

## Arizona's Proposed Groundwater Management Plan

*Summarized from the Proposed Management Plans of Arizona's Department of Water Resources, Active Management Areas, First Management Period 1980-1990*

For several decades, water use in Arizona has exceeded the renewable water supply. This has occurred at the expense of groundwater supplies that are being severely overdrafted in many areas of the state.

Overdraft occurs when more groundwater is withdrawn than is replaced by natural or artificial means. Negative consequences of overdraft, which have already occurred, include land subsidence and earth fissures, large increases in pump lifts and associated costs of using groundwater, and aggravated water quality problems.

If overdraft were to continue, the long-range future of central and southern Arizona would be bleak. Conservation and sound water management are the cornerstones of Arizona's Groundwater Code. Therefore, four areas of the state, Phoenix, Pinal, Tucson and Prescott, were designated as Active Management Areas (AMAs) to help regulate water use and, ultimately, to eliminate groundwater overdraft.

Sweeping water management reforms are mandated by the Groundwater Code. Conservation, strict limits on

## Arizona's Future in Agriculture

“Agriculture is an important part of Arizona's history, its culture and its economy. We should not sacrifice agriculture to urban growth and industrialization. Rather, we should strive to use the rapid changes and pressures on agriculture to encourage technological change and economic development in agriculture.”

In a guest editorial, the June 1984 edition of the University of Arizona College of Agriculture's *Agri-News*, Governor Bruce Babbitt spoke of Arizona's future in agriculture. To ensure agricultural prosperity, he wrote, Arizonans must work together to meet the challenges of 1) adopting water and energy efficient irrigation systems; 2) improving crop yields; 3) converting to higher value cash crops; and 4) developing arid environment cash crops.

To address these challenges, Babbitt has commissioned a comprehensive study of Arizona's current and future agricultural potential. The study, titled “Project Agriculture's Future,” is headed by the University of Arizona's College of Agriculture and will enlist the help from the public and private sectors. The study will assess natural resources and human needs of the state, and will culminate with a discussion of the results and their implications for public policy at a statewide symposium to be held in the fall of 1985.

This study will address land characteristics, water, climate and plant-animal-soil-water relationships, and will collect information about the state's human resources. The influences of local, county, state and national government also will be addressed. The outcome of this study is hoped to form the foundation for long range plans that will “optimize the state's agricultural, technological and water resources.”

Dr. Curt Cable, the Cooperative Extension Operations Officer, will serve as the project director for the College.

nonagricultural water uses and a ban on new irrigated acres are required in AMAs. The management goal for all AMAs, except Pinal, is safe-yield by the year 2025. (Safe yield is reached

when groundwater withdrawals equal recharge.) To accomplish this goal all water users in the AMAs must participate in the water management process.  
—Groundwater Management Plan p. 2

**- Groundwater Management Plan**

The Groundwater Code also establishes five management periods, each an essential step in controlling and eliminating overdraft. Before each management period, the Arizona Department of Water Resources (ADWR) must develop a management plan for each AMA to include conservation requirements for all agricultural, municipal and industrial users and distributors. Impacts of the first management plan for the Tucson, Phoenix and Prescott AMAs are summarized below.

**Tucson AMA**

The goal of the Groundwater Code for the Tucson AMA is to achieve safe yield no later than the year 2025. The average annual overdraft between 1975 and 1980 was approximately 249,000 acre-feet. Projections indicate that by 2025, Central Arizona Project (CAP) water importation will equal 239,000 acre feet. Receipt of CAP water, com-

ined with the conversion of irrigated lands to urban areas, will reduce the overdraft by about 75 percent. Conservation required under the first management plan will further reduce the projected overdraft by about 23,000 acre feet. This would leave an annual overdraft of 58,000 acre feet to be reduced during the four subsequent management periods.

**Phoenix AMA**

In 1980, the overdraft was approximately 1 million acre-feet per year. Projections indicate that by 2025 CAP water importation will equal 500,000 acre-feet. Receipt of CAP water, combined with the conversion of irrigated lands to urban areas, will reduce the overdraft by two-thirds. Conservation required under the first management plan will further reduce the projected overdraft by about 70,000 acre feet. This would leave an overdraft of 270,000 acre feet per year to be re-

duced during the four subsequent management periods.

**Prescott AMA**

The overdraft in the Prescott AMA in 1980 was approximately 8,600 acre feet. Projections indicate that by 2025 water imported to the Prescott AMA will equal 7,000 acre feet. Receipt of imported water, combined with changes in water use patterns, will reduce the overdraft by about 10 percent. Conservation required under the first management plan will further reduce the projected overdraft by about 2,300 acre feet. This would leave an overdraft of approximately 5,400 acre feet annually to be reduced during the four subsequent management periods.

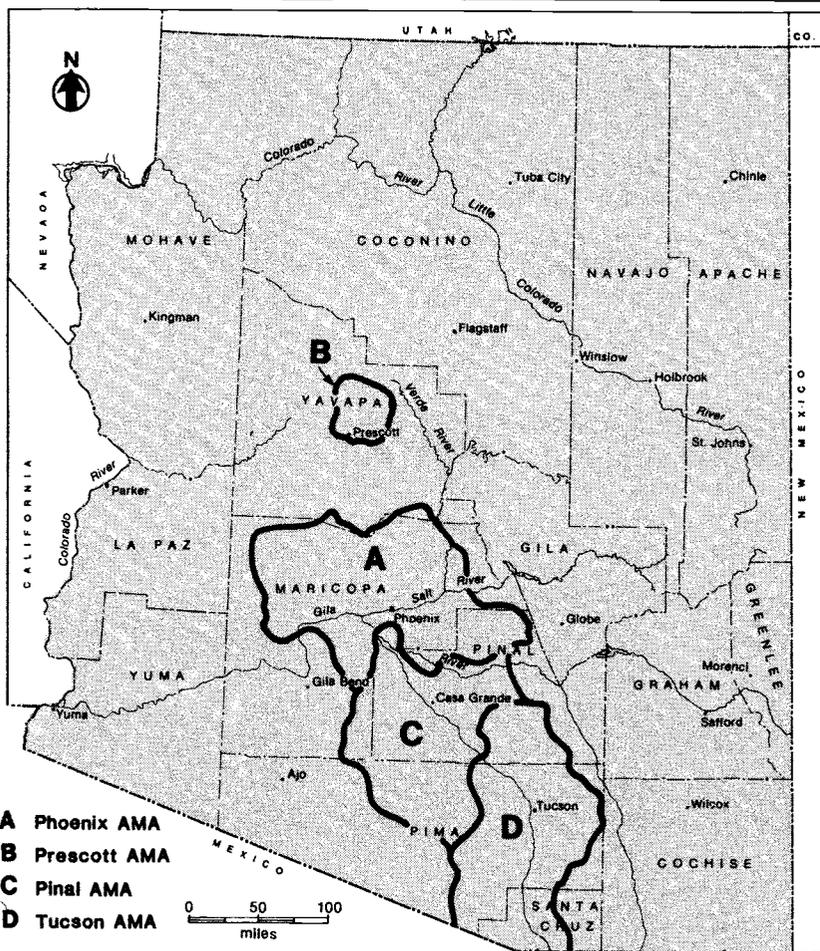
The plans for subsequent management periods in all AMAs incorporate: 1) new conservation requirements; 2) investigations of local water augmentation projects; and 3) purchase and permanent retirement of additional agricultural land after the year 2006, if necessary, to reach the 2025 goal of zero overdraft.

Copies of the complete proposed management plans are available at all public libraries in the Tucson, Phoenix and Prescott AMAs, or from the Arizona Department of Water Resources, 99 East Virginia, Phoenix, Arizona 85004.

*Water Commission Appointments*

During the recent Arizona legislative session, three members of the Arizona Water Commission were confirmed. Marybeth Carlile was reappointed to the Commission for a 6-year term; David R. Gipe was appointed for a 2-year term; and C. L. "Bill" Scott was appointed for a 6-year term.

The Arizona Water Commission is a seven-member advisory board to the director of the Arizona Department of Water Resources. The four other members of the Commission are: R. J. Jack Pursely, John A. Frost, Pete Shumway and Thomas R. Waddell.



Active Management Areas

## Conferences

### AWRA Conference

The American Water Resources Association (AWRA) will hold its Twenty-first Annual Conference and Symposium in Tucson, Arizona, August 11-16, 1985. The theme of the conference is "Water Demand: Sharing a Limited Resource"; the symposium's theme is "Groundwater Contamination and Reclamation."

For information, write or call the general chairman: Dr. Nathan Buras, Department Head, Hydrology and Water Resources, University of Arizona, Tucson, Arizona 85721; telephone (602) 621-5082.

### Water Reuse Symposium

The AWWA Research Foundation is coordinating the Water Reuse Symposium III, August 26-31, 1984, in San Diego, California. This symposium is the third of a continuing series designed to address the tech-

nical, managerial and sociological needs of the water-using community. The theme is "The Future of Water Reuse."

For information write or call: Water Reuse Symposium III, AWWA Research Foundation, 6666 West Quincy Avenue, Denver, Colorado 80235; telephone (303) 794-7711.

### Arizona Water Symposium

The Arizona Water Resources Committee's 28th Annual Arizona Water Symposium will be held September 21, 1984, at the Carefree Inn in Cave Creek, Arizona. The theme of the symposium will be "Financing Arizona's Future Water Development."

For information write or call: Terry Hudgins, Arizona Water Resources Committee Vice President, P.O. Box 21666, Phoenix, Arizona 85036, (602) 271-2012; or Kenneth E. Foster, Office of Arid Lands Studies, College of Agriculture, University of Arizona, 845 North Park Avenue Tucson, Arizona 85719, (602) 621-1955.

### Water Resources Act Survives Presidential Veto and Congressional Override

A bill authorizing federal water research has become law as a result of an overwhelming vote by the House and Senate to override a veto of the legislation by President Reagan.

The Water Resources Research Act of 1984 establishes a three-phased, \$36 million per year water research program. The bill was a compromise between separate bills proposed by Congressman James F. McNulty Jr. (D-Arizona) and Senator James Abdnor (R-South Dakota). The Act establishes the following water

study programs.

- A program of matching funds will establish state water research institutes at land-grant colleges, such as the University of Arizona. The institutes will conduct water research, disseminate research results, promote the application of its results, train scientists and engineers in water research, and will coordinate studies with other colleges and universities in the state. Funds will be matched, one to one at the outset, and will decrease to one federal dollar to every two non-federal dollars. The institutes will be established at land-grant schools like the University of Arizona. The University of Arizona's Water Resources Research Center, within the Engineering Experiment Station, will be supported through this Act.

- Water research grants will be avail-

able to the institutes, other universities, private institutions and firms, to individuals and to state and local governments.

- Additional grants will be available to private firms and state and local agencies to develop water-related technologies.

The Act also approves the transfer by the federal government of two water salinity control plants to local governments in New Mexico and North Carolina. A wide range of individual projects will be eligible for funding under the program. An evaluation panel, made up of experts from governmental and private sectors, will be established by the U.S. Department of Interior.

### Adjudication Proceedings for Little Colorado River System

Adjudication proceedings for the Little Colorado River system and source have resumed after a 2-year delay by a federal court action. An adjudication of water rights is a court determination of all rights to use water from a river system or watershed. Arizona's Department of Water Resources (ADWR) recently notified property owners in the area of the continuation.

The adjudication was requested by water-rights holders who petitioned to have the status of their rights determined. ADWR is assisting the Apache County Superior Court in the proceedings.

Individuals who already have filed all of their claims for water rights in the Little Colorado River watershed do not have to do anything more at this time. However, property owners who have purchased land in the area since September 1981 should contact ADWR at the following toll-free number 1-800-352-8488 or (out-of-state calls) 602-255-1520. Filing forms may be obtained from: Arizona Department of Water Resources, 99 East Virginia, Phoenix, Arizona 85004.

## Publications

### *Saving Water in a Desert City*

In recent years the public has become more aware of the scarcity of water, particularly in the U.S. Southwest, through print and electronic media. The writing of this book was stimulated by a political battle over the pricing of water by the Tucson, Arizona, municipal water system.

Of interest are the examples of pricing strategies and consumer responses to high water prices and the discussion of marginal cost pricing of municipal water supplies.

This publication, authored by William E. Martin, Helen E. Ingram, Nancy K. Laney and Adrian H. Griffin, may be ordered from: Resources for the Future, P.O. Box 4852, Hampden Station, Baltimore, Maryland 21211.

### *Proposed Mission Statements for a National Water Resources Research Center and a National Clearinghouse for Water Information*

This report was prepared for the President's Council on Environmental Quality and reports results of studies to

assess the feasibility of establishing a national center for water resources research and a national clearinghouse for water resources information. This report summarizes the findings of Phase I, which proposes alternative designs for each center.

For copies of this report, CRC Publication No. 119, write to Chesapeake Research Consortium Inc., 4800 Atwell Road, Shady Side, Maryland 20764.

### *Arizona's Water Resources: Management Options and Obstacles*

Proceedings of the Second Annual Policy Forum, November 15, 1983, University of Arizona, can be obtained from: University of Arizona, College of Business and Public Administration, Division of Economic and Business Research, Tucson, Arizona 85721.

Topics addressed at this conference included: conjunctive use of Central Arizona Project (CAP) supplies and local water resources; CAP costs, water rates and effects on demand; agricultural distribution systems for CAP; groundwater quality and protection permitting; groundwater quality regulations; and water management practices.

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