

## Arizona Snowbowl Wins a Round in Court

Plans to use reclaimed wastewater to create artificial snow on U.S. Forest Service land considered sacred by Native Americans does not violate the tribes' religious freedoms, ruled the U.S. 9th Circuit Court of Appeals in August.

The ruling in favor of the Arizona Snowbowl, a ski resort near Flagstaff, is the latest in an ongoing battle that tribal leaders vow to take to the Supreme

Court, reported the *Arizona Republic*. In 2006 a federal judge in Prescott ruled the water-use plan was acceptable, but on appeal, a three-judge panel of the appeals court found in favor of the tribes. Snowbowl's request for a full-panel review resulted in the recent 8-3 decision.

The majority found that artificial snow only affected the tribes' "subjective spiritual experience" and thus did not violate the Religious Freedoms Restoration Act (RFRA). They added that "giving one religious sect a veto over the use of public park land would deprive

others of the right to use what is, by definition, land that belongs to everyone." The dissent called this justification a "tragic irony," as the public land was forcibly taken from the Indians.

"If Indians' landbased exercise of religion is not protected by RFRA in this case," Judge Fletcher wrote, "I cannot imagine a case in which it will be. I am truly sorry that the majority has effectively read American Indians out of RFRA."

Visit [www.azcentral.com](http://www.azcentral.com) and [www.ca9.uscourts.gov](http://www.ca9.uscourts.gov).

## HydroFacts

Extent of riparian vegetation along the lower Colorado River from Lake Mead to the Colorado Delta:	about 100,000 acres
Percent that is dense saltcedar:	50
Percent that is saltcedar mixed with native plants:	50
Percent of Colorado River water between the Grand Canyon and U.S./Mexico border used by saltcedar:	1
Percent of river water used by all riparian vegetation:	2
Percent of river water between the Mexico border and the delta used by all riparian vegetation:	2
Early estimates of annual saltcedar water use, in feet:	10 to 13
Estimates of annual saltcedar water use from 1990s studies, in feet:	2.5 to 6.3
New calibrated studies of annual saltcedar water use, in feet:	3

Sources: Ed Glenn, University of Arizona; and J.C. Stromberg and others, forthcoming in *Changing perceptions of change: The role of scientists in Tamarix and river management, Restoration Ecology*.

## EPA Must Control Construction Runoff

The U.S. Environmental Protection Agency must set standards for limiting construction runoff as part of the Clean Water Act (CWA), ruled the U.S. 9th Circuit Court of Appeals in September.

EPA began work in 1999 to regulate stormwater discharge and associated pollution from construction activities, and in 2000 identified construction activities as a point-source category that necessitated guidelines under the CWA. However, in 2004 EPA withdrew construction activities as a category and did not promulgate standards.

The Natural Resources Defense Council (NRDC) sued EPA in district court, claiming that the CWA required guidelines to be established within three years of the identification of a point-source category, and thus did not allow for their withdrawal. The district court ordered EPA to establish standards by the end of 2009, and the recent ruling affirms this decision.

Visit [www.nrdc.org](http://www.nrdc.org) and [www.ca9.uscourts.gov](http://www.ca9.uscourts.gov).

## Carlsbad Desal Project Clears Biggest Hurdles; Some Remain

Poseidon Resources completed a five-year-long permitting process for a desalination plant in Carlsbad, California, when it received final project

## Sustainability

It's a Southwest necessity. Together we can attain it.

- Groundwater resource evaluation and basin inventory analysis
- Modeling of groundwater and surface water flow systems
- Wellhead and aquifer source protection
- Assured water supply planning and development
- Litigation support for water rights and resource damage
- Water quality evaluation and treatment (including arsenic)

For more information, contact Brad Cross at 480.905.9311 or via e-mail at [brad.cross@lfr.com](mailto:brad.cross@lfr.com).



LFR Inc. is an environmental management & consulting engineering firm with 29 offices nationwide. For more information, call 800.320.1028 or visit us at [www.lfr.com](http://www.lfr.com).

approval from both the California Coastal Commission and the California State Lands Commission in August.

The project has faced numerous legal challenges and approval appeals. Poseidon has been successful thus far, but in September San Diego Coastkeeper and the Surfrider Foundation jointly filed two civil lawsuits in San Diego Superior Court challenging the San Diego Regional Water Quality Control Board's conditional approval of the Carlsbad desalination project in May, as well as the Lands Commission's recent approval. The suits allege that the agencies did not perform full assessments and analyses as required by law. As of December, no decisions had been issued.

Construction is scheduled to begin in 2009 with the plant becoming operational in 2011. The desalination operation will have the capacity to produce 50 million gallons per day and serve 300,000 residents.

Visit [www.carlsbad-desal.com](http://www.carlsbad-desal.com) and [www.sdcoastkeeper.org](http://www.sdcoastkeeper.org).

---

## **Colorado Court Considers Mining and Drilling Cases**

The Colorado Supreme Court heard arguments in September in two cases with implications for mining and drilling operations across the West, reported Denver media outlets in September.

The first case, reported by *Examiner.com*, deals with a dispute over produced water from coal bed methane drilling. Landowners in the San Juan Basin sued the state engineer in an attempt to require well permits for the drilling, citing concerns that the large quantity of produced water will threaten their own water supplies, which have senior rights.

According to the *Examiner*, the state engineer treats produced water as a waste product that should be regulated, as it currently is, under oil and gas rules. But the district court ruled that produced water fits the definition of a beneficial

use and therefore belongs under the jurisdiction of the state engineer.

The second case, reported by the *Denver Post*, deals with a ban on the cyanide heap-leach gold-mining method enacted by Summit County in 2004 in an effort to protect water quality. The Colorado Mining Association is attempting to have the ban overturned, saying that kind of regulation should take place at the state level. The *Post* said the appellate ruling, which upheld important elements of the ban, found no conflict between the county ban and the state's Mining Land Reclamation Act.

The Supreme Court had not issued opinions as of December.

Visit [www.denverpost.com](http://www.denverpost.com) and [www.examiner.com](http://www.examiner.com).

---

## **Close Save for California Water Softener Industry**

California Gov. Arnold Schwarzenegger in September vetoed a bill that would have given local governments the ability to ban residential water softeners. Water softeners increase the salinity of wastewater, and where it is being recycled, high salinity can limit its uses.

AB 2270 noted that the state is 20 years behind in reaching its recycled water goals. The bill proposed to change statewide recycling goals into targets to be updated every five years and was intended to remove barriers to, and provide incentives for, water reuse.

The bill would have allowed governments to prohibit installation of residential water softeners or even to require residents to remove existing softeners with compensation. Schwarzenegger wrote in his veto message that even though recycling water is important, the bill "went too far" with its water softener limitations.

The Water Quality Association (WQA), an industry group, led opposition to the bill, reported *WaterTech Online*. Mike Mecca, director of the Pacific WQA, told the news service that awareness of

the salinity issue should allow regulatory attention to be directed toward large commercial and industrial operations.

One proponent of the bill, the Association of California Water Agencies, estimates that self-regenerating residential water softeners introduce one-half to one pound of salt per day into wastewater. Although statewide figures on the number of such softeners were not available, the organization estimated that 10 to 15 percent of residents in some parts of Southern California and the Central Valley have them.

Visit [www.leginfo.ca.gov](http://www.leginfo.ca.gov), [www.watertechonline.com](http://www.watertechonline.com), [gov.ca.gov/pdf/press/AB2270\\_Laird\\_Veto\\_Message.pdf](http://gov.ca.gov/pdf/press/AB2270_Laird_Veto_Message.pdf), and [www.acwa.com](http://www.acwa.com).

---

## **Truckee River Operating Agreement Signed**

Decades of dispute over the Truckee River in Nevada and California were put to rest with the signing of the Truckee River Operating Agreement in September.

The agreement was signed by Secretary of the Interior Dick Kempthorne and 16 others, including the Pyramid Lake Paiute Tribe, U.S. Department of Justice, the states of California and Nevada, and the Truckee Meadows Water Authority; it implements a 1990 settlement act sponsored by Nevada Senator Harry Reid. Now it must be promulgated as a federal regulation.

The agreement will modify the operations of Truckee River reservoirs upstream of Reno, Nevada, and enhance the flexibility and coordination of those operations while meeting flood control and dam safety requirements. With its implementation, interstate water allocations will take effect between California and Nevada in the Lake Tahoe, Truckee River, and Carson River basins.

The agreement will also "enhance conditions for the threatened Lahontan cutthroat trout and endangered cui-ui in the Truckee River Basin, increase

*continued on next page*

municipal and industrial drought supply for the Reno-Sparks metropolitan area, improve Truckee River water quality downstream from Sparks, Nevada, and enhance streamflows and recreational opportunities in the Truckee River Basin," according to the Bureau of Reclamation.

Visit [www.usbr.gov](http://www.usbr.gov) and [www.sfgate.com](http://www.sfgate.com).

## Yucca Mountain: More Water Info Needed

The Nuclear Regulatory Commission (NRC) in September accepted for review the U.S. Department of Energy's (DOE) license application for the Yucca Mountain nuclear waste repository in Nevada, while demanding more information about impacts on water resources.

While DOE in general met the requirements for the application, NRC staff concluded that the environmental impact statements (EISs) did not adequately discuss the cumulative impacts of radiological and nonradiological contaminants on groundwater in the volcanic-alluvial aquifer, or even the full extent of the aquifer. The EISs also failed to characterize the potential impacts of discharge of contaminated groundwater to the surface. NRC staff estimated that the additional documentation

needed to address these issues could be completed within a period of several months, reported the *Las Vegas Sun*.

The license application was submitted in June 2008, six years behind schedule. Officials emphasized that acceptance does not mean approval, and a decision is still years away. As the *Sun* reported, "The commission's Michael F. Weber tried to put the moment in perspective, saying Monday's announcement is a little like a young adult's college acceptance: Just because the student gets in doesn't guarantee he'll walk across the stage in four years, diploma in hand."

Visit [www.energy.gov](http://www.energy.gov), [www.nrc.gov/waste/hlw-disposal/yucca-lic-app.html](http://www.nrc.gov/waste/hlw-disposal/yucca-lic-app.html), and [www.lasvegassun.com](http://www.lasvegassun.com).

## EPA to Determine Navigability Status of CA, AZ Rivers

After the Army Corps of Engineers declared that only a few miles of the Los Angeles River were navigable and suspended its decision that two reaches of the Santa Cruz River in southern Arizona were navigable, the U.S. EPA stepped in to address concerns related to the Clean Water Act.

In his August letter to the Corps serving notice that EPA would make the final determination on the two rivers, EPA

Assistant Administrator for Water Benjamin Grumbles wrote, "These two cases raise important legal and policy issues in light of the extensive case law regarding the definition of traditional navigable waters and because of special environmental and climatic factors found in the arid Southwest."

Earlier, House Committee on Transportation and Infrastructure Chairman James L. Oberstar and House Committee on Oversight and Government Reform Chairman Henry A. Waxman had cited potential problems with the Corps' navigability determinations. In a letter, they requested information from the Corps on definitions, policies, and authorities related to navigability decisions, as well as a list of pending or completed navigability determinations that were apparently undertaken as a result of the U.S. Supreme Court *Rapanos v. United States* decision, which ruled on the definition of navigable waters. The chairmen noted that navigability determinations will impact Clean Water Act implementation, including regulation of discharge of toxic chemicals, raw sewage, and oil.

EPA's decision was expected by the end of December.

Visit [www.tucsonaudubon.org/conservation/scr\\_navigablewater.htm](http://www.tucsonaudubon.org/conservation/scr_navigablewater.htm) and [www.latimes.com](http://www.latimes.com).



## 2009 Ground Water Summit: The Science and Engineering Conference Adapting to Increasing Demands in a Changing Climate

April 19-23 • Hilton Tucson El Conquistador Golf & Tennis Resort • Tucson, Arizona

Plan to attend the 2009 Ground Water Summit, the principal national conference, designed to help push the boundaries of applied ground water science by bringing together international leaders in ground water consulting, research, and public service. The conference is structured to foster open discussion of current topics in applied ground water science. It is international in breadth with a distinct element of local flavor.

You will:

- Interact with those working in the science and performing research
- Participate in open discussions with peers
- Gain insight about new technologies.



Address/ 601 Dempsey Road, Westerville, Ohio 43081-8978 U.S.A.  
Phone/ 800 551.7379 (614 898.7791) Fax/ 614 898.7786 Web site/ [www.ngwa.org](http://www.ngwa.org)

## Massive Mechanical Mole Emerges from SoCal Mountain

After a five-year journey featuring setbacks from fire and flood, a 450-foot-long tunnel-boring machine emerged in August from under the San Bernardino Mountains in Southern California, having carved out a four-mile-long, 19-foot-diameter tunnel. The 820-ton mechanical mole completed the Arrowhead West tunnel as part of Metropolitan Water District's (MWD) 44-mile Inland Feeder.

Designed to improve the quality and reliability of imported water for Southern Californians, the \$1.2 billion project will deliver water from the Colorado River Aqueduct in San Jacinto for storage in Diamond Valley Lake and other reservoirs and groundwater basins. MWD expects that future uncertainty in weather patterns may require them to be able to deliver large amounts of water quickly from Northern California for storage during long dry periods in Southern California.

According to the *Los Angeles Times*, the Inland Feeder will "triple the existing system's capability to move water to Diamond Valley. At its maximum, the new pipe could move enough water to fill an Olympic-sized swimming pool in less than 30 seconds."

The feeder also will improve the quality of Southern California's water supply by allowing more uniform blending of Northern California water, which has low total dissolved solids, with more mineral-laden Colorado River water.

The *Times* reported that the tunnel-boring machine advanced at a top speed of two inches per minute, although over the five years, the average rate was about 12 feet per day. Arrowhead West was the last of the three tunnels in the gravity-fed project to be completed, with final project completion scheduled for 2010.

Visit [www.mwdh2o.com](http://www.mwdh2o.com) and [www.latimes.com](http://www.latimes.com).

## SoCal Spurns Surface Storage

With California in a drought, pumping from the Sacramento-San Joaquin Delta limited by environmental concerns, and Gov. Arnold Schwarzenegger advocating an expensive infrastructure and storage package, no one would be surprised if Southern Californians threw their support behind new dams.

But a draft report released in August by the Los Angeles County Economic Development Corporation (LAEDC) evaluated future water strategies for Southern California based on cost-effectiveness, environmental impacts, and

other factors, and dams came in dead last. The LAEDC report was prepared for the Southern California Leadership Council (SCLC), a business-led public policy partnership. SCLC, AECOM Water (a consulting firm), and the Eastern Municipal Water District sponsored the research.

Dams are expensive, risky, not drought-proof, and have a high potential for environmental impacts, states the report, "Where Will We Get the Water?" In addition, the authors see no possibility for surface storage in Southern California because all water there is already spoken for, and the water from any dams in Northern California would likely have to come through the troubled delta.

Meanwhile, urban conservation provides "the cheapest, easiest and most environmentally friendly means of improving reliability." Conservation could also improve Southern California's image. "Building support for a solution in the Bay-Delta...will be easier," the authors propose, "if Southern California is seen to be treating water as a precious resource by implementing aggressive conservation strategies."

The LAEDC also assessed local stormwater capture, recycling, ocean desalination, groundwater desalination, agriculture-to-urban transfers, interagency cooperation, and groundwater storage.

See the full report at [www.laedc.org/consulting/projects/2008\\_SoCalWaterStrategies.pdf](http://www.laedc.org/consulting/projects/2008_SoCalWaterStrategies.pdf).

## CO Instream Flow Program Strengthened Again

Colorado Gov. Bill Ritter continued to support his state's instream flow program in May, signing a bill that appropriates up to \$1 million annually for acquisition of water rights that can help protect riparian and aquatic habitat in streams and rivers.

HB 1346 was the annual projects bill for the Colorado Water Conservation Board (CWCB), which runs the instream flow program, but this was the first

*continued on next page*



The tunnel-boring machine, shortly after it emerged from the San Bernardino Mountains.

Photo: Metropolitan Water District of Southern California

## Government (continued)

year that instream flow acquisitions were funded, Audubon Colorado noted in its 2008 legislative report.

Rep. Kathleen Curry, cosponsor of the bill, told the *Rocky Mountain News* in September that a rise in severance tax revenues from the oil and gas boom allowed funding for the program.

The new bill strengthens the instream flow program by allowing CWCB to purchase senior water rights in critical river systems, reported the *News*, rather than relying on donations or appropriations of junior water rights that are often not entitled to water in dry times.

Visit [www.rockymountainnews.com](http://www.rockymountainnews.com), [www.auduboncalifornia.org](http://www.auduboncalifornia.org), and [www.colorado.gov](http://www.colorado.gov).

## California Renews Drought Bank

The creation of a 2009 Drought Water Bank was announced by California Department of Water Resources (DWR) Director Lester Snow at a drought summit in September. The bank is designed to facilitate the transfer of water from willing sellers to water-short suppliers. DWR previously undertook dry-year water purchasing programs in the early 1990s and from 2001 to 2004.

The water must come from willing sellers upstream of the Sacramento-San Joaquin Bay-Delta. They can make water available by reservoir releases above normal operations, groundwater substitution, cropland idling, or crop substitution. Water suppliers purchasing this water are also required to have implemented a water management plan that will result in a 20-percent reduction of normal urban demand.

Protective measures will be in place. Critical local needs must be met before water can be transferred out of the region. Water transfers cannot harm other legal users or fish and wildlife. The overall economy of the county must not be unreasonably affected by the transfer. And no more than 20 percent of the cropland in any county can be idled for the Water Bank. DWR will provide California Environmental Quality Act and Environmental Species Act compliance for the program.

The water will be transferred through State Water Project or Central Valley Project facilities, and the supplies will be open to any water providers who obtain water from the projects, either directly or through exchange. Under critically dry conditions, DWR will prioritize water deliveries according to health and safety needs, preservation of high-value assets such as survival of permanent crops, and deliveries sufficient to meet up to 60 percent of normal urban demands or 25 percent of normal agricultural demands.

Visit [www.water.ca.gov/drought](http://www.water.ca.gov/drought).



**Experienced • Equipped • Committed**



*Layne Christensen's combination of experienced technical staff and resources enable us to identify and develop the most practical water source for our Municipal, Industrial, Mining and Energy Clients.*



*Layne Christensen Company: Experienced, equipped and committed to solve your unique water need...*



*...since 1882*

909-390-2833 - Fontana, CA  
480-895-9404 - Chandler, AZ  
303-755-1281 - Denver, CO

[www.LayneWater.com](http://www.LayneWater.com)



## Innovative Solutions in Hydrology



- Groundwater Recharge Studies
- Mine Closure and Reclamation Studies
- Water Resources
- Heap Leach Optimization
- Vadose Zone Monitoring
- Flow and Transport Modeling
- Hydrologic Testing Laboratory



**GeoSystems Analysis, Inc.**  
Tucson, Arizona • Reno, Nevada  
2015 N. Forbes Ave. Suite 105  
Tucson, Arizona 85745  
Phone: 520.628.9330 • Fax: 520.628.1122  
[www.geosystemsanalysis.com](http://www.geosystemsanalysis.com)