

# ARIZONA WATER RESOURCE

Volume 1, No. 1

February 1992

## State-wide Water Newsletter Debuts

Welcome to the premier issue of *Arizona Water Resource*. AWR is produced by the Arizona Water Resources Research Center at the University of Arizona. Representatives from various water organizations within the state, however, assisted in its planning and development. AWR represents a group effort at identifying a publication need within the state, and then developing a newsletter to respond to that recognized need.

The identified need is a basic one: communication. Although often referred to, the Arizona water community defies easy classification. It is made up of over 100 identified members — government agencies, universities, interest groups and other types of specialized water organizations, as well as private sector associations. What is needed is some way for members of the Arizona water community to communicate and share news and information with other members. The AWR is that channel of communication.

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*Ample snowfall in Arizona through December has produced snowpack water equivalency of 160 percent of normal in the Salt-Verde Basin, 150 percent of normal in the Gila Basin, and 200 percent of normal in the Little Colorado Basin.*

## 1991 Arizona Water Developments

Major 1991 state water events are described in the following year in review.

### Legislative

After years of conflict, Arizona enacted legislation regulating the intrastate transfer of groundwater from rural to urban areas in 1991. A.R.S. §§ 45-551 to 559 (1991). The new statute takes a basin-specific approach: prohibiting groundwater transfers away from certain basins, while allowing transfers from other basins. The purchase of outlying land by Phoenix-area municipalities led to considerable controversy. The new legislation resulted from a compromise that allows any city that purchased such property prior to 1988 to transport water from the parcel but prohibits transfers of water from property in certain designated basins if the property was purchased after 1988.

Arizona also enacted legislation authorizing the establishment of a groundwater replenishment district in the Phoenix Active Management Area. *Id.* § 45-4401 *et seq.* The replenishment district, with a nine-member board of elected directors, will have broad powers "to develop, store, augment, conserve, replenish, or otherwise increase water supplies for the benefit of the district members consistent with achieving safe yield." The new legislation authorizes the district to undertake projects designed to add water to the regional aquifer.

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*Water Year in Review, cont. from page 1*

The other major water-related enactment by the 1991 Arizona Legislature allows farmers to sell or convey all or part of the balance in their groundwater "flexibility accounts." The 1980 Groundwater Management Act (GMA), *Id.* § 45-401 *et seq.*, gives grandfathered irrigation groundwater rights holders a "bank account" for credits earned by using less groundwater than the statute allows in a given year. The new legislation allows the farmer to sell a portion of the flexibility account credits without transferring the underlying groundwater right or the irrigated land.

**Judicial**

As part of Arizona's Little Colorado and Gila River general stream adjudication process, the Arizona Department of Water Resources (DWR) will prepare Hydrographic Survey Reports (HSRs) for each watershed.

DWR issued its first HSR, for the Silver Creek Watershed in the Little Colorado Adjudication, in late 1990. The deadline for parties to file objections to individual sections of the Silver Creek HSR was May 29, 1991. Participants filed over 3,000 objections by the deadline. The Special Master issued case management orders on the Silver Creek objection on December 1, 1991, and will begin contested case hearings on these objections in early 1992. DWR issued the HSR for the San Pedro Watershed in the Gila Adjudication on November 20, 1991. This issuance triggers a 180-day period during which parties may object to individual sections of the HSR.

The adjudication court in 1991 also reviewed Indian water rights settlements. The Special Master recommended approval of the Salt River Pima-Maricopa Settlement on October 16. Pursuant to the Master's recommendation, the Maricopa Superior Court approved the Salt River Pima-Maricopa settlement in November. Settlements for the Fort McDowell Indian Community and the San Carlos Apache Tribe are being negotiated and should receive attention in 1992.

Several legal issues related to the adjudications remain pending before the Arizona Supreme Court on interlocutory appeal. Briefs on whether the trial court's specially-ordered procedures violate due process were filed in late May of 1991.

The court declined oral argument and has not yet rendered an opinion.

In 1992 the Supreme Court will also review whether the adjudication court erred in adopting the so-called "50%/90-day" test for determining whether underground water is appropriable. The decision may finally resolve the legal relationship between groundwater pumping and surface water appropriations.

In a peripheral case, the Court of Appeals, Division One, held that there was "substantial evidence...that portions of rivers and streams other than the Colorado" were navigable at statehood. *Arizona Center for Law in the Public Interest v. Hassell*, 95 Ariz. Adv. Rep. 13 (Sept. 10, 1991). The court found the substantial evidence of navigability warranted declaring House Bill 2017, (codified as A.R.S. §§ 37-1101 to 1108, 12-510, and 12-529 (1991)), unconstitutional under the "public trust" doctrine and the "gift clause" of the Arizona Constitution. HB 2017 attempted to relinquish Arizona's interest in riverbed lands. Although primarily a land case, the navigability analysis and the "public trust" doctrine could impact Arizona water law. In 1992, the Arizona Supreme Court is expected to be asked to review the *Hassell* decision.

The Court of Appeals, Division Two, in *Arizona Water Co. v. City of Bisbee*, 98 Ariz. Adv. Rep. 71 (Oct. 24, 1991), decided that a city's delivery of effluent within a water service company's exclusive service area did not give rise to damages for compensation under A.R.S. §§ 9-515 to 516. The Court held that under *Arizona Public Service Co. v. Long*, 160 Ariz. 429, 773 P.2d 988 (1989), effluent was distinctly different

from the water provided by a public service company. *Arizona Water Co.* is another recognition that effluent remains essentially unregulated under Arizona law.

**Administrative**

For almost two years following DWR's 1989 adoption of the GMA-mandated Second Management Plans, various water users contested certain aspects of the plans. The Arizona Municipal Water Users Association challenged two provisions of the plans: (1) DWR's decision to increase the amount of available water for farmers in particular irrigation districts that receive Central Arizona Project water; and (2) DWR's decision to count "recovered effluent" in determining whether municipal water providers had complied with statutory water conservation mandates.

In *Arizona Municipal Water Users Association v. Arizona Department of Water Resources*, Judge Goodfarb of the Maricopa County Superior Court invalidated both provisions. Judge Goodfarb, relying on the *Long* holding which held that DWR had no authority to regulate effluent, found that "counting" effluent in a municipal water provider's daily allotment was equivalent to "regulating" effluent. DWR had no authority to "count" effluent in that calculation. As to the CAP water duty adjustments, Judge Goodfarb held that DWR had an inadequate factual basis to support its increase in the water allotment for CAP farmers. DWR has filed a notice of appeal on the effluent issue only.

*Contributed by M. McGinnis and C. Avery of Jennings, Strouss & Salmon.*



*Arizona Water Resource* is published monthly, except for January and July, by the University of Arizona's Water Resources Research Center. AWR accepts news, announcements and other information from all organizations concerned with water. All material must be received by the 14th of the month to be published in the following month's issue. Subscriptions are free upon request.

**Arizona Water Resource Staff**

Editor: Joe Gelt  
 Reporter: Todd Sargent  
 Calendar: Jim Suriano  
 Publisher: Gary Woodard  
 WRRC Director: Hanna J. Cortner

**Arizona Water Resource**

Water Resources Research Center  
 University of Arizona  
 350 N. Campbell Avenue  
 Tucson, AZ 85719  
 602-792-9591; FAX 602-792-8518



## News Briefs

### Roosevelt Dam Gains Height, Increased Capacity

Roosevelt Dam, which provides two-thirds of the Salt River Project's storage capacity, is undergoing modifications to raise the dam 77 feet. The new height will provide additional water conservation, dedicated flood control space, and a safety of dams pool to manage the revised inflow design flood. Total cost of the project, scheduled for completion in July 1995, will exceed \$200 million.

To facilitate construction and manage small inflow events, SRP is required to keep the reservoir below 75 percent of capacity. The empty space is to be used for managing inflow events with less than a 20-year return period without use of the spillways at the dam. Spillway releases would damage construction work already completed and could lead to significant delays.

Watershed precipitation has run well above average since November 1991. Resulting runoff has caused the reservoir to rise, necessitating releases to keep the level below the drawdown restriction. As a result, Phoenix water demands have been exceeded, and excess water has been spilled into the normally dry Salt River channel.

### San Pedro Watershed Report Released

The Arizona Department of Water Resources has released the final Hydrographic Survey Report for the San Pedro watershed. The report was prepared as part of the general adjudication of water rights in the Gila River System. The San Pedro River watershed includes the areas around Sierra Vista, Tombstone, Benson, and Winkelman.

The San Pedro Hydrographic Survey Report includes a general assessment of water resources and water

uses in the San Pedro watershed and detailed reports on each water user. The detailed reports include technical information such as types of use, sources of supply, amount of water use, and water right filings and claims. This information may be used by the Court to determine individual water rights.

The report contains nearly 4,000 pages and over 200 maps, separately bound in nine volumes. The documents may be viewed at the DWR Phoenix office, the Tucson, Pinal and Prescott Active Management Area offices, and other locations within the affected area.

Objections to information contained in the report must be filed with the Clerk of the Superior Court, Maricopa County Courthouse Annex, 3345 West Durango Street, Phoenix, AZ 85009 on or before May 18, 1992.

### Solar Power to Replace Navajo Nation Windmills

The Navajo Nation has begun replacing its windmills with solar-powered units. Currently 1,011 windmills serve the Navajo Nation. Plans call for 75 per year to be replaced by solar energy, at an average cost of \$16,000 per unit.

The changeover is expected to improve water pumping capacity. Needing wind to operate, windmills have limited effectiveness during summer months, when persistent breezes are lacking. And, conversely, windmills do not operate when wind velocity is too great, their ideal operating range being when winds blow between 15 to 25 miles per hour. When windmills are not pumping sufficient water, the Navajo Nation must haul water at a cost of between \$1 to \$2 million per year.

Solar energy is a more reliable energy source that promises more continuous water supplies. Because of the solar installations, staffing needs are shifting from windmill maintenance to solar technicians.

For additional information contact: Johnny Francis, The Navajo Nation, Water Operation and Maintenance Department, P.O. 678, Fort Defiance, AZ 86504; (602) 871-6954.

### Tucson Water Purchase of Water Company Delayed

The City of Tucson's agreement last June to buy Metropolitan Water Company (MWC) for \$14 million is being opposed by MWC's 12,000 customers, who fear higher water bills. Tucson Water (TW) rates are 50 percent higher, and MWC's 30,000 residents use an average of 30 percent more water. However, without the purchase, MWC would have begun paying TW to deliver treated CAP water, which would have caused similar rate increases.

The ACC in early January delayed transferring MWC's CC&N, suggesting that TW phase in its rates, a move opposed by the City as contrary to its water use policies of charging all customers the same. The ACC will again consider the issue February 19.

### Students Receive Resnick Internship

With the support of the Sol Resnick Internship, two University of Arizona students will gain on-the-job experience in the field of water resources by working with the Special Master of the Arizona General Stream adjudication. The UA Water Resources Research Center and the Office of the Special Master, Arizona General Stream Adjudication offered the internship.

Recipients of the award are Robert Cromwell Jr. and James Crammond. Cromwell will participate during spring semester 1992, and Crammond during summer term 1992. Both attend the UA College of Law. The interns will assist the Special Master in preparing and conducting contested case hearings in the steam adjudications now underway in the Gila River and the Little Colorado River Basins.

The newly created internship honors Sol Resnick for his years of service devoted to water resources, and particularly his support of graduate students. Formerly the director of UA's WRRC, Resnick's career includes local projects as well as international work.



## Legislation

Many local governments and state agencies have prepared water-related bills for the current Arizona legislative session. Below are reviews of legislation to be introduced on behalf of DWR, Scottsdale, and the TAMAWAA.

### ADWR

The Arizona Department of Water Resources is advancing four proposals for the 1992 legislative session.

**Plumbing Fixture Legislation** The proposed legislation will establish statewide standards for water used in toilets, urinals, showerheads, faucets and other appliances. These standards will enhance statewide conservation efforts and are projected to save almost 60,000 acre-feet per year in new housing by 2035. The fixtures that would meet the proposed standards are: water closets not exceeding 1.6 gallons per flush, urinals not exceeding 1.0 gallons per flush, and showerheads and faucets with flow rates not exceeding 3.0 gallons per minute.

**Water Exchange Legislation** The proposed legislation will expressly authorize exchanges of one type of water for another. The types of water to which this proposal will apply include groundwater, surface water, Colorado River water and effluent. The proposal will also clarify how existing regulatory requirements, such as conservation requirements, apply to water given up and water received in an exchange. Also it will formalize the accounting system for exchanges to facilitate water exchanges.

**Agricultural Flexibility Account Credit Transfer and Conservation Assistance Funding** During the 1991 legislative session, H.B. 2340 was passed establishing a system to transfer agricultural flexibility account credits. There are significant ambiguities in its provisions, however, that must be addressed to ensure that these

provisions do not circumvent water management objectives. The proposed modifications include: a) credits may be transferred only from land that was capable of being irrigated as of December 31 of the reporting year; b) credits may be bought and sold only within an operating irrigation district; and c) the effective date of the transfer of credits is the date DWR is notified rather than the date of sale. This legislation will also clarify DWR's authority to expend money collected for the augmentation and conservation assistance fund so that money collected during 1991 for augmentation purposes may be used for conservation assistance purposes.

**Omnibus Legislation** Each year adjustments to Title 45 are proposed to address current issues, clarify existing provisions or streamline administrative processes. This year numerous revisions have been identified and discussed through an ad hoc advisory committee process.

### SCOTTSDALE

The City of Scottsdale has drafted legislation for annual underground storage and recovery of water by municipal water providers. Recharging water and recovering it from wells could obviate the need to construct water treatment plants to treat and deliver CAP and other surface water. Water recharged under this law would be recovered as the same type or class of water, with the rights and restrictions of use for that type of water.

The proposal differs from the existing underground storage and recovery act in that the existing act provides for long-term storage of surplus water, while the new proposal would allow short-term (same year) recharge and withdrawal of non-surplus water. It also differs from existing law in allowing all water recharged to be withdrawn (there is no "cut for the aquifer").

DWR reportedly approves of the general concept as a way of encouraging greater use of CAP water within the state, but wants changes in the "no cut for the aquifer" provision.

### TAMAWAA

High on the legislative agenda of the Tucson Active Management Area Water Augmentation Authority is — and no wonder — a shorter name. Santa Cruz Valley Water Authority likely will be the new title. In addition to a name change, release from an obligation to return \$300,000 in augmentation fees to DWR, and a handful of technical amendments to their enabling legislation, the TAMAWAA will be evaluating potential revenue sources and changes in its governance structure.

The TAMAWAA will consider various governance and revenue options over the next couple months. Immediate implementation of a community participation program is expected to provide input to the planning process during the transition to a permanent water authority.



## Transitions

John W. Harshbarger, founder of the University of Arizona's Department of Hydrology and Water Resources, died October 10, 1991, at the age of 77. Regarded as one of Arizona's and the nation's leading experts in the field of water resources, Dr. Harshbarger led and guided efforts at developing water supplies throughout the United States and in Mexico, South America, and the Middle East. His career spanned nearly five decades.

His academic posts included head of the UA Geology Department and later head of the UA Hydrology Department. Under Dr. Harshbarger's direction, the Hydrology Department achieved an international reputation for excellence.

Memorial gifts in Dr. Harshbarger's memory may be made to the UA Foundation for the John and Margaret Harshbarger Fellowship. Address memorial gifts to: University of Arizona, Scholarship Development Office, Attention: Chad Hunley, 1111 N. Cherry, Tucson, AZ 85721.



## Special Projects

*Current water-related studies, pilot projects and applied research are summarized below.*

### Effluent on Turf Studied

Municipal effluent is ideally suited for turf irrigation, posing no threat to turf or groundwater and effectively producing fairway-quality grass, conclude two University of Arizona agricultural scientists after a three-year study.

Soil scientist Ian Pepper and plant scientist Charles Mancino said comparing irrigation with effluent and drinking quality water proved turf quality depended on the amount of water delivered, as well as water quality. Effluent irrigation however must be managed differently. Higher levels of nitrogen, phosphorus and potassium in wastewater can reduce reliance on commercial fertilizer, particularly in the summer.

The researchers compared soil samples taken at depths of two and three feet on plots irrigated with effluent and potable water. They found that levels of nitrate-nitrogen, ammonia, potassium and phosphorus remained uniform, showing they posed no threat to groundwater.

In effluent-irrigated soils, sodium and phosphorus reached levels that warrant different management practices. For example, reducing phosphorus fertilizer applications allows the grass to use the nutrient contained in the effluent. And applying calcium sulfate or sulfur reduces the sodium in the soil. Also, the soil can act as a tertiary treatment of wastewater, cutting treatment costs.

The researchers note that cost discourages wider use of effluent. For example, in Tucson effluent is priced at \$400 per acre-foot, or about 20 percent cheaper than drinking-quality water. Most golf courses have wells and can irrigate for between \$40 and \$150 per acre-foot. As a result only 16 percent of Phoenix golf courses and 29 percent of Tucson fairways currently use effluent.

### Fish Control Canal Weeds

Abundant aquatic plant growth in Salt River Project's 131-mile water transmission system is a continual problem. Left uncontrolled, the weeds could severely reduce canal system flow rates in a few weeks, as well as absorb precious water. Water loss due to aquatic weeds and nearby plant growth can be thousands of acre-feet annually.

As an alternative to chemical and mechanical demossing, SRP implemented in 1989 a pilot program of biological weed control using sterile white amur fish. After two years, the canals stocked by white amurs were clean and flowing smoothly. The fish were thriving, some now twice their initial size. They were not affected by temperature changes or storm runoff. Artificial feeding was not required. Plans call for expanding the program to include at least 18,000 fish in 75 miles of canal by 1993.

For more information contact: Water Production and Transmission, Salt River Project, P.O. Box 52025, Phoenix, AZ, 85072-2025.

### Lakes Assessment to Set State Funding Priorities

The Arizona State Parks Statewide Planning staff is conducting an assessment to identify funding priorities for the State Lake Improvement Fund (SLIP) for the next ten years. The SLIP program is to assist state and local units of government in improving boating related resources and facilities and to assure the safe use of the lakes and rivers where boating is permitted. SLIP grants are allocated by the Arizona Outdoor Recreation Coordinating Commission (AORCC) and recommended to the Legislature each fiscal year as part of the Arizona State Parks Board budget.

The Arizona State Parks Board is responsible for assessing boating and facility needs statewide and providing grants for up to 100 percent of eligible project cost for developing of boating related entities and/or the purchase of boating safety equipment.

Work is underway to assess

statewide recreational, environmental, and management impacts to boating resources that may have resulted from projects funded from 1960 through 1992 totalling over \$42 million. These impacts, along with identified new trends and surveyed user needs, will be considered to set priorities for future grants by AORCC.

For additional information contact: Peggy Tabor, Arizona State Parks, 800 W. Washington, Suite 415, Phoenix, AZ 85007; (602) 542-4174.



## Publications

*Predevelopment hydrology of the Salt River Indian Reservation, East Salt River Valley, Arizona* by B.W.

Thomsen and J.J. Porcello. U.S.G.S. Water-Resources Investigations Report 91-4132, \$4 microfiche, \$6.50 paper copy, from U.S. Geological Survey, Books and Open-File Reports Section, P.O. Box 25425, Federal Center, Denver, CO 80225.

This USGS study, carried out in cooperation with the U.S. Bureau of Indian Affairs, involved the development of a numerical model to simulate groundwater flow, stream-aquifer connection, and evapotranspiration. The model represents average conditions in the groundwater system before development by non-Indian settlers, when the system was essentially in equilibrium.

*Evaluation of the USFS Fish Habitat Relationship System in East Central Arizona Trout Streams* by Robert Clarkson. Copies can be obtained from the author at Arizona Game and Fish by calling (602) 942-3000.

Done for the U.S. Forest Service, this study evaluates tools and methodologies for appraising fish habitat. An important element of the study relates to evaluating impacts of grazing on trout habitat in the Tonto Forest.

February 1992 Water-Related Events in Arizona						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1
2 Casa del Agua	3 PhAMA GUAC Yav Co Flood Ctrl	4 Tuc CWAC	5	6	7	8
9 Casa del Agua	10 1992 Western	11 Wetlands Conf Solving Ground-	12 ARWA UA Hydr Seminar water Problems w/	13 GIS/Land- Models	14 Use Decisions Tuc Water Auth	15
16 Casa del Agua	17 Using GIS to	18 Tuc CWAC Summit, Env Educ Manage Growth	19 Pres AMA GUAC UA Hydr Seminar	20 AZ Rainforest Pres Water Comm PAG Water Qual	21 Tuc AMA GUAC	22 Tuc CWAC Santa Cruz Corrid
23 Casa del Agua	24 Yav Co Flood Ctrl	25 Theory and	26 UA Hydr Seminar Practice of Ground	27 Environmental water Monitoring	28 Stewardship Con-	29 ference

## Calendar of Events

### RECURRING

**Arizona Rainforest Alliance.** 1st & 3rd Thursdays of the month. UA Student Union Rm. 280, Tucson. Contact: Jeff/Julia 602-621-6401; 738 N. 5th Ave., Tucson 85705.

**Arizona Water Commission.** No meeting in February.

**Casa Del Agua** water conservation tours hourly Sundays noon to 4 p.m., 4366 N. Stanley, Tucson. Contact: 602-881-3939.

**City of Tucson Citizens Water Advisory Committee.** 7:00 a.m., 1st Tuesday of the month. 310 W. Alameda, Tucson. Contact: Trish Williamson 602-791-4331.

**Pima Association Of Governments/ Water Quality Subcommittee.** 9:30 a.m., 3rd Thursday of the month. 177 N Church Ave., Tucson. Contact: Gail Cushner 602-792-1093.

**Pinal AMA, GUAC.** No meeting in February.

**Phoenix AMA, GUAC.** February 3, 9:30 a.m., Phoenix AMA offices, 15 South 15th Ave. Phoenix.

**Prescott AMA, GUAC.** February 19, 10:00 a.m.. Prescott AMA offices, 1316 Iron Springs Road, Prescott.

**Tucson AMA, GUAC.** February 21, 9:00 a.m.. Tucson AMA offices, 400 West Congress, Suite 518, Tucson.

**Tucson Augmentation Authority.** 2nd Friday of the month, 7:30 a.m., Water Resources Research Center, 350 N. Campbell, Tucson. Contact: Shelley Stefanski 602-326-8999.

**Yavapai County Flood Control District.** 1st Monday of month in Prescott; 4th Monday of month in Camp Verde. Contact: Y.C.F.C.D., 255 E. Gurley, Prescott 86301.

### FEBRUARY

10-11 (Mon-Tue) **1992 Western Wetlands Conference.** San Francisco, CA Contact: Executive Enterprises Inc., 22 W. 21st Street NY, NY 10010-6904; 1-800-831-8333; FAX 212-645-8689.

11-13 (Tue-Thu) **Solving Ground Water Problems with Models Conference.** Dallas, TX. Contact: NGWA, 6375 Riverside Dr., Dublin, OH 43107.

12 (Wed) **ARWA Meeting.** County Supervisors Assoc. Bldg., 1570 W. Van Buren, Phoenix. 10:00 a.m. - business meeting; 11:00 a.m. - lunch; 1:30 p.m. - meetings with legislators. ADWR Director Betsy Rieke will give a legislative review. Lunch is \$6.00, payable at door. Contact: Marianne at 602-258-8401 for lunch reservation.

*continued on following page*

**February Events, cont. from previous page**

12 (Wed) D. Slack, Water-Related Programs in the Department of Agricultural and Biosystems Engineering. Dept. of Hydrology and Water Resources, UA. 4 p.m., UA Geology Rm. 206, Tucson. Contact: Fran Janssen 602-621-7120.

13-14 (Thu-Fri) GIS, Spreadsheet & Database Management for Land Use Decisions. Scottsdale. Contact: Lincoln Institute of Land Policy, 113 Brattle St., MA 02138-3400.

17-18 (Mon-Tue) Using GIS to Manage Urban Growth & Change. Scottsdale. Contact: Lincoln Institute of Land Policy, 113 Brattle St., MA 02138-3400.

17-21 (Mon-Fri) 40-Hour Health & Safety Training for UST Workers. Mesa. Contact: Center for Environmental Studies, ASU, 602-965-1850.

18 (Tue) Mini-Summit, Environmental Education in Arizona. Commission on the Arizona Environment. Holiday Conference Center, 2532 W. Peoria Ave., Phoenix. Contact: Marion Reeves 602-542-2102.

18 (Tue) CWAC, Public Meeting for Proposed Water Rate Increases for 1992/93. 7:00 p.m., Mayor and Council Chambers, City Hall, First Floor, 255 W. Alameda St., Tucson. Contact: 602-791-4331.

19 (Wed) R. Dickinson, Global Climatic Change: What it Means for Western Hydrology. Dept. of Hydrology and Water Resources, UA. 4:00 p.m., UA Geology Rm. 206, Tucson. Contact: Fran Janssen 602-621-7120.

20 (Thur) Prescott Chamber of Commerce Regional Water Steering Committee. 1:30 p.m., Prescott Chamber Office.

22 (Sat) CWAC, Public Meeting for Proposed Water Rate Increases for 1992/93. 10:00 a.m., Wilmot Library, Large Meeting Room, 530 N. Wilmot. Contact: 602-791-4331.

22 (Sat) Public Workshop/Open House Preliminary to the Upper Santa Cruz River Corridor Study. 9:00 A.M.-1:00 P.M. Rio Rico Swim & Racquet Club. Contact: Santa Cruz County Planning Department, 602-281-4685 x3071.

25-27 (Tue-Thu) Theory & Practice of Groundwater Monitoring & Sampling. Denver, CO. Contact: NGWA. 6375 Riverside Dr., Dublin, OH 43107.

26 (Wed) L. Askari, EPA. Dept. of Hydrology and Water Resources, UA. 4:00 p.m., UA Geology Rm. 206, Tucson. Contact: Fran Janssen 602-621-7120.

27-29 (Thu-Sat) Environmental Stewardship Conference. Tucson. Contact: UA College of Agriculture, Forbes 325.

**UPCOMING**

3 MARCH (Tue) Gila Box Public Meeting. 10:00 a.m.-3:30 p.m. Dragoon; Amerind Foundation. Contact: BLM, Dianne Drobka 602-428-4040.

4 MARCH (Wed) 8 - Hour Hazardous Waste Site Worker Health & Safety Refresher Training. Mesa. Contact: Center for Environmental Studies, ASU, 602-965-1850.

19 MARCH (Thu) Gila Box Public Meeting. 10:00 a.m.-4:00 p.m., BLM Safford District Office. Contact: BLM, Dianne Drobka 602-428-4040

20 MARCH (Fri) State Lake Improvement Fund Expert Workshop. Contact: Peggy A. Tabor, Arizona State Parks, 800 W. Washington, Suite 415, Phoenix, AZ 85007. 602-542-1996.

21 MARCH (Sat) Tour Through Guevabi Ranch. 1:30 P.M. Contact: Friends of the Santa Cruz River, PO Box 154, Tumacacori, AZ 85640.

10-11 APRIL (Fri-Sat) Arizona Riparian Council Meeting. Las Campanas Inn, Cottonwood. Contact: Andy Laurenzi 602-622-3861.

14 APRIL (Tue) Gila Box Field Trip. 8:30 a.m.- 4:30 p.m. Meet at BLM Safford District Office; Public is welcome if they provide own transportation. Contact: BLM, Dianne Drobka 602-428-4040.

15 APRIL (Wed) 11th Annual Kisiel Memorial Lecture. Werner Stumm, Director, Swiss Federal Institute for Water Resources and Water Pollution Control, Surface Chemical Theory and Predicting the Distribution of Contaminants in the Aquatic Environment. Dept. of Hydrology and Water Resources, UA. 3:00 p.m., UA Center for Creative Photography, Tucson. Contact: Fran Janssen 602-621-7120.

19-21 MAY (Tue-Thu) Arizona Outdoor Recreation Coordinating Commission Workshop. Contact: Peggy A. Tabor, Arizona State Parks, 880 W. Washington, Suite 415, Phoenix, AZ 85007. 602-542-1996.

The input we received while planning *AWR* indicated that the calendar represents a much wanted and needed service. The calendar profiles the Arizona Water Community, noting organizations, their interests and activities. In a sense, the calendar tells who is doing what. As a result, we are striving to make the calendar the most complete such listing in Arizona — and the most informative. Please notify us of all water-related events in which you or your organization may be involved.

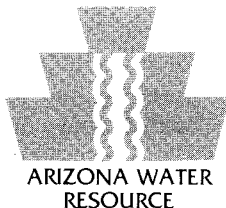
*Newsletter debuts, cont. from page 1*

Material to be published by AWR include dates of events (a priority goal is to have a master calendar of all state water happenings), information on research and other studies, publication notices, legislative affairs, legal developments, notices of regulations and hearings, notes on transitions, and other types of information of general interest. To ensure ongoing and expanded coverage, we intend to identify as many sources of Arizona water information as possible. When this first issue was compiled, many organizations were contacted to provide material, and they intend to continue their involvement.

We invite others whom we may not yet have contacted to also supply information. Think of us as a bulletin board for Arizona's water community. If an item is of interest to you, it probably has wide-spread interest, so please share it. Since timeliness is key, we urge contributors to make maximum use of FAX (792-8518) or, if not available, call us at (792-9591). Such a cooperative effort will establish *AWR* as a valuable resource within the Arizona water community. We look forward to working with you.



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Water Resources Research Center  
Tucson, Arizona 85721  
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## Announcements

### Tucson AMA Relocates

After February 15, the Tucson Active Management Area office will be located in the new State of Arizona office building at 400 W. Congress, Suite 518, Tucson, AZ 85701. New phone numbers are: 602-628-6758; fax 602-628-6759.

### UCOWR Offers Dissertation, Public Service Awards

The University Council on Water Resources is seeking nominations for two awards. The Council offers its annual award for best dissertation in each of three areas: engineering and physical science, environmental and biological sciences, and social and behavioral science. A master theses can be submitted, but will be reviewed at dissertation level and criteria.

Deadline for submitting a summary paper is March 1, 1992. For additional information contact: William Funk, Washington Water Resources Research Center, Washington State University, Pullman, Washington 99164-3002; (509) 335-5531.

The Education and Public Service Committee of the Universities Council on Water Resources is seeking nominations for an award for education and public service in water resources. The purpose of the award is to recognize individuals, groups or agencies who have made significant contributions to increased public awareness of water resources development, use or management.

Nominations which are due March 31 are to be made by letter of not more than one page, plus supporting materials. The nomination must describe the program or activity, the targeted audience, and the nominee's role in its success.

Submit all materials to the Chair, Education and Public Service Committee, Universities Council on Water Resources, c/o Duane Baumann, Exec. Director, 4543 Faner Hall, Southern Illinois University, Carbondale, IL 62901-4526.

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