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LR Letter 02/01/05

## **Grand Canyon CRMP DEIS comments**

February 1, 2005  
Mr. Joseph Alston, Superintendent  
Grand Canyon National Park  
P.O. Box 129  
Grand Canyon, AZ 86023

Re: Draft Environmental Impact Statement for the Colorado River Management Plan at Grand Canyon National Park

Dear Mr. Alston,

Living Rivers and Colorado Riverkeeper submit the following as comments on Grand Canyon National Park's Draft Environmental Impact Statement (DEIS) for the Colorado River Management Plan.

On August 1, 2002, Living Rivers provided scoping comments for the DEIS process (see attached), which specified that it was paramount that the National Park Service (Park Service) not limit the DEIS scope to merely addressing human activity in the river corridor of Grand Canyon National Park (Grand Canyon). The ecological and cultural integrity of the river corridor is in serious decline, and its must not be ignored by any management plan pertaining to the river. Such an omission violates the spirit of, if not the letter of, the Organic Act, Endangered Species Act, National Historic Preservation Act and Grand Canyon Protection Act.

These earlier comments also stressed that the stewardship goals of the Park Service for this EIS include necessary criteria to restore critical river corridor habitat of the threatened and endangered species within the Park's jurisdiction, and that this responsibility be tiered with the stakeholders of the Adaptive Management Program, especially the Fish and Wildlife Service, the Bureau of Reclamation, and First Nations.

The DEIS, however, has ignored this responsibility. It considers the fate of the Grand Canyon's broad ecosystem problems to be subservient to the Park Service's views on the needs and expectations of human visitation within the river corridor. This approach wholly ignores resource protection, the Park Service's prime directive.

As a result, the deteriorating river ecology in Grand Canyon will be exacerbated should Preferred Alternative H (Alternative H), as presented in the DEIS, be implemented. This alternative should be abandoned, and the Park Service should refocus the plan on developing a management plan that will first satisfy the urgent needs of the ecosystem, then address how visitors should interact with it.

To achieve this, the Park Service should implement the following:

## 1. Properly Define the Problem

This public process has been a valuable opportunity for the Park Service to build support for the prudent management of the resource. Indeed, most participants have indicated a strong preference for a healthy Grand Canyon ecosystem. What is controversial is the role humans will play in the management of Grand Canyon, and this must not be limited to visitation but other impacts as well, especially Glen Canyon Dam. Alternative H is a marginal job addressing the former, and pays little attention to other impacts.

Alternative H attempts merely to placate the wishes of non-commercial and commercial boaters, while doing nothing to benefit the resource. Indeed, Alternative H is little more than a political compromise arising from the historical controversy regarding human access to the river, with no regard for the health of the river itself.

Alternative H will not unite human interests behind the critical management goal of placing the resource first. What is good for the river is good for its visitors, but not vice-versa. The Grand Canyon cannot adjust to the demands of people, but people can and must adjust to the demands of the Grand Canyon. This is especially true now as the Grand Canyon's native river ecosystem is nearing a state of total collapse, and it's the job of the Park Service to reverse this. It is the resource that the public comes to visit. It should not be devoid of the ecology, which belongs there, because the Park Service is too focused on whom, how and for how long humans can play on the river. The Park Service has the legal, scientific, and public responsibility to redirect its approach to correct this.

## 2. Wilderness Management as a Preferred Alternative

Considering that the Wilderness Act contains provisions to improve the ecological integrity of wilderness areas such as Grand Canyon, Alternative B provides a more logical choice from which to develop the management plan. But this too, will require some enhancement.

For example, beaches and sandbars have diminished significantly because of Glen Canyon Dam operations. These sand deposits are essential for the recovery of endangered native fish, for preserving Traditional Cultural Properties (in-situ), and for human recreation. Guidelines must be established regarding the level of impact these critical habitat components can sustain. Alternative H wholly ignores this and advocates increasing use contrary to published reports from the Grand Canyon Monitoring and Research Center (GCMRC), and others, that conclude the habitat is degraded. If the resource cannot be sustained under the present use, how can this use be increased?

When looking at the sandbar situation alone, visitor numbers must be reduced. Moreover, as the beach habitat continues to decline, so should the number of visitors present in the river corridor. Visitor numbers must be determined by the amount of available sand in the system as determined by GCMRC monitoring information.

Conversely, the Grand Canyon beaches can only sustain more use if more sediment is supplied. The experimental flows of 1996 failed to provide any lasting sediment augmentation, and there is yet no evidence to suggest that further experimental flows will improve the situation. The Park Service has done little to assert its role as guardian of this critical habitat component. At minimum, the management plan should be arguing ways to improve the sediment/beach situation. The management plan should argue for seasonally adjusted steady flows while opposing load following generator operations, which have proven to be more detrimental to maintaining a minimal sand balance.

Given the extensive new information since new Glen Canyon Dam operational guidelines were first established, mainly the continued decline of endangered fish populations and the conservation of sediment, this management plan should establish as a priority an aggressive advocacy position for the river corridor within its capacity as a member of the Glen Canyon Dam Adaptive Management Program. The CRMP should demand that the river corridor receive the necessary sediment, and other habitat modifications, to allow for the recovery of endangered fish as directed by science.

Recognizing the inherent constraints built into the Glen Canyon Dam Adaptive Management Program, the CRMP should also require the Park Service to engage the Secretary directly if recovery efforts continue to fail. Specifically, the Park Service should advocate for a supplemental EIS on the operations of Glen Canyon Dam, to explore the full range of alternatives available to achieve endangered fish recovery in the Grand Canyon, including decommissioning the dam.

Another means of increasing camping sites within the river corridor is to more aggressively pursue the eradication of exotic vegetation, which has encroached on camping areas. The management plan should explore programs to engage river runners in such activities. Special permits should be available for river runners who want to participate in such restoration efforts. With proper training, supervision and tools, the exotic plant problems could be managed in a matter of years, at a limited cost. When completed, the camping carrying capacity could be adjusted upward accordingly.

### 3. Concerns for Threatened and Endangered Native Fish

#### a. The Refuge at the Little Colorado River

Since Glen Canyon Dam became operational the sole remaining rearing habitat for endangered Humpback Chub has been the Little Colorado River (LCR). In addition to the Park Service's recommendation to change human use regulations as described in the DEIS, swimming in the LCR should be eliminated until which time the recovery goals for the endangered fish of the Colorado River has been achieved. The only exceptions to this rule should be provided to the reasonable needs of the First Nations and the fishery biologists.

Living Rivers does not concur with the Park Service view that motorized trips have less impact on Humpback Chub than oar trips. A motorized boat should never approach the Little Colorado River for any purpose, including scientific research. Moving parts and

accidents from petroleum products must be avoided at all costs, especially until such time as it is demonstrated that the Humpback Chub is in full recovery.

Additionally, a component of this management plan should include an action item to mitigate toxic spills that might occur in the drainage of the Little Colorado River in and above the Grand Canyon.

#### b. Consultation by US Fish and Wildlife Service

The consideration of endangered and threatened native fish in the Colorado River at Grand Canyon within the DEIS is not adequate and requires consultation with the US Fish and Wildlife Service.

#### 4. Climate Change and Global Warming

The Park Service must evaluate the impacts, and the Colorado River corridor management actions to be taken, should reduced water releases from Glen Canyon Dam occur as a result of drought and climate change.

The Department of Energy and others have advised water managers to expect the volume of water produced by the Colorado's watershed to be reduced significantly and progressively due to climate change. Their reports state that the Colorado River reservoir levels will be reduced by more than one-third and water releases by as much as 17 percent, which will result in reductions in hydropower generation by as much as 40 percent. Scientists have also warned that the Upper Basin may not meet its obligation to deliver its full requirement of water to the Lower Basin before 2010. Such changes in Grand Canyon will reduce fine sediment storage, concentrate rocks and boulders at rapids, degrade water quality and compromise fish recovery plans. They may also impact the types and number of boats that run the river, and the number of days it may take them to complete the trip.

#### 5. Recreational Access to the River Corridor

The DEIS fails to solve the disparity of the access issue between commercial and non-commercial river runners. The DEIS largely favors access for concession contractors in the summer and non-commercial river runners in the winter. This suggests segregation and discrimination. Access should be equitable for all users and at all times. A common pool system, such as has been implemented at the Boundary Waters and the Deschutes River, is the access model that should be pursued by the Park Service in Grand Canyon.

#### Conclusion

Living Rivers recognizes the effort the Park Service has made in developing this DEIS. But it's clear that despite all the hard work, the Park Service has ignored its stewardship mandate as prescribed in the 1916 Organic Act. Without the natural ecological integrity of the river, which carved it, Grand Canyon itself loses its integrity, as does the Park Service and the stakeholders in this process. The principle objective of the Final EIS must be the restoration and recovery of the natural processes and native species to

Grand Canyon's river corridor that are impacted by the activities of humans, and with a management plan that articulates how this can best be achieved.

Thank you again for the opportunity to submit these comments on the DEIS.

Sincerely yours,

John Weisheit  
Living Rivers, conservation director  
Colorado Riverkeeper

Attachments:

[Scoping comments by Living Rivers, August 1, 2002.](#)

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Regional News 02/11/05

### **Parched Colorado River Basin struggles to write drought plans**

GREENWIRE Friday, February 11, 2005

WATER RESOURCES

April Reese,  
Greenwire Southwest reporter

SANTA FE, N.M. -- For the first time since the Bureau of Reclamation began building the elaborate plumbing system to deliver water to Colorado River Basin states in the 1930s, the West is bracing for severe and potentially long-lasting water shortages.

Five years of drought and explosive growth in the basin's booming cities have drawn down reservoirs to half capacity or less as the seven states scramble for strategies to cope with what some meteorologists predict could be a 20-year dry spell.

The states are facing a federal ultimatum: Write a drought plan by April 1 or have one imposed by Interior Department bureaucrats.

"Although we do not know how long or severe the drought will be, we must face our collective responsibility to plan for the likelihood that water supplies may be limited in the lower basin over an extended period of time," Interior Deputy Secretary Steven Griles warned the Colorado River Water Users Association in December.

Droughts are notoriously hard to predict. So while some basin states -- Arizona, New Mexico and Utah -- have been periodically soaked since last fall, it's too early to say if the increased precipitation is an anomaly or the end of a dry spell that's now in its sixth year. Scientists say the conditions now are similar to those that plagued the West in the 1950s, the region's last major drought.

"One good year doesn't solve the drought," said Dennis Underwood, vice president of the Metropolitan Water District of Southern California. "It would take a number of years of good years like this to recover."

Even if the heavens open and the basin recovers quickly, the experience of the past few years underscores the need for a drought strategy, water managers say.

### Booming population stresses Colorado River

Called the "River of the West," the Colorado supplies water to 25 million people and 3.5 million acres of farmland. Under the Colorado River Compact, the landmark agreement for managing the river signed by the states' delegates in 1922, water is divided between the upper basin states -- Colorado, New Mexico, Utah and Wyoming -- and the lower basin's Arizona, California, and Nevada.

Each basin receives 7.5 million acre-feet a year under the compact, and Mexico receives 1.5 million acre-feet under a separate agreement. An acre-foot is the volume of water covering an acre to a depth of a foot, translating into 325,851 gallons -- a year's worth of water for two households of four.

Until now, the river and region's two biggest reservoirs, Lake Powell and Lake Mead, have yielded enough water to ensure that all the states received their allotted shares.

But population growth in the basin has worn thin the safety net provided by the water management system. The river's water is already over-allocated, and the Bureau of Reclamation reports that Lake Powell was just 35 percent full and Lake Mead 58 percent at the start of February.

As water supplies have declined, population has grown. Between 1980 and 2000, the West's population increased 47 percent. There were 1 million people living in Arizona in the 1950s, for example; today, the state is home to almost 5 million.

So rain or shine, the states must keep working hard on their water-shortage plans. During a speech in Denver last week, Interior Secretary Gale Norton tried to keep the pressure on the states. "I trust that the basin states will continue to work with us on drought mitigation strategies," she said. "Time is of the essence."

The basin's water managers say the basin will eventually draft a water shortage plan that everyone can agree on, but probably not in time to meet Interior's deadline. "There's not going to be shortage criteria in April," said Larry Dozier, deputy general manager of the Central Arizona Project, which delivers water to the Phoenix and Tucson and regional farmers. "That's a given."

The states have agreed to come up with recommendations for a shortage strategy by mid-April, to be followed by a plan in the ensuing months, according to Dozier and other state officials who participated in a conference call with Interior last Friday. The plan will be folded into an environmental impact statement and vetted through a public process dictated by the National Environmental Policy Act. The EIS would probably take about two years, they said.

Strategies start taking shape

Two strategies being mulled by the states appear particularly promising, Anderson and other water officials say. One calls for building a small reservoir in the lower basin to capture "over-delivered" water that would otherwise run downstream after storms, and starting the Yuma desalting plant in southwestern Arizona. Building the new reservoir and cranking up the desalting plant would save about 200,000 acre-feet of water a year.

Getting the Yuma plant running would, in effect, provide a new water source for Mexico, freeing more water from the Colorado River that could be diverted upstream for the states (Land Letter, Aug. 21, 2003).

Even though it would be expensive to bring the Yuma plant on line -- the bureau has put the price tag at \$25 million -- avoiding economic damage from water shortages could make the project worth it, said Dennis Underwood, vice president of the Metropolitan Water District of Southern California.

"It's like your car or your house," said Underwood, who was a former BuRec commissioner when the agency discovered the plant's design flaws. "If you keep deferring the maintenance, eventually you pay the price."

The basin states are also considering changing the operations of the river's two biggest reservoirs to balance declining water levels. When Lake Powell's levels rise, for example, it could release water so Lake Mead recovers more quickly, water managers say.

Several states have taken their own steps to deal with the drought as well, including paying farmers to temporarily fallow their lands and "banking" water in underground storage or in neighboring states for future use.

If Norton were to order water cutbacks in the basin -- something no Interior secretary has ever done -- the Central Arizona Project would be the first area hit because it is considered a junior partner under terms of the river compact.

Central Arizona officials say the hierarchy is unfair. They urge that all the states share the pain of a shortage equally, but they recognize their chances are slim. "We'd love to get that changed, but the political stars have to be aligned just right," Dozier said.

So far, the drought's pain has been greatest in the upper basin. Under the compact, the upper basin states must deliver 8.23 million acre-feet to the lower basin states and Mexico. The upper basin has met that obligation, but at a price. Farm production is down 40 percent in many areas, the Upper Colorado River Commission says. Meanwhile, the lower basin continues to receive its full share of Colorado River water, lessening the impact of the drought there (Land Letter, Oct. 7, 2004).

Just as drought and population growth test the limits of the Colorado River delivery system, the rules of the compact appear to be at odds with the basin's hydrology, providing a perverse incentive for the states to use as much of their legal share of water as they can. By storing water for Nevada, Arizona will take more of its Colorado River apportionment -- a strategy it hopes will buffer it against any future claims on unused water, most likely by California (Land Letter, Dec. 9, 2004).

And Colorado, concerned that the drought could force cutbacks in the upper basin, is exploring ways to tap its unused Colorado River water. It has said it will take the necessary steps to defend its water rights in case an interstate shortage strategy fails.

Despite their different agendas, the basin states share a common desire to come up with a fair solution to deal with potential shortages and stay out of court, water officials said.

"People are always predicting these big fights in the basin. ... But we've mostly been able to stay away from that, and I think that is the goal of every state -- not to go to court," said Larry Anderson, director of the Utah Division of Water Resources. "We certainly want to determine what our own destiny is, and not leave it up to the hands of judges."

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LR Letter 02/18/05

### **Moab Mill tailings pile: Comments DOE's DEIS**

February 18, 2005  
Mr. Don Metzler  
Moab Federal Project Director  
U.S. Department of Energy  
2597 B 3/4 Road  
Grand Junction, CO 81503

Re: Remediation of the Moab Uranium Mill Tailings, Grand and San Juan Counties, Utah, Draft Environmental Impact Statement (DOE/EIS-0355D).

Dear Mr. Metzler,

Living Rivers, Colorado Riverkeeper, Colorado Plateau River Guides, River Runners for Wilderness and Colorado Outward Bound West submit the following comments concerned with the Draft Environmental Impact Statement (DEIS) for the Moab Uranium Mill Tailings. Collectively our mission statements promote protection of the natural and cultural heritage of rivers. We would like to thank the Department of Energy (DOE) for their efforts to prepare this DEIS for public review and appreciate this opportunity to participate.

#### 1. Summary

It is our position that the Moab Mill's tailings pile be moved by the existing railroad to an off-site disposal area in the Mancos shale deposits north of Moab. We agree with the Environmental Protection Agency that the Off-Site Disposal Alternative at Crescent Junction is superior to the disposal alternative at Klondike Flats. The site at Crescent Junction is more isolated from human activity, has a thicker deposit of shale and is more protected from the agents of erosion.

It is also our position that the ground water pollution from the Moab Mill site should be remediated to successfully remove all jeopardy to the threatened and endangered species of the Colorado River downstream, including the wetlands of the Moab Sloughs. We are convinced that this can not be accomplished by leaving the pile capped on-site and adjacent to the Colorado River.

Our position also includes moving the pile off-site to eliminate future risks to human health for residents of developed areas along the Colorado River downstream, and to the visitors of federally protected public lands downstream. These public lands include the national parks at Canyonlands and Grand Canyon, the national recreation areas at Glen Canyon and Lake Mead, and the wildlife refuges of the Lower Colorado River Complex. This also includes the water users identified by the Colorado River Compact, specifically Arizona, Nevada, California and the Republic of Mexico.

It is also our position that the White Mesa Mill Alternative in San Juan County should be abandoned for the reasons stated by the Ute Nation from the White Mesa Reservation, as presented to the DOE at the public meeting held there on January 27, 2005. This alternative will affect the Ute Nation's quality of life and their values concerning the protection of their cultural heritage and their sacred sites.

The DOE must also acknowledge the official position of the City Council of Moab and Grand County Council, which have identified the Off-Site Disposal Alternatives at either Klondike or Crescent Junction as superior. This alternative will meet the objectives and goals of the local citizens in order to remove them from environmental and social harm.

The members of our organizations that live in Grand County strongly object to moving the toxic contents of the Moab Mill site to any other county in Utah. This is a Grand County problem and the impacts from these toxic materials should not be passed on to our neighbors in San Juan County.

2. The DOE is unsuccessful in removing doubt concerning the compromise of the On-Site Disposal Alternative during a probable maximum flood

We are convinced that the tailings pile at the Moab Mill must be moved away from the Colorado River because the suggested reasons identified with the On-Site Disposal Alternative in the DEIS are, at best, speculative.

a. The Moab Mill site was originally chosen for reasons of convenience and not for reasons of providing long-term environmental protection from the consequences of historic flooding along the Colorado River.

b. The federal government has already moved uranium waste piles away from the floodplains of the Colorado River and its tributaries and it is reasonable to expect the federal government to remain consistent with this precedent.

c. Independent scientists have demonstrated that it is reasonable to suggest that Colorado River flooding may compromise the Moab Mill's tailings pile during a probable maximum flood in the next 200 to 1000 years. That ground water remediation may not be geologically feasible with the pile capped in place. These scientists are associated

with the National Academy of Sciences, U.S. Geological Survey and academics from the state universities at Salt Lake City and Tucson.

d. The Bureau of Reclamation manages high dams, both concrete and earthen, on the Gunnison and Dolores rivers. These dams will likely be decommissioned in the next 200 to 1000 years. At some point in this time-period these dams will no longer provide flood control for the downstream environment. It is also possible that, as these dams age and fill with sediment, the spillway mechanisms will experience flood flows greater than the original design specifications, which could result in a possible catastrophic breach that could subsequently compromise a tailings pile capped in place at Moab Valley.

e. The threat of flooding that could compromise the On-Site Disposal Alternative is significant when considering the intent behind the legislation for protection of downstream resources. This legislation includes the National Park Service Organic Act, the National Historic Preservation Act, the Clean Water Act, the Rivers and Harbors Act and the Endangered Species Act. This would also include Executive Orders such as #11990 (wetlands protection) and #13007 (sacred sites).

3. The DOE must ensure consultation with the work performed by the University of Utah at Salt Lake City and the University of Arizona at Tucson

We request that all findings from Mr. Phil Gardner and Mr. Kip Solomon, at the University of Utah at Salt Lake City, be included as a part of the public record for the Final Environmental Impact Statement (FEIS). These studies indicate that ground water remediation at the Moab Mill site would best be served by moving the pile from the river.

We also request that all findings, pending the completion of work now being performed by Mr. John Dohrenwend and Mr. Victor Baker from the University of Arizona at Tucson, be considered as part of the public record for consideration by the FEIS. These studies will concern the effects of a probable maximum flood at the Moab Mill site and would serve as a valuable exercise in the peer-review process of DOE's contractor-based science and engineering reports that are deemed speculative.

We would also request that the work already completed by Mr. Dohrenwend be submitted as part of the public record for the FEIS. Mr. Dohrenwend's reports were recently published in the Times-Independent, the weekly paper of Grand County. By using existing photographic evidence from over-flight and satellite imagery, Mr. Dohrenwend has demonstrated that the findings of the DOE contractors concerning river migration are speculative and that a reasonable doubt does exist to conclude that the Moab Mill site could be compromised by a probable maximum flood.

4. The DOE must ensure consultation with applicable federal agencies

The DEIS is not thorough because consultation with the Bureau of Reclamation (Bureau) was not sought in an official capacity. This is an oversight on the part of the DOE that must be corrected. The Bureau is the federal regulatory agency that has jurisdiction over water quality for the Colorado River. The Bureau is also a partner in the Upper Colorado River Endangered Fish Recovery Program and the Lower Colorado

River Multi-Species Conservation Program. The Bureau has already produced publications analyzing and modeling a probable maximum flood in the Colorado River drainage and their expertise in this regard should be fully considered.

Some of the dams that the Bureau has designed have had engineering components that have become problematic. Some Bureau dams have failed entirely, such as Teton Dam. The Colorado River basin dams that have had design problems include Fontenelle, Flaming Gorge, Navajo, Glen Canyon and Hoover. The problems include seepage erosion at the earthen dams and river outlet and spillway failures at the concrete dams.

Living Rivers brought this oversight to the attention of the Bureau of Reclamation at Salt Lake City on January 27, 2005. We formally ask DOE that consultation with the Bureau is initiated and that their comments be included in the FEIS.

We also remind DOE that a full consultation with the U.S. Fish and Wildlife Service (USFWS) concerning the Endangered Species Act is required for the FEIS. This would include the reasonable and prudent alternatives of USFWS's Biological Opinion.

We also request consultation with the U.S. Geological Survey in the FEIS concerning this agency's recent analysis and modeling of a probable maximum flood in the Moab Valley; Report 2005-5022 became publicly available on February 11, 2005.

We also request that the State Department should be allowed to weigh in on FEIS concerning U.S. treaty obligations with the Republic of Mexico, and because the Colorado River delta has been designated as an International Biosphere Reserve.

#### IV. Global warming and climate change

The DOE sponsored the Accelerated Climate Prediction Initiative (Initiative), which was administered by the Pacific Northwest National Laboratory. Much of the consequent analysis and modeling from this Initiative has been recently published and would be useful in the consideration of alternatives for the Moab Mill's tailings pile. We request the DOE consult with the principle scientists of the Initiative for the FEIS concerning the effects of climate change on the Colorado River. The report of the Initiative acknowledges that extreme variables of climate are likely to occur and due to the impacts of increasing greenhouse gases in the atmosphere. Examples of impacts from climate change would include reduced water quality as a result of diminished flows, increased sediment loads, channel narrowing of the river, and catastrophic flooding in local and regional watersheds.

#### V. Cost analysis

Human health, national parks, endangered species and cultural heritage are priceless things. We will support the DOE to save taxpayer money so that the savings could be applied to other worthwhile service projects to protect the general health and welfare of the American people. However, because it is reasonable to assume that the On-Site Disposal Alternative may fail and that subsequent clean-up costs would be astronomical, the On-Site Alternative should be abandoned for reasons that it would

potentially save taxpayer's money in the long-term. The Off-Site Disposal Alternative, though more expensive, provides greater economic and environmental security. The additional cost is therefore justified and potentially serves to be the most affordable alternative in the DEIS.

## VI. The river community

People depend on the Colorado River for economic security and for the enrichment of their lives through visitation at Canyonlands National Park and Glen Canyon National Recreation Area. Living Rivers, Colorado Riverkeeper, Colorado Plateau River Guides, River Runners for Wilderness and Colorado Outward Bound West represent various parts of a constituency we call the river community. The intent of this community is to partake in the organizing and participation of river trips through Canyonlands National Park and Glen Canyon NRA. The reasons include recreation, employment, education in the sciences and arts, and the monitoring of the Colorado River's environmental quality and cultural heritage.

The professional river guides represent the day-to-day users of the Colorado River. Over 300 active professional river guides have hundreds of multiple-day river trips and thousands of one-day trips that have spanned a career, for some, as long as 40 years. Their clients (numbering in the thousands annually) include the general public, special populations, and educational and cultural institutions. Another large constituency of the Colorado River users that are represented by the thousands are the non-commercial river runners who come to enjoy the benefits of Canyonlands National Park for the same reasons as stated above, which includes employment through incidental support services.

The On-Site Disposal Alternative must be abandoned for the reasons that this river community would suffer economic and social hardships should the Moab Mill's tailings pile fail in a probable maximum flood with the eventual outcome of irradiating the river corridor of Canyonlands National Park and Glen Canyon NRA. This could also affect the river community of Grand Canyon National Park and Lake Mead NRA.

In conclusion the risk to the downstream ecosystems and the health of millions of people is much too high to justify keeping the Moab Mill site along the shores of the Colorado River. The principle objective of the Final EIS must be the safe removal of the pile from the Colorado River, to stop the groundwater contamination of the Colorado River and the Moab Sloughs, and to contain these toxic materials at an off-site location in a responsible and efficient manner.

Thank you again for this opportunity to provide comments. Please do not hesitate to contact us should you require assistance in regard to this letter.

Sincerely yours,

John Weisheit, Conservation Director  
Living Rivers and Colorado Riverkeeper

On behalf of the following groups:

Colorado Plateau River Guides  
PO Box 344  
Moab, UT 84532

River Runners for Wilderness  
PO Box 17301  
Boulder, CO 80308

Colorado Outward Bound West  
PO Box M  
Moab, UT 84532

[Detailed comments of Sarah Fields  
Nuclear Waste Chair, Glen Canyon Group Sierra Club](#) [95k PDF File]

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Regional News 02/19/05

### **Communities still face drought, tree-ring researchers say**

Tree rings in West indicate drought may not be abating  
Scientists say wet periods are not historically uncommon in the midst of long dry spells

By Arthur H. Rotstein  
The Associated Press

TUCSON, Ariz. - A vigorously wet winter has buoyed spirits in Arizona and other Southwest states parched by drought. But history recorded in tree rings suggests it's far too soon to even think the region is near an end to its long dry spell.

Researchers say tree rings have shown that wet periods aren't uncommon during droughts. So the wet weather that has greened up Arizona, made dry rivers run and even caused flooding isn't necessarily a sign of things to come.

Wet breaks in past big droughts usually have lasted only a year or two before a return to dry conditions, said David Meko, a principal researcher at the University of Arizona's Laboratory of Tree-Ring Research.

Scientists can see a historical record of past droughts by looking at the thickness of a tree's rings. Since trees grow more during wet periods, the rings will grow thicker at those times. Trees grow less in dry times so those rings will be thinner.

According to tree ring analysis, there have been numerous extended droughts throughout the West over the last 500 years. The current drought has been partly blamed for the proliferation of tree-killing insects and has contributed to enormous wildfires of recent years.

How long it takes to overcome a drought varies.

Building up depleted reservoirs, restoring soil moisture and allowing vegetation to recover, particularly trees whose crowns and roots have been damaged by prolonged lack of water, could take years, said Thomas Swetnam, director of the tree ring laboratory.

"This is a deep deficit, many years in the making," said Kelly Redmond, Nevada state climatologist with the Western Regional Climate Center in Reno. "You wouldn't want to see the kind of thing that would get you out of it in one year," because it would mean inundation and massive flooding, with its own consequences, he said.

Besides, Redmond said, only part of the West has really seen strong rain or snowfall: California, most of Utah and Nevada, Arizona, New Mexico and southern Colorado. Elsewhere, it's been lackluster at best, he said. Still, some people are just happy to see the wet weather that has been moving regularly through the area in recent months.

"The lakes are filling and it looks pretty promising," said Bob Prosser, who runs the Bar-T-Bar Ranch in northern Arizona. "I think it's late enough and wet enough that it'll certainly do some good." At a minimum, he said, he'll have a good forage crop for his cattle this spring.

Bob Ginn, a retired Air Force colonel and flight instructor in Tucson, said he sees the rainfall "as a definite plus."

"I like the rain as a change from normal Tucson, dry and windy, and I like what it does because we garden, and I'm somewhat of a nature photographer so I expect a lot of wildflowers," Ginn said.

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Regional News 03/02/05

### **Moab tailings could wash into Colorado River**

Moab tailings could wash into Colorado River  
A matter of when, not if, U. professor says of uranium-mining waste

By Joe Bauman Deseret Morning News

If the Moab uranium tailings pile stays where it is, eventually a big flood will wash it into the Colorado River.

"Not could. It will happen. It's just a matter of when," says one of the authors of a report on the subject, D. Kip Solomon, a University of Utah professor of geology and geophysics.

Even if no giant flood hits in the near future, radioactive and chemical contamination apparently has leached from it and migrated under the river. On the other side of the Colorado are a nature preserve and the city of Moab.

About 11.9 million tons of uranium tailings and contaminated soil were left near the Colorado River, three miles northwest of Moab, when Atlas Minerals Corp. stopped production in 1984. According to the U.S. Department of Energy, the wastes cover 130 acres and were placed in an unlined impoundment.

Atlas "placed an interim cover over the tailings pile in 1995," the DOE adds. The department has been preparing an environmental impact statement about what to do with the tailings, which at the closest point reach to within about 1,000 feet of the river.

Gov. Jon Huntsman Jr. recently wrote to the DOE expressing his determination that the pile should be hauled away from the river as soon as possible.

"Recent flooding in the St. George and Santa Clara regions of Utah also demonstrated the swift and immense force of moving water in the desert," he wrote.

Huntsman's concerns are backed by studies, including one published in December 2003 by Solomon and Philip Gardner, a graduate student at the U.

DOE studies found ammonia and uranium in gravel below the Matheson Wetlands Preserve across the river, the researchers wrote.

"The magnitude of these concentrations and the location of the highest values suggest that groundwater from the mill tailings is flowing under the Colorado River and impacting groundwater" beneath the preserve, they added.

"We believe that there are fluids that have migrated underneath the river," Solomon said in a telephone interview.

Contrary to earlier expectations of the DOE, the river was not a barrier to the flow. A lot of contaminated fluids are discharging into the Colorado, he added. But some of it goes under the river to the Moab side.

Whether this occurs depends on the amount of water in the river and how much groundwater pumping is going on.

When the uranium mill was working, operators leached out material they needed by pouring fluids on the tailings. This caused material to leak out of the pile.

"They were pushing fluids beneath the river toward Moab," he said. Now that operations have ceased, whether the flow is still occurring "is a little uncertain."

The study uncovered "very, very permeable gravel deposits beneath the mill tailings, beneath the river and beneath the entire Matheson Wetlands Preserve," Solomon added.

Permeable gravel is important for two reasons, he said:

- The layer amounts to a hydrological "superhighway." It's a pathway along which groundwater can migrate under the river. If enough pumping takes place on the tailings side, water might flow toward it. If the reverse is true, water could flow from the tailings toward Moab.

In that case, some controls may be possible through pumping.

- The "very coarse gravels" show that the Colorado River has flooded in the past, bringing in gravel and boulders. "The river has migrated laterally over very large distances through geologic time," he said.

Above the gravel is about 15 feet of fine, silty material. The tailings are on top of the silt, approaching within 1,000 feet of the river in one place.

The tailings amount to "a house that's literally built on sands and silts," Solomon said. "They're not founded on any really competent material," meaning they could easily wash away.

At 24 and 30 feet below the surface, geologists uncovered organic material. A lab in Florida checked the age of the wood and peat through carbon dating.

Radiocarbon dates for samples from the two floods ranged between 1860 and 1980 for the most recent, and between 990 and 1090 AD for the earlier material. That is about when flood waters carried them in.

The samples were taken from a bore hole on the Moab side of the river. But the debris indicate the river's violence throughout the zone.

The report by Gardner and Solomon explains, "The radiocarbon ages of these two samples indicate that there have been two flood events in the last 1,000 years that have scoured down to 24 and 30 feet below present land surface, respectively, at a distance of more than 260 feet from the present river channel."

During January's flooding, the Santa Clara River in southwestern Utah rapidly ate away at its banks.

"The biggest meander was 700 feet," said Jan Sandberg, engineer for the city of St. George. "There was a lot of meandering in lots of areas." "In the city of Santa Clara, it took a huge bite, took out a bunch of prime real estate," said Dean Cox, emergency services director for Washington County.

An erosion of 700 feet would not quite bring the Colorado River onto the Moab tailings. But the Santa Clara destruction happened with just one flood, and that river is far smaller than the Colorado.

If a big enough flood were to race through the Colorado, said Dianne Nielson, executive director of the Utah Department of Environmental Quality, "We're going to have uranium mill tailings strewn along the banks and sandbars along that river for distances downstream."

That, Nielson added, is unacceptable.

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LR Press Release 03/03/05

## **Another Step towards Extinction for Grand Canyon Native Fish**

March 3, 2005

For immediate release

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Another Step towards Extinction for Grand Canyon Native Fish

Recovery Experiments Fail Again

Phoenix, AZ. Leaders of the ten-year old federal program responsible for guiding recovery of endangered native fish in Grand Canyon National Park are undertaking their annual meeting today amidst a climate of mounting bad news.

A major experiment they undertook last November has likely contributed to further declines in fish counts, pushing the dwindling Humpback Chub population much closer to extinction.

Known as the Glen Canyon Dam Adaptive Management Working Group (AMWG), the team is charged by the Secretary of Interior to reverse the environmental decline of Grand Canyon's river ecosystem resulting from the operation of the 710-foot Glen Canyon Dam upstream.

New data being discussed at today's meeting reveal that a key recovery indicator, the number of juvenile fish, declined 63 percent following an experimental release from Glen Canyon Dam that began on November 21.

"It is very unfortunate for Grand Canyon's resources that the Adaptive Management Working Group is faced with an impossible task, as these declining ecosystem conditions simply can't be mitigated with the dam in place. Rather than report this fact to the Secretary of the Interior, they continue to tinker with expensive minor adjustments in dam operations that always have failed to achieve any meaningful long-term success," says David Haskell, policy director for Living Rivers. "They've spent nearly a decade tinkering with Glen Canyon Dam's operations while the ecology of Grand Grand Canyon continues to collapse."

Adult fish populations have been estimated to be as low as 1,000 as compared to 8,517 in 1993, the year following passage of the Grand Canyon Protection Act. The 90-hour, 41,000 cubic-foot-second release was supposed to help restore beach and sandbar

habitat for the native fish. Ninety-five percent of the sediment and nutrients Grand Canyon would normally receive are now trapped behind the dam. The experiment was designed to work with inputs of sediment from the tributaries below Glen Canyon Dam in an effort to preserve and redistribute the five percent that is still available.

Analysis following the flows revealed that indeed improvements in sandbar habitat had occurred, but the high dam release, a winter storm, or both, caused the young Humpback Chubs to be flushed downstream into Lake Mead.

Additionally, as was documented following a similar experiment in 1996, these habitat improvements are only temporary as the sandbars are again deteriorating due to a lack of continued inputs from upstream.

"At best this can be described as a more successful failure," adds Haskell. "These experiments, will never succeed because they ignore fully restoring the natural processes the native fish require, which includes the pre-dam flow of sediment and nutrients."

Because of the ongoing decline of endangered native fish, Living Rivers and coalition of 200 groups across the country are calling for a new Environmental Impact Statement of Glen Canyon Dam that evaluates the merits of decommissioning the dam to achieve habitat recovery and restoration in Grand Canyon. ###

[GCMRC Synopses of Experimental Flow](#) [776k PDF File]

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LR in the News 03/04/05

### **Data shows dam had negative effect on fish**

By SALLY SPAULDING The Daily Sentinel

An experiment at Glen Canyon Dam designed to build beaches below the dam may have damaged endangered fish, according to preliminary data.

Initial results from the November experiment show evidence that young fish in the river system declined during the experimental high flows released from the dam for 60 hours in late November. That may mean a decline in young endangered fish such as the dwindling Humpback Chub.

"We caught two-thirds fewer fish when we sampled after the experiment," said Lew Coggins, a fish biologist with the Grand Canyon Monitoring and Research Center, the science division of the Glen Canyon Dam Adaptive Management Program that is charged with maintaining the Grand Canyon's river ecosystem.

"We anticipated, at least in the short term that (the experiment) would have somewhat of a negative effect on young fish in the system, and we saw some evidence of that," Coggins said.

Coggins said it was speculation, however, to say the number of juvenile fish in the system truly dropped by two-thirds, saying testing conditions changed because of flooding during sampling times.

The turbid water during sampling after the experiment made it difficult to say the data was conclusive.

Coggins said the experiment was not designed to benefit endangered fish but was focused on building new beaches.

That's what bothers environmental groups such as Living Rivers, a Moab-based group that advocates the decommissioning of Glen Canyon Dam.

“Beaches are short-term successes because it will continue to wash down to Lake Mead without more sand being allowed into the system,” said David Haskell, policy advisor for Living Rivers. “Beaches only last a few months, and the fish are suffering.”

Sally Spaulding can be reached via e-mail at [sspaulding@gjds.com](mailto:sspaulding@gjds.com).

## Utah dam failures

DAM	COUNTY	YEAR	CAUSE	TYPE FAILURE
Strates	Sarape	2005	Seepage	Partial
Sand Cove	Washington	2001	Seepage	Complete
South Creek	Washington	1998	Erosion	Engineering*
Long Park	Daggett	1996	Seepage	Engineering*
Silver Lake	Utah	1994	Seepage	Engineering*
Graff	Iron	1993	Slip	Partial
Aspen	Iron	1993	Seepage	Engineering*
Baker	Washington	1993	Seepage	Engineering*
Abes	Weber	1993	Seepage	Complete
Kelly Creek	Weber	1993	Spillway	Partial
Indian Creek	Beaver	1993	Maintenance	Complete
Irvin Beach	Washington	1992	Seepage	Engineering*
Bells Canyon	Salt Lake	1991	Seepage	Engineering*
Quail Creek Dike	Washington	1989	Seepage	Complete
Chicken Creek	Juab	1987	Spillway	Complete
Irvin Beach	Washington	1986	Slump	Partial
Forsythe	Sevier	1986	Cracking	Partial
Hancock	Utah	1986	Spillway	Complete
Trial Lake Dike	Summit	1986	Seepage	Complete
Notch Lake Dike	Summit	1986	Seepage	Complete
Gordon	San Juan	1985	Slump	Partial
Blue Creek	Bca Elder	1985	Spillway	Partial
Wilkeson	Morgan	1985	Slump	Partial
Corn Creek	Millard	1984	Spillway	Complete
Settlement Canyon	Tooele	1983	Outlet	Engineering*
Hobbs	Davis	1983	Slump	Partial
Wales	Sarape	1983	Seepage	Partial
DMAD	Millard	1983	Spillway	Complete
Gumman	Sarape	1983	Seepage	Engineering*
Twin Lake	Sarape	1983	Foundation	Engineering*
Brown Duck	Duchesne	1981	Outlet	Partial
Enterprise	Washington	1980	Seepage	Partial
Goshon	Utah	1978	Spillway	Complete
Little Creek	Rich	1975	Slump	Partial
Electric Lake	Carbon	1975	Seepage	Partial
Fool Creek No. 1	Millard	1974	Seepage	Complete
Upper Browns	Garfield	1973	Seepage	Partial
Box Lake	Utah	1973	Seepage	Complete
Kent's Lake	Beaver	1973	Seepage	Partial
Wilcox	San Juan	1973	Seepage	Complete
Newcastle	Iron	1973	Spillway	Engineering*
Roundy	Garfield	1973	Spillway	Complete
Duck Creek	Sarape	1973	N/A	Partial
Center Creek No. 1	Wasatch	1973	Seepage	Complete
Bullock Draw	Utah	1971	Seepage	Complete
Ash Creek	Washington	1969	Seepage	Partial
Hancock	Utah	1965	Spillway	Complete
Little Deer Creek	Duchesne	1963	Slump	Complete
Percupine	Cache	1963	Spillway	Partial
Brush	Sarape	1952	Spillway	Complete
Newton	Cache	1942	Seepage	Partial
Scotfield	Carbon	1942	Outlet	Engineering*
Willow Creek	Sarape	1942	Slump	Complete
Rox	Sevier	1940	Outlet	Complete
Blending No. 2	San Juan	1940	Foundation	Complete
Valley City	Grand	1940	Spillway	Complete
Navajo Lake	Kane	1940	Slump	Complete
Beaver Meadow	Summit	1939	Spillway	Complete
Five Point	Duchesne	1939	Spillway	Partial
Spectacle	Garfield	1938	Spillway	Complete
Forsythe	Sevier	1938	Seepage	Engineering*
Zaugg	Weber	1937	Seepage	Complete
Kent's Lake	Beaver	1937	Slump	Engineering*
Garrison	Millard	1936	Spillway	Engineering*
Smith & Monhouse	Summit	1935	Spillway	N/A
Lake	Wasatch	1935	Spillway	Complete
Tropic	Garfield	1935	Spillway	Complete
Beaver Dam	Beaver	1935	Seepage	Partial
North Creek	Garfield	1932	Spillway	Complete
Valley City	Grand	1929	Spillway	Complete
Lewis Larsen	Sarape	1929	Foundation	N/A
Little Creek	Rich	1929	Erosion	Engineering*
Scotfield	Carbon	1928	Outlet	Partial
Twin Pits	Duchesne	1927	Foundation	Complete
Valley City	Grand	1926	Spillway	Complete
Adams	Davis	1924	Outlet	Engineering*
Hobbs	Davis	1924	Slump	Partial
Holmes	Davis	1924	Slump	Partial
Rocky Ford	Beaver	1922	Seepage	Engineering*
Forsythe	Sevier	1921	Spillway	Partial
Santa Clara	Washington	1919	Seepage	N/A
Chatfield	Bca Elder	1919	Seepage	Engineering*
Grass Valley	Washington	1917	Seepage	Engineering*
Mammoth	Carbon	1917	Spillway	Complete
Lewis Larsen	Sarape	1917	Foundation	N/A
Dooted	Sevier	1915	Spillway	N/A
Hatchtown	Garfield	1914	Seepage	Complete
Hatchtown	Garfield	1910	Spillway	Complete
Delta-Millville	Millard	1910	Foundation	Complete

\* Engineering failure means emergency actions prevented loss of reservoir

SOURCE: Utah state dam safety records

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LR in the News 03/05/05

## **Efforts to Hide Sensitive Data Pit 9/11 Concerns Against Safety**

New York Times

By CHRISTOPHER DREW

They are just pieces of cardboard, and they cover less than a square foot on the side of railroad tank car. But behind them lies a post-9/11 competition between public safety and national security.

For decades, emergency-response teams approaching train wrecks have peered at the signs through binoculars to see what dangerous chemicals might be leaking. But federal officials will soon decide on a proposal to remove the placards from all tank cars. Their fear is that terrorists could use them to lock in on targets for highly toxic attacks.

The idea has sparked an outcry from firefighters and rail workers, who say removing the signs could endanger their lives. They say federal officials seem more focused on guarding against a terrorist attack than on the daily threat of accidents.

"There's this feeling that you have to secure everything possible in every way possible for every possible kind of terrorist attack," Garry L. Briese, executive director of the International Association of Fire Chiefs, said.

The dispute illustrates a growing push to mask sensitive data about the nation's industrial base from the prying eyes of potential terrorists. In the tug of war over tank cars and other industrial information, critics question whether the move toward secrecy is overwhelming safety concerns and even chilling debates over how to eliminate the vulnerabilities.

People who live near chemical and nuclear plants, dams and oil and gas pipelines complain that it has become harder to find out about disaster plans and environmental hazards, and some have sued for more information. Engineering reports have been stripped from government Web sites, and several agencies are creating new controls on sensitive information that go far beyond the wide-ranging classification system built in the cold war.

Federal officials say although they are trying to strike a reasonable balance, some clashes are inevitable, and more are likely to occur. If delicate information leaks out, "it gives our adversaries too much of a picture of what our vulnerabilities are," Jack L. Johnson Jr., chief security officer at the Department of Homeland Security, said.

Internal government e-mail messages show that months before the train bombings last March in Madrid, transportation officials stopped the Defense Intelligence Agency from releasing a report on rail vulnerabilities in the United States.

The messages, which were obtained by The New York Times from a former federal official, show that the report was intended to spark debate among officials on improving rail security. But after complaints from the industry, one senior transportation official helped block the report by arguing that if it became public "I could foresee this paper being a handout in the next session of Al Qaeda's rail-attack course."

A similar secrecy question is unfolding in Washington. On Tuesday, the District of Columbia Council extended a ban on shipping hazardous cargo through Washington.

Even as it opposed the ban, the CSX railroad company quietly re-routed some cargo away from Capitol Hill last spring. But citing security, railroad and security officials refused for months to tell the Council about the rerouting. It turns out that the railroad simply shifted the cargoes to tracks in other neighborhoods. Federal and railroad officials said the other tracks seemed less likely to be targets.

A Council member, Kathy Patterson, said, "There was just a total alliance between the homeland security and railroad officials that was very disheartening."

Another hot area of debate over secrecy is the atomic energy industry. The Nuclear Regulatory Commission has stashed away an enormous trove of documents about nuclear power plants, suspending access to much of its Web site while weeding out reports that might aid terrorists.

A spokeswoman for the commission, Sue F. Gagner, said that access to 380,000 documents was suspended last October and that 120,000 had been made available again.

"We think it's very important to be diligent about having information that could potentially be helpful to a terrorist," Ms. Gagner said.

The commission has also issued classified orders on how the plants guard against terror attacks, and citizens' groups have been fighting in court to demand public input.

"You can hide the information, but if the vulnerability still exists, the bad guys will find it," said Gary D. Bass, executive director of OMB Watch, a group in Washington that supports more openness. "So let's reduce the vulnerability instead."

Mr. Bass said similar debates had prompted some complexes like a sprawling sewage plant in Washington to switch to less-toxic chemicals.

In some instances, new dictates have eclipsed broader health and safety concerns.

Living Rivers, an environmental group in Utah, sued a federal agency after it had refused to release flood maps showing what areas would be inundated if major dams failed. A federal judge ruled for the agency, saying he agreed that releasing the maps "could increase the risk of an attack on the dams."

The shift to greater secrecy began after the Sept. 11, 2001, attacks. Mr. Johnson, of the Homeland Security Department, said a captured training manual showed that Al Qaeda

expected to glean 80 percent of what it needed to plan attacks in the United States from open sources.

The government has turned to a smorgasbord of new controls for withholding sensitive - but unclassified - information.

The Homeland Security Department has designations like "Sensitive Homeland Security Information" and "Protected Critical Infrastructure Information." Airport workers use "Sensitive Security Information" to hold back the details of pat-downs. The Federal Energy Regulatory Commission stamps "Critical Energy Infrastructure Information" on pipeline maps.

Officials said many companies had long resisted disclosing security flaws to the government out of fear of leaks. Mr. Johnson said that the department was blending what it obtained from the companies with intelligence about terrorist intentions and that it intended to share much of that analysis with local officials who agree to keep it confidential.

Sometimes the battles are more visible. Since chlorine leaking from a derailed tank car killed nine people and injured hundreds last month in South Carolina, the fight over the railroad placards has emerged as the most potent symbol of the debate.

The Homeland Security and Transportation Departments have been considering whether to remove the placards since August.

Firefighters, railroad workers and large chemical companies are adamant about keeping the placards. Statistics show that chemicals leak from dozens of rail cars a year and that deaths occur periodically.

The chlorine placard is black and white. It has a skull and crossbones and the number 1017, the chlorine code. Without placards, "we'd be completely in the dark" at many crashes, said Joe Ashbaker, a supervisor in the San Bernardino County Fire Department in California.

The railroads have their doubts. "We were for the placards, until 9/11, when it became clear they presented a security risk," the industry's lobbying group, the Association of American Railroads, said in a statement.

The railroads also say they are working to create a system that meets security and safety needs.

But two studies by the Transportation Department have shown that the alternatives, electronic systems that could transmit lists of chemicals on a train by radio or satellite, would be more expensive, cumbersome and less effective on safety. Texas A&M University is finishing another study.

Jamie Conrad, a lawyer for the American Chemistry Council, which lobbies for large chemical makers, said he could see how a placard might "advertise a little bit" the best cars to attack.

"But where we come down is that if you take it off, you know that people will be killed in accidents," Mr. Conrad said. "And you're basically balancing that against the theoretical prospect that terrorists might be lurking on that corner."

Walt Bogdanich and Jenny Nordberg contributed reporting for this article.

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LR in the News 03/07/05

## **Fish numbers drop after Grand Canyon flood**

ARTHUR H. ROTSTEIN

Associated Press

TUCSON, Ariz. - The number of juvenile endangered fish recovered in the Colorado River declined dramatically after officials flooded the Grand Canyon in an effort to aid them and their fragile ecosystem. But scientists aren't sure what the fish decline means or why it happened.

"We're trying to get the same answer," said Jeff Lovich, chief of the Grand Canyon Monitoring and Research Center in Flagstaff. "We don't know what their fate is."

Following a 90-hour experimental water release from Glen Canyon Dam into the canyon in November, 63 percent fewer endangered humpback chub juveniles were trapped than before flooding.

Lovich said there are three possible explanations: The fish were washed downstream, they died, or they're still in the river and scientists couldn't accurately sample them after the simulated flood.

During the flooding, the Bureau of Reclamation released as much as 41,000 cubic feet of water a second from four of the dam's giant steel tubes. Scientists hoped to redistribute 800,000 metric tons of sediment to create beaches, substrate used by plants and backwaters and pools to help the fish breed.

The dam, built 40 years ago to assure the West's water supply, has altered the landscape dramatically. The chub is the last of four endangered fish species surviving in the canyon and one of only four native species of fish left among eight that once swam through it.

Scientists set out hoopnets centered around the mouth of the Little Colorado River - a spring-fed tributary into the Colorado - and at two other locations downstream to catch the juvenile humpback chubs to count, tag and release before the flooding.

The fish, which belong to the minnow family and spawn primarily in the warmer-water Little Colorado, were counted again after flooding.

The fish caught after the flooding tended to be somewhat larger, up to a bit over 7 inches in length. That suggested that the smallest fish declined most significantly, said Lew Coggins, a fisheries biologist.

Water releases from the Glen Canyon Dam are much colder, generally between 46 and 54 degrees Fahrenheit. The humpback chub's eggs have a much higher survival rate in the Little Colorado's temperatures of about 61 degrees.

Scientists are looking at installing temperature control devices in the future to release warmer water closer to the surface of the reservoir.

They also note that sampling conditions were different during the flood because of an unexpected natural flood in the Little Colorado.

"We have to admit that all of our results have to be interpreted with that caveat - that we had different conditions," Coggins said.

The change in conditions could have affected fish behavior.

"People want to know right now what did the fish do, and sampling showed this reduction of about 63 percent," Lovich said. "But we don't have the answer right now."

Officials estimate there may be about 3,000 fish in the Grand Canyon today, down from about 10,000 in the last decade.

Environmental critics such as Living Rivers, based in Moab, Utah, said the flooding likely pushed the dwindling chub population closer to extirpation. It contends that the dam, which creates Lake Powell along the Arizona-Utah line, is exacerbating the collapse of the Grand Canyon's ecosystem and should be decommissioned.

"It makes sense to get rid of Glen Canyon Dam, because it's the one changing the ecosystem of the Grand Canyon," said spokesman John Weisheit. "It's dying."

ON THE NET

Grand Canyon Monitoring and Research Center: <http://www.gcmrc.gov/>

Living Rivers: <http://www.livingrivers2.org/>

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LR in the News 03/11/05

### **Glen Canyon Dam experiment brings mixed results**

April Reese  
Land Letter Southwest reporter

SANTA FE, N.M. -- Three months after an experiment aimed at improving habitat for the endangered humpback chub in the Grand Canyon, the preliminary results are in, and it appears the fish did not fare well.

Following a 90-hour experimental release of 224,000 acre-feet of water from the Glen Canyon Dam into the canyon in November, the number of juvenile humpback chub dropped 63 percent, according to Barbara Ralston, a biologist with the Grand Canyon Monitoring and Research Center.

Ralston said that other factors aside from the test flow may have contributed to the decreased numbers. Natural flooding in the Little Colorado River may be partly to blame for the flushing of the fish downstream or scientists may have undercounted the fish in muddy, post-flood conditions, she said.

During the flooding, the Bureau of Reclamation released water into the canyon at a rate of 41,000 cubic feet per second (cfs) from four giant bypass tubes. Scientists and dam managers hoped the high flows would stir up sediment flowing in from tributaries downstream from the dam and deposit sand in the Grand Canyon's river channel, building beaches and sandbars to help the humpback chub (Land Letter, Dec. 2, 2004).

The hope was that the deposited sediment would create pools and ripples, which provide important habitat for the chub, one of four endangered fish that persist in the Colorado River.

John Weisheit, conservation director for Living Rivers, said that even without the unexpected variable of high flows from the Little Colorado River, the chub would probably not have benefited much from the experiment.

"Whether they got flushed out of the Little Colorado doesn't really matter, because once they get in to the main stem, it's too cold for them, it stuns them, and they become prey to non-native fish," said Weisheit, who advocates breaching or removing Glen Canyon Dam to restore the Grand Canyon ecosystem. "As long as Glen Canyon Dam is still there, they're going to continue to have losses like this."

However, scientists note that the latest experiment has been more successful than previous test flows. A 1996 experiment, which sent 45,000 cfs down the river, failed to keep deposited sediment in the system long enough to benefit the ecosystem, largely because the release was too long, eventually scouring the beaches and sandbars it had built.

Three months after the shorter test flow in November, a considerable amount of sand has remained in the upper area of the canyon, although below that 40-mile stretch, deposition was "a bit of a wash," Ralston said -- sand was deposited in some areas, but eroded from others. Scientists will travel the river again in a few months to see how much of the newly deposited sand is still there, she said.

Ralston said the preliminary results of the November experiment are encouraging enough to merit further test flows, and the Grand Canyon Monitoring and Research Center is discussing a long-term plan for conducting periodic artificial floods.

But David Haskell, a former Grand Canyon National Park employee who currently works as the policy director for Living Rivers, which is calling for a new environmental impact statement of Glen Canyon Dam that evaluates the merits of decommissioning it, says the latest experiment is not much of an improvement.

"At best this can be described as a more successful failure," he said. "These experiments will never succeed because they ignore fully restoring the natural processes the native fish require, which includes the pre-dam flow of sediment and nutrients."

Nikolai Ramsey of the Grand Canyon Trust was more equivocal. Grand Canyon scientists are only three months into a year-and-a-half-long monitoring effort, and it's too early to make sweeping conclusions about the experiment's effectiveness, he said.

Ramsey, who represents the Trust on the Glen Canyon Dam Adaptive Management Work Group, which makes recommendations on dam management and protection of downstream resources, said experimental high flows may work -- with better timing.

"The sediment improved in some cases, and didn't improve in others," he said. "We need to know how often and when to do this kind of thing, and we need to know how to protect the chub from unintended impacts," he said.

One option may be to unleash experimental flows when juvenile fish are not at the confluence of the Little Colorado and Colorado rivers, he said.

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Regional News 03/20/05

### **Dam safety: High hazard dams**

Terrorism poses new threat to dam safety

121 are perched above populated areas across Utah

Copyright 2005 Deseret Morning News By Lee Davidson Deseret Morning News

State records show that eight unsafe dams loom upstream from Salt Lake City. Three others sit above Provo. Four are above the Ogden area. Eleven sit above the wall-to-wall cities of Davis County.

A crew from the U.S. Bureau of Reclamation — Scott Jensen, left, Brad Winters, Lenny Washburn and Chip Todhunter — drill holes below Echo Reservoir dam in as part of efforts to examine stability of the earth levee. Jason Olson, Deseret Morning News

In fact, state officials say 121 unsafe dams are perched above populated areas in 26 of Utah's 29 counties and would likely kill people if they fail.

"It's not that they are crumbling and are ready to fall down immediately — they're not. But they don't meet minimum standards of safety. And in some sort of extreme event, like major flooding or an earthquake, they are not considered safe," said David Marble, assistant state engineer for dam safety.

That may be disconcerting as this year's mountain snowpack is far heavier than during the recent extended drought, posing a tougher-than-in-years test for dams during upcoming spring runoff. One dam in Utah has already partially failed this year (the first in four years), with tense moments occurring elsewhere amid early flooding.

But the good news is that big strides have been made to improve Utah dam safety over the past 15 years. The most dangerous dams have been repaired or replaced (and repair work disclosed they often were in worse shape than feared). Governments also vastly improved monitoring of major dams.

"But we still have a long way to go," Marble said. At recent spending levels, decades could be needed to fund all the upgrades needed at those 121 unsafe dams. Meanwhile, officials hope for no more repeats of the 89 full or partial dam failures that have occurred in Utah historically.

### Making progress

A computer-assisted analysis of state records shows Utah has made much progress since the last time the Deseret Morning News looked in-depth at the condition of state dams — 17 years ago in 1988.

At that time, officials rated as safe a mere 7 percent of those dams classified as "high hazard," defined as those where failure would likely kill people and cause extensive damage. (Also, that 1988 story reported that several Utah dams had broken in the '80s after not acting on earlier federal studies that warned they were unsafe).

Photo: The Lower Enterprise Dam, in Washington County, had water flowing over its top for a time this year. Matt Lindon, State Of Utah

In comparison, now 44 percent of such Utah "high hazard" dams meet all minimum safety standards — more than a sixfold improvement. But that still means 56 percent of such dams are considered unsafe during extreme events.

A few months after the old 1988 Deseret News story, one of the few dams that was then considered to be safe — the then relatively new, 4-year-old Quail Creek Dike on the Virgin River — broke early on New Year's Day 1989.

It sent a 40-foot-high wall of water toward St. George, making 1,500 New Year's revelers scramble for high ground early in the morning. No one died, but 50 to 60 homes were destroyed or damaged, and hundreds of livestock animals were killed.

Marble said all that created political pressure to improve Utah's dam safety program. The Legislature passed a law in 1990 aimed at improving safety. Among other things, it led to studies that raised minimum standards for dam safety. It also required dam owners to perform studies of what steps are needed to bring their dams up to those higher standards.

With concern that resulting repair costs could bankrupt some dam owners, the Legislature passed a law saying the state could not order upgrades to dams until the state offered a grant covering at least 80 percent of the cost.

Since then, the state has awarded more than \$40 million in grants to help upgrade or replace dangerous local dams. Such construction has been completed at 21 "unsafe" locally owned dams and is ongoing at three others. Meanwhile, work at 118 other "unsafe," state-inspected dams is awaiting funding.

Additionally, the federal government owns or inspects 25 high hazard dams in Utah — and says they meet safety standards or are undergoing construction to meet them. Many of those federal dams also have been repaired or upgraded in recent years.

Are cities safe?

The state developed a risk rating system to identify and prioritize for repair those dams that it considers to be unsafe. Results show that the most heavily populated areas in Utah also have the most "unsafe" dams.

Salt Lake County has 18. Utah County is close behind with 16, and Davis County is third with 11. All counties except Daggett, Kane and Grand have at least one unsafe dam.

Photo: A crew from the U.S Bureau of Reclamation get ready to drill holes below Echo Reservoir dam. Jason Olson, Deseret Morning News

The city with the most "unsafe" dams immediately above it — eight — also happens to be the state's largest: Salt Lake City.

Unsafe dams in or immediately upstream from Salt Lake City include: Rotary Glen Park Dam; Red Pine Dam; Red Butte Dam; Chandler Drive Dam; School Pond Dam; Sugarhouse Dam; Federal Heights Dam; and Shriners Dam.

Sandy in Salt Lake County has the second-most "unsafe" dams above it, seven.

Heber, Payson and Whiterocks (Duchesne County) each have four unsafe dams immediately above them.

Six cities have three "unsafe" dams immediately above them: Bountiful, Center Creek (Wasatch County), Centerville, Huntington, Kaysville and Provo.

Eleven cities have two "unsafe" dams immediately above them. And 50 sit beneath at least one unsafe dam. (See accompanying charts for a list, location and rating of all unsafe dams.)

Dangerous data hole

Photo: Scott Jensen, left, and Brad Winters of the U.S. Bureau of Reclamation examine a core sample they retrieved while drilling holes below Echo Reservoir dam. Big strides have been made to improve Utah dam safety over the past 15 years. And governments

also have vastly improved monitoring of major dams to prevent problems. Jason Olson, Deseret Morning News.

The state's risk rating system has a problem. It relies on engineering studies that dam owners were ordered to complete about work needed to bring dams up to current standards. But such studies have never been completed on 35 "high hazard" dams.

So, they have been left off priority lists, and their true risk is unknown.

"We don't really know whether they are safe, or exactly where they would fit on priority lists," said Marble, who became head of the state's dam safety program last year. "At this point, we can't document that they are safe, so we're going to assume they are unsafe."

He said the state has begun a push again for completion of those studies by owners. With that, he said, 20 of those dams are at the point that they have started exploratory drilling or are well under way with preparations for studies. Most of the other 14 have started some preliminary work or expressed willingness to do so, he said.

He said the state has the power to restrict operations at a dam if an owner will not do the work in a reasonable period, "but we try to work with them in a positive proactive way." That includes reminding them of the "carrot" of state funding for upgrades.

#### Repair priority

For the 143 state-inspected, high-hazard dams where detailed engineering studies have been completed, the state created a risk score to prioritize them for repairs.

Risk scores could range from zero to a possible 775, based on numerous factors about dam conditions and how many people they could endanger. A score of zero meant the dam met all current minimum safety standards — and 45 dams initially received that score (or were constructed after standards were raised).

All others had problems and had an average score of 111.

Among the worst initial scores were: 635 by the Piute Dam on the Sevier River near Marysvale; 588 by the Holmes Dam on Holmes Creek above Layton; 480 by the Porcupine Dam above Avon, Cache County; 380 by Logan First Dam above Logan; and 363 by Rocky Ford Dam above Minersville.

All of them have since been repaired or replaced, although a second phase of construction at Piute is still under way. After construction, the dams' scores essentially become zero as they then meet all minimum safety standards.

"Holmes Creek Dam was a big concern," Marble said, talking about the highest risk dams. It is just two miles above Layton and the rest of the heavily populated Davis County.

"It was built in the early 1900s by a method we call hydraulic fill, or sluicing. Essentially, they took a sand pile on top of a hill, and ran water over it and collected it between

some dikes. They would wash the sand in and let it settle out, " he said, adding many early dams in Utah were built that way and are essentially sand piles.

"They have been shown to be problematic, especially in an earthquake. They have a very high potential for liquefaction," he said. Holmes also had extra seepage, which could lead to internal erosion of a dam that could cause it to break apart. In fact, Holmes had partially failed in 1924 and 1983, with some repairs made thereafter.

"What we did is went in and completely removed the dam and completely rebuilt it. Interestingly enough, the bulk of the construction was out of the same material," but modern construction techniques provide better compacting and density of material, plus drains to control interior seepage, Marble said.

Other repairs Deseret Morning News graphic

Another dam of highest concern was Logan First Dam. Its old spillway could pass only 1 percent of the potential maximum flood expected there. The U.S. Army Corps of Engineers say dams should pass 100 percent of such flooding and consider it an emergency situation when a dam can pass only 50 percent. (If flood waters go over the top of a dam, they often cause quick, extreme erosion and failure.)

While state inspections had for years urged upgrades, the dam's owner, Utah State University, repeatedly said it could not afford them unless the Legislature came up with money. It finally did through the upgrade program it passed for all dams in 1990. Logan First Dam now meets all minimum standards, Marble said.

Also, Mountain Dell Dam in Parley's Canyon was long one of the biggest concerns in the state and had an initial risk rating score of 250. Salt Lake City Public Utilities Director LeRoy W. Hooton Jr. remembers how that dam scared officials during heavy snowmelt runoff flooding in 1983.

Officials figured they came within an hour of having water go over the top of the dam that year (which could easily lead to quick erosion and failure). It was saved only as they released as much water as they could through outlets and spillways, even though that flooded downstream areas and turned 1300 South Street into a long "sandbagged river."

"We couldn't take a chance of overtopping the dam, but we still got awfully close," he said about that year when the mountains went from "freezer to furnace" almost overnight to produce record snowmelt runoff flooding. He said vibration at the concrete dam was so intense when all outlets were open that officials feared it would cause cracking.

After the 1983 floods, officials took several steps to prevent further problems at Mountain Dell. The biggest was building the modern Little Dell Dam just upstream in 1993. After it was completed, Mountain Dell was never allowed to fill to more than two-thirds its capacity.

Also, Hooton said numerous improvements were completed at Mountain Dell, including raising its height and performing studies to ensure it should be safe during an earthquake. "The improvements have really taken the worry out of running that dam," Hooton said.

### Surprise inside

Marble said repair work has often brought unhappy surprises once crews dug into dams for repairs.

For example, at Rocky Ford Dam, he said, officials worried that extra seepage they had observed could eventually lead to erosion and create sinkholes that could break it apart. Once they started digging to put in some drains, "We found a very large sinkhole already developing. . . . We worried it could happen and found it already had."

Marble said similar findings came in repairs at many dams. For example, at Porcupine digging showed that seepage and saturation was much more extensive than feared — and had saturated almost the entire dam. "It wasn't something that you could just look at the dam (from the outside) and see from a safety inspection," he said.

To help find hidden and unpleasant surprises among the many dams awaiting upgrades, Marble said, virtually all have added special equipment in recent years to help monitor interior saturation, seepage and dam movement. He said that helps give early warning if conditions are deteriorating and quick action is needed.

That is a vast improvement over conditions found back in 1988.

"In 1988, I would bet there were no more than 10 high hazard dams that were fully instrumented for performance evaluation," Marble said. "Now virtually all of the high hazard dams are instrumented."

Also of note, records show that all high hazard dams overseen by the state are being inspected every year now, which was not always the case back in 1988. However, Marble said, plans call for inspecting some rarely filled flood control dams every other year to allow more attention on higher risk dams that constantly store water.

Also, all but eight of the high hazard dams in Utah have completed "emergency action plans" — about how to handle emergencies and failures and whom to contact downstream. Few had them back in 1988, but they were later required by law. The only dams lacking them now have only recently been elevated to "high hazard" status, which triggers requirements for such plans.

### Federal efforts

The federal government has also made big strides in recent years to upgrade the large dams it owns or inspects.

In 1988, more than half the federal dams were rated as poor or had their condition unknown. Now, all are considered to meet safety standards or are undergoing

construction to meet them, said Ed Vidmar, Resource Management Division director for the Bureau of Reclamation's Provo Area Office.

He added that all dams have an intensive "Comprehensive Facility Review" every six years, with major engineering studies conducted by Reclamation's Denver Technical Service Center.

At the midpoint between such reviews, engineers from the bureau's regional office in Salt Lake City perform a somewhat less intensive safety review. And once a year, inspectors from the bureau's Provo Area Office conduct safety reviews of dam exteriors and key features.

Some dams get even more attention. For example, the massive, 50-story Flaming Gorge Dam, the largest in Utah, receives exterior inspections monthly, said Walter Payne, a maintenance official in the bureau's Salt Lake City regional office.

Additionally, he said, "Measurement of movement (by the dam structure) is done monthly," as is measurement of movement of water under the dam. Also, he said, flows from drains are checked four times a year, as is seepage.

Some of the major ongoing work of federal dams includes upgrading the large Deer Creek Dam in Provo Canyon. Vidmar said once construction relocates roads and traffic off the top of that dam, the bureau plans spillway modifications to improve safety.

The bureau is also finishing a second set of modifications to the large Pineview Dam above Ogden. During one of the regular re-evaluations of that dam, Vidmar said, engineers found that earlier improvements in 1991 did not meet "new standards that came because of the Kobe, Japan, earthquake. Some of the materials used tend to liquefy (in an earthquake), so the standards were changed," he said.

#### 2005 outlook

Utah has been in a long drought, which Marble notes means "spillways have not really been tested a lot in recent years." But with mountain snowpack heavier this year, long-forgotten concerns about dam safety are suddenly becoming more important.

One dam already partially failed this year. "Strates Dam in Sanpete County failed. It washed out (because of interior erosion) under the spillway. It was about 25 feet tall, and the top 7 feet of the reservoir came off," he said. That was a "moderate hazard" dam that did not threaten any populated areas.

Marble said, "The only area we're really keeping an eye on right now with concern for the spring is the Enterprise area" in Washington County.

Some tense moments came at the Lower Enterprise Dam there during flash floods in January. That concrete dam had water flowing over its top for a time, with its spillway unable to handle heavy rainfall that filled its reservoir to overflowing.

"It (the dam) actually performed fairly well. But there has been some damage, of which we are concerned, and which will require some remedial work," Marble said.

"While we are concerned, we are not alarmed. It is very important we do not raise a panic and make people think they need to evacuate," Marble said. "There are concerns, but we do not see anything at this point" to make officials believe the dam cannot handle spring runoff or that it needs to have its storage restricted.

While Marble said that "any of the dams that do not meet our current standards we would call unsafe," that is only for extreme events, such as heavy flooding or earthquakes.

He said most of the dams rated as "unsafe" can handle routine years and operations safely, or inspectors would take actions to close them. He does acknowledge, however, that some dams in the state "are leakers and saggings."

Still, Marble stressed that any dam in the state that inspectors believe could pose an immediate threat would face emergency actions, such as restricting storage. "If there is something we can see and determine that it's deteriorating, something that is an imminent safety concern, we can deal with that immediately."

He said the monitoring equipment at virtually all high hazard dams in the state should help residents feel more safe, as should the repairs and replacements of the most dangerous dams in recent years.

"For those who haven't had their dams fixed, I would emphasize again that . . . we are out there inspecting and monitoring these dams. We've got all the high hazard dams now instrumented. We are collecting that data. We are reviewing that data," Marble said.

"I can't say that's 100 percent sure, but we are doing all that is possible to address the safety concerns, even before they get fixed. If there is anything we can do to prevent a catastrophe, we will do that," he said.

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Regional News 03/31/05

### **Western states to miss drought plan deadline**

Proposal would determine Colorado River allocations in event of water-shortage declaration

By HENRY BREAN  
REVIEW-JOURNAL

The seven Western states that depend on water from the Colorado River will not have a drought management proposal in hand by the Friday deadline set by the U.S. Department of the Interior, Nevada's top water official said.

No such proposal has been developed and representatives from the seven states are not slated to meet again until next week, said Pat Mulroy, general manager of the Southern Nevada Water Authority.

"I don't think we are any closer than we were," Mulroy said. "I think we're going to need more time."

In December, Deputy Interior Secretary Steven Griles called on the states to accelerate discussions on how they would divide up a shortage on the drought-stricken river. Griles used the same news conference at the Las Vegas convention of the Colorado River Water Users Association to announce the April 1 deadline.

Federal officials have never declared a water shortage on the Colorado, and no rules presently exist that spell out how the river allocations of Nevada and the six other states would be cut in the event of such a declaration.

Some experts were predicting that a shortage could be declared as early as 2006, but Mulroy said this year's record wet winter appears to have bought river users some time.

Most pressing now, she said, is for the states to reach a consensus about how much water to release from Lake Powell this year.

The upper basin states of Colorado, New Mexico, Utah and Wyoming want to reduce the 8.23 million acre-feet of water that traditionally is released from Powell each year to allow the lake to recover, Mulroy said.

Five years of drought, coupled with normal water deliveries downstream to Nevada, Arizona and California, have caused Lake Powell to shrink to about one-third of its capacity.

Mulroy said Nevada is agreeable to a reduced release from Powell, so long as the resulting drop in Lake Mead does not jeopardize the intakes Southern Nevada uses to draw about 90 percent of its drinking water supply from the lake.

Mulroy expects the states to agree on a preferred release from Powell by mid-April, before federal officials conduct their midyear review of the 2005 Annual Operating Plan for the Colorado River.

But complicating the interstate discussions is the weather. "Nobody knows if this is the end of a dry cycle or just a wet year in the middle of the cycle," Mulroy said.

As for the larger task of developing shortage criteria for the river, Mulroy predicted the process will take at least two years, with or without input from the basin states. "It's pretty academic. If the states don't do it, the (Interior) secretary will," she said.

Mulroy has said that Nevada's share of a shortage probably will be 12,000 to 18,000 acre-feet a year, though the state would be able to replace that lost supply with banked water here or from its recent water agreement with Arizona.

There are about 326,000 gallons in an acre-foot. The average Las Vegas Valley household uses slightly more than two-thirds of an acre-foot of water each year.

"Nobody wants to tackle these ugly issues until they absolutely have to," Mulroy said. "But the possibility of the lower basin going into a shortage within two years is real."

That's why the Interior Department came up with the April 1 deadline: to push the states into talks on shortage criteria, Mulroy said.

"And quite honestly, we're going to push back. I still want to know what, if anything, the federal government is doing to engage Mexico on shortage criteria. There is no way Arizona and Nevada can bear the brunt" of a shortage if Mexico doesn't take a hit, she said.

Under the terms of a 1944 treaty, the United States is obligated to allow 1.5 million acre-feet of Colorado River water to flow into Mexico each year. However, that obligation is not governed by the 1922 Colorado River Compact or subsequent federal laws that divvy up the river among the seven states.

Mulroy and her fellow basin-states representatives are slated to meet behind closed doors in Las Vegas on Monday.

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LR in the News 04/04/05

### **Federal effort to ease Western tensions getting mixed reviews**

April Reese, Greenwire Southwest reporter

An Interior Department initiative aimed at averting water wars in the West is getting mixed reviews as it heads into its third year.

Regional water managers praise "Water 2025" as an important first step toward easing tensions, but environmentalists largely dismiss the program for enhancing irrigation infrastructure while ignoring damage to rivers and other resources.

But the program's critics and backers do agree on one thing: Water 2025 needs more money.

With a budget that has grown from \$8.4 million in fiscal year 2004 to \$19.5 million in fiscal 2005, the Bureau of Reclamation program provides grants aimed at enhancing conservation, improving the efficiency of irrigation systems, and developing new technologies to increase water supplies. It has funded 19 projects so far -- ranging from lining irrigation canals to reduce seepage to creating a "water bank" to buffer against shortages.

The Bush administration is asking Congress for \$30 million for the initiative in fiscal 2006, and Avra Morgan, who directs the program, said the additional cash would be

welcome. The initiative received more than 100 applications for grants in fiscal 2004, but could award only 19 grants, she said. BuRec is expected to announce the next round of grant recipients by July 1.

Despite the relatively small number of projects funded so far, Morgan predicted that Water 2025 would prove its worth in water-shortage hot spots. "I do have confidence that these projects, once they're completed and under way, will help reduce tensions over water," she said.

But critics say the initiative is tantamount to putting Band-Aids on broken arms. Laura Ziemer, director of Trout Unlimited's Montana Water Project, called the program, which is implemented by the Bureau of Reclamation, a "lofty and noble endeavor," but one that puts too much emphasis on increasing efficiency of existing water-supply infrastructure and not enough on restoring rivers.

"I would broadly characterize it as a missed opportunity," Ziemer said. "It was a well-conceived notion and an opportunity ... for the bureau to take a broader view of what it means to have fundamentally altered many of the waterways of the West. Unfortunately, they've failed in taking that opportunity."

Interior launched the program in May 2003, seven months after farmers and other water users in Oregon's Klamath Basin clashed with federal agencies that sought to provide water for endangered fish during a drought.

"I think what they're trying to do is prevent any future Klamaths from sneaking up on them, because it was a black eye for the department," said Tom Donnelly, executive vice president of the National Water Resources Association, which advocates for rural and municipal water districts and supports the program.

Announcing the program's first round of challenge grants, Interior Secretary Gale Norton touted Water 2025 support for "realistic, cooperative approaches and tools that have the most likelihood of successfully addressing water challenges in basins where crisis and conflict are preventable."

### Enviros want more attention for ecosystems

But environmentalists maintain that Water 2025 largely ignores the need for restoring the ecological health of river systems, which they say is essential for averting water conflicts. Ziemer said a Trout Unlimited project that would have created a reservoir to store wastewater to be used by irrigators on the Sun River in northwestern Montana was rejected by Water 2025 gatekeepers.

Most Water 2025 projects, which primarily involve improvements to irrigation systems, could have been funded through other means, such as the Reclamation Reform Act program, she said. "They're doing the same kinds of things they were doing before, and just calling it a new name," Ziemer said.

John Weisheit of the advocacy group, Living Rivers, based in Moab, Utah, said the initiative has proven itself to largely be a public relations exercise with few real results.

Water banking, farm-to-urban transfers, and irrigation efficiency projects will not be enough to prevent future water conflicts, he said, especially at current funding levels.

"We think it would definitely help, but it would require a lot of money," Weisheit said. "It's very limited funding."

Furthermore, Interior waited too long to come up with a plan to help address the West's water challenges, Weisheit added. "Unless they put lots and lots of money into this," he said, "it's a little too late."

Optimistic water managers hope for more federal cash

Tim Martin, executive director of Western Resource Advocates in Colorado, said the initial Water 2025 report was "a pretty good roadmap for how to move forward" but that the limited funding behind the initiative hinders its ability to achieve its stated goals.

"There's only so much you can do with the amount of money that has been allocated," Martin said.

Interior has targeted the basins facing the greatest risk of water conflicts, but critics say there is still not enough money to fund all of the ditch-lining, water banking and conservation projects that need to be done.

But Mark Limbaugh, deputy commissioner of BuRec, said a little can go a long way. "The reality is we're in tight times, the federal government is not going to come in and solve this all by itself," Limbaugh said. "I'd rather have some drops in the bucket than none at all."

Getting projects going on the ground can help build momentum and "start a healing process that helps people resolve conflict," Limbaugh said. "These are projects on the ground, working every single day to alleviate conflict to help these communities not have to go through what we've seen in the Klamath Basin."

The program focuses on irrigation systems because agriculture is the biggest water user in the West, Limbaugh said. And improving efficiency in agricultural systems can save water that can be left in the river to help increase flows, which benefits fish and wildlife, he said.

While Reclamation Reform Act funding does support efficiency improvements, those projects tend to be on a smaller scale than Water 2025 projects and are more directly tied to Reclamation-managed systems, Morgan added.

"I do believe," she said, "these are projects that would not be able to go forward without our Water 2025 funding."

A sampling of Water 2025 grants

Projects funded in part by Water 2025 include: \* The San Juan River Dineh Water Users Association in New Mexico replaced three unlined canals with pipelines in an effort to reduce evaporation and seepage, providing a potential water savings of 5,600 acre-feet

per year, Morgan said. An acre-foot is about 325,850 gallons, a year's water supply for a family of four. Water 2025 picked up \$200,000 of the project's \$751,000 tab.

\* The Central Oregon Irrigation District teamed with cities and tribes to create a water bank, a pool of donated or temporarily leased water that can be used to help meet demand during dry times, that could save up to 326,522 acre-feet of water a year, BuRec says. The bureau provided \$233,750 of the project's \$588,750 cost.

\* The Medford Irrigation District in Oregon replaced 2,200 feet of open canal with a pipeline, saving about 94 acre-feet of water per year, BuRec says. The project will also remove three fish passage barriers and enhance habitat for federally protected coho salmon. Water 2025 grant will cover \$300,000 of the \$900,000 project.

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LR Press Release 04/06/05

## **DOE: Announces preferred alternative to move uranium waste pile away from the Colorado River**

April 6, 2005

For immediate release

Contact: John Weisheit - (435) 259-1063/(435) 260-2590

Sarah Fields - (435) 259-4734

Washington DC - The Department of Energy (DOE) announced today that their preferred alternative concerning the fate of the uranium waste pile adjacent to the Colorado River near Moab, Utah, is to move it to a location 30 miles away from the Colorado River. The location of this preferred waste storage facility is near Crescent Junction (the junction of Highway 191 and Interstate 70), which the Environmental Protection Agency recommended as a superior site in their comments to the DOE. This site is in the shadows of the Book Cliffs, which is considered a desirable place to relocate the pile because it is isolated, protected from potential flash floods, and where a thick layer of shale will better prevent the contamination of local ground water resources.

The alternatives not chosen as preferred include capping the pile in place; moving the pile to Klondike Flats, which is about 17 miles north of Moab and a popular place to recreate; and pumping the waste in a slurry via pipeline to a uranium processing plant near the White Mesa Ute Reservation, which is about 80 miles south of Moab.

"We are delighted with this announcement from the DOE about their preferred alternative," says John Weisheit from Moab, who is the conservation director at Living Rivers and the Colorado Riverkeeper. "This decision was not wholly unexpected considering the issue to move the pile to the north had overwhelming support from our city, county and tribal councils. A decision to the contrary would have started a

contentious situation from a determined local citizenry that considers the pile a threat to human health and endangered fish species."

Besides the local city and county representatives, the citizens of Moab, and concerned citizens of the White Mesa Tribe, other groups and agencies were also in favor of moving the pile away from the river.

"We are very happy to hear how the combined efforts of the communities down river, the State of Utah, federal agencies and our representatives in Congress, has resulted in sound decision by the DOE to remove the tailings from the floodplain of the Colorado River. We hope the final decision will include congressional action to appropriate all the necessary funds in a timely manner to remove the pile and remediate the local ground water," said Sarah Fields, who is the project coordinator for Living Rivers and the chair of the Nuclear Waste Committee, Sierra Club Glen Canyon Group.

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See DOE's press release below:

April 6, 2005

DOE Announces Preferred Alternatives For Moab, Utah, Uranium Mill Tailings

WASHINGTON, DC - The U.S. Department of Energy today announced the department's preferred alternatives for remediation of the Moab, Utah, Uranium Mill Tailings Remedial Action Project Site: active groundwater remediation, and offsite disposal of the tailings pile and other contaminated materials to the proposed Crescent Junction disposal site.

These preferred alternatives will be included in the Department of Energy's Final Environmental Impact Statement (EIS). Previously, the department did not identify a preferred alternative, in its draft Environmental Impact Statement on the remediation of the Moab, Utah, Uranium Mill Tailings Remedial Action Project.

The preferred alternatives do not indicate that the department has reached a final decision on remediation of the Moab site. The department continues to review comments it has received from the public on the site.

A Final EIS on the Moab, Utah, Uranium Mill Tailings site and the remediation of the site is in preparation, and the final department Record of Decision will be issued following the release of the Final EIS for the Moab site.

Media contact: Joe Davis, 202-586-4940

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Regional News 04/07/05

## **Activists hail the proposal to move toxic tailings away**

By Lisa Church  
Special to The Tribune

MOAB - News that the Energy Department will move almost 12 million tons of radioactive waste away from the banks of the Colorado River brought tears to Bill Hedden's eyes.

The department said Wednesday that it will recommend in an upcoming final environmental impact statement that the Cold War-era uranium mill tailings be moved by rail to a site 30 miles north from where they now sit four miles from Moab along the bank of the Colorado River across from Arches National Park.

For Hedden, a former Grand County councilman, and other residents and government officials, the announcement was especially sweet after years of pushing to have the unsightly and unhealthy tailings moved away from this red rock tourist destination.

"I actually cried this morning when I got the call. I surprised myself with that reaction," said Hedden, now executive director of the Grand Canyon Trust, an environmental group that has lobbied Congress on the tailings issue.

"Our democracy works slowly sometimes, but frequently we end up in the right place. This was a roller coaster."

The decision is a victory long overdue for Western politicians, county officials and environmentalists who have argued for years that toxic chemicals leaching from the pile are contaminating the Colorado River, the major source of drinking water for about 25 million people in Utah, Arizona, Nevada and California.

"This just goes to show what a small town can do when people work together," Grand County Councilwoman Joette Langianese said of the Energy Department's decision. "The fact that we got this decision is amazing. Just a year ago, everybody was feeling like it wouldn't happen."

The relocation effort, which probably will take five years, also will bring jobs to Grand County, Langianese said. And many feel having the 130-acre site cleaned up will boost tourism.

"I'm looking forward to the time when we can drive down Moab Valley and see its beauty instead of seeing a toxic pile," Langianese said.

"This is a good day for Grand County."

Moab activist Sarah Fields, who spent years researching the environmental impact of the tailings, said pressure from other state and federal agencies made it almost

impossible for the Energy Department to recommend leaving the tailings at their current site.

"I'm sure the [Energy Department] felt they wouldn't have a leg to stand on," she said.

Ute Mountain Ute tribal leaders and residents of White Mesa, a small community in southeastern Utah, had opposed one cleanup alternative that would have transported the tailings to the White Mesa processing mill located on tribal lands south of Blanding.

"It took a tremendous amount of time and money to discuss the White Mesa alternative, even though it was a ridiculous idea," said Tom Rice, director of the Ute Mountain Environmental Department.

"We're pleased that the decision was made to move it to a less populated area."

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Regional News 04/13/05

### **Colorado River users at odds over flow**

By Theo Stein  
Denver Post Staff Writer Staff

The seven states that share the Colorado River are unlikely to agree on how much to refill Lake Powell this year, leaving the decision to Interior Secretary Gale Norton, Colorado's top water planner said Tuesday.

Five of the driest years on record have left Lake Powell, the giant impoundment on the Utah- Arizona line, two-thirds empty.

Meanwhile, record precipitation this winter has helped produce a dramatic rebound in Lake Mead, Powell's equally large downstream sibling, which is now nearly two-thirds full.

To help restore balance to the system, Colorado, Utah, New Mexico and Wyoming want the Bureau of Reclamation to capture more water than planned behind Lake Powell's Glen Canyon Dam. They plan to make that request next week.

"It's just common sense at this point," said Rod Kuharich, executive director of the Colorado Water Conservation Board.

But Kuharich said consensus among the seven states is unlikely by federal officials' Tuesday deadline.

That would leave Norton to make a decision in early May.

Upper Basin states such as Colorado want Lake Powell to fill because the lake plays a critical role in providing water for downstream users - especially during dry years.

If the lake empties, California, Nevada and Arizona, which have a senior claim on the Colorado River, would be able to take water from the river that Front Range residents now use.

"It's our protection," Dave Merritt, chief engineer of the Colorado River Water Conservation District in Grand Junction, said of Lake Powell.

The debate was cast last fall when officials, wary that the drought could deepen, agreed to an unprecedented midyear review of Glen Canyon's operations.

Lower Basin officials argue no change of course is needed. They point out that the reservoir's annual operating plan, which is set each September, assumed continued drought in the Upper Basin would reduce runoff into the reservoir to 77 percent of normal. Instead, runoff is forecast to be 107 percent of normal.

"That's 30 percent better than the estimate used in setting the operating plan," said Herb Guenther, director of Arizona's Department of Water Resources.

In addition, Lower Basin officials say, the two reservoirs are headed in opposite directions.

The runoff season, which is just starting, will raise Lake Powell's level to 49 percent of capacity by summer's end.

Meanwhile Lake Mead's level will drop to about 54 percent by the end of the year, officials said.

"So they'll be getting pretty close equalizing on their own," said Dennis Underwood, chief executive of Southern California's Metropolitan Water District, which serves Los Angeles and San Diego.

But Upper Basin officials are frustrated by the Lower Basin's reluctance to let Powell fill.

After all, they argue, Lake Powell's water is destined for California, Arizona and Nevada anyway. Refilling the reservoir means more reliable supplies to the lower basin if drought returns.

A fuller Lake Powell produces more power, and hence more revenue, from the turbines in Glen Canyon Dam.

And, because Powell is higher in elevation, the vast lake surface loses less to evaporation than Mead, they say.

Lurking below the surface is lingering uncertainty about what next year will bring.

"The drought in the Colorado River basin has eased," said Tom Ryan, a Bureau of Reclamation hydrologist.

"We can't say that it's over."

The issue

Should Interior Secretary Gale Norton reduce water released from Glen Canyon Dam to help Lake Powell refill more quickly?

Upper Basin states: Yes.

Norton should cut the planned annual release from 8.23 million acre-feet to perhaps 7.5 million acre-feet, Colorado, Utah, New Mexico and Wyoming say. That would allow Powell to capture an additional 730,000 acre-feet of water. An acre-foot is enough water to serve two average families for a year.

Lower Basin states: No.

California, Arizona and Nevada say runoff expected in the Upper Basin is greater than was anticipated when the 8.23 million acre-foot objective was set in September.

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Regional News 04/14/05

### **Biologists to see if latest experiment on Colorado River helped fish habitat**

Deseret News

An experiment regarding fluctuating flows in the Colorado River below the Glen Canyon Dam ended last week.

Now, biologists will begin collecting data to see if the fluctuating flows actually helped the endangered humpbacked chub.

In November 2004, a second high-flow experiment, which involved the release of 41,000 cubic feet per second during an 60-hour period, was conducted in an attempt to scour the beaches and shorelines through the Grand Canyon, and to help the endangered humpback chub.

Scientists hoped to redistribute 800,000 metric tons of sediment through the Grand Canyon to create and resurface beaches, build substrate used by plants and backwaters and pools to help the fish breed. Then, from early January through April 8, flows were periodically changed, from roughly 5,000 cfs to 20,000 cfs.

Chubs, over eons of time, have adapted to the fluctuating flows of the Colorado River, while non-native species, such as trout, have not.

What biologists found after the high release of 41,000 cfs, however, was that there were 63 percent fewer juvenile chubs in the river than before the release.

The belief was that the fish were either washed downstream or were holding in areas not studied.

The chubs are the last of four endangered fish still living in the river running through the Grand Canyon.

Consensus was that fluctuating flows would keep the non-native fish, such as rainbow and brown trout, out of the river and holding in tributaries. This would stop the trout from competing against the chubs for food, and would stop the trout from preying on young chubs and eggs.

Biologists also believe that the fluctuating flows would thin the trout population, which is overgrowing the available habitat between the dam and Lee's Ferry, which is approximately 16 miles of very popular fishing waters.

Researchers have found that since 1991, when such fluctuations ended, the trout population dramatically grew at the probable expense of the native chub population.

Scientists are trying to determine if the fluctuating flows can keep the trout population in check by impacting their spawning and other aspects of their lifecycle

Additionally, another ongoing experiment has been the mechanical removal of non-native fish, primarily trout, near the confluence of the Little Colorado River and the mainstream Colorado River. The area is prime humpback chub habitat as the endangered fish move between both rivers. The removal effort, using electro-fishing techniques, reduces competition by physically removing trout. Early indicators from last summer's work have shown positive results.

The initial portion of the experiment was conducted this year from January through March and resulted in removing 7,573 fish, with 6,703 of them rainbow trout. There were also 130 brown trout and 135 common carp removed.

"Now we will have to monitor to determine if reduced non-native numbers result in a benefit to the humpback chub. That's why it is called adaptive management. You try something, if it works, you can repeat or expand the process to achieve greater results. If it doesn't work, you move on and try something else," said Steve Gloss, a scientist with the U.S. Geological Survey.

The endangered humpback chub is one of eight native fish species that were once abundant in the 277-miles of river flowing through the Grand Canyon.

The humpback chub is a "big-river" fish that grows to 20 inches. It is superbly adapted to survive in the wild and turbulent Colorado River that had historic flows ranging from 500 to 300,000 cfs.

As with earlier releases, biologists and scientists will now collect needed data to see if, in fact, the experiment worked.

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Regional News 04/21/05

## **Feds will referee Colorado River fight**

Storm runoff ups ante for 7 states

Shaun McKinnon  
The Arizona Republic

Winter storm runoff that should have eased fears of water shortages along the Colorado River has instead fueled new fighting among the seven states that use the river.

At issue is whether the states along the upper river - Colorado, Utah, New Mexico and Wyoming - can withhold water from the lower-river states of Arizona, California and Nevada, which benefited more from the winter storms.

What's really at stake isn't so much the water that flows downriver this summer - the storms ensured there would be no shortfall - but whether the seven states can agree on how to manage a resource that has steadily weakened under the pressures of growth and drought. advertisement

The federal government will be forced to settle the short-term question of how water from the river will be divided for the next six months. But fallout from that decision, expected by May 1, could sour longer-range discussions about the river's future and hurt Arizona's efforts to protect its supply during a drought.

"We've approached (the upper-river states) three times to get a consensus on this," said Herb Guenther, director of the Arizona Department of Water Resources.

"They've chosen to use it as bully pulpit against us. I think it's already kind of spoiled the atmosphere."

Representatives of the seven states will meet Tuesday in Las Vegas to discuss how much water should be released from Lake Powell downstream into Lake Mead this summer. They aren't expected to reach an agreement, leaving the final call to Interior Secretary Gale Norton.

Typically, the river's use is planned out one year in advance, from October to October, but because the drought had taken such a toll on Lakes Powell and Mead, the states agreed this year to revisit the numbers after six months. The two sides disagree on what the midyear numbers mean.

- The Upper Basin states say Powell, which is at 33 percent of capacity, needs help in recovering from the drought. They argue that Mead received extra water this year from the heavy winter runoff and want the secretary to reduce the water released from the reservoir downriver to Mead by 500,000 acre-feet or more, a reduction of about 6 percent compared with a normal year.

- The Lower Basin states say there's no reason to change the original plan because the upper river is set to receive more runoff than predicted last fall. Powell will rise by as much as 50 feet this spring and summer, they say, and won't need the extra protection sought by the upper-river states.

Both sides acknowledge that the drought has cut deeply into the West's water storage. Hydrologists say the river in 2005 should receive nearly normal runoff for the first time in six years, but by the end of the summer, Powell will still be less than half full and Mead will have settled just slightly above the half-full mark.

"From our perspective, we can see no reason why the secretary should make an adjustment when conditions are better than they were when the plan was agreed to by all the states," said Sid Wilson, general manager of the Central Arizona Project, which delivers Colorado River water to Phoenix and Tucson. "Colorado just seems hellbent on pushing those changes."

'Thinking about future'

The Colorado General Assembly has adopted a resolution calling on the Interior Department to reduce water deliveries from Powell, and state water managers are marshalling the other Upper Basin states to support that position.

"We're not thinking about this year, we're thinking about future years," said Eric Kuhn, general manager of the Colorado River Water Conservation District, which represents river users in 15 Colorado counties.

"This would give us more assurances down the road. We don't know what the future will bring."

Although it stores water for use by the Lower Basin states, Powell was built to help the Upper Basin states, which are required by the Colorado River Compact of 1922 to deliver water to the Lower Basin states each year. The Lower Basin states take their water from Powell, allowing the Upper Basin states to divert more of the river upstream.

Since Powell began operation more than two decades ago, the Upper Basin states have always released a minimum of 8.23 million acre-feet a year to the lower states. An acre-foot is 325,851 gallons, enough to serve one or two average households for one year.

But Upper Basin officials are now citing specific passages from the compact that say they are not bound to deliver that amount of water each year but rather a total of 75 million acre-feet over 10 years. Over the past 10 years, they say, total releases from Powell have topped 100 million acre-feet.

Extra water

The problem, those states suggest, is that the faster-growing lower states have grown accustomed to the extra water.

"In the long run, if things go dry again, the Lower Basin has a problem," Kuhn said. "It uses more water than it can rely on. The sooner the Lower Basin gets on to try to

address that problem, the better off we are." Lower Basin states are furious about what they describe as posturing by Colorado, which is fighting its own internal battles over how to meet increasing demands for water from the river.

"For the Upper Basin states to dig their heels in and demand some token reduction this year is distracting and is jeopardizing the long-term discussions we need to have," said Pat Mulroy, general manager of the Southern Nevada Water Authority. "This is all about posturing, and that's where the frustration sets in for the Lower Basin. This is a position we did not want to be in."

For Norton to withhold water based on the river's current condition would be difficult, Lower Basin officials say, because there are no immediate risks to water users or power producers.

"The midyear review was to see if conditions got worse," Guenther said. "They didn't. They got better, so there's no need to make an adjustment."

The dispute has slowed work on a plan to manage drought-related shortages on the river, although the Lower Basin states are prepared to submit a preliminary plan to Norton, who had set an April deadline. The Interior Department is now ready to begin work on the shortage plan with or without the states' involvement.

Arizona's interest in resolving supply-related issues is especially keen: If the Interior secretary was ever to declare a shortage on the Colorado, the Central Arizona Project Canal would lose its entire supply before any other user suffered. State officials are working to protect the CAP in case the drought deepens.

The Bureau of Reclamation will begin seeking public input next month and hopes to include as much from the river states as possible.

"We would definitely like to have a consensus from the seven states," said Bob Johnson, commissioner of the Bureau of Reclamation Lower Colorado Region. "We would prefer to hear them speaking with one voice. But the reservoirs are low, and even with a normal year, the drought's not over. We need to move ahead."

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Regional News 04/27/05

## **States fail to agree on drought rules; Norton takes over**

Feds to map river plan

By Jerd Smith, Rocky Mountain News

LAS VEGAS - Seven Western states failed to reach agreement Tuesday on how to manage the mighty Colorado River in times of drought, an impasse that means the federal government will begin crafting its own plan May 1.

"We've tried to come to a consensus, but it hasn't been possible for us to do that," said Larry Anderson, director of the Utah Division of Water Resources.

Anderson and more than 40 other water officials met in Las Vegas in a last-ditch effort to meet an April 30 deadline imposed by U.S. Secretary of the Interior Gale Norton. Norton wanted the states to come up with at least the rudiments of a drought-management plan for the river and its two main reservoirs - Lake Powell and Lake Mead.

A key issue has been the request by Colorado and three other states to hold more water in Lake Powell this year to help it recover from the drought.

But weeks of talks leading up to the final meeting Tuesday failed to deliver any consensus on how the river could be equitably shared if shortages arise, or whether releases from Lake Powell to Lake Mead should be reduced this year.

Norton will decide by the end of the week whether to alter releases from Lake Powell, but she plans to spend much of the next two to three years holding public hearings to build a federal drought-management plan for the river.

"The idea was that the states would develop some middle ground," said Tom Weimer, assistant secretary overseeing water issues at the U.S. Department of Interior.

"We clearly didn't get there. So we'll begin briefing the secretary tomorrow and we'll continue briefing her Thursday and Friday until she's prepared to make her decision."

Riding on Norton's drought-management plan are potentially historic new legal precedents in Western water law and millions in recreation dollars and electric power sales from Glen Canyon Dam at Lake Powell and Lake Mead's Hoover Dam.

Under a 1922 compact, Colorado River water is divided equally between the Upper Basin states, Colorado, Wyoming, Utah and New Mexico, and the Lower Basin states, California, Nevada and Arizona. Each basin gets 7.5 million acre-feet.

Last December, John Keys, commissioner of the U.S. Bureau of Reclamation, warned the seven states they needed to begin resolving long-standing differences to get at a potentially bigger issue: how some 25 million people who depend on the river can share its waters if chronic drought becomes the norm, as it has been for the past five years.

As part of the drought talks, the Upper Basin states sought a reduction of as much as 700,000 acre-feet in the amount of water released from Lake Powell this year to help it recover from the drought. The giant storage pond on the Utah-Arizona border is just 34 percent full, its lowest level since 1969.

If the lake drops too low, Colorado and the other Upper Basin states might have to deliver more of their own supplies to ensure that cities such as Phoenix, Las Vegas and Los Angeles get their fair share under the 1922 compact.

Such a situation, though unlikely, has Colorado water officials scrambling to figure out how they would cope with such a demand for extra supplies.

The headwaters of the Colorado River occur high in the Never Summer Mountains in Rocky Mountain National Park and supply about half the water used on Colorado's Front Range.

Colorado's General Assembly and the state's congressional delegation have also weighed in, asking Norton to protect Lake Powell's supplies until it can recoup some of its losses.

"We think it is definitely within her authority to make a modification in the release," said Randy Seaholm, a manager at the Colorado Water Conservation Board, who has been representing Colorado in the talks.

But officials from California and Nevada on Tuesday, though tight-lipped, made clear they were unwilling to go along with anything that would reduce their share of river water this year.

"We in the Lower Basin states believe the hydrologic conditions do not justify any change in the release," said Gerald Zimmerman, a representative from California.

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Regional News 05/03/05

## **Norton turns down proposal for Powell**

Upper Basin states hoped to hold more water in reservoir

By Jerd Smith  
Rocky Mountain News

Secretary of the Interior Gale Norton on Monday rejected a plea to hold more Colorado River water in drought-stricken Lake Powell this year, dealing a blow to the efforts of Colorado and three other states to shore up the giant holding pond on the Utah-Arizona border.

"It's disappointing, but I feel as if we got a very fair hearing from the secretary," said Russell George, executive director of Colorado's Department of Natural Resources.

Last December, Norton warned Western states that they must come up with a drought plan for managing the Colorado River and Lakes Powell and Mead or the federal government would develop a plan for them.

But last week the seven Colorado River basin states acknowledged that they could not reach a consensus on long-term drought issues or, in the short term, whether deliveries from Lake Powell should be reduced this year. That failure opens the door to creation of a federal drought plan for the river.

George and other Colorado water officials refused to class Norton's Lake Powell decision as a defeat, saying it was only the first round in what will become historic talks on how to manage the Colorado River in times when water is scarce.

"This thing is way too complex to be thinking in terms of winning or losing at this point," George said.

Even as she rejected the request to hold more water in Lake Powell, Norton said that she would review the situation again next year, in case the drought worsens and stored water supplies continue to drop.

About 25 million Americans rely on the Colorado River, from Wyoming to California. In Colorado, it supplies nearly half the drinking water for the Front Range, keeps snowmaking machines going from Winter Park to Vail, and irrigates peach orchards and wineries along Colorado's western border.

Under the 1922 Colorado River Compact, the river's water is divided equally between the upper basin - Colorado, Wyoming, Utah and New Mexico - and the lower basin states of Nevada, Arizona and California.

According to the compact, the Upper Basin gets to keep at least 7.5 million acre-feet of water annually and must deliver another 7.5 million acre-feet to the Lower Basin states.

In addition, the Upper Basin states deliver another 730,000 acre-feet from Lake Powell each year to help meet the Colorado River's obligation to Mexico, bringing total minimum deliveries from Powell to Lake Mead to 8.23 million acre-feet. Lower Basin states contribute water to Mexico, as well.

Until the current drought struck, enough water has been stored in Lakes Powell and Mead to ensure that Nevada, Arizona and California and Mexico get their share, even in dry years.

But if the reservoirs' stored supplies continue to shrink, greater pressure will be put on Upper Basin states to provide more.

Last fall, as worrisome forecasts showed storage at Powell continuing to shrink - it now stands at just 34 percent of capacity - the Upper Basin states asked Norton to slash deliveries to help the lake recoup water supplies lost to the drought.

But forecasts improved dramatically over the winter, showing that for the first time in five years Lake Powell would see above-average inflows.

"I don't think it's a devastating blow," Eric Wilkinson, manager of the Northern Colorado Water Conservancy District, said of Norton's decision. "But if this downward trend continues, we'll be asking her to do the same thing next year."

In Los Angeles, Dennis Underwood, manager of the giant Metropolitan Water District of Southern California, struck a conciliatory tone, saying the need to cooperate in the drought talks was more important than winning or losing the first round.

"This was an operational decision for 2005," he said. "This is the first time in history we've had the reservoirs where they are. We've never had to look at 'is there a better way to operate.' But there is no victory here."

In a letter to the seven basin-state governors on Monday, Norton restated her concern about the lingering drought and the need to develop new drought rules for the river to ensure that all seven basin states have adequate supplies.

Norton said Monday she wants the drought plan done in 30 months - by the end of 2007 - and she wants meetings to begin by May 31.

Norton's decision on Lake Powell is "understandable . . . but we'd hoped to keep more water in the Upper Basin," said Scott Balcomb, a Glenwood Springs water attorney who represents Colorado on the Upper Basin Commission and in talks among the seven basin states.

Norton's decision, however, didn't sit well with a Lake Powell boating enthusiast, one of thousands who live in Colorado.

"They had a chance to get some capacity in Powell and you'd have thought she'd be all for that," said Dave Dunder, of Grand Junction, part-owner of a houseboat. "So the water will keep dropping so all those folks in Arizona and California can keep their swimming pools full. It's not right."

Staff writer Ellen Miller contributed to this report.

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Regional News 05/17/05

## **Water Wars Move Underground**

Los Angeles Times

Cities seek to refill aquifers emptied by extensive pumping. But another agency claims control over reserves.

By Jia-Rui Chong, Times Staff Writer

Since Southern California was settled, communities have lived and died on their access to water, fighting mercilessly for their rights to pump it. Now, the focus has shifted as cities see the depleted underground aquifers as a potentially valuable resource.

A group of cities in southeast Los Angeles County, including Downey and Lakewood, are asserting their rights over the vast aquifers and hope to eventually use the porous sediments to store portions of their water supply. They believe they can save money by pumping imported water into the ground rather than pay for expensive water storage facilities and pipelines.

Water storage can be expensive: The Metropolitan Water District, the region's main water wholesaler, spent \$2 billion completing Diamond Valley Lake, a reservoir that holds 800,000 acre-feet of water and required flooding a valley in Riverside County. An acre-foot is enough water to supply two average families for a year.

"I could spend a lot of money, find land, build a pipeline to that land because there's no land around here, but it would be very expensive," said Desi Alvarez, the director of public works in Downey. "Why would I give up a relatively inexpensive resource right under our jurisdictional boundaries?"

But exactly who controls the valuable aquifers is a matter of dispute. The Water Replenishment District of Southern California also claims authority over what happens in the aquifers. The district was formed in 1959 because local agencies had drawn out so much water that the aquifers were dangerously low. It was charged with refilling the aquifers so that agencies with rights to the water could continue pumping.

Water district officials fear that cities or other groups with water rights, such as private water companies, want to use the fragile water system to generate revenue. They worry about the aquifers being leased out to the highest bidder or agencies that will distribute the water elsewhere. That, they said, could result in misuse of the system.

"It's like deregulating energy," replenishment district General Manager Robb Whitaker said. "You saw what happened. If people put water in whenever they want to put it in and we have no ultimate authority over what occurs, we'd be left to clean up the mess."

Aquifers form when water saturates loose layers of earth - sand and gravel in the Los Angeles Basin - that are separated by dense silt and clay. Under certain conditions, water percolates from the surface into these underground reservoirs. Some aquifers lie just below the surface and others spread out at a depth of about 1,000 feet. Cities and water agencies drill wells to recover the water.

Not all areas have aquifers. Bedrock underlies San Diego, for example, so not enough water can accumulate to supply the county.

In the Los Angeles Basin, much of the natural water had been drained from the wells by the 1960s. In the decades after that, no one really sought to use empty space in the aquifers.

But that changed a few years ago.

Voters passed ballot initiatives in 2000 and 2002, making millions of dollars available for local groundwater storage projects. Underground storage is attractive not just because of the lower costs but because less water evaporates than in a surface reservoir.

In southern Los Angeles County, geologists believe the 10 aquifers that spread underground from Manhattan Beach to Whittier could safely store 450,000 acre-feet of water. That's enough to fill more than half a million Olympic-sized swimming pools.

The region's main importer of water, the Metropolitan Water District, has already joined water officials in Orange County to slowly fill aquifers with about 60,000 acre-feet of imported water. In exchange for the storage space, the MWD used the bond money and its own construction funds to pay for new pipes to bring the water into the Orange County Water District's system.

The eight cities participating in the project will also get free wells so it is easier to draw the stored water. The cities could draw the water as soon as 2007, officials said.

Cities in Los Angeles County are now talking about reserving a portion - perhaps half - of the aquifers beneath their own communities.

They would use the space to capture additional storm runoff and store imported water, a move they said would save them the cost of contributing to big water storage projects.

In drier years, the cities would still have to import water from sources in Northern California and the Colorado River, among others, to put into storage. But they could take advantage of natural aquifers, instead of paying a water wholesaler to build its storage systems. With plenty of water in hand, the cities could also avoid surcharges the wholesalers sometimes add in times of drought.

Several cities said they had no immediate plans to sell off that storage space to other counties and funnel the money back into police departments or other city services.

But, Alvarez, of Downey, added: "I see nothing wrong with that."

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LR in the News 06/02/05

## **Flaming Gorge test flow blamed for flooding crops**

April Reese, Land Letter Southwest reporter

A test flow unleashed by the Bureau of Reclamation in late May to aid endangered fish in the Green River flooded farms along its banks, prompting an angry backlash from farmers and local government officials that may culminate in legal action.

The razorback sucker, humpback chub and Colorado pike minnow -- all listed under the Endangered Species Act -- have been in decline for decades, and biologists say Flaming Gorge Dam, completed in 1962 as part of the Colorado River Storage Project, is partly to blame.

But the Fish and Wildlife Service and the Bureau of Reclamation, which operates the dam, have come up with a plan to recover the fish while keeping the dam in place. The key, they say, may be experimental, increased flows from the dam that mimic historic flows on the Green River, which is fed by the free-flowing Yampa River in Dinosaur National Park. At the behest of FWS, BuRec launched a test flow in late May, allowing a

torrent of water to surge downstream for several days in hopes that the flows would help create sandbars and side channels, which serve as nurseries for the fish.

But officials in Uintah County, Utah, and some area farmers say the experiment, which boosted flows to 19,500 cubic feet per second near the confluence of the Green and Yampa rivers, flooded farmland and destroyed crops. Some farmers along the river have had to pull their irrigation pumps, said Mike McKee, a Uintah County commissioner.

"We have some real concerns about how this has affected farmers," McKee said. "To spend hundreds of thousands of dollars and have this kind of thing happen ... taxpayers should be pretty frustrated right now."

The county argues that a smaller test flow would have been just as beneficial to the fish. Their requests to ratchet down the flows went unanswered, McKee said.

"This whole flooding tragedy could have been avoided," McKee said.

But Beverly Heffernan, an environmental specialist at BuRec's Provo, Utah, office, said the test flows are no higher than flows during wetter years in the basin. In 1996, 1997 and 1999, flows exceeded 20,000 cfs -- less than the peak of the test flow.

"It seems bigger to everyone because we've had 6 years of drought," she said.

And the test flows are required under a 1992 biological opinion from the Fish and Wildlife Service that calls for boosting flows for at least a week every spring to help recover the fish, Heffernan added.

After receiving complaints from Uintah County, BuRec asked FWS for approval to decrease the flows, but the service said the flows had to be in keeping with the requirements of the biological opinion, Heffernan said.

Furthermore, without the dam in place, flows would be higher, she noted.

"There's a reason it's called a flood plain," she said. "They're saying we're causing an unnatural, high flow, but actually it's an unnatural low flow compared with what it would be like if the dam weren't there."

When asked why the county has allowed farming and development on the banks of the river, McKee said it's difficult to determine where to draw the line in a flood plain to protect property.

"The problem is, what is a flood plain -- is it 500 years, 100 years?" he said, referring to the frequency of floods that is often used to characterize a flood plain. "How far do you go?"

Uintah County likely will file suit against BuRec for losses incurred by farmers during the test flows, McKee said.

BuRec and FWS have gotten flack over the test flows from environmental groups as well, which say the influx of water is unlikely to help endangered fish.

"I'd like to see them doing something as positive as experimental flows are supposed to be to help recover fish," said John Weisheit, conservation director for Living Rivers in Moab, Utah, which has advocated for the removal of Flaming Gorge Dam.

Southwest reporter April Reese is based in Santa Fe, N.M.

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Regional News 06/09/05

### **Water expert warns Colorado River shortages may be inevitable**

ASSOCIATED PRESS

BOULDER, Colo. – Water shortages in the Colorado River are almost inevitable by 2011 and could force feuding Western states to cooperate on managing the river, an expert said.

"All the states are at risk," said Jim Lochhead, former executive director of the Colorado Department of Natural Resources. "And when all parties are at risk, there is potential for a mutually beneficial (resolution)."

Lochhead spoke Wednesday at a University of Colorado symposium on the river's problems.

A long drought has left Lake Powell and Lake Mead, the river's two major reservoirs, dangerously low. Abundant snow last winter will raise both reservoirs, but not enough to replace what the drought and a booming population have drained.

"We wiped out the bad year of 2004 by having a wet 2005," said Terry Fulp of the U.S. Bureau of Reclamation. "But there is still an impetus to get some agreement."

The 1922 Colorado River Compact divides the river's water between the Upper Basin states – Colorado, New Mexico, Utah and Wyoming – and the Lower Basin states – Arizona, California and Nevada. So far, the river has been able to satisfy the demand, but population growth is expected to outstrip the available water, officials said.

The Interior Department has begun writing a drought management plan for the river after the seven states failed to reach an agreement. The plan is expected to be finished by December 2007.

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Regional News 06/16/05

## **Meetings to focus on Colorado River water pact**

Comments will lead to seven-state sharing agreement

By Jerd Smith, Rocky Mountain News June 16, 2005

Federal water officials, hoping to break a seven-state impasse over a new drought plan for the Colorado River, will launch the first round of public meetings in Utah and Nevada next month on what such a plan should contain.

Late last year, federal officials warned the states that if they couldn't agree on a drought plan, the U.S. Bureau of Reclamation would do it for them.

"The drought has placed a lot of pressure on everybody," Bob Johnson, director of the Lower Colorado Region at the U.S. Bureau of Reclamation, said Wednesday. "Now decisions have to be made."

U.S. Interior Secretary Gale Norton has said she wants the water-sharing agreement finished by the end of 2007.

In April, the seven states that comprise the Colorado River Basin missed the deadline to come up with their own plan.

Today the stalemate continues as states from Wyoming to California contemplate a future of shrinking water supplies.

"Now it's who blinks first," said Herb Guenther, director of Arizona's department of water resources.

Tensions rose in May when Norton refused to hold more water in Lake Powell this year, as Colorado and others had requested.

Any new drought plan is likely to include triggers for determining when releases from Lake Powell to Lake Mead, the river's two main storage banks, can be reduced.

But that's something Arizona and other states have vigorously opposed because it means they would have to get by on less water.

Under the 1922 Colorado River Compact, the river's water is divided between the Upper Basin states - Colorado, Wyoming, Utah and New Mexico - and the three Lower Basin states - Nevada, Arizona and California.

Lake Powell holds extra water generated in the Upper Basin until it is needed farther downstream in Lake Mead. But if Lake Powell drops too low, Upper Basin states such as Colorado could be forced to cut back their own take from the river to ensure those farther south get their legal share. The river provides about half the water used on the Front Range.

In the past, there always has been enough extra water to satisfy growing demands on the river. But the recent drought has shown all of the states how difficult it is to manage when the river's supplies are short.

Water officials estimate that the Upper Basin states did without more than 400,000 acre-feet of Colorado River water - enough for more than 800,000 households - during the dry spell that began in 2000.

Even if the drought ends and there is a return to wetter weather, the need to provide drinking water to millions of new residents throughout the West will strain the river to the breaking point, water officials say.

The main problem: Writers of the 1922 compact believed the river produced, on average, nearly 17 million acre-feet of water, more than enough to supply the Upper Basin and Lower Basin with 7.5 million acre-feet each.

Now, water officials believe the river produces much less - from 13 million acre-feet to 14.5 million acre-feet.

"The river has been overdeveloped based on the water supply we now know is there," said Scott Balcomb, Colorado's representative on the Upper Colorado River Commission and a negotiator in the seven-state talks.

Last week, at a University of Colorado conference on the river, several Western water officials said the only way to break the deadlock is to find new water supplies, using such techniques as cloud seeding to produce more snow or desalination plants on the West Coast.

How to comment

Public hearings on the Colorado River Drought Plan:

- July 26: Henderson, Nev., 10 a.m to noon (PDT), Henderson Convention Center, 200 S. Water St.
  - July 28: Salt Lake City, 10 a.m. to noon, Hilton Hotel, 255 South West Temple St.
  - Officials will take written comments through Aug. 31 for the Lower Colorado region at [Strategies@lc.usbr.gov](mailto:Strategies@lc.usbr.gov), or by fax at 702-293-8156.
  - For the Upper Colorado region, the e-mail address is [Strategies@uc.usbr.gov](mailto:Strategies@uc.usbr.gov), or fax 801-524-3858.
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Regional News 06/21/05

## **APS dam removal releases Fossil Creek**

Central Ariz. plant closures let stream flow again

Mary Jo Pitzl The Arizona Republic Jun. 19, 2005 12:00 AM

**FOSSIL CREEK** - It started as a trickle, a small finger of water stretching across a sunbaked slab of granite. But it had the force of a flood, heralding a historic event and the beginning of a new era for this central Arizona stream.

At high noon Saturday, Arizona Public Service Co. abandoned the dam that has held back Fossil Creek for nearly a century and let the water flow unabated. advertisement

It marks the first time in anyone's memory that an Arizona dam has been taken out of commission in the name of restoring a river. On Fossil Creek, the water had been diverted to power two hydroelectric plants run by APS.

"This represents a watershed event," said Andrew Fahlund, vice president for protection and restoration at American Rivers, a conservation group. "To do something like this in Arizona is extraordinary." It's extraordinary for a number of reasons, as speaker after speaker said during a creekside ceremony that marked APS' retirement of the Childs and Irving hydroelectric-power plants northwest of Payson.

"This is just another benchmark in the long history of Fossil Creek," said Jack Davis, president and chief executive officer of APS. When future generations come to Fossil Creek, he said, "they'll remember that short period of time - 100 years - when Fossil Creek was used for economic development."

"APS gave Fossil Creek a gem," said Duane Shroufe, director of the Arizona Game and Fish Department. The creek is one of the few perennial streams in Arizona, running even on hot summer days. The water is rich in calcium carbonate, which will grow into travertine formations under the force of the increased water flow, creating pools and basins reminiscent of those found at Havasu Falls.

Hiking enthusiasts will have a 14-mile waterway to follow on hikes along the tree-lined stream, and wildlife is expected to be drawn to the once-again flowing creek.

Fossil Creek also is on the brink of becoming a prime spot for native fish, such as the humpback chub, the speckled dace and the longfin minnow.

State and federal fishery officials airlifted native fish to ponds along the creek last fall, and the ensuing months have been productive.

"There's lots of little fish that spawned," reported Dave Weedman, an aquatic-habitat specialist with Game and Fish.

But don't grab your fishing pole just yet. Game and Fish wants to give the fish at least two years to establish a healthy population before opening the area to anglers.

Saturday's event was highlighted by Davis and representatives of six other groups flipping a symbolic switch to turn "off" the dam.

This triggered dam operators to open the gates on the dam, several miles upstream. Two hours later, the first trickles of Fossil Creek flow reached the grounds of the Irving power plant. Plant operators figured it would take four hours for the full force of the 43 cubic-feet-per-second flow to reach the plant, and estimated it would raise the creek 10 inches.

Davis said the shutdown of the only two hydropower plants in its network wouldn't cause a ripple in APS' power supply. Combined, the plants were producing less than 1 percent of APS' total electricity. The return of water to Fossil Creek came about through an unusual alliance between the utility company, various environmental organizations and the Yavapai-Apache Nation.

In 1999, APS decided to drop plans to recommission the power plants.

Tribal Chairman Jamie Fullmer fought back tears as he contemplated the significance of Saturday's event.

"To us, water is sacred," Fullmer said. "And with the water now flowing, it will bring back a new energy to our community in the Verde Valley and to Arizona." Just as the power plants were key to Arizona development, their decommissioning also plays a big role, he said.

The Childs plant was built in 1909, Irving in 1916. Both were powered by an above-ground pipeline that channeled the force of Fossil Creek to produce power for central Arizona mining operations. Later, some of the power was directed to Payson and Phoenix.

Robin Silver of the Center for Biological Diversity put in a plug for the National Environmental Policy Act, which he said gave environmental groups the right to speak out against continued damming on the creek. The law is currently the subject of congressional scrutiny, including a public meeting Saturday in Show Low.

"The two laws that made this happen are being destroyed," he said referring to NEPA and the Endangered Species Act, which protects the habitats of endangered plants and animals.

The creek's restoration puts more pressure on officials with the Coconino and Tonto national forests, where the creek runs, to manage the people that are expected to visit the area.

Long-term planning will start soon, said Nora Rasure, the Coconino superintendent. And in the short term, some hiking trails may be closed as APS deconstructs the power plants.

The utility plans to leave a section of the flume and one or two structures at the Irving plant; everything else, including a new temporary bridge, will be dismantled and removed.

Perhaps the looming threat to Fossil Creek is that it will be loved to death, proponents say.

But U.S. Sen. John McCain, R-Ariz., plans to introduce legislation that would include Fossil Creek in the Wild and Scenic Rivers system, providing federal protection and dollars.

Reach the reporter at [maryjo.pitzl@arizonarepublic.com](mailto:maryjo.pitzl@arizonarepublic.com) or at (602) 444-8963.

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LR in the News 07/14/05

### **Scientists investigate Colorado River paleoflood deposits**

The Times-Independent  
Moab, Utah

Fieldwork for Phase 2 of a Living Rivers uranium waste research project was recently completed along the banks of the Colorado River. Living Rivers is a Moab-based non-profit river restoration organization that is conducting the study with a grant from the Department of Energy's Citizens Monitoring and Technical Assessment Fund.

This project was completed with the cooperation of three professors of geomorphology at the University of Arizona, namely John Dohrenwend, Victor Baker and Noam Greenbaum. The purpose of this work is to provide sound scientific evidence to describe the nature of past floods along the Colorado River and how such floods, if they occur again, could potentially lift the pile into the river, thereby causing serious contamination problems for all downstream users for generations to come.

Dr. John Dohrenwend, who assessed that the Colorado River was migrating towards the Moab Mill site, conducted the first study last winter. The results of Dohrenwend's findings were published with much detail in the Times-Independent.

See: [Times-Independent.pdf](#) [7.2 MB File]

The second study was conducted in the last four weeks under the direction of Dr. Noam Greenbaum, who is currently on a sabbatical at the University of Arizona. Dr. Greenbaum is a professor at the University of Haifa, Israel, and an expert in the study of paleofloods.

A paleoflood refers to a past or ancient flood event that occurred prior to the time of human observation or direct measurement by modern hydrological procedures. Such floods usually leave evidence along the margins of watercourses that include sediment deposits, driftwood lines, and buried organic material.

In late March an excellent study site was discovered across the river near the BLM boat launch along Highway 128 near milepost 10.3. The site included surface driftwood, imbricated rocks (rocks stacked like shingles by moving water), and high water flood deposits.

"For the purposes of this study it was critical to find a pristine site close to the Moab Mill downstream of the Dolores River," said Dr. Greenbaum. "To discover such a potentially productive site was indeed a very fortunate occurrence for us."

The site is located in Arches National Park and the permit to begin investigative work was issued by the park superintendent. During the excavation of 14 test pits (up to 2 meters deep), which were dug by hand by the staff of Wildland Scapes, a certified archeologist was present to ensure that no cultural properties were jeopardized at the work stations – which fortunately was the case.

Of the 14 pits that were carefully examined, described and sampled, 13 pits provided evidence of several large floods that have occurred on the Colorado River. The findings in the pits include also four samples of organic material that will be analyzed by the University of Arizona for Carbon 14 radiometric dating. These samples will provide ages of at least 4 paleofloods. Additionally, sediment samples were also collected to undergo another dating process called Optically Stimulated Luminescence.

Another phase of the second project included measuring the river geometry including 25 cross-sections, longitudinal profile and elevations of flood deposits with a total station – an instrument that uses a laser range finder to accurately record the maximum stages of these historic floods. Approximately three miles of the Colorado River segment was sufficiently measured, starting downstream from Sandy Beach.

Said Dr. Greenbaum on the extent of the flooding, "We hope to produce a public report of our findings this fall. In the meantime, we feel confident in our preliminary findings to conclude that part of the floods we are currently analyzing were much bigger than the historic flood of 1884, which was measured at Loma, Colorado at a discharge of 125,000 cubic feet per second."

The final report will be submitted to all the management agencies that utilize the resources of the Colorado River, especially the Department of Energy as it relates to the mitigation of the Moab Mill tailings pile. It is the intention of this report to provide information to aid the DOE concerning their pending Record of Decision and to encourage Congress to provide the necessary funding to move the pile in a timely manner. This report should also provide the people of Moab and other settlements along the Colorado River a long-term and more reliable flood frequency analysis to improve flood risk assessment for any engineering design along the Colorado river.

"What is really exciting about this project was the filling of a scientific void through the initiative of citizens of Moab and Grand County. This study will in turn benefit all the people downstream who depend on the Colorado River for sustenance," says John Weisheit who is the conservation director at Living Rivers and the Colorado Riverkeeper of the Waterkeeper Alliance.

Says Professor Victor Baker, "We thank the citizens of Moab for their persistence to get this work done. It is our hope that Dr. Greenbaum's study will initiate further funding to investigate the paleoflood deposits of the Green and San Juan rivers as well. By doing this, agency managers will have much needed information to safeguard public resources and private property along the Colorado River."

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LR in the News 07/25/05

## **Two-hour comment period on river set up**

LAS VEGAS SUN

The federal government is providing two hours Tuesday for Southern Nevada residents to contribute their thoughts toward what ultimately would be a new policy governing shortages along the Colorado River, the source of 90 percent of Southern Nevada's drinking water.

The Interior Department and the Bureau of Reclamation are working to design rules to govern how the seven states along the Colorado River would share the pain from cuts to the river resource if the volume of water in the river continues to fall.

The impetus for the rule-making process has been more than five years of drought that caused water supplies in the river to drop to about half of what it has been in wet years.

Although last winter's relatively wet season helped the Colorado River recover somewhat, the volume is still just 56 percent full. Regulators worry that an extension of the drought could require cuts for the states that use the river water, among them Nevada, Arizona and California.

Before drafting the rules for "shortage criteria," the Bureau of Reclamation is working to define how the rule-making process should go forward. The meeting from 10 a.m. to noon at the Henderson Convention Center, 200 S. Water St., is one of the first steps toward setting the process. A second meeting will be Thursday in Salt Lake City.

People will be able to submit written or verbal comments at the public meeting.

Robert Walsh, a bureau spokesman, said despite the narrow, two-hour period for the public meeting, people will have ample opportunity to comment.

"This is a scoping process," he said. "We have left that period open to the end of August. People can send us a letter. They can fax us information. They can send us e-mails. There's full opportunity to participate even if they can't attend the meetings."

As the policy is constructed over the next several years, there also will likely be other public meetings, Walsh said.

"There will probably be other opportunities for input and comment," he said.

One group that promises to attend the two-hour meeting is Living Rivers, which is dedicated to conserving the Colorado River. The group is probably best known for advocating the removal of Glen Canyon Dam, which spans the river from Utah to Arizona and forms Lake Powell.

Although Nevada and federal water officials have said Lake Powell has been a critically important upstream reservoir, Living Rivers members argue that Lake Powell has led to an unsupportable loss of water from the Colorado River system because of evaporation.

The main concern of the group is that the two-reservoir system with Lakes Powell and Mead is contributing to the demise of endangered species along the river.

"The Grand Canyon ecosystem is falling apart," said John Weisheit, Living Rivers conservation director. "They are sacrificing the Colorado River, is what they are doing."

Doug Hendrix, a spokesman for the Bureau of Reclamation's division that manages the upper Colorado River, including Lake Powell, said the upcoming meetings will not address the long-simmering debate over Glen Canyon Dam. Hendrix noted that operation of the dam and Lake Powell is congressionally mandated "for the long term use by the states that depend on that water."

He said the upstream reservoir with Lake Mead have been very important in regulating the water supply on the river. Southern Nevada and its neighbors have had a reliable source of water despite severe drought, he said.

"They have certainly proven their worth over the last five consecutive years of drought," Hendrix said. "That's what they were designed to do."

The Southern Nevada Water Authority, the water wholesaler for the region, also will have officials attending the meeting, said Vince Alberta, Water Authority spokesman.

He said the economies of all seven basin states, from Wyoming to California, depend on effective management of the river.

"The primary objective in developing these guidelines must be the conservation of the water supply, consistent with the purposes for which Mead and Powell were authorized by Congress," Alberta said.

For information about the development of strategies to manage shortages in Lake Mead and Lake Powell, call Bureau of Reclamation at 293-8156.

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LR Press Release 07/25/05

**The One-Dam Solution: Hoover Dam alone the solution for managing dwindling Colorado River water.**

Report calls for decommissioning Glen Canyon Dam as the primary action needed to reduce current and future economic and ecological impacts of dam operations to the Southwest.

Contact:

John Weisheit - (435) 259-1063/Mobile: (435) 260-2590

David Haskell - (928) 567-9873

As the Bureau of Reclamation begins developing plans for re-operating the nation's two largest dam and reservoir complexes with public meetings at Las Vegas and Salt Lake City this week, a new report released by Living Rivers reveals that Southwestern water users and the ecological health of the Colorado River would both be better served if one dam were removed.

"Hoover and Glen Canyon Dams may have been icons of 20th century civil engineering, but continuing to operate them in their present fashion is wasting water that could support more than six million people. In addition, Glen Canyon Dam is devastating the ecological integrity of the Grand Canyon and is creating a dam safety problem due to advancing sedimentation in Lake Powell," says John Weisheit, Living Rivers conservation director.

The analysis reveals that increased water use and decreasing supplies raise questions about the need for both dams, especially in light of their tremendous evaporation losses. The report concludes that it would be more efficient to eliminate Glen Canyon Dam from the system and utilize Hoover Dam and adjacent underground storage to capture the limited amounts of surplus water that may be available in the future.

Key findings of the 24-page The One-Dam Solution include:

More efficient water storage strategies are needed.

When Glen Canyon Dam was built, nearly 2.6 million acre feet (MAF) of surplus water flowed into Lake Powell annually, allowing the reservoir to fill in 17 years. However, increasing demand upstream has nearly eliminated these reserves. Demand has risen 100 percent since the dam was built and is projected to increase another 23 percent by 2020--placing demand well above the rivers' 13.5 MAF average annual flow.

Since 1979 there have been warnings that the Colorado River would fail on the supply-side because 11 percent more water has been allocated than the river can historically provide. Even more problematic is that Department of Energy research forecasts that climate change will cause Colorado River flows to decline 18 percent by 2040.

Precious water is being lost from the system

On average, Lake Powell and Lake Mead lose 1.3 MAF of water annually to evaporation, nearly ten percent of the river's annual flow.

It was not until the Autumn of 2004 that Lake Powell's storage actually factored into the water usage of people downstream. Prior to this time it caused the loss of 36 MAF due to evaporation and to seepage into the surrounding sandstone. Underground Storage should be more widely utilized

Depleted groundwater aquifers along the Colorado River represent a storage solution that could eliminate much of the water now being lost. In California and Arizona alone it is estimated that suitable sites containing a total of 41 MAF of storage are available along the system, and potentially another 46 MAF nearby. Aquifer recharge infrastructure in place now have the capacity to recharge 1.4 MAF of Colorado River water annually.

There is one dam too many in the Southwest desert.

Removing Glen Canyon Dam from the system, using Hoover Dam to capture annual flows while expanding groundwater storage could recover 810,000 acre feet annually now being lost to evaporation. This is enough water to support 1.6 million households of four people each.

The Destruction of Grand Canyon Resources must be stopped.

More than \$200 million has been spent in failed efforts to halt the demise of Grand Canyon National Parks's river ecosystem due to the impacts of Glen Canyon Dam. Four native fish are now extinct, one is in jeopardy and another is of special concern. Glen Canyon Dam has trapped the sediment necessary to maintain habitat and beaches for wildlife and recreation, as well as the stabilization of archeological sites.

Accumulating Sediment Presents a Serious Looming Problem.

Sediment is a major unresolved problem threatening the long-term operations of both Hoover and Glen Canyon Dams. Ultimately, sediment will have to be removed from one or both of these reservoirs. Removing sediment from Lake Mead rather than Lake Powell is the most feasible and least expensive likely alternative. While original estimates projected that sediment would not effect the safe operations of Glen Canyon Dam for another 60 years, scientists now warn that major problems could occur sooner.

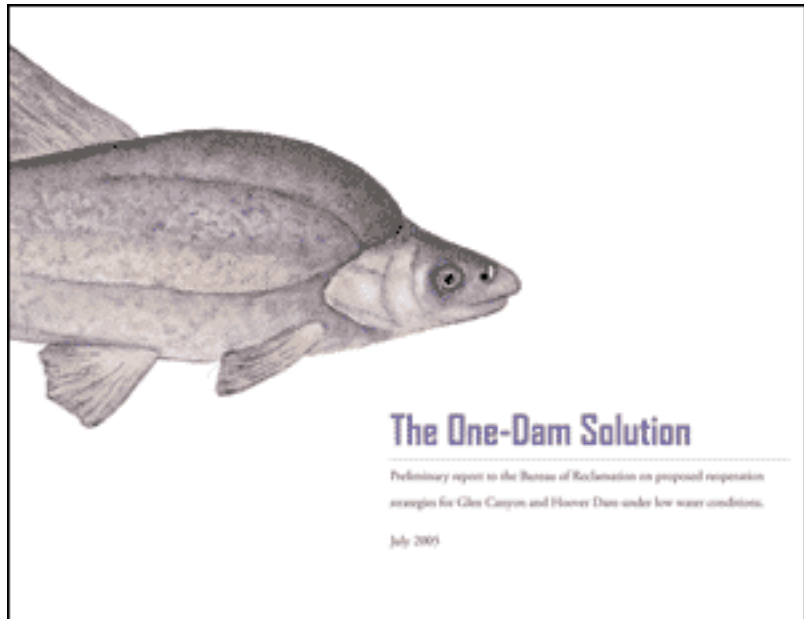
Hydropower and Recreation are Incidental Benefits

Lower reservoir levels have already resulted in reducing Glen Canyon's power production by 40 percent. This loss has been seamlessly absorbed elsewhere in the energy market. The same is true of recreation, which at Lake Powell has dropped 50 percent in the past 15 years. Such uses were deemed "incidental" to water management when these dam were authorized, and should be treated similarly as new management strategies are developed.

"There will be no efficient solution to managing the growing crisis in Colorado River water management without seriously rethinking how these dams are used, or not," adds Weisheit. "And when doing so, it's clear than when it comes to saving precious water, and restoring Grand Canyon in the process, one dam is better than two."

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[Click here](#) to download a pdf of *The One-Dam Solution*: Preliminary report to the Bureau of Reclamation on proposed re-operation strategies for Glen Canyon and Hoover Dam under low water conditions



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LR Testimony 07/25/05

## **The One-Dam Solution**

[This report](#) by Living Rivers calls for decommissioning Glen Canyon Dam as the primary action needed to reduce current and future economic and ecological impacts of dam operations to the Southwest.

The One-Dam Solution is supported by a growing list of [national and international non-profit groups](#).

The analysis reveals that increased water use and decreasing supplies raise questions about the need for both dams, especially in light of their tremendous evaporation losses. The report concludes that it would be more efficient to eliminate Glen Canyon Dam from the system and utilize Hoover Dam and adjacent underground storage to capture the limited amounts of surplus water that may be available in the future.

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#### Precious water is being lost from the system

On average, Lake Powell and Lake Mead lose 1.3 MAF of water annually to evaporation, nearly ten percent of the river's annual flow.

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#### Accumulating Sediment Presents a Serious Looming Problem.

Sediment is a major unresolved problem threatening the long-term operations of both Hoover and Glen Canyon Dams. Ultimately, sediment will have to be removed from one or both of these reservoirs. Removing sediment from Lake Mead rather than Lake Powell is the most feasible and least expensive likely alternative. While original estimates projected that sediment would not effect the safe operations of Glen Canyon Dam for another 60 years, scientists now warn that major problems could occur sooner.

#### Hydropower and Recreation are Incidental Benefits

Lower reservoir levels have already resulted in reducing Glen Canyon's power production by 40 percent. This loss has been seamlessly absorbed elsewhere in the

energy market. The same is true of recreation, which at Lake Powell has dropped 50 percent in the past 15 years. Such uses were deemed "incidental" to water management when these dam were authorized, and should be treated similarly as new management strategies are developed.

###

Boulder City, NV 89006-1470

Mr. Rick Gold  
Regional Director  
Bureau of Reclamation, Upper Colorado Region  
Attention: UC-402  
125 South State Street  
Salt Lake City, Utah 84318-1147

Dear Mr. Johnson & Mr. Gold,

Living Rivers, Colorado Riverkeeper, and the 144 undersigned organizations submit the following report, The One-Dam Solution, as scoping comments for the development of management strategies for operations at Lake Powell and Lake Mead, on the Colorado River, under low reservoir conditions.

With current demand for Colorado River water nearly at the river's historical annual flow of 13.5 million-acre feet (MAF) and rising, and government-sponsored scientists anticipating average annual flows to decline 18 percent by 2040, the prospect of ongoing low water conditions for Colorado River reservoirs is a near certainty. The average flow of 60 percent into the system for the past six years is firm evidence of this.

For more than 25-years, government scientists and administrators have warned that shortages would be occurring now. This action is the first to reexamine the flawed operational strategies that have been in place as far back as 1922 when the Colorado River Compact allocated 11 percent more water than the Colorado River has to give.

Reexamining these two reservoirs is critical, as they constitute more than two-thirds of the system's storage capacity, which with declining inflows and increased demand are proving excessive.

Meanwhile, these two reservoirs can cause the loss of upwards of ten percent of the river's average annual flow due to evaporation—valuable water for critical habitats and water users downstream.

Furthermore, the challenges facing the future operations of these reservoirs go beyond water allocation and storage inefficiencies. Sediment entering Lake Powell will eventually compromise Glen Canyon Dam's safety. Despite recent warnings that this could happen sooner than the 40-year-old estimate of 2060, there has been no comprehensive monitoring or analysis conducted to address this inevitable problem.

Lastly, despite more than \$200 million already spent, no gains have been made to restore the critical habitat for endangered species in Grand Canyon National Park impacted by Glen Canyon Dam's operations. The mandates of the Grand Canyon Protection Act and the Endangered Species Act in particular are being ignored to maintain Lake Powell even though it is proving to be both wasteful and unnecessary for water storage.

It is therefore critical that the Bureau of Reclamation broadly reexamine the operations of these facilities in accordance with preparing an Environmental Impact Statement to address the following:

- 1) Pursue transfers of Lake Powell and Lake Mead storage to groundwater aquifers.
- 2) Develop a sustainable sediment management program for Lake Powell and Lake Mead.
- 3) Determine the costs and benefits of decommissioning Glen Canyon Dam to restore natural flows through Glen and Grand Canyons.
- 4) Identify new water allocation guidelines to reflect the amount of water the Colorado River actually provides, how it should be distributed and what amounts are needed to protect critical habitats in Grand Canyon and elsewhere.

A water management crisis is looming on the Colorado River. The federal government, as Water Master, has the responsibility to help avert this. Most of the issues addressed in the attached report are not new, but continuing to ignore them will only worsen the impacts once the crisis arrives.

Thank you for the opportunity to submit these comments. We look forward to assisting the Bureau of Reclamation in developing this Environmental Impact Statement concerning the protection of water resources from the Colorado River in times of shortage.

Sincerely yours,

John Weisheit Conservation Director, Living Rivers Colorado Riverkeeper

Attachment: [The One-Dam Solution](#)

Submitted July 26, 2005 at Henderson, Nevada

On behalf of the following groups:

A Critical Decision  
Alabama Environmental Council  
Alaska Coalition  
American Wildlands  
Animas Riverkeeper  
Appalachian Forest Coalition  
Audubon Society of Greater Denver  
Ballona Institute

Black Warrior Riverkeeper  
Blackwater/Nottoway Riverkeeper  
Bluewater Network  
Boulder Regional Group  
Buckeye Forest Council  
Californians for Western Wilderness  
California Save Our Streams Council  
Casco Baykeeper  
Castle-Crown Wilderness Coalition  
Center for Biological Diversity  
Choqueyapu Riverkeeper  
Citizens of Lee Environmental Action Network  
Citizens Progressive Alliance  
Coalition for Jobs and the Environment  
Coastal Law Enforcement Action Network  
Cold Mountain, Cold Rivers  
Coloradans for Utah Wilderness  
Colorado Plateau River Guides  
Colorado White Water Association  
Columbia Riverkeeper  
Conservation Northwest  
Coosa River Basin Initiative  
Devil's Fork Trail Club  
Dogwood Alliance  
Earth Action Network  
Ecology Center  
Electors Concerned about Animas Water  
Endangered Habitats League  
Erie Canalkeeper  
Flagstaff Activist Network  
Forest Guardians  
Forest Watch  
Forests Forever  
Foundation for Global Sustainability  
Four Corners School of Outdoor Education  
Free the Planet  
Friends of Living Oregon Waters  
Friends of the Animas River  
Friends of Blackwater Canyon  
Friends of the Earth  
Friends of the Eel River  
Friends of the Estuary at Morro Bay  
Friends of Hurricane Creek  
Friends of the Milwaukee River  
Friends of the Nanticoke River  
Friends of Yosemite Valley

Gifford Pinchot Task Force  
Glen Canyon Institute  
Goods From The Woods  
Grand Canyon Private Boaters Association  
Grand Riverkeeper  
Great Egg Harbor Watershed Association  
Great Old Broads for Wilderness  
Greenaction for Health and Environmental Justice  
Green Delaware  
Green Party of Utah  
Green Party of York County  
Hells Canyon Preservation Council  
Hudson Riverkeeper  
Hurricane Creekkeeper  
Indiana Forest Alliance  
Inland Empire Waterkeeper  
International Rivers Network  
International Society for Preservations of the Tropical Rainforest  
Johnson County Green Party  
Jumping Frog Research Institute  
Kern Valley River Council  
Kettle Range Conservation Group  
Land Institute  
London Canalkeeper  
Lone Tree Council  
Los Alamos Study Group  
Louisiana Bayoukeeper  
Lower Neuse Riverkeeper  
Maricopa Audubon  
Milwaukee Riverkeeper  
Montana River Action  
Morava Riverkeeper  
National Organization for Rivers  
National Water Center  
New Riverkeeper  
New River Foundation  
Northwest Rafters Association  
Northwoods Wilderness Recovery  
Neuse River Foundation  
Ogeechee-Canoochee Riverkeeper  
Orange County Coastkeeper  
Oregon Natural Desert Association  
Outdoor Adventure River Specialists  
Outward Bound West  
Patapsco Coastkeeper  
Patrick Environmental Awareness Group

Puerto Rico Coastkeeper  
Raritan Riverkeeper  
Red Rock Forests  
Restore: The North Woods  
Ridgeline & Open Space Coalition  
River Runners for Wilderness  
Riverhawks  
Rocky Mountain Peace and Justice Center  
Russian Riverkeeper  
Sacramento River Preservation Trust  
Salt Creek Watershed Network  
San Diego Coastkeeper  
San Luis Obispo Coastkeeper  
Santa Monica Baykeeper  
Satilla Riverkeeper  
Save the Illinois River  
Siskiyou Project  
Snake River Alliance  
South Riverkeeper  
South Yuba River Citizens League  
Southern Appalachian Forest Coalition  
Southern Utah Wilderness Alliance  
Spirit of Sage Council  
Swan View Coalition  
Taking Responsibility for the Earth and Environment  
Taxpayers for the Animas River  
The Clinch Coalition  
The River Project  
Umpqua Watersheds  
Upper Coosa Riverkeeper  
Upper Neuse Riverkeeper  
Ventura Coastkeeper  
Virginia Forest Watch  
Waterkeepers of Australia  
West/Rhode Riverkeeper  
Western Lake Erie Waterkeeper  
Western Lands Project  
Western Watersheds Project  
Wetlands Action Network  
Wild South  
Wild Virginia  
Wild Wilderness  
Wilderness Watch  
Wildlaw

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LR in the News 07/26/05

## **Future of Colorado River subject of meeting**

### **Utah environmental group seeks dismantling of Glen Canyon Dam, proposes pumping reserve water into aquifers**

By HENRY BREAN LAS VEGAS REVIEW-JOURNAL

The Bureau of Reclamation will hold a public meeting in Henderson today on the future of the Colorado River, and a Utah environmental group plans to be there to call for an end to North America's second largest man-made reservoir.

Moab-based Living Rivers wants the federal government to tear down Glen Canyon Dam and allow Lake Powell to drain downstream, a move the group argues would save water and revitalize the Grand Canyon.

"We've got to do something because it's obvious the Colorado River doesn't have any more to give," said John Weisheit, Living Rivers conservation director.

But state and federal water officials insist the dam and the reservoir behind it are far too important to simply dismantle.

"The groups out there are free to have their own suggestions and their own opinions, but from the bureau's perspective, it is not an issue we have under consideration," said Doug Hendrix, spokesman for Reclamation's Upper Colorado Regional Office. "The intent of the reservoir is to provide long-term carry-over storage for Colorado River water users."

Lake Powell has served that role well in recent years, said Vince Alberta, spokesman for the Southern Nevada Water Authority.

"The value of Lake Powell has never been more significant than over the last six years, when the Colorado River has been dealing with the worst drought on record," Alberta said.

"Without Lake Powell, Lake Mead would have been pretty close to empty before this in-flow year," Hendrix said.

Today's meeting is scheduled for 10 a.m. to noon at the Henderson Convention Center on Water Street. The bureau will hold a second meeting from 10 a.m. to noon Thursday in Salt Lake City.

Reclamation officials are seeking public input as they prepare to consider new management strategies for Lake Mead and Lake Powell, where water levels have dropped in the face of drought and increased demand by water users.

Interior Secretary Gale Norton has called on the Lower Colorado River Basin states of Nevada, Arizona and California and the upper basin states of Colorado, New Mexico, Utah and Wyoming to adopt new management strategies for the lakes.

Norton has also directed the states to agree for the first time on rules for dividing a shortage on the river.

She wants both issues decided by the start of 2007, or the federal government will impose a solution of its own.

About 90 percent of Southern Nevada's drinking water comes from the Colorado River.

In a 24-page report titled "The One-Dam Solution," Living Waters argues that decommissioning Glen Canyon Dam is necessary to restore natural habitat along the Colorado and protect wildlife, recreation and cultural resources within the Grand Canyon.

The move also would save water, since about 6 percent the Colorado River's annual flow is lost to evaporation and seepage from Lake Powell, which straddles the Utah-Arizona border at the northeastern end of the Grand Canyon.

Instead of storing water in the giant, open-air reservoir, the Living Rivers report released this week recommends pumping the water into depleted groundwater aquifers along the Colorado River, where it could be stored with comparatively little evaporation.

According to the report, there is enough aquifer space in California and Arizona alone to store almost twice as much water as Lake Powell can hold when it is full.

But Alberta called the Living Rivers plan "cost prohibitive."

"The spike flows on the Colorado River would make it extremely difficult to make an artificial recharge system large enough to accommodate the volume of water over the run-off period," he said. "Lake Powell has risen more than 50 feet over last few weeks alone."

One way or another, Glen Canyon Dam will not last forever, Weisheit said. Unless something is done, silt carried by the river will build up at the base of the dam until it endangers the structure.

"This is going to happen anyway," Weisheit said of losing the dam. "Why are we putting this off?"

The Bureau of Reclamation will accept public input through Aug. 31 on how the Colorado River should be operated during low reservoir conditions.

Comments can be sent by fax to 702-293-8156, by e-mail to [strategies@lc.usbr.gov](mailto:strategies@lc.usbr.gov), or by surface mail to Regional Director, Bureau of Reclamation, Lower Colorado Region, Attention: BCOO-1000, P.O. Box 61470, Boulder City, NV 89006-1470.

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LR in the News 07/26/05

## **Draining Lake Powell not an option, federal water officials say**

By KEN RITTER  
ASSOCIATED PRESS

HENDERSON, Nev. (AP) - Decommissioning Glen Canyon Dam and draining Lake Powell is not an option for managing the Colorado River during years of drought, federal officials said Tuesday.

"Our direction from Congress has been, 'Don't study that,'" Terry Fulp, Bureau of Reclamation Lower Colorado area manager, said of a proposal by a Moab, Utah-based environmental advocacy group.

Millions of gallons of water lost to evaporation could be saved by removing the dam in Page, Ariz., the Living Rivers group said in a report outlined for bureau officials.

Water managers took public testimony Tuesday as part of Interior Secretary Gale Norton's command to establish rules to limit interstate squabbles while managing the river during shortages.

A 1922 agreement allocating Colorado River water does not specify how it should be shared during drought. Norton in May rejected a request by four states in the river's upper basin - Colorado, Utah, Wyoming and New Mexico - to reduce releases of water from drought-depleted Lake Powell to more quickly refill the reservoir.

The decision was seen as a victory for California, Nevada and Arizona - three lower basin states that rely on allocations from the downstream Lake Mead reservoir. But Norton made it clear she wanted the states to find a way to share the water without federal involvement.

"This boils down to how we deal with droughts in the future," said Ken Albright, an official with the Las Vegas-based Southern Nevada Water Authority who said he was speaking for the seven Colorado River basin states. "We'll do it, or they'll do it for us."

"Today we have no answers," Fulp said. "We're only trying to get questions and comments about where we're headed."

Another session is scheduled Thursday in Salt Lake City.

The information-gathering process may lead to one or more environmental studies before yielding a December 2007 report, Fulp said.

Nine people spoke Tuesday at the Henderson Convention Center. Some acknowledged the rapid growth of cities such as Denver, Salt Lake City, Albuquerque, Las Vegas and Phoenix was increasing pressure to rewrite river allocation rules drawn up decades ago to serve agricultural needs. Mexico also has a stake in Colorado River flow south of the border.

"You're basically going to be in permanent drought," said Michael Jackson, a lawyer representing a farm family in California's Imperial Valley. "There's not going to be water to fill those reservoirs because of demand."

David Weisheit and David Haskell, Living Rivers officials, said they accelerated the release of a report calling for the decommissioning of the Glen Canyon Dam to coincide with the Bureau of Reclamation review.

They contended that lakes Powell and Mead, the largest of the more than 40 reservoirs in the Colorado River basin, lose 1.3 million acre-feet of water a year to evaporation - or about 10 percent of the annual river flow. An acre-foot equals 325,851 gallons, enough to serve one or two households for one year.

Haskell said capturing water at upstream reservoirs or letting it seep into the ground to recharge underground aquifers would be more efficient.

Rapid silt buildup also could render the Glen Canyon Dam ineffective faster than builders projected, they said.

The dam, which they said contributes to ecological damage in the Grand Canyon downstream, was completed in 1963. Lake Powell, when full, covers 266 square miles, mostly in Utah.

"Somebody's got to be looking out for the future," Haskell said.

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On the Net: U.S. Bureau of Reclamation: <http://www.usbr.gov>

Living Rivers: <http://www.livingrivers2.org>

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LR in the News 07/30/05

## **Draining of Lake Powell urged**

Group cites loss to evaporation

The Arizona Republic

By MARK THIESSEN  
Associated Press Writer

SALT LAKE CITY (AP) - A Utah environmental group on Thursday renewed its call for Glen Canyon Dam to be decommissioned and Lake Powell drained to stop the massive yearly evaporation of stored Colorado River water, saying there is a better use for it in the water-starved West.

"We believe 800,000 feet of water could be available to the lower basin," said John Weisheit, with the Moab-based Living Rivers group. "We think that is a significant amount of water."

The group issued a 24-page report - titled the [One-Dam Solution](#) - this week ahead of two federal Bureau of Reclamation meetings seeking comment on plans to manage Lake Powell and Lake Mead during drought.

By having only Hoover Dam in Nevada capture water and using extensive underground storage, enough water could be saved to support 1.6 million households of four people each, Weisheit said at Thursday's meeting here.

When Weisheit spoke at a similar meeting Tuesday in Henderson, Nev., he was told the bureau has been directed by Congress not to study that.

"Living Rivers thinks it's highly undemocratic that we are not allowed to discuss and debate the study of the facility that uses public money," Weisheit said Thursday. "If Glen Canyon Dam is needed, the studies will prove that. If it is not, then that will be the case, too, and we should let science decide what is best for the resources of the Colorado River."

There was no debate Thursday as water managers only took testimony for review. More hearings may be held before the bureau's management report is issued in December 2007.

This week's meetings were part of Interior Secretary Gale Norton's command to establish rules to limit fights among states while managing the river during shortages. A 1922 agreement allocating Colorado River water does not specify how it should be shared during drought.

Norton in May rejected a request by four states in the river's upper basin - Colorado, Utah, Wyoming and New Mexico - to reduce releases of water from drought-depleted Lake Powell to more quickly refill the reservoir.

The decision was seen as a victory for California, Nevada and Arizona - three lower basin states that rely on allocations from the downstream Lake Mead reservoir. But Norton made it clear she wanted the states to find a way to share the water without federal involvement.

Nine people testified Thursday, some urging the government not to ignore the financial rewards from recreation and tourism at both lakes and nearby recreational areas.

Fourteen million visitors annually result in direct and indirect economic benefit to the economy, said Kitty Roberts, superintendent for the Glen Canyon National Recreation Area.

But five years of drought "has negatively affected recreation use and likely caused significant changes to the local and regional economies," she said.

The National Park Service has spent more than \$20 million over the past three years responding to the drought, with the money being used for things like closing or extending launch ramps, moving or adjusting docks.

She urged bureau officials to establish critical water levels on both lakes so recreation services won't have to be curtailed.

Steve Ward, president of Friends of Lake Powell, asked the bureau to consider adjusting water depending on conditions to stabilize the lake's level.

"More efficient reservoir operation would help prevent overflowing spills in the wet years and slow the drawdowns during severe droughts that can jeopardize hydroelectric power production," he said. ---

On the Net:

Bureau of Reclamation: <http://www.usbr.gov/>

Living Rivers: <http://www.livingrivers2.org/>

Glen Canyon National Recreation Area: <http://www.nps.gov/glca/>

Lake Mead National Recreation Area: <http://www.nps.gov/lame/>

Hoover Dam: <http://www.nps.gov/lame/>

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Regional News 08/25/05

### **Arizona braces for water war**

\$1.5 million sought to fight Colorado River lawsuits

Shaun McKinnon  
The Arizona Republic

Arizona has created a legal defense fund to protect its Colorado River allocation in the event a simmering dispute among other states flares into a regional water war.

The state hopes to raise at least \$1.5 million in the coming months to prepare for possible lawsuits, though officials admit costs could climb many times higher if the dispute spills into a courtroom.

At stake is Arizona's ability to grow. A worst-case loss in court could force the state to give up half of the water that flows through the Central Arizona Project Canal and leave it in reservoirs to benefit upstream users or satisfy a treaty with Mexico.

Most of that water is now reserved for cities in Maricopa, Pima and Pinal counties or set aside to settle claims with Indian tribes.

Representatives from all seven Colorado River states will meet today in San Diego to consider a plan that might solve some of the issues without legal action. The plan is aimed at wringing every possible drop from the river even if it means punching holes in clouds.

The states hope to submit their proposals to Interior Secretary Gale Norton next week as part of a larger effort to create a long-term drought plan for the Colorado. Drought and growth have pushed the river past its limits and renewed tensions among the states, whose bickering dates back decades.

Without a workable plan, "litigation is inevitable at some point," said Herb Guenther, director of the state Department of Water Resources. "We've been staring at it for a long time. But we're trying to avoid the head-on collision and see if we can't work together on these issues."

Guenther's agency ponied up the first \$200,000 for the defense fund, and the state will ask boards governing the CAP and Salt River Project to contribute similar amounts. Guenther said a fund-raising committee will then seek donations from others with a stake in the river, including cities and home builders.

The state has also retained a lawyer who specializes in water to help with legal research and planning.

The decision to begin raising money for legal action pushes Arizona further into a battle that it had largely avoided in recent years, though the state is certainly no stranger to river wars. Arizona vs. California, a landmark case that helped define the way the Colorado is managed, grew out of Arizona's refusal to ratify the original river compact.

"The Colorado River is extremely important to the state of Arizona," said John Sullivan, associate general manager of SRP's water group and a member of the fund-raising committee. "When other states begin to make noises about threatening Arizona's supply, I think the whole state needs to get involved."

The threat stems from arguments over how the river and its tributaries are divided among users. In states along the upper river, which include Colorado, Wyoming, New Mexico and Utah, water taken from tributaries is counted against the states' shares.

In states on the lower river - Arizona, Nevada and California - tributaries are not included in the accounting. That means Arizona, the primary beneficiary to the difference in rules, can use water from the Salt and Verde rivers, for example, and still take its full share of the Colorado.

Arizona won the tributary issue during negotiations over the original Colorado River compact, the set of laws and agreements that governs the river. But, in recent years, Colorado and other upper river states have argued that the lower river states have abused the rule and, as a result, take more than they should.

What may force the argument to the table is a plan by Nevada to divert water from the Virgin River to thirsty Las Vegas, which has exhausted its Colorado River allocation. The Virgin flows into the Colorado at Lake Mead.

Officials from Colorado and Wyoming protested the proposal, telling federal regulators it would rob the Colorado River of a significant amount of water. Those states say that, because the Virgin flows into the Colorado, any water taken from it should be counted against Nevada's share.

Arizona officials fear that, if the dispute over the Virgin River lands in court, the upper river states could demand that other states account for water taken from their tributaries. In addition, the upper river states could ask the court to force the lower river states to deliver all the water that Mexico gets from the Colorado, an obligation all seven states now share.

State officials believe as much as 750,000 acre-feet could be lost. Because the CAP holds the most junior rights to the river, the water would be taken from the canal, leaving it at half-strength. (An acre-foot covers an acre to the depth of 1 foot, or 325,851 gallons. It would meet the needs of a family of five for a year.)

CAP officials believe the seven states can forge an agreement and avoid court, but they acknowledge the risk.

"We all have something at risk when we litigate," said Sid Wilson, the CAP's general manager. "If we could work together on a program of management, we could all be winners for a good long while."

The plan under consideration today would focus on augmenting the river's flow, adding water by seeding clouds, removing non-native vegetation such as salt cedar, adding storage on the lower river and simply managing the water more efficiently.

Wilson said he is confident such an approach could add 1 million acre-feet of water or more per year, easing the pressure on the lower river states.

Pat Mulroy, general manager of the Southern Nevada Water Authority, said what is happening now could be "a lot of saber-rattling," but she said Nevada can't just do nothing.

"It would show a real failure on everyone's part if we end up in court," she said. "If we're pushed, we may not have a choice. Given what our resource picture is, we have no choice but to be dogged."

Colorado created its own legal fund earlier this year and staked out its position that the lower river states, Arizona in particular, have taken more than their share of Colorado River water. Officials there have softened their public stance and have pledged to work on a cooperative plan.

"We believe that we water professionals should be able to do a better job of managing the river than leaving it up to a judge or a court," said Scott Balcomb, Colorado's representative on the Upper Colorado River Commission. "Our thrust right now is to attempt to get some kind of a seven-states agreement in place"

"(Still), I don't blame Arizona for being concerned about the situation that is unfolding," he said.

"My boss was quoted in the Colorado papers indicating that if we needed to, we would have our own legal defense fund ready. Being ready to litigate, if that turns out to be the only option, is only prudent. None of us is gambling on an agreement."

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LR in the News 08/29/05

### **Glen Canyon Dam set for flow test to revive habitat**

New twist: Officials will reduce high-low water fluctuations in hopes of restoring the environment for native fish species

By Joe Baird  
The Salt Lake Tribune

They will be slowing the flow at Glen Canyon Dam this week, the latest installment in a series of attempts to analyze and ultimately revive the habitat for endangered native fish species in the lower Colorado River.

Beginning Thursday and continuing through Saturday, the Bureau of Reclamation - which operates the dam - will start reducing Glen Canyon's high-low water fluctuations to roughly half of what they have been this month. The lower flows will continue for the following three weeks, then bureau officials will smooth the releases to a steady level before resuming the reduced fluctuations in October.

The flow adjustments are all part of a larger scheme by federal officials to restore the Colorado River to something closer to its natural habitat in the Grand Canyon, with the goal of reviving fish species such as the humpback chub. This week's flow test follows a Glen Canyon release last November in which flows were substantially increased in a bid

to wash sediments down the river to create the sandbars and backwaters that young native fish need to survive. This time around, bureau officials and scientists will be assessing water temperature changes and the food sources that come downstream in the course of the river fluctuations.

Water flowing naturally downstream warms during the summer, but the water released from Glen Canyon Dam is typically much colder because it comes from the deep recesses of Lake Powell. The new twist, according Dennis Kubly, manager of the bureau's adaptive management plan, is that because of the drought and the reservoir's depleted supply, the water released from Glen Canyon is currently warmer than usual - providing bureau analysts with an opportunity. "There is strong evidence that these fish will grow faster in warmer water than colder water," Kubly said.

"They'll be larger at the end of the year; they'll have a better chance of survival than the smaller fish."

But as has been the case with the bureau's other flow test experiments, this latest release is drawing flak from some environmental groups, who argue that the experiments have been a failure. "What they're trying to do is artificially create a natural river habitat with the dam, but that can't be done," said John Weisheit, conservation director of the Moab-based Living Rivers organization. "That 700-foot dam is trapping all the sediment in Lake Powell, and along with it all the nutrition - carbon, trees, driftwood - which creates food base for these fish."

Weisheit says the humpback chub has re-established itself in the Little Colorado River, which feeds into the Colorado. What the bureau is attempting to do, he says, is create a second stronghold - which is a worthy goal, in and of itself.

"But it's not working," he added, "because the sediment continues to be pushed downstream because of the normal fluctuating flows from power generation." Bureau manager Kubly says it is too early to begin making those kinds of assessments.

"People want to reach conclusions quickly," he said. "But sometimes they do it before the evidence comes out in the science."

Beginning Thursday, Glen Canyon Dam's August flows, which have ranged from 10,000 to 18,000 cubic feet per second (cfs), will be reduced to 6,500 to 9,000 cfs. Those daily fluctuations will be adjusted to a steady 8,000 cfs beginning Sept. 21, with the reduced high-low flows resuming from Oct. 8 through the end of the month.

Normal dam operations will resume on Nov. 1.

[jbaird@sltrib.com](mailto:jbaird@sltrib.com)

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Regional News 09/11/05

## **The Colorado River system: Dams and drought**

John W. Keys III  
Salt Lake Tribune

**Note:** this opinion piece is longer available on the Salt Lake Tribune's web page.

The numbers are in and the winners are - the more than 25 million people who depend upon the Colorado River system for their daily water supply.

After serving the people of Arizona, California, Colorado, Nevada, New Mexico, Utah and Wyoming through the worst five-year drought in 100 years of record-keeping, the Colorado River system is recovering and recharging. In doing so, immediate needs and obligations will continue to be met while we regain storage for the next dry period.

My views on the Colorado River system are shaped by two equally important vantage points. I'm writing this from my desk in the Interior Department in Washington, D.C., where I am commissioner of the Bureau of Reclamation, the agency entrusted by the Interior Department to manage water in the West.

Equally, I also feel that I am writing from my back porch in Moab, Utah, where my home is. You see, I am also one of those 25 million people who keep a careful eye on the Colorado River as it rolls past our towns and farms.

All across the Colorado River Basin, the smaller water projects that Reclamation has constructed over the years refilled. As the drought persisted, those reservoirs were taxed to the maximum. Many were drawn down to near bottom. Without them, cities and farms alike would have been bone dry years ago.

Looking at Lake Powell behind Glen Canyon Dam, I really understand the foresight of those in Congress and past administrations who formulated the Colorado River Storage Project. They envisioned that a long-term drought would develop at a point in time when growing populations and water demands would run head-to-head with a drought-starved water supply.

Over the past five years, Lake Powell went down by two-thirds of its capacity, but in doing so it insured that Lake Mead behind Hoover Dam would stay viable. Without Lake Powell, there would have been no Lake Mead. Without the two dams, Arizona, California and Nevada and Mexican water users would have had serious troubles.

I can't overstate the importance of storing spring runoff. The Colorado River is one driven by winter snowfall, spring melt and high runoff, and then low summer and fall flows. Unlike the great rivers in the eastern states, it is not heavily influenced or served by summer rainfall. Here we must take what Mother Nature gives us in snowmelt, conserve it, and carefully release it throughout the rest of the year.

So, in a few words, why is Lake Powell so important? Why does it stand out from all the other storage on the Colorado River?

Lake Powell gives us the long-term storage capacity to ride out droughts and to deal with the increasing demands that come with the phenomenal economic growth in the Southwest. Naysayers who question Lake Powell's relevance somehow believe that because the Southwest will continue to grow, further taxing the water supplies, that becomes the reason to do away with Lake Powell.

The logic escapes me. We need to be stewards of our stored water, the Bureau of Reclamation working with the states. As I've said time and again, the keys to viability and survivability for the Southwest come in balancing growing demands for water, respecting state water laws and the treaty with Mexico, and stretching limited supplies through inevitable prolonged drought conditions.

We are doing that today and we will continue in generations to come.

When I think of Lake Powell, I really do think of Secretary Gale Norton's "4 C's" credo that guides the Department of the Interior. It goes like this: Consultation, cooperation, and communication - all in the service of conservation. We are truly attempting to consult, cooperate, and communicate to conserve the single greatest resource we have in the Colorado River Basin - our water supply.

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John W. Keys III is commissioner of the U.S. Bureau of Reclamation.

[Living Rivers letter to Salt Lake Tribune](#)

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LR Letter 09/12/05

## **Response to Commissioner John Keys' 9/11 Opinion**

Editor,

It's appalling that in the wake of Hurricane Katrina, that Bureau of Reclamation Commissioner John Keys peruses the same public relations' strategy as FEMA Director Michael Brown.

In Keys' opinion piece "[The Colorado River system: Dams and drought](#)" he celebrates that people along the Colorado River are "winners" because reservoirs like Lake Powell kept water supplies flowing these past few years while the region experienced below average precipitation.

But just like FEMA's Brown, what Commissioner Keys continues to ignore are the findings of government scientists and Congressional investigators, who for nearly 25 years now have been warning that disaster is on the way.

- 1) That 11 percent more Colorado River water has been promised to the American people than the Colorado River has historically provided, leading to supply problems as states now edge toward using their full allocation.
- 2) That lower snow pack is likely to be the norm due to climate change, and that water managers should be planning for ongoing flow reductions of 18 percent over the next several decades.
- 3) That Lake Powell and Lake Mead lose to evaporation annually ten percent of the Colorado River's annual flow, whereas this water could be stored underground without such waste through the minimal use of Hoover Dam alone.
- 4) The unnecessary use of Lake Powell is causing the near collapse of the river ecosystem in Grand Canyon National Park.
- 5) That despite sediment forcing the closure of Lake Powell facilities and heading toward the dam, Keys has no plan for this looming safety problem.

But given how the Bush Administration is so fond of telling the truth, I guess we should not be surprised when Commissioner Keys' states "the logic escapes me" as to why we should be looking toward draining Lake Powell as a cornerstone of more efficient and environmentally sound means toward protecting scarce Colorado River water.

The party will soon be over on the Colorado River, but instead of too much water from Katrina, the people of the Colorado will find they don't have enough.

Who will be the winners then Commissioner Keys?

John Weisheit  
Conservation Director  
Living Rivers & Colorado Riverkeeper  
Moab, Utah

["The Colorado River system: Dams and drought"](#), by John Keys Commissioner of the Bureau of Reclamation.

Salt Lake Tribune, Saturday, September 11, 2005

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LR Press Release 09/12/05

### **Colorado River water users beware**

Bureau of Reclamation Chief follows in FEMA's footsteps

While the public continues to wrestle with the Bush administration's disregard for the truth in acknowledging that a Katrina-like event would eventually strike New Orleans,

the Bureau of Reclamation Commissioner is denying nearly three decades of warnings that water shortages are imminent for Colorado River water users.

In his opinion piece, ["The Colorado River system: Dams and drought"](#) published in the Salt Lake Tribune on Sunday, Bureau of Reclamation Commissioner John Keys stated that despite several years of reduced flows, all is well again for the 25 million people reliant on Colorado River water.

"After serving the people of Arizona, California, Colorado, Nevada, New Mexico, Utah and Wyoming through the worst five-year drought in 100 years of record-keeping, the Colorado River system is recovering and recharging. In doing so, immediate needs and obligations will continue to be met while we regain storage for the next dry period," wrote Keys.

Such logic runs contrary to the advice of government scientist and Congressional researchers. Since 1979 there have been warnings that the Colorado River would fail on the supply-side because 11 percent more water has been allocated than the river can historically provide. Even more problematic is the Department of Energy research forecast that climate change will cause Colorado River flows to decline 18 percent by 2040.

"It's terrible what has happened on the Gulf Coast and while we are fully sensitive to all those affected by Katrina, there's another kind of lack of preparedness prevailing along the Colorado. But instead of too much water, there will be too little, " says John Weisheit, Conservation Director for the Utah-based Living Rivers & Colorado Riverkeeper.

"Science and common sense tell us that recent reductions in river flows were not some hundred-year aberration, as Commissioner Keys claims. But should instead be viewed as a stern warning that increased demand and decreased supply have taken root in the Colorado River watershed and we are unprepared for the repercussions," Weisheit adds.

The only attention the Bureau of Reclamation has given to Colorado River water shortages began in July—a [two-year study](#) on reoperating the Colorado River systems two largest reservoirs, Lake Powell behind Glen Canyon Dam and Lake Mead behind Hoover Dam, when low water levels occur.

In response to the proposed reoperation, Living Rivers and 85 other groups from across the country demanded that a much broader approach be taken. In their report "The One-Dam Solution" they highlighted how the Bureau must prepare for much lower flows over time, and be more efficient in how it stores scarce Colorado River water.

"Moving minimal water from one dam to the next will be of little value to those without water," continues Weisheit. "They must address the fundamental problem that there will no longer be enough water to go around, and that these dams themselves are part of the problem."

A key finding of "The One-Dam Solution" is how evaporation from these two reservoirs causes the loss of ten percent of the Colorado River's annual flow every year. By eliminating the use of Glen Canyon Dam and using Hoover Dam alone for capturing snowmelt, then routing water to more efficient underground storage, enough water for six million people could be saved.

Commissioner Keys ignores such evidence, stating in his opinion piece, "the logic escapes me," as to why one might consider removing Glen Canyon Dam from the system.

"Maybe because it's not needed and is destroying Grand Canyon's ecosystem downstream," concludes Weisheit. "But the real problem is so much bigger than this dam, and that like Katrina, the Administration is ignoring that soon Colorado River water users won't have the water Commissioner Keys has promised."

###

Additional Information

["The Colorado River system: Dams and drought"](#), by John Keys Commissioner of the Bureau of Reclamation.

[Living Rivers letter to the Salt Lake Tribune](#)

[Keys tells more truth to CRWUA than to the people.](#) Read the remarks of John Keys to the Colorado Water Users Association at their last annual meeting.

LR Press Release, [The One-Dam Solution](#): Hoover Dam alone the solution for managing dwindling Colorado River water.

Bureau of Reclamation [program for reoperating Lake Powell and Lake Mead](#) under low water conditions.

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LR Press Release 10/24/05

## **Grand Canyon Restoration Program, a Failing Grade Government to release scorecard**

For immediate release

Contact: John Weisheit, 435-259-1063; Cell: 435-260-2590

PHOENIX - On the occasion of the tenth anniversary of the federal program established to reverse the ecological impacts of Glen Canyon Dam's operations on Grand Canyon's Colorado River corridor, government scientists will release an internal analysis of their progress.

"The State of the Colorado River Ecosystem in Grand Canyon" report will be presented and discussed at a three-day symposium which begins here on Tuesday.

"Their primary objective was to stop Grand Canyon's endangered native fish from going extinct and to help recover those species already lost, but after \$200 million spent, one more species has disappeared and another now hangs in the balance," says Living Rivers conservation director John Weisheit.

Living Rivers own assessment (below) of the Glen Canyon Dam Adaptive Management Program's 12 goals reveals that no progress is being made on eight. Two areas where progress can be claimed, hydropower production and preservation of non-native trout habitat, happen to be in conflict with the core objectives of native habitat restoration. The only other area of progress has been not to impinge on river recreation opportunities.

These program goals were rooted in recommendations of an Environmental Impact Statement (EIS) completed in 1995 to comply with the Grand Canyon Protection Act passed by Congress three years earlier. "All the past decade has taught us is that the findings and assumptions of the EIS were insufficient," adds John Weisheit. "The declining state of the ecosystem proves the program has been a failure and it's high time for a new EIS to be undertaken that reflects this new reality."

What Living Rivers and more than 200 other organizations have been calling for is the implementation of management strategies that will restore the natural processes that have been lost during the four decades since Glen Canyon Dam has been in operation, including:

- \* A water temperature regime that fluctuates seasonally from near freezing to 80 degrees Fahrenheit, not the year-round dam releases of 47 degrees.
- \* River flows that fluctuate seasonally from 3,000 to 100,000 CFS (cubic feet per second), not daily between 8,000 and 20,000 CFS.
- \* The return of the sediment required to maintain sandbar habitat and supply nutrients to the food web.
- \* The removal of non-native fish that inhabit the post-dam environment and compete with the native fish.

"This ten-year masquerade of a recovery program must come to an end," stresses Weisheit. "The habitat can no longer absorb this kind of help, and it's time to revert back to what nature intended by examining the benefits of decommissioning of Glen Canyon Dam."

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### **Living Rivers Scorecard Ten-Year Assessment of Glen Canyon Dam Adaptive Management Program Goals**

0=Failing; 1=Unacceptable; 2=No Effect; 3=Potential Progress; 4=Achieving Goal

**1. Protect or improve the aquatic food base so that it will support viable populations of desired species at higher trophic levels.**

An ongoing decline in composition, diversity and biomass of the native food base continues in the Colorado River, which will be modified further as low reservoir levels at Lake Powell change the downstream thermal regime which will result in additional chemical and biological changes to occur. (Score 0)

**2. Maintain or attain viable populations of existing native fish, remove jeopardy from humpback chub and razorback sucker, and prevent adverse modification to their critical habitat.**

Humpback Chub populations have declined 67 percent since the program began, and continues to be threatened with extinction. In November 2004 the AMP sponsored a beach rebuilding event in the Grand Canyon which resulted in documented significant losses to the remaining humpback chub populations. The razorback sucker is now confirmed to be extirpated from Grand Canyon. (Score 0)

**3. Restore populations of extirpated species, as feasible and advisable.**

There has been little effort, and no success, in establishing a second humpback chub population in the river's main stem as required by the program, nor has there been efforts to recover any extirpated species. The AMP focus appears to be concentrated primarily on the removal of trout which is a temporary Band-Aid as long as trout are allowed to remain above Lees Ferry. The AMP program primarily funds the continued monitoring of the demise of the species rather than focusing on specific actions that would support the recovery of the humpback chub. The US Fish and Wildlife Service has failed in its responsibility to recover and protect the listed fish species in the Grand Canyon. (Score 0)

**4. Maintain a naturally reproducing population of rainbow trout above the Paria River, to the extent practicable and consistent with the maintenance of viable populations of native fish.**

Trout populations have been preserved, but there has yet to be the establishment of viable populations of native fish which are prey to the trout, an appropriate balance, if indeed possible, has also yet to be achieved. The maintenance of the trout fishery above Lee's Ferry severely limits any potential action that can be taken to support the native fish species. (Score 2)

**5. Maintain or attain viable populations of Kanab Ambersnail.**

Attempts have been made to establish new wild populations of Kanab Ambersnails in three additional natural springs along the Colorado River. These sites are located above the historic high water mark, so that the new populations will be protected from the experimental scouring floods. (Score 3)

**6. Protect or improve the biotic riparian and spring communities including threatened and endangered species and their critical habitat.**

Marshes, riparian plant communities and sandy beaches are essential to maintain the diversity of wildlife, enhance visitor use and preserve cultural resources. Without sediment and nutrient replacement and effective exotic plant removal programs these resources will continue to degrade. Dam controlled releases and the lack of sediment input to the Grand Canyon ecosystem limits the extent of any protection or improvement effort. Again, the ongoing AMP program is oriented to the continued monitoring of the demise of the ecosystem. (Score 0)

**7. Establish water temperature, quality, and flow dynamics to achieve the Adaptive Management Program ecosystem goals.**

First proposed ten years ago, progress continues to be nothing more than talk in achieving temperature regimes or flow dynamics beneficial to native fish recovery. No actions have been taken to augment changes that are ongoing in the reservoir. Lack of action by the AMP to thoroughly evaluate changes in water chemistry, sediment supply and thermal regimes indicates that the program is more interested in maintaining the status quo than looking for solutions to the environmental problems below Glen Canyon Dam. (Score 0)

**8. Maintain or attain levels of sediment storage within the main channel and along shorelines to achieve the adaptive management program ecosystem goals.**

Despite several attempts to utilize specialized dam operating techniques to conserve sediment, such practices have proven not to achieve lasting results. Operations to periodically stir up the sediments in the Grand Canyon do not address the real problem of the lack of sediment supply. Without an aggressive approach to the management of sediment which includes the movement of sediment around Glen Canyon Dam, long-term solutions cannot be achieved. The proposal to augment the system with sediment from outside still continues to be nothing more than a ten-year discussion item. (Score 1)

**9. Maintain or improve the quality of recreational experiences for users of the Colorado River ecosystem, within the framework of the adaptive management program ecosystem goals.**

By in large, the "quality" of the recreational experience in the river corridor has not been unduly compromised by the program. However, this experience remains inconsistent and violates the basic precepts of the protection of the National Park and makes a travesty of the National Park Service Organic Act. The AMP program is keeping the status quo while allowing visitors to experience an ecosystems but violates the intent and purpose of the providing and environment that has been left 'unimpaired" for future generations. (Score 4)

**10. Maintain power production capacity and energy generation, and increase where feasible and advisable, within the framework of the adaptive management program ecosystem goals.**

Glen Canyon Dam power production has continued, and has at times has been modified to allow for scientific experimentation. However the intent of the AMP is to keep the power system functioning at all costs. Power production has been modified, but at times of year that are conducive to minimize power impacts instead of focusing on completing the studies during periods of the year that would show the most scientific value. Fulfilling this objective has significantly restricted options toward achieving the broader goal of ecosystem restoration. (Score 4)

**11. Preserve, protect, manage and treat cultural resources for the inspiration and benefit of past, present and future generations.**

Archeological resources along the river continue to be threatened by the lack of sediment to continuously rebuild and stabilize the banks. As a result, artifacts must be removed, as opposed to be protected in-situ as prescribed by historic preservation legislation. Native American tribes continue to have their programs reduced and their involvement limited to periodic river trips and occasional consultation. (Score 1)

**12. Maintain a high quality monitoring, research, and adaptive management program.**

The program has been plagued by staff turnover, the removal of staff and consultants whose findings may be disagreeable to water and power interests, and has abandoned the policy of obtaining peer review of their protocols and findings. Further the lack of following the intent of the National Resource Council recommendations and continuing the focus on monitoring and data management limit the intent and objectives and requirements of the Grand Canyon Protection Act. (Score 1)

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Additional information:

[Science Symposium program and location](http://www.gcmrc.gov/news_info/outreach/symposiums/2005/sym_2005.htm)

[http://www.gcmrc.gov/news\\_info/outreach/symposiums/2005/sym\\_2005.htm](http://www.gcmrc.gov/news_info/outreach/symposiums/2005/sym_2005.htm)

[Living Rivers letter asking for Supplemental Environmental Impact Study](http://www.livingrivers2.org/archives/article.cfm?NewsID=567)

<http://www.livingrivers2.org/archives/article.cfm?NewsID=567>

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LR in the News 10/27/05

**Dam still injuring Grand Canyon**

Geological Survey study: The restoration picture is not encouraging for the Colorado River ecosystem

By Joe Baird  
The Salt Lake Tribune

Thirteen years of effort and millions of federal dollars have not been enough to stave off the deterioration of the Colorado River's ecosystem below Glen Canyon Dam, according to a new report released Wednesday.

In the most extensive assessment of river conditions in the Grand Canyon since the creation of the Grand Canyon Protection Act in 1992, the U.S. Geological Survey study says endangered native fish species are still struggling, while sandbars and backwaters that serve as habitat for the fish as well as anchors for vegetation, havens for cultural resources and campsites for human visitors continue to decrease.

The report, produced by the agency's Grand Canyon Monitoring and Research Center, stopped short of calling federal attempts to restore the river and its shorelines a failure. But it makes clear there is still a long way to go to bring the environment back to anything close to what it looked like before Glen Canyon Dam and Lake Powell were created some four decades ago.

"We've learned a helluva lot, but we've also learned is that this is really, really hard," said Jack Schmidt, an aquatic, watershed and earth resources professor at Utah State University, who attended a symposium in Phoenix unveiling the study. "It's a real challenge to adaptively manage the river [and restore habitat] while also focusing on producing electricity and providing water for California. It's just damn hard."

Others were more blunt. At least one environmental group labeled the report proof that efforts by the Bureau of Reclamation - which manages Glen Canyon Dam - to revive the Colorado River below the dam have been a flop.

"When you add up all the numbers, over \$200 million has been spent on this, and 13 years after all this money has been spent, they have absolutely nothing to show for it," said John Weisheit, conservation director of the Moab-based Living Rivers, which has called for the decommissioning of Glen Canyon Dam. "The Grand Canyon, in my opinion, is worse off. There's less fish. Less sand. Fewer archaeological resources. The dam has become more of a liability than an asset."

Attempts to reach Bureau of Reclamation officials for comment were unsuccessful Wednesday. Built in 1963, Glen Canyon Dam has provided water and power for the West, but also transformed the Colorado River below it from muddy and warm to clear and cold, and altered and moderated its natural flows. The long-term results have been a gradual disappearance of sandbars and backwaters throughout the canyon, as well as the decline of native fish species, such as the humpback chub, and the emergence of new, non-native fish such as rainbow trout.

The Geological Survey study focused on efforts by federal managers since the creation of the Grand Canyon Protection Act, and specifically the establishment of the Glen Canyon Dam Adoptive Management Program - an attempt to reintroduce beaches and other native fish habitat into the Grand Canyon's bottom. The focus of those efforts: a series of high-flow test experiments, the most recent last November, that were designed to push more sediment downstream.

The big picture is not encouraging. According to the report, sandbars "continue to erode," and new sand brought downstream by the test flows have not accumulated in the main channel. Likewise, the humpback chub's population has decreased between 30 percent and 60 percent. Now on the endangered species list, it is one of four native fish species that survive in the Colorado River below the dam out of the original eight. But there also have been positive signs. Warmer water coming out of Lake Powell - depleted because of the drought - combined with a program to eradicate non-native fish from the river has resulted in an increase in juvenile humpback chubs, though it's unclear now how many will make it to adulthood. And last November's flow test, which came following heavy October rains, succeeded in pushing more sediment and creating sandbars in the upper reaches of Marble Canyon, even though it was shorter in duration than previous flow tests.

"We saw a limited restoration scenario in an area that had been subject to significant erosion," said Ted Melis, executive director of the Grand Canyon Monitoring Center. "We didn't see a larger impact because of the limits in sand, but with more supply, we might have seen more restoration throughout the system. That's a real positive outcome."

All sides agree on one point: The sediment issue will have to be resolved - both because its need in the Grand Canyon, and because the buildup of sediment in Lake Powell will eventually threaten the reservoir. A sediment pipeline, or dredging Lake Powell, could be in the offing at some point.

Temperature controls at the dam could also become a fixture, if they are proven to enhance native fish populations without introducing new problems.

"It might be hard and it might be costly," said Schmidt, the USU professor. "In fact, it might be so costly that the public might decide that we shouldn't try. Maybe we should tell the public that the cost of providing water and power is the decline of the Grand Canyon and the public will accept that. But the public might also say the Grand Canyon is too important and we should spend whatever it takes."

#### Grand Canyon health report

- \* The Grand Canyon ecosystem hasn't been repaired despite a long, costly effort.
- \* The disappearance of sandbars and native fish declines haven't been reversed by experimental releases from Glen Canyon Dam.

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LR in the News 10/28/05

### **Scientists still unsure of how to protect river in Grand Canyon**

By the Associated Press

PHOENIX — Scientists say they still don't know how to protect the Colorado River in the Grand Canyon without disrupting water and power production upstream.

Despite a decade of trying, few attempts have succeeded in trying to mimic the natural conditions erased by construction of Glen Canyon Dam, which supplies water and electricity to millions of people.

Endangered fish continue to disappear, habitat erodes almost as fast as it is rebuilt and interloping fish and plants find new ways to thrive.

The river's health as it courses through the Grand Canyon is the focus of a 10-year-old program created after environmental studies uncovered deteriorating conditions caused by Glen Canyon Dam.

The giant structure cooled the river, stripped it of sediment and nutrients and tamed its seasonal flows, which helped keep wildlife habitat vital.

Scientists admit that reversing the damage from 40 years of unnatural river flows could take decades and cost hundreds of millions of dollars.

Living Rivers, a conservation group, claims the best solution is to decommission the dam and return the river to its historic flow all the way through the canyon.

“We're sacrificing the Grand Canyon for that dam,” said John Weisheit, Living Rivers' conservation director.

“We just don't need it.”

Glen Canyon Dam, completed in 1963, supplies power across the West and stores water that eventually serves users in Arizona, Nevada and California.

Other restoration efforts also are under way, including a \$600 million lower-Colorado habitat-conservation program adopted this year by Arizona, Nevada and California.

But Weisheit said the government should stop spending money on ideas that will never solve the entire problem.

“They've spent \$200 million and there's been no improvement,” he said. “Nature's been doing this for millions of years for free.”

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LR in the News 10/28/05

## **Dam has hurt the Colorado**

River study yields few positives

Shaun McKinnon for the The Arizona Republic

Oct. 28, 2005

After more than a dozen years of trying, scientists still don't know how to protect the Colorado River in the Grand Canyon without disrupting water and power production upstream.

Few attempts have succeeded in trying to mimic the natural conditions erased by construction of Glen Canyon Dam, which supplies water and electricity to millions of people. Endangered fish continue to disappear, habitat erodes almost as fast as it is rebuilt and interloping fish and plants find new ways to thrive.

Even faint signs of progress may be as much the work of nature as the ongoing experiments on the river, according to information presented at a science symposium this week in Tempe. An increase in the number of endangered humpback chub occurred at the same time drought conditions warmed the temperature of water released from Lake Powell, creating better surroundings for the tiny fish.

The river's health as it courses through the Grand Canyon is the focus of a 10-year-old program created after environmental studies uncovered deteriorating conditions caused by Glen Canyon Dam. The giant structure cooled the river, stripped it of sediment and nutrients and tamed its seasonal flows, which helped keep wildlife habitat vital.

Although scientists tried to find reasons for optimism, they admitted that reversing the damage from 40 years of unnatural river flows could take decades and cost hundreds of millions of dollars. Some of the work will never end, they said, and some of the damage will go unrepaired as a trade-off for the benefits from the dam.

A river conservation group produced its own report card on the restoration studies and pronounced the effort a failure. The government-led program missed the mark on eight of its original 12 goals and achieved progress on two - power production and non-native fish habitat - that clash with true resource protection, according to Living Rivers.

The best solution, the group argues, is to decommission Glen Canyon Dam and return the Colorado River to its historic flow all the way through the Grand Canyon, an idea already rejected emphatically by government and business leaders. "We're sacrificing the Grand Canyon for that dam," said John Weisheit, Living Rivers' conservation director. "We just don't need it."

Glen Canyon Dam supplies power across the West and stores water that eventually serves users in Arizona, Nevada and California. The U.S. Geological Survey's report assumes the dam will remain in operation and focuses on issues ranging from endangered fish and plants to lost recreational opportunities along the river and in the canyon.

"Not everything in the report says what we're doing is working," said Denny Fenn, director of the USGS Southwest Biological Science Center, one of the agencies involved in the long-term studies. "But we're making progress."

The sheer size of the problem accounts for the slow work, scientists said. Glen Canyon Dam, completed in 1963, permanently transformed the Colorado from a wild river that

fluctuated with the seasons to a carefully controlled waterway that ebbs and flows based on water and power demands.

After environmental studies identified the changes to the river ecosystem, federal officials created the adaptive management program to study the problems and look for solutions that can be integrated into the operations of the dam and the river. This week's report examined several key problems:

- Sediment and erosion.

Before the dam was built, the Colorado moved about 29 million tons of sand and sediment through the Grand Canyon each year. The constant flow rebuilt beaches and sandbars as others washed away. The dam captures almost all of the upstream sediment, leaving only what flows from tributaries like the Paria and Little Colorado River.

In an effort to rebuild beaches and mimic the fluctuations of the old river, scientists have tried twice to create artificial floods by releasing extra water from the dam for several days. A 1996 flood produced mixed results, but a smaller experiment last November was more promising.

"There were clear indications of restoration," said Ted Melis, acting chief of the Grand Canyon Monitoring and Research Center. The question is whether there is enough sediment to sustain artificial floods.

Fenn said the goal is to hand over the flood and sediment experiment to the U.S. Bureau of Reclamation, which would incorporate the high flows into the dam's regular operations.

- Endangered fish.

The cooler water provided a poor environment for native fish like the humpback chub and razorback sucker, which hasn't been seen since about 1992. But the river is now ideal for such non-native species as rainbow trout, which prospered and quickly turned into a chub predator, eating newborns.

Chub numbers have fallen by as much as 67 percent. Scientists don't think the fish will turn extinct, as several other native species have, but a Canadian researcher at the symposium predicted the long-term numbers will remain below the recovery goals.

To help the chub and other native fish, scientists have removed trout from stretches of the river, but recent events suggest that water temperature may have more to do with the chub's long-term survival. The drought lowered water levels at Lake Powell, which raised the temperature of the river downstream. In surveys this past summer, the number of newborn chub rose significantly, said Lew Coggins, a fishery biologist at the research center. That's no guarantee they'll survive until adulthood, he said, and the warm waters aren't a perfect solution.

"There are risks because the warm water could allow for more expansion of non-native fish, and that could be an even bigger threat," he said.

- Drought.

At least half the study period occurred during a serious drought on the Colorado, and that may have colored some of the findings.

In addition to making it difficult to tell whether management or nature contributed to the higher number of newborn chub, the drought also limited the amount of sediment and sand carried toward the Colorado by the tributary rivers, said Fenn of the USGS. That forced the agencies to delay some of the flood experiments.

"It's clear that nature always plays a role and drought can compound the results," he said. The study released this week won't end the adaptive management work, Fenn said.

Other efforts are also under way, including a \$600 million lower-Colorado habitat-conservation program adopted this year by Arizona, Nevada and California. Weisheit, of Living Rivers, said the government should stop spending money on ideas that will never solve the entire problem.

"They've spent \$200 million, and there's been no improvement," he said. "Nature's been doing this for millions of years for free."

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Regional News 10/31/05

### **Experts worry about Colorado River estimates**

By Associated Press October 31, 2005

GRAND JUNCTION, Colo. — Some Colorado River experts worry a new federal process aimed at figuring out how to operate Lake Mead and Lake Powell in times of drought is being overly generous in its assumptions of how much water is available.

They caution the overestimate could cause problems in the future, echoing the mistake the West's water honchos made in the early 1920s when they divided up the river's water during a time of plenty.

Years after the 1922 Colorado River Compact, the document that divided the water among seven western states, officials discovered the allocation was much higher than the river's historical flow. The result was a serious water deficit that left water lawyers in the 21st century to figure out the mess.

"They knew they were overdeveloping the system back then, and they left us to deal with it," said Jim Lochhead, an attorney in Glenwood Springs who represents a group of Colorado cities and water districts in system discussions.

Officials with the Colorado River Water Conservation District don't want to repeat the past mistake.

The U.S. Bureau of Reclamation is working on a series of models that analyze a number of scenarios for operating Lake Powell and Lake Mead in tandem, eventually calculating how much water should be released from Lake Powell during dry spells to satisfy users downstream.

Feds hope the process will be completed by 2007, with the goal of minimizing water shortages to the Lower Basin states of California, Arizona and Nevada. The Upper Basin states of Colorado, Wyoming, Utah and New Mexico also hope their water shortages will be minimal.

Eric Kuhn, general manager of the Colorado River Water Conservation District in Glenwood Springs, said the bureau's current modeling looks at the period from 1906 to 1995 to calculate the reservoir scenarios.

"The future may not look like the recent past," he said. "Using the entire 1906 to 1995 period understates the probabilities of shortage in today's current climate conditions."

Kuhn worries the bureau's hydrology could lead this round of Colorado River Compact negotiators down the same slippery slope their ancestors sent them hiking to, setting up even more problems for the future.

There's not enough worst-case scenario thinking, he said.

But the bottom line for Upper Basin states is that many of the operating scenarios put Lake Powell in the shallow end of the pool.

"A lot of options on the table right now benefit the Lower Basin, and most of them reduce water in Lake Powell," Kuhn said.

Some of the scenarios even bring water levels at the reservoir below minimum power pool, eliminating the ability to create hydropower at Glen Canyon Dam.

"It's one of the proposals on the table, but I don't know if it's serious," he said.

All seven basin states have agreed that strategies should be in place to delay the extent of water shortages to the Lower Basin during drought, but the Upper Basin doesn't want to increase its own risk in the process.

Hydropower, recreation on the popular Lake Powell and a host of side issues keep the process as complicated as ever.

As a result, discussions have become a tennis match of wish lists.

Scott Balcomb, the water attorney appointed by the governor to represent Colorado in the basin state discussions, said the basins were slowly working toward consensus.

"We're trying to process each other's issues, concerns and wishes," he said.

"Colorado wants to keep all of our water and learn to operate the system more efficiently."

The basin states have agreed to some vague ideas of how to minimize shortages on the system, pushing ideas such as conservation, tamarisk removal and the potential to exchange desalinated water into the Colorado River system.

But it's Nevada, a Lower Basin state, that has led the charge in generating wish lists, offering an array of unconventional ideas for solving its own water woes.

The state receives one of the smallest apportionments from the river, but Las Vegas, the main recipient of the water, has only enough water to continue its current rate of growth until 2013.

Pat Mulroy, Nevada's representative to the negotiations, has suggested diverting water from the Virgin and Muddy rivers east of Las Vegas to the city, but both rivers are tributaries to the Colorado River.

Colorado and the other Upper Basin states argue those rivers, and others like them in the Lower Basin, should be considered part of the Colorado River.

They contend that Lower Basin states are using the tributary water illegally when Upper Basin tributaries, such as the Gunnison River, already are calculated in Compact deliveries.

Colorado has threatened in the past to sue to bring tributary water in the Lower Basin into the Compact's jurisdiction.

Nevada presented the idea of diverting the Virgin and Muddy tributaries again during a meeting of the basin states in Denver on Friday.

"Nevada is pressing ahead on all of its options, including the Virgin and the Muddy," Balcomb said.

"They don't believe they have another choice."

Nevada did, however, back off a previous proposal to buy water from other states in the Upper Basin.

Utah has expressed an interest in the idea, but Colorado has remained vehemently opposed.

"Nevada knows that is one place we in Colorado will not go," Balcomb said.

"They know bringing up that concept again does not further any opportunities to truly discuss these new management scenarios."

For now, basin state representatives will continue to gather and peruse graph after graph of hydrological information, trying to come up with future reservoir operations from the Bureau's assumptions.

"It's a fairly complex process on a tight timetable," Lochhead said. "The issues are framed, but now is the hard part, talking about them."

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Take Action 11/01/05

## **Comments needed to halt the operation of Glen Canyon Dam**

Submit Comments by: Wednesday, November 30, 2005

The Bureau of Reclamation is accepting public comments on the reoperation of the nation's two largest reservoirs, Lake Powell and Lake Mead. Your voice is needed to demand that they examine the viability of permanently ceasing operations at Lake Powell and employing just one reservoir to capture and manage the bulk of Colorado River flows.

**Join in calling for the [The One-Dam Solution](#) as outlined in Living Rivers' new report prepared for the reoperation public scoping process.**

Let the Bureau of Reclamation know that:

1. No longer a need for a single-use dam at Glen Canyon It was not until the fall of 2004, more than 40 years after Glen Canyon Dam began impounding Lake Powell that Lake Powell water storage actually augmented water storage downstream. But with climate change already causing long-term flow reductions, and water consumption levels near the river's historic average flow and rising, it's unlikely that Lake Powell will fill again. The surplus water that filled it during 17 years the first time is no longer there to build a storage cushion. Even should surplus water accumulate, Lake Mead on its own could accommodate it.
2. It's time for more efficient storage With Lake Powell and Lake Mead losing to evaporation upwards of 17 percent of the water that flows into them, it's time that more efficient means be explored for storing this precious water. Vacant space in underground aquifers on, or accessible to, existing Colorado River infrastructure could accommodate more water than these two reservoirs combined—and with far greater efficiency. Upwards of 810,000 acre-feet of water annually—enough water for 1.6 million households of four people each—could be saved by eliminating Lake Powell and operating Lake Mead principally for distribution to groundwater recharge facilities.
3. Revive Grand Canyon Between Lake Powell and Lake Mead lies one of the world's most famous and geologically and ecologically unique river canyons, Grand Canyon National Park. The operation of both these reservoirs has impacted the Canyon, but Glen Canyon Dam has been far more devastating. Since its completion four of eight native fish have gone extinct and the dam has trapped the sediment necessary to maintain habitat and beaches for wildlife and recreation, as well as the stabilization of archeological sites.

4. Manage the sediment Sediment is a major unresolved problem threatening the long-term operations of Lake Powell and Lake Mead. Ultimately, sediment will have to be removed from one or both of these reservoirs. Removing sediment from Lake Mead rather than Lake Powell is the most feasible and least expensive likely alternative. While original estimates projected that sediment would not effect the safe operations of Glen Canyon Dam for another 60 years, scientists now warn that major problems could occur sooner.
5. Revise the Colorado River Compact The Colorado River Compact of 1922, which largely governs the discharge of flows from Lake Powell to Lake Mead, cannot meet its intended purpose of sharing Colorado River water equitably between the Upper and Lower Basin states. The Compact allocated 11 percent more water than the river has to give, and affords the Lower Basin 20 percent more water than the upper basin. With river flows expected to decline 18 percent by 2040, this inequity will worsen as the Upper Basin is required to deliver to the Lower Basin its full share regardless of declines in river flow.

*All comments must be received by close of business (4:00 p.m. Mountain Daylight or Pacific Daylight Time) on Wednesday, November 30, 2005.*

Comments can be mailed, faxed, or e-mailed to:

Regional Director  
Bureau of Reclamation, Lower Colorado Region  
Attention: BCOO-1000  
P.O. Box 61470  
Boulder City, Nevada 89006-1470

Fax (702) 293-8156  
strategies@lc.usbr.gov

Regional Director  
Bureau of Reclamation  
Upper Colorado Region  
Attention: UC-402  
125 South State Street  
Salt Lake City, Utah 84318-1147

Fax (801) 524-3858  
strategies@uc.usbr.gov

For Additional Information:

[The One Dam Solution: Preliminary report by Living Rivers to the Bureau of Reclamation on proposed reoperation strategies for Glen Canyon and Hoover Dam under low water conditions.](#)

[Bureau of Reclamation web page with updates and additional information](#)

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LR Press Release 11/08/05

## **Federal Government Notified of Intent to Sue**

November 8, 2005

For immediate release

Contact:

John Weisheit, 435-259-1063; Cell: 435-260-2590

Dr. Robin Silver, 602-246-4170

### Grand Canyon Fish v. Glen Canyon Dam

Living Rivers and the Center for Biological Diversity today notified the Bureau of Reclamation and Fish and Wildlife Service of their intent to sue over violations of the Endangered Species Act resulting in the demise of endangered native fish in Grand Canyon National Park.

For more than a decade the Bureau of Reclamation has been required to modify the operations of Glen Canyon Dam on the Colorado River to reverse the dam's downstream impacts on Grand Canyon's famed river ecosystem. However, as outlined in a letter sent to Department of Interior officials today, these efforts have failed.

"Since the Fish and Wildlife Service issued its Biological Opinion on the dam's operations in 1994, the Bureau of Reclamation's actions have merely made things worse," says Living Rivers Conservation Director John Weisheit. "One more fish species is effectively extinct in the Canyon, and another is on the verge."

Just eight native fish species once lived in Grand Canyon's desert river corridor, six of which could not survive anywhere else in the Colorado River. Now only four species remain, one of which, the Humpback Chub, has declined to just a few thousand fishes.

In 1992 Congress passed the Grand Canyon Protection Act to reverse this decline. Following the completion of an Environmental Impact Statement, three years later, the Glen Canyon Dam Adaptive Management Program was established to guide the Bureau of Reclamation in implementing recovery guidelines set forth by of the Fish and Wildlife Service.

Now, some 13 years later, the United States Geological Survey has evaluated this program and has confirmed what many scientists have been saying for years, that recovery is not being achieved. Released on October 25, their 220 page "The State of the Colorado River Ecosystem in Grand Canyon" report states:

"...it is clear that the restrictions on dam operations since 1991 have not produced the hoped for restoration and maintenance of this endangered species

"Overall, about 15% - 20% of the adult humpback chub are dying each year. If this mortality rate and the dramatically reduced recruitment rate of young chub experienced since the early 1990s remain unchanged, there will be a decline in the adult population

of humpback chub from the present 3,000 - 5,000 fish to a level of 1,500 - 2,000 adult fish over the next 10 - 15 yr.

"...the MLFF [Modified Low Fluctuating Flow] operating alternative has not effectively mitigated the influence of regulation with respect to either the thermal and hydrologic changes or the fine-sediment supply limitation of the downstream ecosystem."

"It's outrageous that the public has invested more than \$200 million to help the Bureau of Reclamation restore the river habitat in Grand Canyon, and all they have to show for it is fewer fish." says Dr. Robin Silver, Board Chair of the Tucson-based Center for Biological Diversity. "It's time they re-tool their strategy before Grand Canyon's river ecosystem is lost forever."

The groups are demanding that in light of the mounting evidence of no progress, the Fish & Wildlife Service is compelled by law to immediately reinstate consultation and devise a new strategy to ensure recovery of Grand Canyon native fish, particularly the Humpback Chub. Key issues that must be addressed are:

- \* Restoring a water temperature regime that once fluctuated seasonally from near freezing to 80 degrees Fahrenheit, but now is a constant 47 degrees year-round.
- \* Restoring river flows that fluctuated seasonally from 3,000 to 100,000 CFS (cubic feet per second), but now can fluctuate daily from 8,000 to 20,000 CFS.
- \* Restoring the sediment and nutrients that nourished Grand Canyon's aquatic habitat, 95 percent of which is now trapped by the dam annually.
- \* Controlling non-native fish which have flourished in this new environment, competing with, and preying on, the native fish.

"The Colorado River through Grand Canyon is one of this planet's most precious gifts, but the Bureau of Reclamation remains hell-bent on destroying it," adds Weisheit. "This ecosystem may not survive much longer with that dam in operation, but we could certainly survive were that dam not there."

More than 200 groups from across the country now advocate the decommissioning of Glen Canyon Dam as the best alternative for restoring the river ecosystem in Grand Canyon National Park.

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For More Information

[60-day notice letter](http://www.livingrivers2.org/pdfs/CBD_LR_Notice.pdf) [57k PDF File]

[http://www.livingrivers2.org/pdfs/CBD\\_LR\\_Notice.pdf](http://www.livingrivers2.org/pdfs/CBD_LR_Notice.pdf)

[Biological Opinion: Glen Canyon Dam](http://www.livingrivers2.org/pdfs/BOgcd.pdf) [3700k PDF File]

<http://www.livingrivers2.org/pdfs/BOgcd.pdf>

USGS SCORE Report, released on October 25, 2005  
[The State of Natural and Cultural Resources in the Colorado River Ecosystem](http://www.gcmrc.gov/products/score/2005/score.htm)  
<http://www.gcmrc.gov/products/score/2005/score.htm>

LR Press Release, October 24, 2005  
[Grand Canyon Restoration Program, a Failing Grade](http://www.livingrivers2.org/archives/article.cfm?NewsID=690)  
<http://www.livingrivers2.org/archives/article.cfm?NewsID=690>

[Glen Canyon Dam Adaptive Management Program](http://www.usbr.gov/uc/rm/amp/index.html)  
<http://www.usbr.gov/uc/rm/amp/index.html>

[Living Rivers](http://www.livingrivers2.org/)  
<http://www.livingrivers2.org/>

[Center for Biological Diversity](http://www.biologicaldiversity.org/swcbd/)  
<http://www.biologicaldiversity.org/swcbd/>

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LR in the News 11/09/05

## **Enviro groups issue notice to sue over declining Grand Canyon ecosystem**

April Reese, Land Letter Southwest reporter

Two weeks after scientists released a report critical of federal efforts to improve the flagging health of the Grand Canyon ecosystem downstream from Glen Canyon Dam, two environmental groups have filed notice that they plan to sue to force the agencies involved to reconsider their management approach.

Calling the Bureau of Reclamation and Fish and Wildlife Service's program for reversing the decline of the endangered humpback chub and other canyon resources a "failure," the Center for Biological Diversity and Living Rivers notified agency officials Tuesday they plan to file suit to nudge federal officials toward conducting a new analysis of how dam operations are affecting the fish. The groups also want BuRec to take a new look at how to operate the dam to reverse the decline of the chub, razorback sucker, bonytail and Colorado pikeminnow -- the four remaining native fish species of the eight that once inhabited the Grand Canyon.

The groups say new information presented in an Oct. 25 report from the U.S. Geological Survey requires the agencies to retool their management plan for the fish and other Grand Canyon resources.

The report found that the low fluctuating flow regime that federal water managers and biologists have been using for the past decade to help improve conditions for endangered fish the canyon is not working. About 15 percent to 20 percent of adult humpback chub are dying each year, while populations of non-native fish are on the rise. If that mortality rate continues, the adult humpback chub population will plummet

from current population levels of between 3,000 and 5,000 fish to between 1,500 and 2,000 fish over the next 10 to 15 years, the report says.

There is "evidence that dam operations during the last 10 years ... have not restored fine-sediment resources or native fish populations in Grand Canyon," the report states. Scientific information collected over the last decade contradicts the projections for habitat improvement outlined in a 1995 environmental impact statement for modified flows, the USGS scientists concluded (Greenwire, Oct. 25).

The construction of the dam in the early 1960s trapped sediment that once moved down the river, providing sandbars and pools important for fish in the Grand Canyon.

Under the Grand Canyon Protection Act of 2002, the federal government must protect downstream resources in the park from the effects of Glen Canyon Dam.

"New information reveals effects of 'adaptive management' and the [low fluctuating flows] operational scheme are harming the humpback chub, its critical habitat and the Grand Canyon in a manner and extent not previously considered," the groups wrote in their notice.

"The scientists have shown pretty compelling evidence that not enough is being done to save Grand Canyon," said John Weisheit, conservation director for Living Rivers.

"It's outrageous that the public has invested more than \$200 million to help the Bureau of Reclamation restore the river habitat in Grand Canyon, and all they have to show for it is fewer fish," added Robin Silver of the Center for Biological Diversity.

The groups argue that FWS's 1994 biological opinion on the effect of dam operations on endangered fish requires the agency to reassess those effects if new information -- such as the USGS report -- suggests it should do so.

Decommissioning Glen Canyon Dam is the only way to restore the Grand Canyon ecosystem and recover the fish, Weisheit said.

Sam Spiller, lower Colorado River coordinator for FWS, said he could not comment on the group's notice because of an agency policy that prevents employees from discussing pending litigation with the press. Reclamation officials also declined to comment.

Federal biologists and water managers have found some hope in the preliminary results of an experimental flood conducted in November of last year that they say appears to have resulted in some habitat improvements, but more high flow tests are necessary before recommending any changes in dam operations, agency officials said (Greenwire, Oct. 26).

Southwest reporter April Reese is based in Santa Fe, N.M.

[Living Rivers/Center for Biological Diversity Press Release](http://www.livingrivers2.org/archives/article.cfm?NewsID=696)  
<http://www.livingrivers2.org/archives/article.cfm?NewsID=696>

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LR Press Release 11/10/05

## **Profits to Trump Saving Grand Canyon Ecosystem, Recommends National Park Service**

For immediate release

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Despite decades of compelling scientific evidence concerning the deteriorating biological integrity of Grand Canyon Park, the National Park Service's Final Environmental Impact Statement released Thursday, concludes that virtually no changes should be made to its Colorado River management activities.

Cascading 250 miles from just below Glen Canyon Dam to Hoover Dam's Lake Mead, the Colorado River through Grand Canyon National Park is one of the world's most sought after river recreation adventures. This ecosystem is also one of the most threatened in the National Park system. The proposed Colorado River Management Plan is intended to guide new strategies for achieving the Park Service's dual missions of providing visitor access while preserving Grand Canyon's natural integrity for future generations.

"From dams to inflatable aircraft carriers, a journey through Grand Canyon now has nothing to do with Theodore Roosevelt's intentions when creating the Park 86 years ago," says Living Rivers conservation Director John Weisheit. "It's become a motorized, ecological funeral procession marketed as a six-day E-ticket Disneyland ride, and this new plan is doing nothing to change that."

Indeed, the plan emphasizes alterations in the allocations of visitor activity on the river with very little attention to managing the ecosystem. It's preferred alternative is designed to satisfy demands from the public boating sector without impacting the commercial. Another way of assessing this preferred alternative is: as the resource degrades, visitation increases.

"The plan says nothing about how the Park Service will meet it's obligation to recover the ecosystem that has seen half it's native fish species disappear, along with otters and muskrats, and it's entire aquatic food base devastated due to dams above and below," continues Weisheit. "It's all about preserving a \$30 million outfitting industry and \$110 million worth of hydropower, not the priceless ecosystem they are required by law to protect."

Although most of the land emanating from the banks off the Colorado River to the Grand Canyon's rim is designated Wilderness, thus subject to the most stringent federal ecological and human management practices, the new plan would not recommend the need the river itself to managed Wilderness in kind. Such designation has been fought

extensively by the Grand Canyon River Outfitters Association, a lobbying group for the Grand Canyon river companies.

The Plan also side steps issues pertaining to the impacts of Glen Canyon Dam, stating that the dam is outside its jurisdiction, and under the management of another Department of Interior agency, the Bureau of Reclamation. Such issues did not come into play ten years ago for Everglades National Park, which found its ecological integrity degraded by Army Corps of Engineers projects outside the Park. A \$10 billion restoration programs along the Kissimmee River which feeds the park is now well underway.

"The bottom line is that the current leadership in the Department of Interior considers Grand Canyon to be no different than an oil field or a coal mine, and could care less whether the Grand Canyon is there to be enjoyed by future generations," concludes Weisheit.

[National Park Service Final EIS for Colorado River Management Plan](http://www.nps.gov/grca/crmp/documents/index.htm)

<http://www.nps.gov/grca/crmp/documents/index.htm>

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LR in the News 11/10/05

### **New plan should allow more people to tour Grand Canyon by boat**

Associated Press Nov. 10, 2005 04:11 PM

More people would be able to tour the Grand Canyon by boat each year, but they'll go in smaller groups under final river management plans released Thursday by the National Park Service.

The plan for Colorado River use in the Grand Canyon would shift more travelers into the fall, winter and spring months, while cutting the number of daily summertime launches of motorized and non-motorized commercial rafts.

It trims the maximum number of passengers in groups by about 10, to 32 for both types of boats, but increases the number of private launches in the summer.

The result would be more tourists overall.

In the lower Colorado River from Diamond Creek to Lake Mead, the number of pontoon boat tours would go up, from 130 passengers daily to 480 each day. But jet boat tours would be banned entirely. Existing operations that use large jet boats to meet rafts above Lake Mead would still be allowed, however.

The final plan, technically a final environmental impact statement, comes after four years of study by a group of scientists, park service managers and other professionals, with input from tour operators, Indian tribes and members of the public.

Nearly 25,000 public responses were taken during the public comment periods, and at more than a dozen public meetings around the country from 2002 to 2004, said Jeffrey Cross, the project manager for the Colorado River Management Plan.

"We listened, we talked to people, they submitted information and we looked at it," said Cross. "We've tried to address the comments and concerns. That's the best that we can do. We will never satisfy everyone who wants to go down the Grand Canyon."

The plan could still be revised by the regional director of the park service, but that's not likely. Plans are to publish a final version in about two months, and have it in force by 2007.

It wasn't met with glowing reviews by environmental organizations.

John Weisheit, conservation director for the river restoration group Living Rivers, said the park service didn't even consider a wilderness designation that would have increased protections.

"I'm very, very disappointed but I'm not surprised," Weisheit said. "Even though their own surveys have indicated a strong preference for a wilderness designation, they don't do it because they don't want to upset the tour operators."

Meanwhile, the Hualapai Indian Tribe, which runs the lower river pontoon trips, disputed the government's legal ability to limit its operations.

"From our tribal perspective, there's a question of whether or not they have the jurisdiction to impose this on the tribe," said Charlie Vaughn, the tribe's chairman. "There was no limitation on us in the lower gorge prior to this plan - and we don't feel we have increased to our capacity and there's no allowance for that in the plans."

The 2,300-member tribe's reservation spans 1 million acres bordered on the north by 108 miles of river.

The Hualapai had wanted to increase the number of daily pontoon boat passengers to about 1,000.

Superintendent Joe Alston of Grand Canyon National Park said the law is clear that the entire river is subject to federal government oversight.

"Our simple answer to this is it doesn't really matter where the Hualapai boundary is, Congress established where the Grand Canyon is - and it is the south side of the river," he said.

For adventurers trying to raft the river on their own, the biggest change will be in the system used to allocate the limited number of slots.

Currently, a waiting list system is used, but it is overloaded.

There are now about 7,000 people on the waiting list, 1,700 of whom have spent from 11 to 15 years in line. It's been frozen to new signups since 2003.

That system will be replaced with a lottery, Cross said. Those who has been waiting the longest will get preference during the first years of operation, but no guarantees of receiving a permit.

More trips will be moved to the wintertime as well, he said. Those trips are given more time, so that visitors can hunker down if needed and wait out stormy weather.

Despite that, the plan was a huge disappointment for some noncommercial users.

"We want it to be fairly allocated. Right now we've got concessionaires that can't fill their seats, and yet here we are with this huge pool of demand that's not going to be met," said Jo Johnson, co-director of River Runners for Wilderness, which advocates fair access and wilderness protection for the canyon. "This plan was our last best chance to get that."

River use had to be cut back during peak times for several reasons, Cross and Alston said. The biggest is the loss of beaches.

About half of the large beaches used for camping have been lost since the 1964 completion of the Glen Canyon dam cut off sediment flow, leading to crowding and competition for the best spots.

The other reason is driven by the intent to give visitors as true a "wilderness experience" as possible.

During peak months now, as many as 300 rafters can be stopped at well-known scenic spots at any one time, Cross said. By lowering the number of people per raft and cutting the number of daily tour departures, visitors will meet fewer people.

The director of the association representing tour operators said the park service appears to have done a good job balancing the competing interests of many users.

"The bottom line is we believe that one of the purposes of the plan was to reduce the amount of use happening at one time, to spread that use out over a broader period of time," said Mark Grisham, director of the Grand Canyon River Outfitters Association. "Our initial read of the plan is they've done a pretty decent job under a lot of competing demands."

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On the Net:

Management plan: <http://www.nps.gov/grca/crmp/>

Grand Canyon National Park: <http://www.nps.gov/grca/>

Living Rivers: <http://www.livingrivers2.org/>

Grand Canyon River Outfitters Association: <http://www.gcroa.org/>

River Runners for Wilderness: <http://www.rrfw.org>

Regional News 11/17/05

## **Report sees decline of up to 30% by 2050, cites warming**

Snowmelt may dwindle

By Jerd Smith, Rocky Mountain News  
November 17, 2005

Colorado and other Western states dependent on snowmelt could see a 10 percent to 30 percent reduction in annual runoff by 2050 as the Earth's atmosphere warms, according to a report in the journal Nature.

Such a change would have severe consequences for water supplies in regions such as the seven-state Colorado River Basin and other parts of the world, including southern Europe and the Middle East, the report said.

Even a 10 percent reduction in the Colorado River's flows, for instance, would mean a drought-like existence for the historic stream, with annual flows equal to those of the recent five-year dry spell, said Andrew Gilmore, a hydrologic engineer for the Bureau of Reclamation in Salt Lake City.

During that time, flows averaged 10.1 million acre feet, well below the 98-year average of 15.1 million acre feet, Gilmore said.

Other parts of the world, such as eastern equatorial Africa and Eurasia, could see stream runoff increase as global temperatures rise, the report says.

The new research marks an expansion of what scientists have been able to determine to date about the effects of climate change.

Until now, much of the analysis done on the complex interrelationships between temperature and climate have indicated that winter snowpacks are likely to melt earlier, that more rain and less snow will fall, but that overall amounts of precipitation would stay about the same in the West.

But the new findings indicate that there will be a marked decrease in the total amount of water in streams in some regions, said Christopher Milly, an author of the Nature report and a research hydrologist for the United States Geological Survey in Princeton, N.J.

"It's taken us a while to tease out a way to look at this," Milly said. "But the results of this study will increase the degree of confidence that scientists put in water resource

projections. . . . We know there are certain areas of the Earth that are systematically projected to dry."

The precision is thanks largely to new international data collection and coordinated international modeling efforts. That work has resulted in much more reliable global and regional analyses.

Milly said it isn't entirely clear why runoff is shrinking in some regions, but he believes that one plausible explanation for its occurrence in the West is this: As the atmosphere warms above the ocean, it is able to hold more water.

As these warm ocean winds blow across the hot, semi-arid West, they warm even more, holding more water and ultimately carrying that water out of the region rather than allowing it to fall.

Those findings don't necessarily conflict with a recent report by Boulder climate researcher Gerald Meehl, who published a paper in September indicating that total annual precipitation in Colorado would change little over the next century.

But even a slight decrease in precipitation can trigger a much more dramatic decrease in runoff, Milly said.

Meehl said the new modeling being done is allowing scientists to connect more data and better data than before.

How similar data can be used in real life river-management tools isn't clear yet.

"It's one thing to say we think the climate is warming," said Rick Clayton, a hydrologic engineer for the U.S. Bureau of Reclamation. "It's another thing to say we think the Colorado River is drier. That's quite a leap."

Still, Clayton and Gilmore said that the bureau is searching for ways to include climate-change projections in their existing analysis to better understand how the river will respond to dramatically lower flows.

"We get asked this question all the time," Gilmore said. "And we need a better answer than we have."

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Regional News 12/07/05

## **Salt in Colorado River concerns USGS**

Donna Gray Post Independent Staff

By the time they reach Mexico the waters of the Colorado River are so laden with salt as to be a danger to crops.

"About 9 million tons of salt passes Lees Ferry (on the Colorado River in Arizona) every year," said Paul Von Guerard, office chief of the U.S. Geologic Survey in Grand Junction.

Since the 1970s, the seven states through which the river flows have agreed to control that burden of salt as much as possible. The USGS monitors the salinity of the river, which has its source in Colorado.

Thursday, members of USGS in Grand Junction brought the Energy Advisory Board up to date on efforts to monitor salt in the Colorado reaches of the river.

The Colorado, as it flows through the state, picks up a significant amount of salt that is augmented as it is carried downstream, Von Guerard said.

"Salinity is a major water quality concern in the Colorado River," Von Guerard said.

Salt dumps into the river from a variety of sources, among them irrigation of agricultural lands, the Mancos shale geologic formation and the hot springs around Glenwood Springs, Von Guerard said.

About 47 percent of the salt in the river comes from natural sources such as hot springs and erosion of soil and the rest is from human actions. Salt causes about \$300 million in damage to crops, water pipes and hot water heaters in the lower Colorado River Basin in California and Nevada, as well as in Mexico, Von Guerard said.

While the survey has a number of monitoring stations along the river and its tributaries, there is a gap between Glenwood Springs and Grand Junction.

"We don't have a good handle on the discharge from Glenwood Springs," he said.

About 47 percent of the salt load that goes through Colorado passes the Cameo monitoring station on the west side of DeBeque Canyon just east of Grand Junction, Von Guerard said. But only 18 percent of that load comes from the river above Glenwood Springs, according to data from a station just upstream from the city. The rest of that salt comes from sources between Glenwood and Grand Junction, he said.

The USGS needs to monitor that load with at least one new monitoring station between Glenwood and Grand Junction, at a cost of \$25,000. Because of flattened funding in the last few years, USGS is seeking to find financial support from local towns and cities in that reach of the river to install a station, Von Guerard said.

"We are working with the (Colorado River Water Conservation District) on funding," he said. The district also suggested the USGS appeal to the energy companies operating in the county for financial support.

Alan Lambert, an Energy Advisory Board member and a Rifle city councilman, agreed salinity is a problem and municipalities need to push for minimum stream flows in the Colorado in order to protect their infrastructure.

"We have a salinity problem in the water treatment plants," he said.

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LR in the News 12/11/05

## **Lake Powell still a glass half-empty**

By Kim McGuire Denver Post Staff Writer

Flows into Lake Powell were slightly above average this year, but the giant reservoir in Utah remains far from full, officials with the Bureau of Reclamation say.

In 2005, flows into the reservoir were about 105 percent of average.

Even with that increase, Lake Powell is only about half- full, holding 12 million acre-feet of water.

One acre-foot of water is about 326,000 gallons.

"There were increases in both content and elevation in both Lake Powell and Lake Mead this year that were about the same in the water year 2003," said Rick Clayton, a hydrologist with the Bureau of Reclamation. "Another way to look at that is what we saw this year was the equivalent of rolling back one year of drought."

The drought of 2002 decimated Lake Powell, which acts like a water bank for the upper basin states of Colorado, Wyoming, New Mexico and Utah, releasing water to Lake Mead for distribution to the lower basin as required under the 1922 Colorado River Compact.

Flows in Lake Powell in 2002 were 25 percent of average - the lowest they had been since the completion of the Glen Canyon Dam in 1963.

Clayton declined to say how long he thought it would take for Lake Powell to refill.

"That would be speculation," he said. "But I think it's safe to say it's trending in the right direction."

Some Western environmental groups are skeptical about the chances of Lake Powell ever refilling again.

They say the insatiable thirst of booming cities in Arizona, California and Nevada will outweigh any gains in flow the reservoir may experience.

"When the demand equals the supply, it seems highly unlikely Lake Powell will fill again," said John Weisheit, conservation director for Living Rivers, a Moab- based

group that supports decommissioning the Glen Canyon Dam. "It might happen. But let's put it this way: It's more likely to be empty than full."

This summer Interior Secretary Gale Norton rejected a request by Colorado and other upper basin states to help refill the depleted reservoir by reducing outflows from Lake Powell.

The move disappointed officials in the upper basin states who wanted Norton to send a message to California, Nevada, and Arizona that she could curb releases in times of drought.

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