

ARIZONA WATER & RESOURCES NEWS BULLETIN

NEWSLETTER NO. 73-1

JULY-AUGUST 1973

WATER-RELATED INFORMATION DISSEMINATION

At a meeting in Tucson several weeks ago, a Phoenix-based representative of a Federal agency lamented over the lack of information concerning artificial groundwater recharge in Arizona; yet very thorough research in this regard has been accomplished over the past ten years at the University of Arizona. Hopefully in the future, through the means of this newly initiated Newsletter and the Project Information Bulletins, water-related research efforts and results, other than those competently handled by the Agricultural Extension Service and others, will reach the attention of a greater number of interested users.

With a great crew like Phil Briggs, Jim DeCook, and Ken Foster at the helm, this new means of statewide dissemination of water-related research findings and news, with your cooperation, I am sure, will prove to be a worthwhile function.



Sol Resnick
Director, Water Resources Research Center
University of Arizona

ORTHOPHOTO QUADRANGLES OF ARIZONA

Arizona Resources Information System (ARIS) has for sale 7½-minute orthophoto quadrangles of Arizona at a scale of 1:24,000, the same scale and area as USGS topographic quads. What is an orthophoto quad? It is a topographic quad with a photographic base.

The orthophoto quadrangles are produced from photography taken at an altitude of 65,000 feet and made by a process that corrects the distortion so that they meet national map accuracy standards.

As of July 1973, approximately one-third of the Arizona quadrangles are available, primarily the area south of the 34° parallel. Other quadrangles are continuously being received until the entire State is completed.

If you wish to check availability and cost, or place an order, contact ARIS at 3500 North Central, Phoenix, Arizona 85012, (602) 271-4061.

NEW WATER RESEARCH PROJECTS

The Director of the University of Arizona Water Resources Research Center, with approval by the State Review Committee, submitted the Application for Allotment for FY1973-74 in April, to the Office of Water Resources Research in Washington, D.C. The new projects approved for this fiscal year are listed below by title,

principal investigators and their departmental affiliations. Also, for purpose of reference, the OWRR project number is given. More will be said in a later issue concerning other types of water projects funded by OWRR as well as other agencies.

Resource Information Applied to Water Sources and Discharges at Existing and Potential Power Plant Sites in Arizona and the Southwest (A-043-ARIZ): K.J. DeCook, Water Resources Research Center and R.A. Fazzolare, Nuclear Engineering Department. *Conceptual Design Evaluation of a Physical-Chemical Domestic Waste Treatment System Utilizing Power Plant Waste Heat (A-044-ARIZ):* R.A. Fazzolare, Nuclear Engineering and R.A. Sierka, Civil Engineering. *An Assessment of Snowpack Depletion-Surface Runoff Relationships on Forested Watersheds (A-045-ARIZ):* P.F. Ffolliott and D.B. Thorud, Watershed Management. *Utilization of Clear-Water Sewage Effluent in Mineral Processing (A-046-ARIZ):* W.W. Fisher and D.D. Rabb, Arizona Bureau of Mines. *Digitization and Computerization of River System Coordinate Geometry (A-047-ARIZ):* G.S. Lehman and M.M. Fogel, Watershed Management, and C.B. Cluff, Water Resources Research Center. *Evaluation of Agricultural Adjustment to Irrigation Water Salinity: A Case Study for Pinal County, Arizona (A-048-ARIZ):* W.E. Martin and L.E. Mack, Agricultural Economics. *Urban Flood Water Management Systems in Semi-Arid Regions: Model Extension, Design and*



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



Application (A-049-ARIZ): S.D. Resnick, Water Resources Research Center.

Should you desire additional information on any of these projects, call 884-2751 to obtain the investigator's phone number at the University of Arizona.

UNIVERSITIES COUNCIL ON WATER RESOURCES ANNUAL MEETING

The UCOWR Annual Meeting was held July 29-August 1, 1973, in Lubbock, Texas, to discuss "The University and Public Policy in Water Resources." UCOWR is a national council comprised of universities having a mutual interest in water resources research. One day was devoted to review and discussion of the National Water Commission's recent report entitled "Water Policies for the Future." The report concludes a four-year study on national water policy and contains some 300 recommendations.

Workshops were organized to explore opportunities and mechanics for regional cooperation and coordination in water research. Dr. Warren A. Hall, Acting Director, Office of Water Resources Research, Washington, D.C., discussed "Regional Cooperation in Research and Education," which provided the springboard for the workshop.

INFORMATION SYSTEM RELATING TO VEGETATION MANAGEMENT AND TREATMENT UNDER DEVELOPMENT

Vegetation management and treatments and the effects on water and other resource-based products are the subjects of a developing reference retrieval information system operated out of the Watershed Management Department of the University of Arizona. References to studies done in other locations, besides Arizona and the Southwest, are included. Materials covered are mostly conference and symposium reports, journal articles, publications of various governmental agencies, theses and dissertations, and progress reports and reviews.

Any persons wanting information in this area are considered users, and include researchers, students, professors, land managers, private interests, and decision makers. In response to a particular subject inquiry, the user receives a computer printout of citations and abstracts relating to his topic of study.

If you are interested in using the system, contact Linda White, Department of Watershed Management, University of Arizona, Tucson, phone 884-2313.

CASSETTE TAPE SERIES OFFERED

The Office of Arid Lands Studies, in cooperation with the Water Resources Research Center, University of Arizona, is offering a cassette tape program on timely subjects relating to current trends in Arizona Water Resource Development. To date, three cassette tapes have been produced:

Cassette Tape 1 - "Water Harvesting, Evaporation, and Seepage Control," by Brent Cluff, Associate

Hydrologist, Water Resources Research Center, University of Arizona.

Cassette Tape 2 - "Farming the Desert," by W.G. Matlock, G.R. Dutt, and K.R. Frost, Professors, Department of Soils, Water, and Engineering, University of Arizona.

Cassette Tape 3 - "Trickle Irrigation Techniques for Arizona," by D.A. Bucks, U.S. Water Conservation Laboratory, Phoenix; D.D. Fangmeier, Professor, Department of Soils, Water, and Engineering; and A.D. Halderman, Cooperative Extension Service, University of Arizona.

These pilot tapes are produced under the ongoing Arizona Water Information System to obtain user reaction to this method of information dissemination. By receiving one tape per month, one will be able to build an audio library which can be used to keep abreast of the changing field of water resource development. It can also be used as an education tool.

The number of cassettes produced for each topic has been limited, and if you have not listened to a cassette but desire to do so, please contact:

Kennith Foster
Office of Arid Lands Studies
1201 East Speedway Boulevard
Tucson, Arizona 85719
Phone: (602) 884-3694 or 884-1955

A questionnaire will be provided for your evaluation of the series and for an indication of your interest in subscribing to such a service.

WATER INFORMATION CONFERENCE HELD

The first annual (1973) "Western State Conference on Water Information Dissemination," sponsored by the Water Resources Research Center with funds provided by the Office of Water Resources Research (OWRR), was held in Phoenix on June 8.

The Conference assembly was fortunate in having Mr. Lou Lulich of the OWRR Water Resources Scientific Information Center, Washington, D.C., to present a review of OWRR's current program and goals in water information dissemination. The state water centers in California, Utah, and Nevada were represented to provide reports on their respective information dissemination activities. An interstate panel discussed needs and opportunities for coordinated regional or interstate action.

Another important part of the Conference was the state agency panel. Those agencies represented were Arizona Water Commission, Arizona Game and Fish Department, Arizona State Health Department, Arizona State Land Department, and the Department of Economic Planning and Development. Also represented on the panel were the Arizona Water Resources Committee and the Arizona Resource Information System. The active participation of State agency personnel in the Conference demonstrated the concern for needed water information. A limited number of Conference proceedings will be available in September, on request, from the Water Resources Research Center, University of Arizona, Tucson.

GAME AND FISH DEPARTMENT TO PURCHASE BECKER LAKE

At its August 4, 1973, public meeting in Phoenix, the Arizona Game and Fish Commission authorized the Game and Fish Department to proceed with the purchase of Becker Lake, near Springerville in Apache County. Funding for the purchase of this 107-acre lake will come from the Water Conservation and Recreation Development Fund. The establishment of this fund and a million-dollar appropriation from the State general fund was made possible by the 30th State Legislature (1st Session). Governor Williams signed the legislation into law on May 17, 1971.

Becker Lake is one of the oldest lakes on the Little Colorado River. The lake carries a first priority water right under the Norviel Decree of April 29, 1918, with a priority date of 1883. The water right is for 422 acre-feet.

The Game and Fish Department is formulating a fishery management plan for presentation to the Game and Fish Commission. Department fisheries biologists indicate that they would like a quality fishery at Becker, i.e., fly or lure only, limited season, reduced creel limit, limited fishermen on any given day, possibly increased size limits, and other limitations that will permit quality fishing. Ten-pound rainbow trout are not uncommon with the average size in the three-pound class.

Other expenditures from the Water Conservation and Development Fund are contemplated in the Douglas area at Leslie Canyon (250-acre lake) and at Twin Peaks (120-acre lake) some 40 miles south of Tucson. These two projects are scheduled when water right problems are resolved.

The Twin Peaks water right application was denied by the State Land Department on the grounds that water loss through evaporation from the 120-acre lake would contribute to the already overburdened Santa Cruz Basin. The Game and Fish Department has appealed the Land Department's decision and the appeal is currently under advisement in the Superior Court of Pima County.

DEVELOPERS MUST DEMONSTRATE ADEQUATE WATER SUPPLY

ARS 45-513, enacted May 2, 1973, by House Bill 2100, requires the developer of a subdivision to submit plans for its water supply to the Arizona Water Commission, 222 North Central Avenue, Suite 800, Phoenix, Arizona 85004, and demonstrate to the Commission that the supply is adequate to meet the projected needs prior to recordation of the plat. The Water Commission is required to issue a report on the adequacy of the developer's supply. If the Commission reports the subdivision's water supply is inadequate, or if no water is available, the State Real Estate Commissioner shall require that all promotional material and contracts for the subdivision contain a summary of the Commission's report.

The Commission is empowered to designate service areas where an adequate supply of water exists. In such areas, the developer is not required to submit plans to the Commission and may record the subdivision plat in the normal manner. The Commission is required to report

such designation to the water departments of the municipalities or to the private water companies within the service area. Below is a list of service areas designated to date. A subdivision is considered to be within the designated service area *only* when its water supply is taken from the municipal system. Subdivisions outside a municipality's corporate limits, yet served by the municipal system are considered to be within the service area. Conversely, subdivisions within the corporate limits of one of the designated municipalities but not receiving water from the municipal system are outside and must still file with the Water Commission. A companion list of service areas supplied by private water companies will also be derived.

Regulations to establish for developers and their hydrologists what constitutes a satisfactory demonstration of adequacy are now being drafted by the Commission. In the interim, please contact the Commission at 258-8175 if you have any questions.

Arizona Water Commission's Designated Municipal Water Service Areas¹ Pursuant to ARS 45-513

County	City	County	City
Apache	Springerville St. Johns	Mohave	Kingman Lake Havasu City
Cochise	Douglas Willcox	Navajo	Holbrook Winslow
Coconino	Flagstaff Page	Pima	Tucson South Tucson ³
Gila	Globe	Pinal	Eloy
Graham	Safford	Santa Cruz	Nogales
Greenlee	None ²	Yavapai	Prescott
Maricopa	Buckeye Glendale Mesa Phoenix Scottsdale Tempe Wickenburg	Yuma	Parker Yuma

¹Service area considered to be that served by municipal system; self-supplied subdivision or those served by private water companies that are within the corporate limits of the municipality are considered to be outside of the service area.

²No municipal water systems within county; municipalities supplied by private water companies.

³No municipal system, but as it is served by Tucson's municipal system it is considered to be a municipal service area.

SOUTHWESTERN GROUNDWATER LAW BIBLIOGRAPHY

Because of the uneven development of groundwater law in the southwestern U.S., "enacted ad hoc or piecemeal," the Office of Arid Lands Studies, University of Arizona, supported by an OWRR grant to Patricia Paylore, Principal Investigator, has prepared the third of its *Arid Lands Resource Information Papers* in an effort to bring together in some sensible way all the up-to-date information possible on the interpretation of basic doctrines of

groundwater law in the area, the state of the art at this time, and an evaluation of the climate of change that reflects a growing public concern for the control and use of a diminishing resource in the states in this region with a variety of dilemmas held in common. It is hoped that this paper will be of great practical usefulness to a variety of persons presently confused by a morass of almost anarchical opinions, laws, interpretations, appeals, and suits.

The interpretative text, written by University of Arizona College of Law J.D. (1972) John R. Chalmers, is supported by a computerized annotated bibliography of over 150 items, with access through a detailed keyword index and an author index as well. Inquiry into previous attempts to provide this type of information reveals that the latest such bibliography covers references not only now nearly ten years old, but nationwide in coverage rather than specifically regional. Other strictly legal efforts do not include the type of information that has been identified for inclusion in this paper, with its orientation directed particularly toward lay persons involved in water planning, policy, and legislation. Special emphasis has been placed on Arizona, California, Colorado, Nevada, New Mexico, Texas, and Utah. Chalmers has interviewed officials from water-related state agencies in several of these states in an attempt to provide currency of information and activities so badly needed.

The publication, *SOUTHWESTERN GROUNDWATER LAW: A Bibliographic Interpretation* by John R. Chalmers, J.D., (U.S. Department of the Interior, Water Resources Scientific Information Center, 1973 [in press]: University of Arizona, Office of Arid Lands Studies, Arid Lands Resource Information Paper 3.) is expected in the fall of 1973. Advance requests will be received by OALS and filled immediately upon issuance.

UPCOMING EVENTS

17th Annual Watershed Symposium

The 17th Annual Watershed Symposium cosponsored by the Arizona Water Commission and the Arizona Water Resources Committee is to be held September 19, 1973, at

the Desert Hills Hotel, 2707 E. Van Buren, Phoenix. Registration is at 8:30 a.m., with the opening remarks beginning at 9:00 a.m. This year's theme is "Prescribed Burning." Mr. Ed Komarek of the Tall Timbers Research Station, Tallahassee, Florida, is to be the keynote speaker presenting a summary of prescribed burning in Florida. A series of talks on specific aspects of prescribed burning is also planned, which include water yield, wildlife, and an operational program at the Fort Apache Indian Reservation.

A concluding panel will discuss current state and federal agency positions on prescribed burning with audience participation invited.

For additional information contact: Mr. Phil Briggs, Arizona Water Commission, phone 258-8175.

4th Annual Conference on the Application of Remote Sensing of Arid Land Resources and Environment

The 4th Annual Conference sponsored by the Office of Arid Lands Studies, University of Arizona, is to be held November 14-16, 1973, at the Senior Ballroom of the Student Union Building on the University Campus.

Papers to be presented are categorized into land use, mineral and soil resources, water resources, and rangeland, forest, and agricultural resources.

For additional information contact: Director, Conferences and Institutes, Division of Continuing Education, University of Arizona, Tucson, Arizona 85721.

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

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