

GOVERNMENT

Cloudy Ruling on Murky Water

In June, the U.S. Supreme Court issued a decision that upheld the Clean Water Act yet maintained the likelihood of further regulatory battles. At issue was the definition of wetlands subject to federal jurisdiction and thus protected by the Clean Water Act.

Four of the nine justices argued to uphold the general definition used by the U.S. Army Corps of Engineers: if any water at all could flow from the area in question to a river or lake, it is a wetland.

Four opposing judges argued for a stricter interpretation in which the wetlands must have a “continuously flowing body of water” within a river or lake, wrote Justice Antonin Scalia, according to the *San Francisco Chronicle*.

The ninth judge, Anthony Kennedy, said a wetland must have “a significant nexus” to a river or lake for the Clean Water Act to apply, and should be evaluated on a case-by-case basis—a “decidedly murky” view, in the *Chronicle*’s opinion.

The decision sent four cases involving parcels of land in Michigan that prompted the ruling back to a lower court for interpretation. Had Scalia’s definition prevailed, said the *Chronicle*, wetlands protection in much of the West would have been undermined, as many so-called wetlands are dry for much of the year. As the ruling stands, the definition remains unclear, leaving open the likelihood of numerous lower court battles over wetlands in the future.

Visit www.sfgate.com.

WSWC Issues Water Management Strategies

The Western States Water Council recently released a report prepared for the 19-state Western Governors’ Association that analyzes issues and provides recommendations for managing water in the growing West. The report, “Water

Needs and Strategies for a Sustainable Future,” addresses six primary areas.

Water policy and growth: WSWC recommends that states define their water requirements for future growth, develop strategies to present to local decision-makers, and facilitate watershed-scale planning to balance growth and environmental needs for water quantity and quality. When considering water transfers and changes in use, local, tribal, and watershed plans should be taken into account. Also, states should consider the impacts of continued growth that relies on transfers from agriculture and rural areas, and identify alternatives.

Needs and strategies for states to meet future demands: The report cited the need for increased federal and state support and funding for the basic data collection that is necessary for sound decision-making. Agencies should seek more in-kind contributions, more stable funding, and possible user-pay opportunities. Research programs at universities should be encouraged to focus on practical applications of promising new technologies and areas where increased use of technology would improve operational efficiency and cost-effectiveness. WSWC strongly supports the National Integrated Drought Information System (NIDIS) and state-wide drought planning efforts. States should develop and implement strong state water plans built from watershed-scale studies, and work with other states to develop regional basin plans where appropriate.

Water infrastructure needs: WSWC supports continued federal and state revolving funds for the Clean Water Act and Safe Drinking Water Act; more money for U.S. Bureau of Reclamation projects for western water supply needs, particularly in rural areas; more loan guarantee programs for nonfederal project sponsors for rural needs; and renewed support for Army Corps of Engineers projects. Maximal coordination of regional approaches by federal/state

groups is recommended. To support the needed infrastructure investment by all levels of government, more outreach and educational programs are also needed.

Resolution of Indian water rights: Pending water rights claims should be settled, and the means to fund them identified.

Preparation for climate change: More funding is required for data collection networks and research for improved climate change prediction/modeling/impact assessment. States must improve planning and coordination with local governments, scientists, policymakers, and water users.

Protection of aquatic species under the Endangered Species Act (ESA): States should establish protocols for implementing the ESA to minimize conflicts between species and other water users. Evaluations of western state water laws could identify possible options for providing water for endangered and threatened species.

The 28-page report is available at www.westgov.org/wswc/publicat.html.

AZ Legislature Approves Earth Fissures Mapping

Last spring, the Arizona Legislature approved HB 2639, requiring that earth fissure maps be made available on request to the public in both printed and electronic formats, and updated on a five-year basis. The bill appropriated \$233,000 to the Arizona Geological Survey (AGS) and \$81,000 to the State Land Department (SLD) for fiscal year 2006/2007.

Earth fissures are tension cracks at or near the earth’s surface resulting from land subsidence. Subsidence in Arizona is due generally to soil compaction caused by excessive groundwater pumping. Earth fissures are located primarily in the central and southern portions of the state and mainly along or near basin boundaries in basins where depth to water has declined several hundred feet.

HB 2639 expands the duties of AGS to require that copies of all data files of known areas of earth fissures be submitted to SLD every five years beginning Jan. 1, 2007. It expands the duties of the Resource Analysis Division of SLD to require maps of areas of known earth fissures to be produced within 90 days of receiving the data from AGS. The maps must include overlays of affected counties, cities, towns, highways and streets; copies must be provided to AGS and the Real Estate Department.

In addition, the bill exempts a subdivider, owner, or licensee from liability to any person or governmental entity if notice of the earth fissure map and website is provided in writing or is part of a public report, or if it was not possible to know that the land was subject to earth fissures before the map was posted.

Visit www.azleg.gov.

AZ County to Monitor Rural Water Use

The 11,400 domestic water wells in Cochise County in southern Arizona present a challenge to county water managers. Because they pump less than 35 gallons per minute (gpm), they are exempt from metering, so whether they pump on average 1 gpm, 34.9 gpm, or somewhere in between is unknown. The county is hoping to get a better idea of how much water its rural residents actually use through a \$100,000 metering program recently funded by

the board of supervisors, according to the *San Pedro Valley News-Sun*.

A 2005 water balance developed by the Arizona Department of Water Resources (ADWR) estimated that domestic well users in the area use an average of about 780 gallons per day (about one-half gpm) for an average household of 2.5 people. Water deficits in the county are being projected based on that figure, Carl Robie, Cochise County Board of Supervisors water conservation specialist, told the newspaper, but he warned that the number may not be terribly accurate. Getting it right is important for water managers, especially if the ADWR estimate is low.

The metering program faces a big challenge: for study results to be meaningful, 476 wells must be randomly selected, and their owners will have to agree to cooperate with the program for its two- to three-year duration, Robie told the *News-Sun*. The owners' identities will be kept anonymous, no restrictions on water use will be required, and the meters and hookups will be free. Owners would simply have to allow officials to enter their property periodically to collect the data. But this is rural Arizona, where government officials are often regarded with suspicion. County officials are hoping that residents will recognize the value of the data and cooperate in the study.

Visit www.svherald.com.

Arizona Water Atlas Released

In July, the Arizona Department of Water Resources (ADWR) issued draft

versions of the first two volumes of the *Arizona Water Atlas*. The atlas eventually will fill nine volumes; additional volumes will be released for comment in the coming months.

"We view the atlas project as central to our mission of securing Arizona's water supply," ADWR Director Herb Guenther said. "It will become a dynamic project, with constant updates as more information is gathered and analyzed."

The *Arizona Water Atlas* is a compilation of currently available water-related information for the state. Volume 1 is an introductory volume; volumes 2 through 7 cover the six planning areas outside of the state's Active Management Areas (AMAs), beginning with the Eastern Plateau planning area, which covers roughly the northeast quarter of the state. The five AMAs are considered together and described in Volume 8. Volume 9 is a summary volume for the entire state.

In addition to providing a comprehensive overview of regional water supply and demand conditions, atlas staff are seeking to compile existing information and identify areas that will require further study, provide water supply and demand information to assist rural Arizona planning efforts, identify water resource issues facing rural Arizona communities and help to identify solutions, and initiate a renewed and more systematic effort by ADWR to maintain a rural Arizona database.

The atlas staff are seeking substantive public and professional comment on the

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HydroFacts

Cubic miles of fresh water in Lake Baikal: **5,660**

Cubic miles in Lake Superior: **2,900**

Cubic miles in Lakes Michigan, Huron, Erie, and Ontario combined: **2,539**

Percent of global fresh water in all six lakes: **39.1**

Although summer's heat is a fading memory, the urban heat island effect is still a hot topic in major metropolitan areas of the Southwest.

Average overnight low temperature, Phoenix, July 1948: **75 F**

Average overnight low temperature, Phoenix, July 2003: **87 F**

Average cooling degree hours*, Phoenix, 1950s: **95,597**

Average cooling degree hours, Phoenix, 1990s: **112,551**

Electricity used for home cooling, Phoenix, 1950s: **7,888 kWh/house/year**

Electricity used, 1994-2003: **8,873 kWh/house/year**

Water consumptively used to generate 1 kWh: **~ 0.7 gals.**

*A measure of energy needed to cool a structure, calculated hourly as the number of degrees that the outdoor temperature exceeds the desired indoor temperature.

work in progress. An electronic comment form is available on the ADWR website.

ADWR plans to finalize the atlas in early 2007. Printed copies and CD-ROMs will be available when the atlas is complete.

Volumes 1 and 2 are available at www.azwater.gov.

CA Considers Climate Change Impacts on Water Resources

In July, the California Department of Water Resources (DWR) released a technical report looking at changes that may affect California's water resources in the future. The report, "Progress on Incorporating Climate Change into Management of California's Water Resources," is an adjunct to an executive order issued by Gov. Arnold Schwarzenegger in June 2005 that set greenhouse gas reduction goals for California.

Prepared for the governor and the California State Legislature, the report describes the mathematical modeling of four climate change scenarios and the corresponding results. It indicates that climate change could significantly impact California's water picture in many ways, including: loss of Sierra snow pack and the seasonal water storage it provides; more rain and less snow, impacting both water supply reliability and hydropower generation; more variable precipitation and extreme weather events, such as floods and droughts—the latter resulting in more energy-intensive groundwater pumping; rising sea levels that would increase pressure on Delta levees and compound saltwater intrusion into Delta water supplies and coastal aquifers; higher water temperatures, possibly affecting listed fish species; and changes in annual average State Water Project and Central Valley Project south-of-Delta deliveries.

According to DWR, the climate change report is consistent with the agency's recently released "California Water Plan Update" that recommends state

agencies work with researchers to monitor, predict, and prepare for the effects of global climate change on water systems and the environment.

The climate change report is available at baydeltaoffice.water.ca.gov.

Pipeline Boring Begins for San Diego

Boring began last summer for the 11-mile long, 8½-foot diameter, \$273 million San Vicente Pipeline that will connect San Diego with the San Vicente Reservoir in Lakeside, California. The pipeline is part of San Diego County Water Authority's Emergency Storage Project, a system of reservoirs, interconnected pipelines, and pumping stations designed to make water available to the San Diego region in the event of an interruption in imported water deliveries, such as caused by an earthquake or prolonged drought.

Originally, the agency planned to construct a giant trench from the city to the reservoir, but in 2004 the plans were changed to a pipeline to minimize environmental and traffic impacts, and noise and dust during construction.

The pipeline will be built in a 12-foot-diameter tunnel at a depth ranging from 50 to 600 feet underground and will not pass directly under any homes. Tunneling, rather than cut-and-cover trenching, was chosen to reduce impacts to land surfaces and the surrounding communities. Three tunnel boring machines will be used to excavate the majority of the tunnel. One will excavate rock using a rotating head to break the rock into small pieces. The other two will use a digging arm equipped with a bucket or rotary cutter. Rock and dirt are discharged behind the boring machines and removed from the tunnel by haul trains. The machines can excavate at a rate of 50 to 130 feet a day, depending on rock and soil conditions. Some short sections of the tunnel may contain rocks too hard for the digger shields to mine, and controlled blasting may be needed.

The pipeline is scheduled for completion in 2008.

Visit www.sdcwa.org.

Power Companies Compete for NV Water

Two power companies hoping to build plants in eastern Nevada are competing for water rights in the Ely, Nevada area, reported the *Las Vegas Review Journal*. White Pine County officials told the newspaper that they support the construction of both proposed coal-fired plants, one by Sierra Pacific Resources, the holding company for Nevada Power Company, and one by LS Power, but they aren't certain sufficient water exists for both companies.

LS Power has already obtained from the county a guarantee of 25,000 acre-feet per year in Steptoe Valley; Sierra Pacific Resources applied to the state engineer for rights from the same location, triggering protests by several entities, including the U.S. Bureau of Reclamation, LS Power, and White Pine County, according to the *Review Journal*. The county commission tried to offer options, such as the two utilities forming a partnership or Sierra or Nevada Power obtaining water from Spring Valley, but the deal had no takers. Both utilities hope to begin operations by 2011 provided the water issues are resolved by next year, said the paper.

Visit www.reviewjournal.com

Edwards Aquifer Authority Moves to Protect Recharge Zone

Following a "concept memorandum" developed last spring, the board of the Edwards Aquifer Authority in central Texas "unanimously supported the idea of limiting rooftop and asphalt cover to 20 percent on aquifer recharge zone properties," according to the *San Antonio Express-News*, but held off drafting actual rules until November.

George Rice, board member and a San Antonio hydrologist, commented to the newspaper, “We punted again,” but expressed hope that eventually the board will stand up to outside pressures influencing its decision.

The memorandum stated that the authority has the power and rights to protect the resources and quality of the Edwards Aquifer. The aquifer is characterized by sinkholes, caves, springs, and extremely high porosity and permeability typical of karst aquifers. As such, any contamination spreads rapidly throughout the system. The memorandum cited several studies showing a decrease in surface water quality as impervious cover increases, particularly when a threshold of 10 to 20 percent impervious cover is reached, and argues that due to the interconnected nature of the Edwards Aquifer, it is likely to experience similar deterioration.

The concept memorandum recommended a 20 percent limit for impervious cover for all new development—across all zoning classes—in the recharge zone within the authority’s boundaries. However, it specifies ways to mitigate the effects of increased cover if a development requires greater than 20 percent impervious cover, such as by implementing permanent stormwater best management practices and purchasing land elsewhere in the same subwatershed to keep vacant.

Visit www.edwardsaquifer.org and www.express-news.net.

Water Sale/Lease Conflict in NM

A water rights debate is unfolding in the Rio Grande Valley. According to the [Santa Fe] *New Mexican*, at issue is whether a farmer with senior irrigation water rights in the Middle Rio Grande Conservation District (MRGCD) can sell his rights to the district without being prohibited from irrigating his land with water leased back from the district’s water bank.

According to the July 2 article, the New Mexico Office of the State Engineer

considers such practices double-dipping, and if the farmer wants to irrigate again, he must obtain a new permit from that agency. But the conservation district argues that the farmer ought to be able to “lease water that the district has ‘banked’ from people who own water rights but have stopped irrigating,” the article said. It would only be illegal if the farmer began irrigating without leasing the water, according to the district’s attorney, Charles DuMars.

Apparently, it is not uncommon in the district for landowners to sell their rights but continue to irrigate without leasing water. According to the *New Mexican*, neither the district nor the state engineer’s office has kept good records on which rights have been sold relative to where irrigation is occurring.

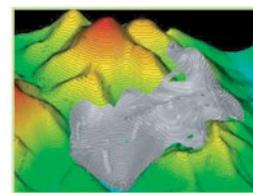
DuMars told the newspaper that the primary conflict between the district and the state engineer concerns whether the district can bank water: the district believes it can, while the state engineer says the water right is lost if land is allowed to go fallow and beneficial use of the water no longer occurs. In fact, according to the *New Mexican*, that

policy is enforced elsewhere in the state, and the state engineer is threatening to nullify pre-1907 “water transfers in the district if he finds out the land from which it was moved is irrigated again.”

The MRGCD was created in 1923 to provide flood protection from the Rio Grande and promote urbanization and agriculture in the area, which encompasses the Rio Grande Valley in the central portion of New Mexico, from Cochiti Dam south, through Albuquerque, to the Bosque del Apache National Wildlife Refuge. Today the district contains a mix of small farms, irrigated lands, pastures, and gardens amid urban and suburban landscapes.

According to the *New Mexican*, the district has the right to irrigate up to approximately 123,000 acres of land, but the volume of water that may be used for irrigation has not been specified, nor has proof of beneficial use been submitted to the state engineer to justify the district’s water entitlement. Some landowners in the district have water rights dating prior to 1907; by state law, pre-1907 rights are senior.

Visit www.mrgcd.com and www.freewmexican.com.



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