

ADEQ Organizing Volunteer Monitoring Program

World Monitoring Day is Oct. 18

The first World Water Monitoring Day will be held Oct. 18. From Sept. 18 to Oct. 18, citizens throughout the world will be monitoring the quality of their local watersheds and entering the results into an international database. World Water Monitoring Day is intended as an educational opportunity for watershed leaders, educators and trained volunteers throughout the world to help citizens better understand the workings of a watershed. (World Monitoring Day web site is: www.watermonitoringday.org)

The Arizona Department of Environmental Quality is doing its part by encouraging greater involvement in its statewide water monitoring efforts. The agency is implementing a new Volunteer Monitoring Program that will result in volunteer groups across Arizona collecting data to supplement the water quality information collected by ADEQ. The volunteer data will be useful to the agency for screening water for potential problems; furthering research or restoration efforts; establishing baseline conditions or trends for water that would otherwise go unmonitored; and evaluating the success of Best Management Practices designed to mitigate problems.

The agency very much welcomes the assistance

Continued on page 5



Students at Sonoran Sky Elementary School, Scottsdale, monitor the water quality of a campus pond during last year's National Water Monitoring Day on Oct. 18. (Photo: Sina Matthes)

Privatization of Water Services in Arizona — the Past, Present and Possible Future

As anyone keeping up with the water news of the day knows, privatization of water services is a major issue, its significance discussed in conferences, journals and newspapers. They also would know privatization of water services is an issue often fraught with controversy, whether it is adopted in foreign countries or contracted in the United States. Privatization is a hot water topic.

Privatization is a complex, multifaceted issue, its significance in developing, third world nations different than what it represents in the United States. Controversy that has flared over privatization of water services in developing countries has been sparked by concern that the water needs of the poor are often overlooked, with private companies in business to make a profit. In this context, access to water has been defined as a basic human right, not a profit-and-loss commodity.

In contrast, privatizing a water utility in the United States doesn't much raise the specter that needy citizens' access to safe water will be limited or even denied, although other concerns abound. Economics, of course, matter, since most U.S. municipalities turning to privatization expect to save money by contracting a private firm to provide water services. This raises the question whether reduced services at higher cost will then be the result. Public-sector unions object to privatization, fearing that jobs are at stake. And not to be overlooked is the consideration that water has a heightened status, that it is a commodity like no other, its supply and delivery to be ensured by government, like the health, well being and safety of citizens.

What relevance does privatization have in the Arizona water picture? With no major public utility having contracted with a private firm to operate its water services,

Continued on page 2



C O N T E N T S

Water Vapors	3
News Briefs	4
Guest View	6
Legislation and Law.....	7
Publications	8
Special Projects	9
Announcements.....	10
Public Policy Review	11

Privatization...continued from page 1

privatization has not been a high profile issue in the state. Yet privatization is a theme in the history and current affairs of Arizona water. With privatization garnering much attention on the national and international scenes, an Arizona perspective on the issue is timely.

“The Private Era” came first

Such a perspective would acknowledge that Arizona has long had privatized water services, despite much current news coverage treating privatization as a breaking development. Consider, for example, the drum roll beat of a lead in a recent “Arizona Republic” story about the city of Phoenix negotiating with a private firm for wastewater treatment services: “For the first time in its 122-year history, the city of Phoenix is turning part of its water system over to a private company.” The statement is not exactly true, or at least it needs qualifications.

In his book “Fuel for Growth,” Douglas Kupel notes that during the early history of Arizona cities private companies mainly provided the water services for a growing population. Kupel calls this period of Arizona water history as “The Private Era.” Phoenix was incorporated as a city in 1881 and according to Kupel by 1898 discontent with the operations of the private water system sparked citizen agitation for municipal ownership.

Public sector continues to grow

The shift from private to public controlled water utilities may not be a movement confined only to Arizona’s early history. Gary Woodard, assistant director of knowledge transfer, University of Arizona’s Center for the Sustainability of Arid and semi-Arid Hydrology and Riparian Areas, argues such a movement continues today, with public utilities taking over private water operations, albeit without the fanfare accorded to private takeovers of public utilities.

He says, “We have had the opposite of privatization going on for many decades in a big way. Tucson Water grew by buying up private water companies. Oro Valley has decided to buy out the two private water companies serving it. Sierra Vista is just beginning that process.” He says plans are now underway for Green Valley Water to become public.

He says, “So it is an odd thing with people saying privatization offers advantages. If so, why is it that 99 percent of the cases where you go from one form to another historically has been from private to public?”

Woodard says at one time public utilities bought private ones as part of a strip annexation wars in the Phoenix area. “What they would do — Scottsdale, Phoenix or whomever — is buy a private water company serving an unincorporated area, make it part of their water department and charge them a much higher rate for water because it was not within the city’s limits. Then a year or so later they would propose making that area part of the city limits, and part of the pitch would be the price of water will drop in half. It was a strategic ploy to have the cities grow.”

Privatization makes inroads

Many private water utilities now operate in Arizona. The Arizona Corporation Commission lists 306 privately owned water utilities operating in the state, most relatively small, serving from about a half dozen customers to a few companies that serve more than

50,000 customers. This often ensures a degree or more of local accountability, with decision making at the community level.

Most of these systems do not hold pretensions of making anybody rich, including present owners and operators, who often are one and the same person. Most of these companies and their operations are not significant players in the ongoing privatization controversy.

Yet some smaller water operations are now playing a role in the larger national privatization movement. “What we have seen in about the last five years has been this incredible consolidation, acquisition and merger by the big boys, with them buying up these smaller companies and stretching privatization where it had not been before,” says Hugh Jackson of Public Citizen, an organization critical of privatization of water services.

Consider Arizona-American Water Company, a subsidiary of American Water Works Company, Inc., which has recently been purchased by RWE, a German multi-national company and one of the world’s largest utility groups and the third largest provider of water and wastewater services in the world. American Water Works serves 15 million people in 27 states and three Canadian provinces and was the largest publicly traded water company in the United States before joining the larger RWE family of water utilities.

Various Arizona utilities are included within this extended international water services family, with Arizona-American providing water and wastewater services to more than 230,000 Arizonans. Communities serviced by Arizona-American operations include Sun City and Sun City West, the Town of Youngtown, Surprise, the southern half of Paradise Valley, a small portion of western Scottsdale, Bullhead City, Lake Havasu City and surrounding areas and the historic community of Tubac.

Tucson considers privatization

The Tucson City Council once expressed an interest in privatization as a possible solution to problems confronting its water utility. This was shortly after efforts to introduce Central Arizona Project water went awry when the quality of delivered water fell far short of expectations. A public furor resulted, with Tucson Water the target of much criticism and many complaints. The City Council charged the Citizens Water Advisory Committee to review management options and come up with a recommendation, with privatization a prime strategy to consider. This was in 1997, and Wayne Adickes of the University of Arizona’s Chemistry Department was the chairman of the committee undertaking the study.

The study was thorough and covered a lot of ground. Adickes said, “We looked at what was out there and what had been done elsewhere. We looked at everything we could under the sun, hundreds of options.”

Although privatization was given due consideration, Adickes did not believe it was a serious contender for the City Council’s consideration and adoption, even though the council had identified it as an option. As a result the committee did not spend as much time studying privatization as it did other management options. He says, “We did not look at privatization very seriously because of the political atmosphere. The City Council made it very clear that they were not going to accept that. So why should we waste our time?”

Continued on page 12



Water Vapors

Water Education, Purveyor of Harsh Realities

Education has various goals including the exposing of false premises that, if pursued, might lead to folly or even worse. Disabusing folks of their misperceptions can be a thankless task, however, since beliefs often reflect a person's faith in the workings of the world. The deflating of a seemingly benign belief can make the world that much less hospitable.

That situation notwithstanding, the JWC Environmental Company, which manufactures equipment to process sewage, introduced children to the harsh realities of wastewater treatment, to discourage them from expecting that releasing pet fish down the drain provides them safe passage to the ocean as shown in the movie "Finding Nemo."

A company press release reported that although drain pipes do eventually lead to the ocean the fluid first passes through powerful machines that "shred solids into tiny particles." The statement continued, "In truth, no one would ever find Nemo, and the movie would be called 'Grinding Nemo.'"

Lest any feckless youth still decide to temp fate, the company adds for good measure that in the unlikely event Nemo survived the deadly machines he would probably be killed by the chlorine disinfection.

Water Education is Main Event at Water Festivals

Education takes on a kinder, gentler role when the University of Arizona's Water Resources Research Center's Project WET (Water Education for Teachers) conducts its water festivals. This year, Project WET will be conducting, not one — as was done in previous years — but two Arizona Water Festivals on Sept. 26, National Water Education Day. Project WET-coordinated water festivals are an annual occurrence, this year's dual event the fourth in the series. Last year's festival was in Scottsdale.

What are water festivals? Water festivals are exercises in water creativity, with participants expanding their awareness of the uses, value and importance of water. But above all, water festivals are fun as well as educational, as students and their teachers participate in interactive water activities and demonstrations. Participants gain an increased appreciation of water in its varied uses and come away with a better understanding of an ethic of stewardship for preserving and protecting the state's water resources.

One of the festivals is scheduled for Surprise, Arizona at the Surprise Recreation Campus and will involve about 1,000 fourth-grade students from the Dysart and Peoria unified school districts. The Surprise festival is a collaborative effort, with the U.S. Bureau of Reclamation, Salt River Project, Arizona Department of Water Resources Phoenix AMA, Arizona Department of Environmental Quality, Central Arizona Project and cities of Surprise and Peoria working with Project WET to ensure the success of the festival. Persons interested in the Surprise Water Festival can contact Dana Flowers, Arizona Project WET coordinator, at 602-470-8086, X 335 or dflowers@ag.arizona.edu

A water festival also will be conducted on the same day in Safford at Firth Park. The event will involve about 600 fourth grade students, from Graham County Schools as well as the communities of Alpine and Bonita. Sponsors of the event include the U.S. Bureau of Reclamation,

Arizona Department of Environmental Quality, Gila Resources and Valley Telecom. Gila Resources and the UA Safford Agricultural Center are assisting Project WET in coordinating the event. For information about the Safford Water Festival contact Kerry Schwartz, Arizona Project WET coordinator, at 520-792-9501, X 22 or kschwartz@ag.arizona.edu.

Kathy Jacobs Joins WRRC

Kathy Jacobs will be joining the University of Arizona's Water Resources Research Center as an associate specialist. Along with her WRRC position, Jacobs also will serve as associate staff scientist at the UA Institute for the Study of Planet Earth. She leaves the Arizona Department of Water Resources after 21 years, beginning as an intern in 1981 and later serving for 14 years as the Tucson Active Management Area director. She was involved in the writing of all three AMA management plans, had a lead role in developing the state's Assured Water Supply Rules and worked with the Tucson community to initiate regional water management plans. Her most recent ADWR task was to serve as project director of the state's Drought Task Force. She will continue to assist in developing the drought plan through an intergovernmental agreement.



Arizona Water Resource is published 6 times per year by the University of Arizona's Water Resources Research Center. AWR accepts news, announcements and other information from all organizations

Arizona Water Resource Staff

Editor: Joe Gelt
jgelt@cals.arizona.edu
Editorial Assistant: Gabriel Leake

WRRC web site:
www.cals.arizona.edu/azwater

WRRC Director: Dr. Peter Wierenga

Arizona Water Resource

Water Resources Research Center
College of Agriculture and Life Sciences
The University of Arizona
350 North Campbell Avenue
Tucson, Arizona 85719

520-792-9591; FAX 520-792-8518
email: wrrc@cals.arizona.edu



News Briefs

Increased Fees Enable ADWR to Rehire Some Staff

Some Arizona Department of Water Resources personnel laid off due to the ongoing budget crunch have been rehired, although their rehiring is not a sign that hard times are letting up for the agency. Last fall, six staff members who processed notices of intent to drill were let go. With the staff gone, the agency still had the statutory responsibility of responding to the about 4,000 to 6,000 requests per year to drill wells.

The agency was able to rehire staff members in the Notice of Intent section because the Legislature last year raised the

notice of intent to drill fee from \$10 to \$150 within Active Management Areas. Fees in non-AMAs were raised to \$100, to eventually reach \$150 in two years.

Jim Holway, assistant director of ADWR's water management division, says, "That money gave us a dedicated fund for the wells-related program that allowed us to rehire four staff members. ... We laid off six, and one retired and we hired back five. The sixth person had been previously rehired when a vacancy occurred."

Holway explains the funding concept: "The idea is that the fee basically pays for the program. Many people hold the theory that this might be something the state should do a whole lot more of, that persons needing the service of permit programs pay for the program."

The agency figures that the fees will initially bring in about \$400,000 this year and up to possibly \$500,000 when the higher non-AMA fees take effect. This will allow the agency two additional FTS in the NOI section.

The state's Water Quality Assurance Revolving Fund also suffered staff cut-backs. Without the good fortune of a new funding stream, however, WQARF lacks the resources to rehire its laid off staff.

Holway warns that the agency remains in difficult budgetary straits. He says agency staffing is down to about 170 general fund employees, although it is authorized to approximately 200 minimum. Even considering the number of employees now on board the agency is underfunded by \$1.8 million.

Fire, Drought Aid Recovery of Native Species

Fire Likely Cause of Native Fish Increase

Last year's Rodeo-Chediski fire wrought havoc to a large forested area of the state but may have helped boost Arizona's native fish population in a stretch of the Salt River. State biologists speculate that runoff from the fire area caused a population decline of a flathead catfish that preyed on native fish.

The flathead catfish has been the bane of native fish in the area since their introduction into the Salt River in 1974. At that time, state biologists released 400 4-inch-long flathead hatchlings into the river at a point north of Roosevelt Lake as game fish for recreational fisherman.

Native to the Mississippi River Basin, the catfish in their new environment became voracious feeders on fish native to Arizona, with the result that the catfish population multiplied while the native fish numbers in the area plummeted. These included the Sonora sucker, roundtail chub and other native fish.

The catfish, which can grow over 4 feet, became stubborn residents of their new waters, able to withstand efforts to remove them to preserve the native fish. Biologists monitored their numbers.

Numbers of a recent survey of 32 miles of the Salt River greatly surprised biologists when they found the flatheads almost gone. Expecting to find hundreds, they found only 35. The largest catfish measured only 20 inches, with no young fish to be found.

In an effort to explain the drastic, albeit welcome decline of the catfish, biologists speculate that the ash and soil that the monsoon rains of last year washed from areas burned by the Rodeo-Chediski fire were the likely cause. The rains washed the

sediment through tributaries into the Salt River which flowed black for while. The ash likely killed the catfish.

This was contrary to expectations. Native to the Mississippi River, the flatheads were expected to survive muddy waters.

Biologists are under no illusions the catfish are completely eradicated but expect that the native fish population will make significant gains before the catfish again reach population levels.

Drought Benefits Sabino Canyon Frogs

Whatever hardships or inconveniences were caused by the extended drought, Tucson's Sabino Canyon native frog species have benefitted from the prolonged dry conditions. This is a finding of the authors of an upcoming book devoted to Sabino Canyon's reptiles and amphibians.

Phil Rose of the University of Arizona's School of Renewable Natural Resources explains that pools serving as habitat for exotic critters such as bullfrogs, crayfish and green sunfish have dried up. With these invasive species gone, conditions were thus favorable for the return of the native frogs.

Native frogs had previously been at a disadvantage. Invasive species are more aggressive when competing with native species for food and/or they prey on them. The result is the same: reduced numbers of native species. With the occurrence of extreme desert conditions such as prolonged drought or severe flooding, native species can hold their own against exotic species that generally prefer slow-moving perennial waters.

Rose is collaborating on the Sabino Canyon book with naturalist David Lazaroff who has studied the amphibian and reptile species of the area for over 25 years.

In that case, ship them CAP water

"Spoon-feeding troops bottled water — a mistake. We want them to have mental toughness."

Gen. John Keane, U.S. Army's vice chief of staff in response to U.S. soldiers being supplied with bottled water in Iraq. The troops consume 45 million 1.5-liter bottles per month.

Human Dishwashers' Water Efficiency Studied

Water-wise consumers in search of an automatic dishwasher to purchase check the machine's water efficiency rating. Researchers at the University of Bonn in Germany studied the water efficiency rating of human dishwashers; i.e. people who hand-washed dishes.

They began their study with the premise that automatic dishwashers use less water than when dishes are hand washed. They wanted to identify, however, variables affecting water use when hand washing dishes.

Seventy-five volunteers from seven European countries were recruited and assigned the task of washing dishes. Each volunteer washed a typical family load of 140 pots and plates coated with hardened egg, spinach and margarine. They found that handwashing used between about five and 86 gallons of water compared to the water consumption of a conventional European dishwasher that uses about four to five gallons of water.

(Americans were not included in the study, but the American Water Works Association web site provides information about hand washing dishes in this country. According to AWWA information an automatic dishwasher uses approximately nine to 12 gallons of water while hand washing dishes can use up to 20 gallons.)

The German study noted differences among nationalities in dish washing methodologies. Professor Rainer Stamminger, author of the study, states, "Whether it be a housewife or househusband, a Spaniard or a Turk, they all have different ways of doing the washing up."

He noted that German and British handwashers did the job more economically

than did their Spanish and Turkish counterparts, though the Spaniards ended up with the cleanest dishes. The Germans produced surprising results. Despite their reputation for cleanliness, their dishwashing performance was merely mediocre.

Stamminger's tips for environmentally friendly hand dishwashing include prevent the food from hardening on plates, soak dishes prior to washing and use a main hot water bath followed by a cold wash rinse.

AZ Rivers Must Get Interim Protection Says Court

The U.S. Forest Service acted illegally by refusing to consider adequate protection for 57 Arizona rivers a federal appeals court recently ruled. In its unanimous decision, the 9th U.S. Circuit Court of Appeals rejected government attorneys' allegation that the law is met if an agency intends a future consideration of river protection when addressing forest plans and grazing permits.

"An intention to consider the rivers cannot satisfy a requirement that the agency actually have considered the rivers," wrote Judge Wallace Tashima for the appellate court.

The significance of the case goes back to a request that the state's congressional delegation made about ten years ago that the USFS prepare a report identifying Arizona streams or river segments eligible for inclusion under the Wild and Scenic Rivers Act. According to the 1968 law unique streams in free-flowing condition are to be preserved and their immediate environment protected "for the benefit and enjoyment of present and future generations." USFS produced a report identifying 57 rivers.

About two years ago the Center for Biological Diversity filed suit arguing that the USFS had taken no actions since that time to protect the rivers listed in the report. USFS said it had no obligation to act. The court disagreed, saying that the agency by writing the report was then required to consider the rivers for legal protection.

A CBD spokesperson said the center filed the suit because designating a river for inclusion under the act is a lengthy congressional process, at times taking as long as ten years. Interim action therefore is needed to protect the rivers from potentially damaging projects such as dam and power line con-

struction, excessive livestock grazing and logging.

The streams of concern include the Tonto and Pinto creeks in the Tonto National Forest, Oak and West Clear creeks in the Coconino National Forest and the Sabino, Grant and Sycamore creeks in the Coronado National Forest.

Of the 10,000 miles of rivers the act protects nationally only about 40 miles, consisting of a stretch of the Upper Verde River, are within Arizona.

Continued from page 1

of volunteers. Credible and defensible water quality data collected by volunteer groups is of utmost importance since ADEQ, like many other organizations, is continuing to do more with less resources, both personnel and funding.

ADEQ will be working with volunteer monitoring groups within the Volunteer Monitoring Program to ensure that they develop strong Quality Assurance Project Plans and Sample and Analysis Plans. These documents determine how samples are collected and analyzed and how information is stored and disseminated and will be used as a reference for training volunteers. ADEQ will assist volunteer groups to ensure their plans are kept current to reflect changes in the group's monitoring objectives and that they collect data that complies with Arizona's Credible and Scientifically Defensible Data requirements in the Impaired Waters Identification Rule.

GateWay Community College in Phoenix will be providing water quality sampling training to the Arizona Volunteer Monitoring groups. The GateWay's Water Resources Technology Program has designed a one-credit course for this purpose. In addition, ADEQ's field equipment designated for use by the volunteer groups is being housed at GateWay for equipment maintenance and calibration.

The volunteer groups that have thus far signed on with ADEQ in its volunteer monitoring effort are: The Nature Conservancy in Arizona - Hassayampa River Preserve; The Nature Conservancy in Arizona - Lower San Pedro River; Friends of Oak Creek; Prescott Creeks Preservation Association; Nutrioso Creek; and Friends of the Santa Cruz River.



Guest View

Citizen Groups Form Consortium to Promote Good Water Policy

Barbara Litrell, president of the North Central Arizona Regional Watershed Consortium, contributed this Guest View.

"Never believe that a few caring people can't change the world. For, indeed, that's all who ever have." Margaret Mead

The North Central Arizona Regional Watershed Consortium came into being in early 2003 as a result of caring citizens who had joined groups to learn more about the precious water resources in their communities and to make a difference in decisions affecting the quantity, quality and sustainability of water in north-central Arizona and in the state in general. The NCAWRC represents 23 of those citizens' groups who share common goals, purposes and strategies and who are committed to making sure the voices of citizens are heard in the decision-making halls of power.

The seed that sprouted and grew into a consortium was planted in May, 2002, when the League of Women Voters Sedona — Verde Valley and the Verde River Citizens' Alliance joined forces to host a public education water forum for citizens in the Verde Watershed area. Two hundred concerned citizens attended the forum to hear from experts on water, to question existing policies and laws in Arizona and the region, and to offer their ideas and recommendations to ensure a sustainable water supply now and for future generations. The Water Forum of 2002 raised the level of awareness among the general public about water issues and heightened citizens' interest in being involved in resolving those issues.

Between May, 2002 and January 2003, the LWV Water Committee became aware of the many citizens' groups that existed to address local water issues. The LWV Water Committee hosted a Citizens' Water Groups Conference at Cliff Castle Casino in Camp Verde on January 18. Representatives of 24 citizens' groups attended, along with over 50 observers including elected officials and others from government agencies, academia and the general public. It wasn't surprising that the groups found that they had a lot in common and, most importantly, they recognized that the voices and concerns of citizens needed to be heard. Encouraged by Rep. Tom O'Halleran, who spoke at the meeting, the groups agreed to draft a Memorandum of Understanding which was subsequently signed by 23 groups representing organizations throughout Yavapai and Coconino counties.

The Memorandum of Understanding of the NCAWRC states that "the pressures of unprecedented growth combined with a limited supply of water in the Verde and adjacent watersheds have raised concerns and fostered the formation of numerous citizens' groups. In addition, inadequate water resource information and the current regulatory framework create uncertainties and limitations on water resource management. These factors have led to the formation of this consortium and the development of this Memorandum of Understanding."

According to the MOU, the consortium was organized to maintain as flowing and healthy, all rivers, streams and wetlands within the region, to ensure that those actions taken in, around, or affecting the region render the natural and human communities within it sustainable, and to develop watershed and water resource plans and regulations that provide regional solutions consistent with the stated purposes.

To accomplish its goals, the consortium established three standing committees, Law, Science and Education. The goals of the Law Committee include establishing regional authority for water planning and management, establishing a legal connection between surface water and groundwater and to revise Arizona water law to sustain regional watersheds and ensure that public decision-makers connect water availability with land use approval.


The Science Committee exists to ensure that adequate scientific information has been developed for decision-makers, to ensure that water budgets cover the region adequately, and to accelerate the rate of collection and dissemination of scientific information.

The Education Committee has as its goals to raise the awareness of decision-makers of the critical value of water to a healthy north-central Arizona and the economic well being of the state, to raise the awareness of decision-makers and the public of the critical value of water quality, quantity, conservation, reuse and sustainability, and to raise awareness of the interrelationship between the actions of our generation and the consequences for generations to come.

On March 26, at the invitation of Rep. Tom O'Halleran, six members of the consortium, supported by numerous other consortium members in the audience, addressed the Natural Resources Committee chaired by Rep. O'Halleran.

The presenters shared maps and charts detailing the 7.2 million acres that make up north-central Arizona, the 425,000 acre-feet and 83,000 acre-feet of water provided to the Phoenix Metro area by the Verde and Gila River systems respectively and which represent 40 percent of the non-CAP water delivered to the Phoenix Metro district, and the astounding 61 percent population growth in rural Yavapai County in ten years. With the projected five times additional increase over the next 47 years, the Consortium representative asked the committee, "How are we to sustain a five times increase in population with surface waters already over-allocated, groundwater being mined, the water table dropping as a result of overdrafting, and predicted long-term drought conditions?"

Other issues presented by consortium representatives included concerns about the lack of connection between growth and water supply, symptoms of water problems evidenced by wells going dry or being drilled deeper, diminishing farmlands, and damage and risks to riparian areas.

For more information about the consortium, contact Barbara Litrell at 649-0135 or blitrell@aol.com 



Legislation and Law

Skirmish in New Mexico in Ongoing Battle Over Water for Species

Arizona Confronts Similar Issue With Southwest Willow Flycatcher Nesting

The ongoing controversy about allocating scarce water resources to preserve a specie was further fueled recently when an appellate court allowed the U.S. Bureau of Reclamation the option to divert water from cities and farms to protect an endangered minnow in the Rio Grande in New Mexico. The decision raised a hue and cry, with critics of the ruling warning of short- and long-term consequences.

The decision upheld an earlier ruling by a federal judge that water in Huron Reservoir should be used to preserve the fish.

In the midst of the furor is the tiny endangered Rio Grande silvery minnow. The controversy involves releasing Rio Grande water backed up behind Huron Reservoir, a facility managed by the BuRec. Water right holders to reservoir supplies include the city of Albuquerque and Middle Rio Grande Conservancy District. They had signed contracts decades earlier, before the passage of the Endangered Species Act.

The ruling allows BuRec the discretion of reducing deliveries of contracted water to ensure flow for the threatened minnow. In other words, the court determined that the ESA takes precedence over the water contracts of cities and irrigators. The resulting fray was predictable.

N.M. Attorney General Patricia Madrid said, "This case involves one pivotal question: Who controls New Mexico's water, New Mexico or the federal government?"

Those opposed to the ruling see its immediate or short-term effect as reducing water supplies to local and state water users. With water siphoned off to protect a species, less water is available for human consumption. This threat raised the ire of New Mexico Gov. Bill Richardson who said, "I pledge my best efforts to protect Albuquerque and New Mexico from this grievous imbalance in the Endangered Species Act."

Albuquerque Mayor Martin Chavez foresees dire and heart-rending consequences saying the decision takes "water from the mouths of this city's children." Agricultural interests claim the ruling will further reduce farmers's ability to earn a living in the state.

Other observers expressed concern about the broader, more long-range effect of the ruling, fearing it could affect management of waterways across the West and threaten all cities and farms served by federal water projects. BuRec Commissioner John Keys III says if the ruling stands it could affect every Reclamation storage project with an endangered species regardless of the state in which it is located. Saying the decision "profoundly disappointed" him, U.S. Sen Pete Domenici views the decision as a threat to established water law throughout the West.

On opposite sides of the issue are environmentalists, who are pleased with the decision, and NM political and business leaders

who generally denounce it. Environmentalists, fearing the decision had come too late to save the threatened fish, say the fish is an indicator species, its survival a measure of the health of the river.

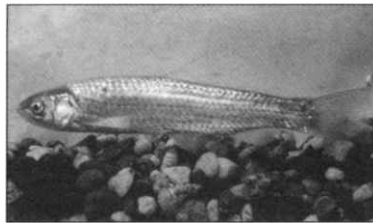
The U.S. Fish and Wildlife Service and BuRec joined in appealing the original ruling arguing that the ESA does not give the Bureau discretion to deliver less than the full amount to entities who have contracted for water.

On the legislative front, Domenici lost little time in adding language to the Senate Energy and Water Appropriations Bill that bars federal agencies from taking water already owned by New Mexico's cities and farmers for use of the endangered Rio Grande silvery minnow. The "rider" also recognizes the U.S. Fish and Wildlife Service's current biological opinion as the definitive statement on the minnow's recovery. According to this opinion, the Bureau only needs to maintain river flow until June 15 each year. NM Rep. Heather Wilson introduced similar measures to the House version of the bill. The bill passed and is expected to be signed into law by President Bush.

In response to a similar issue, Arizona has been taking action to ensure water supplies and protect a specie without incurring at the same time undue consequences and costs. At issue in Arizona is the Southwestern willow flycatcher, an ESA-protected species. Due to the ongoing drought, the level of Roosevelt Lake has dropped significantly, and flycatchers have moved their nests near the dry lake bottom, an area usually underwater. By refilling the reservoir in response to increased precipitation the Salt River Project will be destroying flycatcher habitat in violation of the ESA.

SRP, however, negotiated a permit from the U.S. Fish and Wildlife Service to refill Roosevelt Lake when wet conditions returned. Measures that SRP agreed to adopt to obtain the permit include purchasing of habitat in other locations. Meanwhile flycatchers have been found to be nesting in drought-dried areas at Horseshoe Reservoir, and SRP is again working with FWS to develop a strategy to balance interim reservoir operations and flycatcher protection.

It may have been in response to the NM ruling along with the situation in Oregon's Klamath Basin in 2001 that prompted Arizona Department of Water Resources Director Herb Guenther to warn of conflicts that could result if water users lose out to endangered species for water supplies. He said, "At some point in time, push will come to shove. I believe it will eventually come to civil disobedience where the people are going to demand water back from the species." Guenther made his remarks at a Phoenix conference on July 8 sponsored by the U.S. Department of Interior as part of its Water 2025 initiative. ■



Silvery Minnow Photo: U.S. Fish & Wildlife Service



Publications & On-Line Resources

Project WET Publications Teach the ABC's of Water

Among its many uses, water can serve as a learning experience. It is a friendly, non-consumptive use, without any adverse effects to water quality. A wise water user respects water, conserves and protects it.

The University of Arizona's Water Resources Research Center's Project WET (Water Education for Teachers) offers water education. Project WET conducts teacher workshops throughout the state, to encourage teachers to expand the water horizons of their students by acquainting them with the historical, social, cultural and hydrological meanings of water.

In undertaking its mission, Project WET uses various publications that would be useful to anyone working with students and wanting to provide them a quality water learning experience. Following is a list of Project WET publications.

National Project WET Curriculum and Activity Guide. This is a collection of "innovative, water-related activities that are hands-on, easy to use, and fun" for kindergarten through twelfth-grade students. Only available through attendance at Project WET workshops. Check Project WET web site (see below) for schedule of upcoming workshops.

Arizona WET Teacher's Guide with Nonpoint Source Water Pollution. This teachers guide serves as a companion guide to the National Project WET Curriculum and Activity Guide, providing Arizona specific activity supplements as well as activities covering all types of nonpoint source pollution. \$20 (See Arizona Project WET website for ordering information.)

Arizona WET Grade 9-12 Curriculum on Nonpoint Source Water Pollution. This three-booklet set includes: book 1, student reading on water, land use, water quality, nonpoint source water pollution and best management practices; book 2, laboratory and field activities as well as fact sheets; book 3, Starnet and other articles highlighting Arizona cases of nonpoint source water pollution. \$10 (See Arizona Project WET website for ordering information.)

!Encaucemos el Agua! (The Mexico Edition of the Project WET Guide). This was published through a partnership between International Project WET and the Mexico Institute of Water Technology and the Mexico National Water Commission. It is focused on Mexico's water resources, with relevant, creative, and fun methods for introducing priority water topics to young people ages six through 18.

WOW! The Wonders of Wetlands. This guide features 70 pages of background material followed by more than 40 cross-referenced activities appropriate for grades K-12. Every page is laid out with core text, photographs, side bars, maps and illustrations to make information clear and quick to use. \$21.95

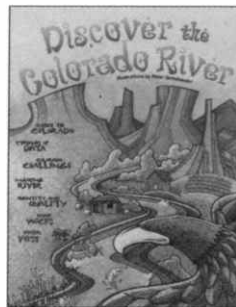
Discover a Watershed: Rio Grande/Rio Bravo Educators Guide. This bi-national river is comprehensively explored in the guide's first 128 pages. 215 pages follow with 25 hands-on lesson plans and activities tested by American and Mexican teachers and students. \$23.95 A "Discover a Watershed: the Colorado Project" is in the works.

Conserve Water Educators' Guide for Grades 6-12. This publication provides teachers of middle school and high school students with the ins and outs of water conservation. \$21.95

Discover a Watershed: The Watershed Manager Educators Guide. This 193-page guide contains 19 science-based, multidisciplinary activities that teach what a watershed is, how it works, and why we must all consider ourselves watershed managers. \$23.95

Healthy Water, Healthy People Water Quality Educators Guide. The purpose of this 200-page guide for students in grades 6 through university level is to raise the awareness and understanding of water quality topics and issues and their relationship to personal, public, and environmental health. \$25

Healthy Water, Healthy People Test Kit Manual. This reference manual serves as a companion text for the above guide. It includes in-depth information about ten water quality parameters, test kit activities and demonstrations, case studies relating concepts to real world applications and much more. \$15



Kids in Discovery Series (KIDS): Discover the Colorado Watershed. This colorful, 16-page activity booklet for students eight through 12 years of age provides a fun, informative introduction to the Colorado watershed. This is one of 11 KIDS booklets available. They make an excellent handout to complement school curriculums or can stand alone as a fun introduction to water knowledge. Creative and hands-on investigations, demonstrations, science experiments, educational games and stories stimulate understanding of each booklet's topic. \$18

To order most of the above materials, visit "Store" at the National Project WET website (www.projectwet.org) Some of the materials also are available at select Project WET workshops. For additional information contact Kerry Schwartz, Arizona Project WET coordinator, at 520-792-9591 X 22 or kschwartz@ag.arizona.edu. Check the Arizona Project WET web site (www.ag.arizona.edu/AZWATER/wet) for additional program information including a schedule of workshops. Check web site for a schedule of upcoming workshops.



Special Projects

UA Water Quality Center Negotiates Collaborative Research Projects

By supporting research, the University of Arizona's National Science Foundation Water Quality Center is fulfilling the traditional role of a university center. What is unique or nontraditional about the WQC is its modus operandi, its plan of operation, or what center Director Ian Pepper describes as its "concept."

The WQC is based on the concept that the most effective approach to resolving water quality problems is building varied, broad-based interest and support. This means outreach in its most literal sense of reaching out — reaching out to the private sector, government agencies and specialists in various water related disciplines, to make up a coalition of interests. It also means reaching out to the public to gauge its water quality concerns.

Pepper says, "I have presented this concept to many different companies, agencies and others, and I have never met any entity that did not like it. The concept is intrinsically sound."

Key to WQC's operation and its most distinctive characteristic is its private sector link. The WQC is part of a National Science Foundation network of about 50 industry-university cooperative research centers, each with a different area of expertise. The UA program is the only NSF cooperative center to address water quality.

In taking on water quality, the WQC is concerned with an issue of broad community interest, not one limited to the private sector, to include also utilities, government agencies and the general public. The UA WQC therefore has a broader focus than most other NSF industry-university research centers, most of which specialize in an industry related concern, such as electronics or computers.

NSF guidelines outline the process of establishing a center. A brief white paper is initially submitted with about eight letters of intent from private and public sector entities pledging their interest and support. If the materials are in order NSF might then provide an applicant with a \$10,000 planning grant to organize the center and firm up commitments. If NSF decides to support a project the agency provides backing for administrative and operational costs. Research is supported by membership funding.

Membership in the WQC is at three levels, with \$3,000 for an associate member, \$10,000 - \$15,000 for an enhanced associate membership and \$30,000 for full membership. Members also can provide additional funding to support specific research projects.

Present WQC membership includes eight full members; six enhanced associate members, and four associate members. Each center member appoints one representative from its organization to serve on the WQC industrial advisory board. The board meets twice a year for two days, the first day devoted to presentations of research project reports and proposals for research. The second day the board votes on which research projects to fund.

Research topics or areas are sought that have a sufficiently broad application to be useful to a number of WQC participants, including both public and private interests. For example, research projects on land application of biosolids benefit various county and

city wastewater departments, including Pima County Wastewater Management, along with private sector biosolid applicators.

Pepper says, "The key to center operations and probably its most novel aspect is the integration of academia, government and the private sector. I think this is a trend you are going to see more of in the future. It is certainly a concept that (UA) President Likens endorses."

This organizational mix is evident in WQC's funding sources. Pepper says, "We get funding from NSF. We get direct funding from the State of Arizona, funding from Pima County Wastewater Management Division and City of Tucson. We are getting funding from the federal, state, county and city level. Also from consulting groups and the private sector."

Pepper acts as a broker to ensure smooth working relationships among the various interests. He says, "A lot of private sector companies are not set up to do research." What then is needed is a way to work out an appropriate match between private entities and university researchers, and that is where the center comes in. Pepper says, "I find out about the problems of the private sector." He then approaches UA faculty members with the expertise to take on those problems and offers WQC support for their research. A private sector interest thus taps into university resources, gaining the services of researchers along with laboratory and equipment.

Pepper views the WQC as operating sort of as a "franchise," linked to the NSF national network, but operating independently in meeting local needs and conditions. This enables the center to focus on more immediate issues, of concern to the here and now. Pepper says, "We deal with issues affecting the quality of water people are now drinking. This is not about modeling, about what might happen 30 years from now. We deliberately have a very rapid response to emerging issues, which I think is important."

For example, the WQC is supporting UA microbiologist Chuck Gerba's research on the *Naegleria fowleri* parasite and the Norwalk virus, two pathogens that recently emerged as water quality problems in Arizona. The WQC also is conducting research on CAP water issues and the SARS virus.

WQC's research budget recently received a boost from UA's Technology and Research Initiative Fund. TRIF funding comes from monies received from a portion of the state sales tax dedicated to education. Pepper says, "TRIF funds gave me the ability to match, or at least partially match private sector funds. I now could go to a company and say, 'We have a lot of expertise, a lot of equipment, a lot of facility, and we can match your research contribution.' It is an offer that is hard to refuse."

Of the \$1 million of TRIF funding available to UA water researchers \$369,000 will be used to support WQC research.

A WQC branch or partner site operates at Arizona State University. Its establishment three years after the UA center was in response to NSF interest in multi-university centers. ■



Announcements

AWRA's Annual Conference, Nov. 2-5

The American Water Resources Association's Annual Conference is set for Nov. 2-5 in San Diego. Over 300 papers will be presented in 75 concurrent platform sessions, along with about 100 poster presentations. Topics addressed by the widely diversified program include: TMDLs; education/outreach/community issues; watershed planning and management; impact assessment of urbanization; meeting future water demand; storm-water management modeling; drought management and conservation; Colorado River basin; trans-boundary water issues; and ground/surface water management. For additional information contact: Harriette Bayse, AWRA, 4 W. Federal Street, PO Box 1626, Middleburg, VA 20118, phone: 540-687-8390, fax: 540-687-8395 or check the web site: www.awra.org

Arizona Water Protection Funding Available

The Arizona Water Protection Fund Commission is accepting applications for its FY 2004 grant cycle. The application deadline is Oct. 15 by 3:00 p.m. All proposed projects must demonstrate direct benefit(s) to rivers, streams and/or riparian habits. About \$2 million is available for this year's funding. Last year AWPf funding supported four projects with a total of \$623,055. Complete information regarding the grant cycle is be posted on the AWPf web site: www.awpf.state.az.us. If you cannot access the web site and want information mailed to you, contact the AWPf office at 602-417-2400, X 7016.

AWPCA Issues Call for Papers

The Arizona Water & Pollution Control Association invites papers for its 77th annual conference on May 5 - 7, 2004 in Mesa. Those interested in presenting a paper should prepare a one-page abstract by Dec. 1 describing the subject matter in sufficient detail to allow evaluation of the proposed topic. Presentations will be limited to 30 minutes including time for questions, although longer presentations will be considered. For additional information, including suggested topics, check the AWPCA website:

www.awpca.org/ or contact Susan Kinkade, phone: 602-508-6600; email: susan.kinkade@hdrinc.com

Colorado Plateau Conference Scheduled

The 7th Biennial Conference addressing "Integrating Science and Management on the Colorado Plateau" is scheduled for Nov. 3-7 at Northern Arizona University, duBois Conference Center, Flagstaff. This conference provides an interdisciplinary forum for research and



land management issues related to the biological, cultural and economic resources of the Colorado Plateau. Anyone having conducted research or been involved with plateau land management issues is encouraged to take part. Conference sponsors include: USGS Southwest Biological Science Center; USGS Colorado Plateau Field Station; NAU Center for Sustainable Environments; NAU Colorado Plateau Cooperative Ecosystem Study Unit; and NAU Marum-Powell Center for Environmental Research. For additional information check the web site: www.usgs.nau.edu/conf2003/

Tucson AMA Announces GUAC Vacancies

The Tucson Active Management Area announces two vacancies on its Groundwater Users Advisory Council. Each council is comprised of five members who serve staggered six-year terms. One vacancies is for a term that began in January of 2000. The appointee to this position will serve until January, 2006. The other vacancy is for a term beginning in January 2004, with the appointee to this position serving until January 2010. Letter of intent must be submitted no later than 5 p.m., Sept. 25. For additional information contact: Cindy Shimokusu, Tucson AMA director, 400 W. Congress St., #518, Tucson, AZ 85701; phone: 520-770-3800.

Southwest Hydrology Merges with UA Program

Southwest Hydrology, a bimonthly publication devoted to semi-arid hydrology, is merging with a University of Arizona program to their mutual advantage. By merging with the UA Science and Technology Center for Sustainability of semi-Arid Hydrology and Riparian Areas (SAHRA) the publication will be able to expand staff, increase its reporting network, establish new departments to cover international water issues and water education, and improve its web site. The magazine also will include expanded coverage of water law and economic issues.

Southwest Hydrology coverage will complement SAHRA's outreach and educational activities aimed at promoting an integrated multi-disciplinary understanding of the hydrology of semi-arid regions. SAHRA is funded by the National Science Foundation.

Betsy Woodhouse will continue as publisher, and Howard Grahn will remain as editorial consultant. Back issues will soon be available on the web site. The publication is available without charge by calling 520-626-1805, email mail@swhydro.com or visit the web site at www.swhydro.arizona.edu. The first jointly produced edition of *Southwest Hydrology* will be the Sept.-Oct. issue.



Public Policy Review

by Sharon Megdal

We Need to Regulate Well Drilling Throughout the State — but How?



Consider this story. It is March 2000. In an area dependent on groundwater for water supplies, a landowner intends to utilize groundwater to irrigate a golf course, fill five lakes and meet other development water needs. Disputes arise regarding the impacts this groundwater pumping will have on other wells in the area. Officials request to see the hydrologic data supporting the landowner's

conclusions that pumping plans will not endanger the wells of surrounding landowners. The requests are denied because ordinances regarding water use do not apply to this particular landowner.

Fast forward to spring 2001. As the landowner's large wells were being completed and utilized, the drying of nearby wells begins. Over the next year, the developer continues to assert there is enough groundwater for at least 50 years and that the new wells rely on a totally separate, abundant aquifer.

One year later, the community discovers that the landowner, who had drilled large wells and assured nearby well owners that the drilling has had no impact on their wells, is trucking in water. The landowner's own wells have run into production difficulties. Due to the critical groundwater situation, the landowner seeks an emergency declaration and exemption from environmental review of plans to obtain additional water sources. Securing bypass of environmental reviews fails. The debate over these plans continues.

I read about this situation recently while visiting San Diego. The events and details are particular to the activities of a specific Indian Nation, with California state laws and San Diego County ordinances part of the issue — and I expect subject to dispute. The story, however, has direct relevance to Arizona.

Outside Active Management Areas, wells other than recovery wells do not require Arizona Department of Water Resources permitting. Only a notice of intent to drill is required. ADWR's (temporary) Well Spacing and Well Impact Rules, which require a demonstration that new wells do not cause "unreasonably increasing damage to surrounding land or other water users from the concentration of wells," do not apply. Outside AMAs, there also is no requirement that new developments show they have an assured water supply for 100 years.

At the top of the list of prioritized major rural water management issues, the Arizona Watershed Alliance listed "lack of local or multi-jurisdictional authority, with enforcement capability, to regulate development activities based on available and sustainable water supplies." The link between water and growth (development) is clear. It's what to do about the link from a regulatory perspective that is elusive. Should there be greater oversight of well drilling in non-AMA areas? In other words, should some type of well spacing and well impact rules apply? Should assured water supply requirements be established for these areas as well?

It is recognized that the prospect of additional regulation of

well drilling is not welcome in many parts of Arizona. Requirements to show absence of adverse effects of well drilling are viewed by some as an infringement of property rights. Yet absence of state law or local ordinances cannot trump the laws of nature. Groundwater supplies must be considered as areas grow. The right to use land is not equivalent to the right to pump other landowners' wells dry. How can situations like that described above be avoided?

Counties with populations greater than 125,000 must include planning for water resources in their comprehensive plans. The statutes require that the plans address the following: "(a) The known legally and physically available surface water, groundwater and effluent supplies; (b) The demand for water that will result from future growth projected in the county plan, added to existing uses; and (c) An analysis of how the demand for water that will result from future growth ... will be served by the water supplies identified ... or a plan to obtain additional necessary water supplies." Yet, the statute also states that the water resources element of the plan does not require new independent hydrologic studies.

If the aversion is really to state-level regulation of water in areas not already under ADWR jurisdiction, perhaps serious consideration should be given to county or regional level regulation. (I write this knowing this concept will elicit howls from some.) And this consideration ought to occur soon. But if the aversion is to regulation no matter what the regulation and who is responsible for it, then we need to do a reality check.

Absence of state law or local ordinances cannot trump the laws of nature.

Sustainable economies require sustainable water supplies. With the Drought Management Task Force addressing the effects of both short-term and possible long-term drought, we must support development and implementation of long-term water supply plans throughout Arizona. In doing so, we should not ignore the possibility that these long-term water supply plans will have some regulatory elements to them. Having growth depend on sustainable water supplies is in the interest of all property owners, from the individual home owner to the owner of large tracts of developable land.

Public policy development involves a lot of give and take, particularly when much is at stake. The manner in which Arizona grows is important. It is in the public interest that water issues be resolved. We are close to settling Indian water rights claims that affect both large metropolitan areas in the state. Approval of the settlements has widespread support. It is important that, as the watershed groups and others consider their options and opportunities to deal with water resource issues, the laws of nature not be ignored.

Everyone wants to avoid dry wells. ■

Privatization...continued from page 2

Phoenix calls the shots

The city of Phoenix has recently embarked on a privatization project, contracting a firm to design, build and operate a water treatment facility near Lake Pleasant. Involving a contract of \$221.2 million, an amount that includes 15 years of operating costs, this project is the most significant commitment to privatization made by any water utility in the state.

Mike Gritzuk, director of Phoenix Water Services, says Phoenix is not privatizing its water services along the lines taken by some large U.S. municipalities, with private firms bidding to operate a public utility. Gritzuk says that in working out the details of the Lake Pleasant treatment plant, the city arranged matters to ensure that whatever private firm got the bid would operate in the best interest of the city. He says the city was in a favorable position because of its use of the design-build-operate procurement process. With the DBO process, which was approved for use only recently by the Arizona Legislature, a privatizer's own self-interest is served by performing contracted activities to ensure high quality.

Gritzuk says DBO was chosen for the Lake Pleasant plant because "When you combine the synergy of the designer, contractor and operator all at the same time, with an understanding that the group is going to operate this facility for a long period — in our case for 15, maybe 20 years — it was obvious that DBO would result in the highest quality project compared to other procurement methods.

"One of the benefits in the DBO procurement method is the transfer of liability and risk from the owner — i.e., the city of Phoenix — to the contractor. If the contractor did not design properly, made errors or did not foresee design needs or if they did not estimate properly, that is their risk, and they have to eat it."

Further, he says "Our performance specifications require the contractor to produce a certain quality of water. And if they miss that quality there are some severe penalties they would have to pay.

"We own the facility, and we will finance the facility. They will have regular compliance requirements that we monitor. We will also do cross-training, with their operators training at our facilities and our operators knowing their facilities. Our vision is that it is going to be a partnership, a private-public partnership."

The partnership was criticized by officials of the American Federation of State County and Municipal Employees Local 2384 who feared privatization would adversely affect union membership.

Whither goes privatization?

Privatization inroads into U.S. municipal water operations, traditionally viewed as a public resource, is significant, the market now estimated at \$2.5 billion per year. Some consider Phoenix's decision to privatize part of its operations as representing the likely future course of water privatization in this country. Many such arrangements are already in effect throughout the United States, with public water utilities contracting with private firms to operate plants, manage facilities or perform service and maintenance activities, without outright ownership involved.

What some say will occur much less frequently in the future is the privatization of an entire utility, with a city getting out of the water business by contracting a private firm to operate its water services. These are the deals the rankle critics of privatization the most. Further, success in these endeavors has been limited.

Some argue that the corporate culture is not well suited for public sector operations. They say a quest for profit is its driving force, to pay stockholders, bondholders and others, whereas the public sector operates at cost. When a public-private partnership is formed to provide a public service, the public sector partner must be able to ensure the arrangement operates to the advantage of the public receiving the service. The question is whether the DBO procurement process will ensure that the privatized Lake Pleasant treatment plant operates for both private profit and public good. This is the crux of the controversy over privatization of water services. 🏢



Arizona Water
Resource

Water Resources Research Center
College of Agriculture and Life Sciences
The University of Arizona
350 N. Campbell Ave
Tucson, AZ 85721

Address Service Requested

NON-PROFIT ORG.
US POSTAGE
PAID
TUCSON, ARIZONA
PERMIT NO. 190
