by the Congressional Budget and Impoundment Control Act of 1974 (P.L. 93-344, July 12, 1974).

Title II funding consists of outright grants for water research; proposals can be submitted by any person or organization, and no matching funds are involved. All such proposals must be submitted in six copies and should be addressed to the Director, Office of Water Research and Technology, U.S. Department of the Interior, Washington, D.C. 20240. Guidelines for preparation of proposals, as well as a listing of priority research subjects, are available at the Office of the Director, Water Resources Research Center, The University of Arizona, Tucson, Arizona 85721 (Telephone 884-2144).

NEW BUREAU OF RECLAMATION REGIONAL DIRECTOR

Commissioner of Reclamation Gilbert G. Stamm recently announced the appointment of Manuel Lopez Jr. as Regional Director of the U.S. Bureau of Reclamation's Lower Colorado Region, with headquarters in Boulder City, Nevada.

Lopez, 52, was Assistant Regional Director for the Lower Colorado Region for a year and has been serving as Acting Regional Director since the retirement of Edward A. Lundberg last June.

As Regional Director, Lopez will direct reclamation operations in a region which includes southern California, most of Arizona, southern Nevada, western New Mexico, and southwestern Utah. Principal projects currently under construction in the region include the $1.4 billion Central Arizona Project and the $155 million Colorado River Basin Salinity Control Project.

A career federal employee with 32 years' service, Lopez received a Bachelor of Science degree in 1951 and a Master of Science degree in civil engineering in 1957 from the University of Colorado. In September 1973, he became the Bureau's Assistant Chief of the Division of Planning Coordination in the Engineering and Research Center in Denver, a position he held until transferring to the Lower Colorado Regional staff in June 1974.

The new Regional Director for the Lower Colorado Region received the Department of the Interior's Meritorious Service Award in 1973, as well as several citations for superior and outstanding performance throughout his federal career.

NEW SOLAR ENERGY RESEARCH PROJECT

Feasibility of Using Solar Energy for Irrigation Pumping is the title of a cooperative research project funded by the National Science Foundation through the USDA Agricultural Research Service. The principal objective of this project is to determine the engineering and economic feasibility of using solar energy to power irrigation pumps. Solar-powered pumps have been used in the past, but those pumps were quite small and are inadequate for today's Arizona agricultural needs.

This project involves Texas Tech University, the University of Houston, and the University of Arizona. The Arizona portion is being investigated by the Department of Agricultural Economics and the Department of Soils, Water and Engineering. In this portion, they are evaluating the feasibility of solar energy and the relative costs of other fuel and energy sources. The project not only involves the technical and economic aspects of pumping but also evaluates potential changes in irrigation or crop production practices to match any changes in pumping conditions. The 15-month feasibility study will be completed in Fall 1976 and may lead to solar energy plans for irrigation or feedlot operation in the Southwest.

CALL FOR PAPERS

The Sixth Joint Annual Meeting of the Arizona Section of the American Water Resources Association and the Hydrology Section of the Arizona Academy of Science will take place April 28 – May 1, 1976, in conjunction with the Arizona Academy of Science and the Southwestern and Rocky Mountain Division of AAAS meeting. The meeting will be held at the Braniff Place Hotel, Tucson, Arizona.

Papers should discuss technical, legal, social, economic and/or political aspects of water resources in the Southwest. All papers will be presented in a ten-minute period, with five minutes for discussion and questions.

Requests for presentation of papers must be made by February 6, 1976, to be considered for the program. The following information is needed: title of paper, author(s), location of author(s), and an abstract (not to exceed 150 words). These should be submitted to Lloyd Gay, School of Renewable Natural Resources, University of Arizona, Tucson, Arizona 85721, telephone (602) 884-2947.

All papers presented at the sessions will be published in the Proceedings of the meeting – Volume 6 of the *Hydrology and Water Resources in Arizona and the Southwest.*

PUBLICATIONS RELEVANT TO ARIZONA

Logan Symposium Proceedings

Watershed Management was the subject of a three-day symposium held this past summer (August 11-13) in Logan, Utah. The symposium was conducted by the Committee on Watershed Management of the Irrigation and Drainage Division of the American Society of Civil Engineers and the Utah Section of ASCE. Other cooperative sponsors were the American Society of Agricultural Engineers, the American Water Resources Association, the Society of American Foresters, the Society for Range Management, and Utah State University.

Papers which discuss Arizona Research are:

Strip Mining and Reclamation on Black Mesa of Arizona, by Tika R. Verma, John L. Thames, and Richard T. Patten.

Black River Barometer Watershed in Relation to the

Resource Manager, by Peter T. Stewart.

Vegetation Management for Water and Range Management, by Peter F. Ffolliott and David B. Thorud.

Characterization of Snowmelt Runoff Efficiencies, by Rhey M. Solomon, Peter F. Ffolliott, and David B. Thorud.

Mountain Watershed and Dynamic Equilibrium, by Burchard H. Heede.

Managing Chaparral for Water and Other Resources in Arizona, by Alden R. Hibbert, Edwin A. Davis, and Thomas C. Brown.

Multiple Use Effects of Manipulating Pinyon-Juniper, by Warren P. Clary.

Modeling Management of Ponderosa Pine Forest Resources, by Malchus B. Baker Jr.

Application of Surface Runoff Models to Problem of Quantifying Hydrologic Influence of Watershed Characteristics, by L.J. Lane, D.A. Woolhiser, and V.P. Singh (abstract only).

The proceedings, entitled *Watershed Management,* are available for $18 from the American Society of Civil Engineers, 345 East 47th Street, New York, N.Y. 10017.

Water Policy in Arizona

Water institutions may be broadly divided into two categories: (1) water rights law and (2) water organizations law. *Economic Implication of Public Water Policy in Arizona,* by M.M. Kelso, D.A. Bingham, W.E. Martin, H. Padfield, and D.F. Paulsen, is concerned largely with the second of these. The research examined the Tucson Metropolitan Area, the Phoenix Metropolitan Area, and the Salt River Project as a major component of the latter area.

The publication is available from the National Technical Information Service as PB-241 513/1WN, for $5.75 for paper copy and $2.25 for microfiche.

Arizona, California, and Nevada Water Laws

The development of relevant legislation governing water is paramount in the western United States because of the increasing demand upon the resource. In *Orienting State Water Laws,* John C. Ohrenschall, of the Nevada Center for Water Resources Research, investigates the water laws of California, a dual-doctrine state, and Arizona and Nevada which are appropriative in surface water law determinations. The three state water systems are analyzed to determine the historical and sociopolitical bases for various legal classifications of water and the managerial framework which has evolved.

This document is available from the National Technical Information Service, as PB-241 712/9WN, 43 pages, $3.75 for paper copy and $2.25 for microfiche copy.

Water Resources Listing

An informal listing of more than 40 organizations that will answer questions or provide materials on water and water pollution is now available, on request, from the Library of Congress.

Entries include the names, addresses, and telephone numbers of organizations and brief descriptions of the information services they provide.

Selected Information Resources on Water and Water Pollution, SL72-8, is available from National Referral Center, Science and Technology Division, Library of Congress, Washington D.C. 20540.

USGS Water Report

A report that contains records of chemical analysis, suspended sediment, and temperature of surface water in Arizona at selected sites has been prepared by the U.S. Geological Survey and released recently. The report was prepared in cooperation with other federal and state agencies and other organizations.

The records serve as a basis for determining the suitability of water for different uses. Water samples for analyses usually are collected at or near surface-water gaging stations. The flow and water quality of a stream are related to variations in rainfall and other forms of precipitation. In general, lower concentrations of dissolved solids may be expected during periods of high flow than during periods of low flow. Conversely, the suspended solids in some streams may change greatly with relatively small variations in flow, and in other streams the quality of the water may remain relatively uniform throughout large ranges in discharge.

Information is presented for chemical, biological, and microbiological quality; water temperature; and fluvial sediment. Chemical quality includes concentrations of individual dissolved constituents and certain properties or characteristics, such as hardness, sodium adsorption ratio, specific conductance, and pH. The biological information includes qualitative and quantitative analyses of plankton, bottom organisms, and particulate inorganic and amorphous matter present. Microbiological information includes quantitative identification of certain bacteriological indicator organisms. Water temperature data represent one-daily observations except for stations where a continuous temperature recorder furnishes information from which daily minimum and maximum readings are obtained. Fluvial sediment information is given for suspended sediment discharges and concentrations and for particle-size distribution of suspended sediment and bed material.

The report *Water Resources Data for Arizona, 1974—Part 2. Water Quality Records* was prepared by the U.S. Geological Survey. Copies are available for examination at U.S. Geological Survey offices in Room 5-A Federal Building, 301 West Congress Street, Tucson, Arizona; Suite 1880 Valley Center, Phoenix, Arizona; 601 East Cedar Avenue, Building 3, Flagstaff, Arizona; 1940 South Third Avenue, Yuma, Arizona; and Room 5312 National Center, 12201 Sunrise Valley Drive, Reston, Virginia.

NEW COURSE IN ECONOMICS OF WATER OFFERED AT UNIVERSITY OF ARIZONA

An interest in the economic problems of water is the major prerequisite for Economics 396K (Spring Semester, 1976) at the University of Arizona. Graduate students in Hydrology and Water Resources, Civil Engineering, Watershed Management, Regional Development and Urban Planning, Law, Political Science, Mining, and other areas are invited to enroll. The course, designed for students having a limited background

in economics, will examine the economic issues surrounding such topics as:

Ground-Water Rights
Surface-Water Rights
Central Arizona Project
Colorado River Development
Urban Demand
Mining and Industrial Demand
Water Reuse and Recycling
Wastewater Treatment and Disposal
Ground-Water Recharge
Urban Water Delivery Systems
Energy Production Demands

Students in Economics and Agricultural Economics are also invited to participate.

Interested persons should register for ECON 396K which is titled "Natural Resource and Environmental Economics." For more information, contact Dr. David E. Pingry at 884-2458 or 884-2155, or Room 517 of the Business and Public Administration Bldg., the University of Arizona, Tucson.

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

Phil Briggs, Arizona Water Commission, Suite 800, 222 North Central Avenue, Phoenix, Arizona 85004.

Jim DeCook, Water Resources Research Center, University of Arizona, Tucson, Arizona 85721.

Ken Foster, Office of Arid Lands Studies, University of Arizona, Tucson, Arizona 85721

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