LR in the News 01/24/08

Experimental flow plan for Glen Canyon Dam aims to recover endangered fish

Thursday, January 24, 2008 April Reese, Land Letter Western reporter

The Department of Interior last week announced plans to release an experimental high flow from behind Glen Canyon Dam to help recover endangered fish and other resources downstream in Grand Canyon National Park.

Federal officials hope the surge, which will mimic historic, pre-dam flows on the Colorado River, will deliver sediment downstream and rebuild eroded beaches. Beaches and sandbars provide crucial habitat for wildlife and create backwaters for native fish, including the endangered humpback chub. The accumulation of sand also helps protect archaeological sites.

The Bureau of Reclamation, which manages the dam, conducted a similar experiment in 2004 (Land Letter, Dec. 2, 2004). The new experiment, announced Jan. 17, will build on the information gleaned from the 2004 experiment and another in 1996, said John Hamill, head of the U.S. Geological Survey's Grand Canyon Monitoring and Research Center. This time, there is an influx of sand in the Colorado River system, which will be carried by the high flows released from the dam.

"Given the current amount of sand in the system, we have a tremendous opportunity to learn more about whether high flows can be used to improve important natural, cultural, and recreational resources in Glen and Grand canyons," Hamill said.

If the secretary of the Interior Department approves the plan, Reclamation will send 41,000 cubic feet per second of water surging down the Colorado River through the Grand Canyon for about two-and-a-half days. That is more than twice the amount of water typically released from the dam; since 1996, releases have ranged between 8,000 and 20,000 cubic feet per second.

The effects of the high flows, tentatively scheduled to begin March 4, will be studied by a cadre of federal scientists. The experiment will "provide the valuable information needed to protect the resources within Grand Canyon National Park," said Steve Martin, superintendent of Grand Canyon National Park.

Under the Grand Canyon Protection Act, Reclamation must make sure operations are conducted in a way that protects Grand Canyon resources.

Larry Walkoviak of Reclamation said the experiment will not increase the overall amount of water released over the course of the 2008 water year. Monthly releases later in the year will be lower to make up for the higher flows in March, he said.

Criticisms

But critics say the experiment is not enough to help the park's resources, which have suffered because of the dam.

"This is a half measure," said John Weisheit, conservation director for Living Rivers. "Unless they do it every year, it's not going to work."

And the amount of sediment flowing in from the Paria River and other tributaries is insufficient to make up for the dam's restriction of sediment in the Colorado River itself, he added. Dam managers estimate that 92 percent of the sediment that would be carried downstream by an undammed river is blocked by Glen Canyon Dam.

"They seriously need to start looking at other alternatives, which are sediment augmentation and decommissioning," Weisheit said.

Augmentation would involve trucking or piping sediment around the dam, an option that has been discussed but never tried, partly due to its exorbitant expense. Decommissioning would involve breaching or removing the dam, a controversial option Living Rivers has advocated for years but Reclamation and power interests oppose.

In December, environmental groups filed suit against Reclamation over the agency's normal operation of the dam (Land Letter, Dec. 13). The groups argue that a 1994 biological opinion from the U.S Fish and Wildlife Service requires the agency to release high flows in the spring and low flows in the summer and fall to benefit the chub. Currently, Reclamation releases low, fluctuating flows throughout the year.

A final decision on the experimental flow proposal is expected in late February.

April Reese writes from Santa Fe, N.M.

Take Action 02/08/08

Announcing: Public Comment Period on River Flow Experiment below Glen Canyon Dam

Bureau of Reclamation
Upper Colorado Regional Office
Media Contact: Doug Hendrix or Dennis Kubly
(801) 524-3837 (801) 524-3715
Release Date: February 8, 2008

Comments due: February 22, 2008

Reclamation Releases Environmental Assessment for Public Comment on Proposed High-Flow and Steady Flow Experiment on the Colorado River

Salt Lake City, UT - The Department of the Interior's Bureau of Reclamation today released for public comment an Environmental Assessment that describes a proposed early-March 2008 high-flow test and fall steady flow experiment from Glen Canyon Dam

downstream through the Grand Canyon. Comments will be due by close of business February 22, 2008.

"Reclamation continues to support the application of science and adaptive management to the operation of Glen Canyon Dam and the management of natural resources in Glen and Grand Canyon," Reclamation Commissioner Robert W. Johnson said in announcing the availability of the Environmental Assessment. "Experiments such as the proposed high-flow and fall steady flow continue to advance our understanding of the ecosystem while providing tangible benefits to the fishery, river environment, and recreational users in Grand Canyon National Park."

The environmental assessment evaluates the impact of the proposed test on a wide range of environmental and socioeconomic resources. A decision by the Department of the Interior is anticipated in late February 2008, with plans to conduct the high flow in early March 2008, if the decision is to move forward with the experiment.

The high-flow experiment and associated research activities, should they occur, will be undertaken cooperatively by scientists and resource managers from Interior's U.S. Geological Survey (USGS), Reclamation, National Park Service, U.S. Fish and Wildlife Service, and Bureau of Indian Affairs.

The 2008 test would be similar to the previous high-flow tests conducted in 1996 and 2004, but the amount of sediment available is considerably larger. In particular, scientists have concluded that more sand is needed to rebuild sandbars throughout the 277-mile reach of Grand Canyon National Park than was available in 1996 or 2004. Currently, sand supplies in the river are at a 10-year high with a volume about three times greater than in 2004 due to tributary inflows below the dam over the past 16 months.

The Environmental Assessment is available for public review on the Internet by following the link at Click Here or by contacting Dennis Kubly, Bureau of Reclamation, Upper Colorado Regional Office, 125 S. State Street, Salt Lake City, Utah 84138, and by telephone at (801) 524-3715.

LR Letter 02/11/08

Comments: West-wide Energy Corridor DEIS

West-wide Energy Corridor DEIS
Argonne National Laboratory
9700 S. Cass Avenue
Building 900, Mail Stop 4
Argonne, IL 60439
Sent via fax: 866-542-5904

Dear Ms. Julia Souder,

Thank you for this opportunity to submit comments on West-wide Energy Corridor Programmatic Environmental Impact Statement (PEIS). Living Rivers is a non-profit organization based in Moab, Utah, which is situated along the Colorado River and two national parks, Canyonlands and Arches. Our mission is to preserve, protect and restore watershed ecosystems and resources in the Colorado River basin.

The Colorado River is the lifeblood of the seven western states and Mexico. The river supplies water for federal reserve lands, agriculture and 30 million people. The geophysical province, the Colorado Plateau, is the major drainage area by volume in the Colorado River basin.

The Colorado Plateau and the Colorado River will be adversely affected by the development of energy transmission corridors considered in this PEIS. This development will encourage industries that are inappropriate for a watershed of this importance, because it will jeopardize our drinking water and watershed habitats that are necessary to recover federal endangered species.

This development sets the stage for extractive industries, and power-generation facilities, of both fossil and nuclear fuels, to enter the Colorado Plateau. The Colorado Plateau is the largest intact wilderness and refuge by area in the contiguous United States.

These industries require incredible amounts of water to operate. Water the Colorado River can no longer reliably provide, because the legal documents of the system have created a situation of over-allocation. Additionally, over-consumption and excessive evaporation from rising temperatures in the atmosphere, will continue the trend of dwindling supplies. Reservoirs are currently lowering and in-stream flows are diminishing throughout the basin.

The energy program proposed in this document, and its connection to large-scale energy fuel development projects, will cause unnecessary harm to the various communities dependent on the Colorado River. They are also financially burdensome and will not reduce our dependency of finite energy resources.

The paradigm of status quo energy development must be changed. Research and development funds must be appropriated to begin a new paradigm of renewable resources and conservation. These programs will reduce the ever-increasing amount of pollution entering the atmosphere and the landscape.

Furthermore, transmission lines spanning the open spaces of the Colorado Plateau, which has the highest concentration of national parks in the United States, can be avoided completely by keeping energy-producing facilities as close to the market place as possible. Eliminating extensive transmission lines altogether will help to increase the yield of electricity through efficiency, and protect what cherished landscapes yet remain in our wild lands of the Colorado Plateau.

If we can be of further assistance to you, please do not hesitate to contact us.

Sincerely yours,

John Weisheit
Conservation Director

Regional News 02/12/08

Lake Mead Could Be Dry by 2021

From: Scripps Institution of Oceanography/UC San Diego
Scripp's Press Release

Scripp's science paper

Reaction by the water managers to the Scripp's press release

Tuesday, February 12, 2008

Lake Mead Could Be Dry by 2021

Analysis of current and scheduled use and human-induced climate change sparks urgent warning from researchers at Scripps Institution of Oceanography, UC San Diego.

There is a 50 percent chance Lake Mead, a key source of water for millions of people in the southwestern United States, will be dry by 2021 if climate changes as expected and future water usage is not curtailed, according to a pair of researchers at Scripps Institution of Oceanography, UC San Diego.

Without Lake Mead and neighboring Lake Powell, the Colorado River system has no buffer to sustain the population of the Southwest through an unusually dry year, or worse, a sustained drought. In such an event, water deliveries would become highly unstable and variable, said research marine physicist Tim Barnett and climate scientist David Pierce.

Lake Mead at Hoover Dam, October, 2007. According to Scripps researchers, the lake could dry up by 2021 if preventative measures are not taken. Photo courtesy of Dr. Ken Dewey, Applied Climate Sciences Group, University of Nebraska, Lincoln.

Lake Mead at Hoover Dam, October, 2007. According to Scripps researchers, Lake Mead could be dry by 2021 if climate changes as expected and future water usage is not curtailed. Photo courtesy of Dr. Ken Dewey, Applied Climate Sciences Group, University of Nebraska, Lincoln. Barnett and Pierce concluded that human demand, natural forces like evaporation, and human-induced climate change are creating a net deficit of nearly 1 million acre-feet of water per year from the Colorado River system that includes Lake Mead and Lake Powell. This amount of water can supply roughly 8 million people. Their analysis of Federal Bureau of Reclamation records of past water demand and calculations of scheduled water allocations and climate conditions indicate that the system could run dry even if mitigation measures now being proposed are implemented.

The paper, "When will Lake Mead go dry?," has been accepted for publication in the peer-reviewed journal Water Resources Research, published by the American Geophysical Union, and is accessible via the AGU's website (see instructions below).

"We were stunned at the magnitude of the problem and how fast it was coming at us," said Barnett. "Make no mistake, this water problem is not a scientific abstraction, but rather one that will impact each and every one of us that live in the Southwest."

"It's likely to mean real changes to how we live and do business in this region," Pierce added.

Research marine physicist Tim Barnett (right) and programmer/analyst David Pierce of the Climate, Atmospheric Science and Physical Oceanography (CASPO) division at Scripps Institution of Oceanography, UC San Diego.

Research marine physicist Tim Barnett (right) and programmer/analyst David Pierce of the Climate, Atmospheric Science and Physical Oceanography (CASPO) division at Scripps Institution of Oceanography, UC San Diego.

The Lake Mead/Lake Powell system includes the stretch of the Colorado River in northern Arizona. Aqueducts carry the water to Las Vegas, Los Angeles, San Diego, and other communities in the Southwest. Currently the system is only at half capacity because of a recent string of dry years, and the team estimates that the system has already entered an era of deficit.

"When expected changes due to global warming are included as well, currently scheduled depletions are simply not sustainable," wrote Barnett and Pierce in the paper.

Barnett and Pierce note that a number of other studies in recent years have estimated that climate change will lead to reductions in runoff to the Colorado River system. Those analyses consistently forecast reductions of between 10 and 30 percent over the next 30 to 50 years, which could affect the water supply of between 12 and 36 million people.

The researchers estimated that there is a 10 percent chance that Lake Mead could be dry by 2014. They further predict that there is a 50 percent chance that reservoir levels will drop too low to allow hydroelectric power generation by 2017.

The researchers add that even if water agencies follow their current drought contingency plans, it might not be enough to counter natural forces, especially if the region enters a period of sustained drought and/or human-induced climate changes occur as currently predicted.

Barnett said that the researchers chose to go with conservative estimates of the situation in their analysis, though the water shortage is likely to be more dire in reality. The team based its findings on the premise that climate change effects only started in 2007, though most researchers consider human-caused changes in climate to have likely started decades earlier. They also based their river flow on averages over the past 100 years, even though it has dropped in recent decades. Over the past 500 years the average annual flow is even less.

"Today, we are at or beyond the sustainable limit of the Colorado system. The alternative to reasoned solutions to this coming water crisis is a major societal and economic disruption in the desert southwest; something that will affect each of us living in the region" the report concluded.

The research was supported under a joint program between UC San Diego and the Lawrence Livermore National Laboratory and by the California Energy Commission. The views expressed here do not necessarily represent the views of the California Energy Commission, its employees, or the state of California.

# # #

Additional news on this subject
U.S. Faces Era Of Water Scarcity: Profligate Use Hurts In Unexpected Places; Quest For New Supplies Nationwide

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Regional News 02/13/08

Lake Mead Not Going Dry, say Dozier and Fulp

"We were contacted by some newspaper reporters to respond to a report to be released by Scripps Institute that says Lake Mead could be dry by 2021," said Larry Dozier, Deputy General Manager of Central Arizona Project.

"That is absurd," he added.

The seven states that draw water from the Colorado River, in conjunction with the U.S. Bureau of Reclamation (BOR), recently reached an agreement on management of the Colorado River. That agreement was reached after extensive studies about the drought conditions and how severe shortages could be avoided. "The studies evaluated a broad range of potential hydrologic conditions and several alternative operating criteria," Dozier said. "Lake Mead did not "go dry" at any time during the various scenarios. Shortages were manageable."

In addition, CAP produced its own separate drought impact analysis in 2007 by creating a "worst case" scenario based on the University of Arizona's tree ring study and it showed that Lake Mead did not go "dry," Dozier said.

Terry Fulp, an area manager of Boulder Canyon Operations for BOR, which oversees water deliveries and hydropower output at Hoover Dam put the chances of Lake Mead running dry at almost zero, according to a story in the Las Vegas Review-Journal.

Ultimately, Fulp said, there is nothing new about the findings in the Scripps study. Such "doom and gloom" predictions have been circulating for years now.

"In my lifetime, I don't expect to ever see it," he said. CAP is a 336-mile-long system that brings about 1.5 million acre-feet of Colorado River water to its customers -- cities, businesses, agriculture and Indian communities -- in Pima, Pinal and Maricopa counties.

An acre-foot of water is about 326,000 gallons.
REFERENCE: CAP press release

LR Letter 02/22/08

LR comments on EA for operations at Glen Canyon Dam 2008-2012

February 22, 2008

Mr. Dennis Kubly
Bureau of Reclamation, Upper Colorado Regional Office
125 S. State Street, Salt Lake City, Utah 84138
Fax: (801) 524-3858
GCexpReleases@uc.usbr.gov

Re: Environmental Assessment of Experimental Releases from Glen Canyon Dam, Arizona 2008 through 2012.
Dear Mr. Kubly,

On behalf of Living Rivers and the Center for Biological Diversity, we submit the following comments on the February 08, 2008 *Environmental Assessment of Experimental Releases from Glen Canyon Dam, Arizona 2008 through 2012*. While we appreciate Reclamation's intentions to potentially aid in the redistribution of sediment, such that it might improve habitat conditions for endangered native fish, we find this action insufficient on its own to offer any lasting benefits toward fulfilling this objective.

1. Sediment Augmentation

Past experience has already illustrated the limited benefits such experimentation can achieve. The 1996 and 2004 high flow experiments have revealed that there is not enough sediment entering the river ecosystem below Glen Canyon Dam to make up for the 44 million tons that would otherwise be entering the system on an annual basis were the dam not in place. In 2005, during the Science Symposium by Grand Canyon Monitoring and Research Center (GCMRC), and again in 2006 during meetings of the Technical Working Group, scientists discussed or recommended that the Adaptive Management Program should consider bringing additional sediment into the system through a mechanical augmentation plan. The public also recommended augmentation during the scoping period for the Long-Term Experimental Plan Environmental Impact Statement. Absent such augmentation, this proposed action will offer no lasting benefits, either to endangered fish or recreational beaches. As noted in the 2005 Score Report by the United States Geological Survey, Grand Canyon is running a sediment deficit, and

no amount of experimental flows can fix this problem. Reclamation must explore sediment augmentation as a viable alternative to meeting the objectives of this action.

2. Seasonally Adjusted Steady Flows

As has been stated repeatedly, Reclamation is in violation of the terms set forth in the 1994 Biological Opinion requiring that Seasonally Adjusted Steady Flows be implemented from Glen Canyon Dam for reasons of insufficient progress to remove jeopardy to threatened and endangered species, and during minimal releases of 8.23 million acre feet (maf). Only when such flows are integrated with sediment augmentation, as noted above, will there be any real opportunity for species recovery.

We find it particularly unfortunate that the 2007 Biological Assessment also chose to ignore Seasonally Adjusted Steady Flows (SASF). It's unfortunate that such operating criteria may offer the best opportunity for meeting the objectives of the Grand Canyon Protection Act, but continues to be shunned by the hydropower interests.

3. Declining Reservoir Levels

This action is wholly contingent on there being sufficient water in Lake Powell, such that flood flows greater than 41,500 to 45,000 cfs (cubic feet per second) can be created. However, should the reservoir elevation drop below 3,490 feet msl (mean sea level), this will be impossible. The maximum flow that could be achieved would be less than 15,000 cfs through the bypass tubes alone. While current snow pack indicates that for at least the next two years, there should be sufficient water in Lake Powell to undertake such experiments, there is no guarantee that this will be the case through the completion of the proposed action period in 2012. Lake Powell's present elevation is 3,595 feet, meaning reduced inflows during the experiment period to 2012 of a net -6.8 maf will be sufficient to force the shut down the penstocks, and this proposed action. As you are well aware, in the three years after 2000, Lake Powell's level dropped 11 maf, thus history illustrates that such reductions have occurred, yet the EA assumes, without any justification, that they will not.

While section 3.1.1.1 discusses climate change, it relies on the same limited analysis undertaken by Reclamation for Shortage Criteria—analysis which Reclamation states does not take into account climate change. More importantly, isolating the ISM single trace (index sequential hydrologic modeling) that begin with water years 1950 or 2000, would clearly show the potential for Lake Powell dropping to levels near or below the 3,490 msl threshold. While Reclamation may wish to argue the likelihood of such an occurrence, it cannot ignore the prospect altogether.

4. Water Quality

The continued avoidance by Reclamation to address the likelihood of reservoir levels dropping significantly below their current levels, represents a potentially ticking time bomb for Grand Canyon. The implications are far greater than whether or not GCMRC scientists find more grains of sand near the Little Colorado River six months following a

high-flow experiment. The quality of water entering Grand Canyon could become so poor as to pose a serious threat to Grand Canyon's entire river ecosystem.

As the EA points out in section 3.1.3.1, dissolved oxygen levels at the upper portion of the reservoir are far greater than that of the water that is typically released from the penstocks. Even now, the levels flowing into Grand Canyon are higher than prior to the experimentation of 1996. This situation only worsens the lower the surface of the reservoir becomes and with the decreased volume of water generally. This issue has never been addressed by Reclamation, nor a number of other potential water quality impacts to Grand Canyon including: extreme water temperature, increased nutrient concentrations, higher salinity, high hydrogen sulfide, heavy metals such as mercury and selenium, and the pass through of exotic reservoir animals. This EA must therefore evaluate the potential water quality impacts the Grand Canyon ecosystem might face from decreasing reservoir levels during the period of the proposed action. More importantly, Reclamation must immediately undertake a comprehensive assessment of the potential water quality impacts on Grand Canyon should the reservoir drop to dead pool.

5. Archeology

As noted in section 3.2, this action is likely to cause harm to a number of archeology sites, as well as to cultural vegetation. Such a problem would not occur were Reclamation to implement SASF as noted above in combination with sediment augmentation. Reclamation continues to make archeology a low priority, preferring to dig and relocate sites and artifacts than preserve them in situ as is their mandate.

Lastly, we remain frustrated by Reclamation's ongoing policy of unnecessarily limiting public comment periods. This action has been contemplated by Reclamation since December of 2007, yet the Environmental Assessment is offered for public comment less than one month prior to the scheduled date of the proposed action. Additionally, a federal action of this magnitude deserves a proper *Federal Register* notice, which Reclamation has failed to do.

Whether it's poor management on behalf of the AMP and the GCMRC, an intentional disregard for public participation, or both, Reclamation must correct this problem, beginning with extending the deadline for comments on this EA an additional 15 days.

As evidenced by the ramping up of publicity for the first experimental flow contemplated with this action on March 4, it appears Reclamation is more interested in mobilizing media interest in support of Reclamation's own interpretation of this action, than it is on assuring the public has an opportunity to evaluate it for themselves and draw their own conclusions.

In conclusion, we view this EA as merely one more volume in the unfortunate history the Bureau of Reclamation and the Adaptive Management Program has visited on Grand Canyon. Until such time as Reclamation and the AMP makes a commitment to restoring the natural process that nurtured the evolution of Grand Canyon's river ecosystem, no

possibility exists for the ecosystem itself to be restored consistent with intent of the 1992 Grand Canyon Protection Act.

Sincerely,

John Weisheit, Conservation Director, Living Rivers
Michelle Harrington, Rivers Conservation Manager, Center for Biological Diversity

Additional Information:
Bureau of Reclamation EA Documents

Living Rivers scoping letter LTEP EIS

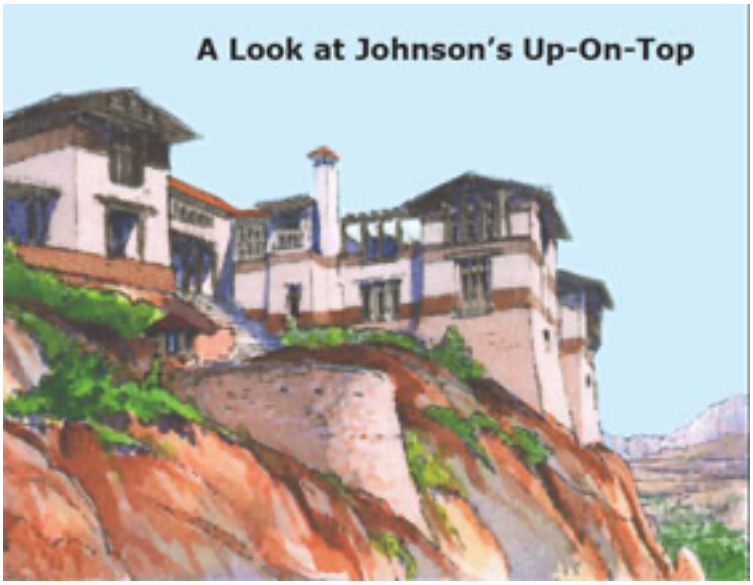
Living Rivers letter Shortage Criteria DEIS

Use the Colorado River Open Source Simulator (CROSS) to perform hydrological modeling yourself.

Regional News 03/17/08

Moab activists call builder a threat to area's water supply

By Christopher Smart
The Salt Lake Tribune
Article Last Updated: 03/17/2008 06:42:03 AM MDT



Download "A Look at Johnson's Up-On-Top"

Developers call it fear-mongering. But a group of residents against a proposed upscale housing project on a redrock mesa overlooking Moab say it could put the town's drinking water in jeopardy.

In a slick, 10-page brochure distributed inside Moab's The Times- Independent newspaper, the Grand County Citizens for Clean Water claim that neither the developer nor Grand County can ensure that the Cloudrock project will not harm the aquifer that feeds the municipal water system.

It's the latest round in an eight-year battle.

The joint proposal by Leucadia National Corp. and the Utah School and Institutional Trust Lands Administration (SITLA) already has been approved by the Grand County Planning Commission and the County Council. The plans include a 225-room lodge, 150 condominiums and 110 home sites on 1,935 acres of state trust lands on the mesa called Johnsons Up On Top.

But the group that distributed the flyer has put the developers on notice that any groundwater pollution and a subsequent cleanup would be cost prohibitive.

"Should damage occur to the aquifer, it is reasonable for the affected parties to insist that SITLA be responsible for the full cost of mitigation," the brochure states.

The group earlier filed suit in 7th District Court alleging that Grand County's adoption of the Cloudrock development was "arbitrary and capricious."

A SITLA official said Friday the agency is confident that Leucadia's plans have gone "above and beyond" engineering requirements - set by Grand County and Grand Water and Sewer Service Agency - to prevent pollution of the aquifer.

"Based on what we've seen, we don't see any risk in the world of reality," said Associate Director John Andrews.

A Salt Lake City-based attorney representing Leucadia said the four-color brochure was just the latest installment of an ongoing "misinformation campaign" aimed at scuttling an approved development.

"It's NIMBYism - not in my backyard," said Michael Zimmerman. "It is our view that the opponents are fundamentally against any development and have been since the origin of the project" in 2000.

Nonetheless, County Councilwoman Joette Langianese, who is not affiliated with the group of residents, said because of the complexities of the sandstone formations surrounding the aquifer, she continues to have doubts about the safety of the water source.

"There isn't enough information for me to be comfortable with a big development like that on top of our aquifer," she said. "Hopefully, nothing will go wrong."

What's next? 7th District Judge Lyle Anderson will hear arguments April 15 at 9 a.m. on whether the group of residents can appeal the Cloudrock proposal to the Grand County Board of Adjustment. Anderson also could rule that the project can go forward.

csmart@sltrib.com

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Lionsback not first controversial project

The Daily Sentinel
Saturday, July 19, 2008

The proposed Lionsback Resort is not the first luxury development to stir up controversy in Moab.

The Cloudrock Resort Development office in downtown Moab has been fully furnished but not staffed since 2001, and Lionsback may be forced to travel a path similar to that development, which has been tied up in lawsuits since 2003.

The Cloudrock resort would sit on State Institutional and Trust Lands Administration land about seven miles south of Moab as per an almost mirror-image agreement of what the Lionsback developers had with the trust lands organization.

Only in Cloudrock's case, the developers sought approval and annexation into Grand County, not the city of Moab.

The approved preliminary plat for the Cloudrock Desert Lodge consists of a 225-room "Wilderness Lodge," 150 residential condominiums, and 110 homes in small clusters.

The development would be across four phases, with the first phase centering on the construction of the lodge.

"These are well-developed units. World-class units, but the developers don't want all their money tied up in construction," said Gene Ciarus, Grand County Council member. "The hotel was first to give people a reason to go out there."

A coalition of Moab residents, the Moab Citizens Alliance, protested the proposed annexation of the property, but the county approved it in 2001.

The complaints also included concerns over water protection and road width within the development, Ciarus said.

"These protesters are grasping at straws," Ciarus said. "This development will bring in big money and tax revenue without taxing our resources. It has exceeded every requirement, and that has been tested in court."

The first of several back-and-forth court filings between the county, SITLA and the MCA began in 2003, leaving the Cloudrock development in limbo.

Ciarus said the "continuing saga" is about to end, however, as the court has two more issues to settle.

He said he didn't want to speak before the judge's ruling, but Ciarus said every prior decision had been in favor of the developers.

"I'm sure with every decision regarding Cloudrock, they will file an appeal until they realize the developers aren't violating any law or asking for anything out of the ordinary," Ciarus said.

Though protesters of the Lionsback development say they don't want litigation, City Councilman Rob Sweeten said he foresees a legal battle in the future.

"They've already tried," Sweeten said.

“You look at what happened at Cloudrock, and it’s happening at Lionsback.”

Additional News

Group appeals council approval of Cloudrock phase 1
by Craig Bigler

Once again the group of citizens has filed an appeal of a Grand County Council decision on the Cloudrock development proposed for Johnson’s Up On Top mesa. Because the action taken by the council to approve the final plat for the first phase (phast 1A) of the development was administrative, according to group member John Weisheit, the appeal should be heard by the Grand County Board of Adjustment.

Last month the council approved the first phase, for development of 12 lots, even though an appeal by the same group is pending in the Utah Court of Appeals. The earlier appeal, if granted, would stop the entire project, except for the approved first phase, Cloudrock Land Company representative Mark Oligschlaeger said at the time.

This latest appeal is designed to stop any development, the appellants have said. It asserts the application for the first phase was incomplete and did not comply with requirements of the amended development agreement approved by the county council last December. The appeal claims that requirements for detailed sewer line construction plans were not submitted or approved.

“Our intent,” appellant Barb Morra said, “is to preserve and protect our drinking water recharge area, which is primarily on Johnsons Up On Top, where Cloudrock is being developed.”

The appeal claims that cost estimates for improvements required by the agreement are incomplete. It also asserts that the $1.5 million financial guarantee proposed by Cloudrock covers only the estimated costs of roads and drainage required for the first phase, and “violates the requirements of the code and the amended development agreement that the financial guarantee be sufficient to cover the costs of all required improvements.”

During the county council’s deliberation on the issue last month, Grand County Planner Kristine Killoy said the bond was “adequate.”

“They didn’t follow the law,” Morra said, adding that the development’s financial guarantee should cover all required improvements, not just the access road. If the development goes bankrupt or loses in the court of appeals, it may not proceed beyond phase 1A and the county would be stuck with the cost of remediation, she said.

Weisheit said that Cloudrock must pay interest on the bond, and it is not large enough to cover all improvements. “They’re just ensuring their right to develop while waiting for the court to act,” he said.

Oligschlaeger declined to comment on the appeal. But when the county approved the first phase last month, Oligschlaeger said that if the 12 lots contained in that phase are

sold, that cannot be reversed, even if the court rules for the appellants. But, he said, such a ruling would stop the rest of the project. He also said that the Cloudrock Land Company would make full disclosure to potential customers about the possibility.

“Once again, they are putting the cart before the horse,” Weisheit said. “It is wrong to move ahead until we’ve had our day in court.”

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New appeals contest PC approval of Cloudrock special exceptions
by Craig Bigler

Once again, attorneys representing a group of Grand County residents have filed appeals of decisions made by the Grand County Council and the Grand County Planning and Zoning Commission that give the go-ahead to development of the proposed Cloudrock Lodge.

Salt Lake City-based Smith Hartvigsen, PLLC, has filed two new appeals with the Grand County Board of Adjustment. The group is appealing the county council's Nov. 20 approval of Cloudrock's use-on-review application, and the planning commission's Dec. 12 approval of Cloudrock's two special exception applications.

Smith Hartvigsen also recently filed a cross-motion to a motion for summary judgement filed by Cloudrock in a separate appeal that was filed last year in 7th District Court in Moab. "It is nothing new, just the next step in resolving the lawsuit," said Smith Hartvigsen attorney Nancy Delacenserie.

The cross-motion asks Judge Lyle Anderson to remand the appeal to the board of adjustment and direct the BOA to hear the plaintiffs' appeal. Delacenserie said the appeal should go first to the board of adjustment because the decision last May by the county council to approve the amended Cloudrock development agreement was an administrative decision.

Smith Hartvigsen argues that the court has first jurisdiction only if the decision is legislative. "The court can decide on the facts if all parties agree on the facts," Delacenserie said. "We don't agree on the facts."

Noting that additional briefs will be filed before the court sets a hearing date to hear the issues, Mark Oligschlaeger of Leucadia Corp., which has partnered with Cloudrock Land Company, for the proposed Johnson's Up On Top project, agreed that nothing new has happened. "This process is playing out in the court system," he said.

Grand County Attorney Happy Morgan disagreed with Smith Hartvigsen assertions that the board of adjustment has jurisdiction over county council decisions and that the Grand County residents who filed the appeal represent the general public.

In an Aug. 29 memo, Morgan refers to the appellants as "a small contingent of persons opposed to the Cloudrock PUD."

Morgan's memo concludes, "The BOA has no authority to overturn an ordinance enacted by the Grand County Council. The elected Grand County Attorney represents both the BOA and the Council, and it is the opinion of the Grand County Attorney that the BOA has no jurisdiction over the appeal filed by Contingent [the appellants]; the proper venue is the District Court."

Regarding special exceptions, the appeal before the board of adjustment stems from the board's refusal to consider nearly identical appeals at a hearing on Dec. 10. The board decided to vacate the planning commission's approval of the exceptions on grounds that the public hearing held by the commission was invalid because proper 15-day notice was not given to the public.

Two days later, the planning commission held another set of public hearings and immediately re-approved the two special exceptions. One exception allows larger lodge unit size, the other allows streets as narrow as 20 feet. These re-approvals are now under appeal.

The use-on-review appeal is in regard to the county council's approval of changes that allow Cloudrock to alter the configuration of the lodge and "village" from the preliminary plat that was approved in May, 2007.

The use-on-review appeal argues that the change in configuration is so dramatic that the preliminary plat approval process should start over. Both the council and the commission indicated that they based their 2007 approval on the original preliminary plat approved in 2002, and the land use code that was in effect at the time.

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Cloudrock LLC to withdraw phase one plat by Craig Bigler contributing writer 12 hrs ago | 83 views | 0 | 0 | | The Cloudrock development is on hold once again. In a Nov. 26 letter to the Grand County Council, Cloudrock Land Company LLC told elected officials the company has elected to withdraw its pending final plat application for the first phase of development, called phase 1A. The letter also states that the project will resume once the current national financial crisis turns around.

The letter from Cloudrock principal Mark Oligschlaeger notes that the pending final plat has not officially received final approval because it has not been signed by the applicant or by the county, and, it has not been submitted to the Grand County Recorder for official recordation.

The development agreement between Cloudrock and the county does not set a deadline for when final plats must be submitted. Council chairman Gene Ciarus said Cloudrock LLC’s withdrawal of the plat means that the process for final approval of the first phase will have to start over again when the company determines it is ready to begin development.

“The primary purpose for this withdrawal is related to deteriorating market conditions, and not to pending legal challenges concerning the project,” Oligschlaeger wrote, “Cloudrock will continue to aggressively defend and litigate these specious claims, and

anticipates that it will be successful in each case, as it has in the cases which have already been decided."

Barb Morra, a spokesperson for the group of residents that has filed those appeals with 7th District Court in Moab and the Utah Court of Appeals, said she thinks the delay was caused because bonding for all infrastructure must be in place before the first phase development can begin. The bonding required amounts to $8-10 million because it must include not just the access road along with sewer and water pipes, but also electricity and other utilities, Morra said she has been told "on good authority."

The council approved phase 1A on Oct. 7 with a requirement that Cloudrock secure bonding of $1.5 million for the access road and drainage. In a statement to the council last week Grand County Engineer Mark Wright acknowledged that an additional bond of $2.5 million for sewer and water facilities is also required by the development agreement. A letter from Daniel Velazquez, project manager for Cloudrock, apologized for the "oversight" and stated Cloudrock's intention to activate a letter of credit for the additional amount.

Morra said she believes that all infrastructure means more than just a road, sewer, and water.

"Who is going to move there without DSL?" she asked. Morra said that bonding for infrastructure for the entire proposed Cloudrock development planned for Johnson's Up On Top mesa southeast of Moab (a total of 309 units) is far too great to be justified by the preparation and sale of only 12 units in the first phase.

Oligschlaeger closed his letter to the council by saying the company will move forward with the development.

"Cloudrock intends to submit applications for final platting when the timing is appropriate, consistent with the terms of the Development Agreement," Oligschlaeger wrote.

Ciarus said the current economic climate and the pending appeals make it more difficult to proceed with the first phase at this time.

"I think [withdrawing the plat is] the rational thing to do," Ciarus said. "Why spend a lot of money until these things [the appeals] get settled in court?"

"They're just trying to keep the development agreement alive any way they can," Morra said.

Oligschlaeger has requested that the county council hear the request to withdraw the plat at its upcoming meeting on Dec. 16.

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July 29, 2009

Moab City Council approves development agreement for proposed Lionsback Resort

Moab Times-Independent by Jeannine Wait contributing writer

In a 3-2 vote Tuesday night, the Moab City Council approved a development and phasing agreement for Lionsback Resort. Council members Kyle Bailey and Sarah Bauman voted against the measure.

The council's decision moves the development, planned for property east of Moab owned by the state School and Institutional Trust Lands Administration, another step closer to becoming a reality.

The controversial Lionsback proposal has been in the works for several years, as the project wound its way through the city planning process that included a series of public hearings and efforts to annex the property into city limits .

From the submission of the proposed resort's design concept to the planning commission in 2007 to Tuesday night's decision on the development and phasing agreement, the Lionsback process has included contentious public hearings before the planning commission and the city council, approval of the preliminary plan, annexation of the 175.12 acre parcel of SITLA land into the Moab city limits and the creation of a new sensitive area resort zone that city officials have said was specifically designed for large, environmentally sensitive developments such as Lionsback. Future approval of a final plan will be the last step in the development process for the proposed resort.

The Lionsback resort development is planned for a 46.8-acre portion of the property located on Sand Flats Road that was formerly the Lions Back Campground. The development will be constructed in five phases, according to the development plans. Phase one calls for the construction of a large hotel center, 50 hotel guest condominiums and the platting of 34 single-family lots.

According to the development and phasing agreement approved Tuesday, a variety of infrastructure requirements will have to be met in phase one. Internal subdivision roads and 105 parking spaces near the hotel are included in the construction design. A storm drain will be required for storm water management, and connections to the city sewer system and the city water system will be included, along with the installation of a large water storage tank that will distribute water to all proposed development facilities located within the resort.

Electric, natural gas, cable television and telephone lines will be extended and installed along Sand Flats Road to serve the resort. Sand Flats Road will be improved to allow for greater public safety with an expected increase of traffic the presence of the resort will bring on the road.

Unlike a standard subdivision agreement, the development agreement approved by the city council requires separate agreements for each proposed phase in order to establish the responsibilities for construction of particular onsite and offsite improvements, city officials said.

A Drinking Water Source Protection Plan will also be required, according to city officials. But that plan is not an element of development agreements and will be presented within the next two council meetings for approval.

At a public hearing held at city council Aug. 26, 2008, Moab citizens spoke for an hour about their concerns regarding the proposed development. Many who spoke raised concerns about the possible effect the development might have as a potential source of contamination of the sole-source aquifer located on a portion of the property.

Lionsback Resort development partner Mike Lawler, and Tom Kennedy, attorney for the developers, were present at Tuesday's council meet ing. After the council approved the development and phasing agreement Lawler and Kennedy were asked when construction could possibly begin. Kennedy explained that the partners are still in court defending a decision by the city council to approve the preliminary master plan for the development.

Several area residents and groups, including Living Rivers and Julianne Fitzgerald, who have been fighting the city's decision to grant approval, filed an appeal of the council's decision last year. The matter was heard by the city Board of Adjustment in August 2008. The BOA ruled that the city of Moab acted in accordance with city code. The BOA decision was then appealed to 7th District Court in Moab. Judge Lyle Anderson has yet to issue a decision in the matter, and a final ruling could take several more months.

"We feel that the earlier approval decisions will be validated in the court," Kennedy said Tuesday.

Lawler expressed confidence in the Lionsback plan. "This is a good project and we're still committed to it," he said.

LR Letter 03/20/08

Comments: Oil Shale and Tar Sands Draft Programmatic Environmental Impact Statement

Sherri Thompson
Bureau of Land Management
Colorado State Office
2850 Youngfield Street
Lakewood, CO 80215
Sent Via Fax: 303-239-3808

Re: Oil Shale and Tar Sands Draft Programmatic Environmental Impact Statement

Dear Ms. Thompson,

Thank you for this opportunity to provide comments for the Programmatic Environmental Impact Statement on development of oil shale and tar sands in Utah, Colorado and Wyoming. We understand that this NEPA process will be ongoing for several years and we desire to be added to the contact list for all future correspondence about public participation in this process.

Living Rivers/Colorado Riverkeeper is a non-profit organization based in Moab, Utah. Our mission is to mobilize the public toward restoring the ecological integrity of the Colorado River and its tributaries, especially as it relates to federal reserve lands.

We understand this federal action now under review will have serious negative impacts on the scarce water resources of the Colorado River basin. This federal program should be terminated because it will harm the water supply of 30 million people and to critical habitat for threatened and endangered species.

We support a new direction for the federal government to provide leadership toward energy independence through conservation, improving efficiency standards, and investing in renewable alternatives that do not further impair water resources and the atmosphere.

Quality fossil fuel products derived from deposits of oil shale and tar sands are wholly dependent on the availability of water resources. The demand for water in the Colorado River basin remains over-allocated and federal and state leadership to balance demand with supply has yet to occur. The annual supply from the Colorado River at the Compact Point, Lees Ferry, Arizona, has declined by 2 million acre feet since 1922, when the Colorado River Compact was first negotiated. Contrarily, the over-allocated demand continues to increase, of which this federal action will contribute to. Consequently, this federal leasing program will cause unnecessary harm to existing downstream users and ecosystems in the acquisition new water rights.

Furthermore, the transfer of senior water rights from agriculture to shale and tar extraction will adversely affect water quality in the form of diminished return flows, which will bring harm to wildlife habitat and increase the load of total dissolved solids in the water supply.

Many hydrology and climate studies funded by the federal government continue to provide more evidence that the downward trend in the water supply will continue into the 21st century and beyond. Indeed, it is highly probable that senior water rights are at risk as well. This federal action is poised to further aggravate an already serious water quantity/quality problem for the basin.

The Bureau of Reclamation recently completed an EIS (2007) called Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lakes Powell and Mead (Shortage Criteria). This document permits further depletions in the upper basin of the Colorado River. Contrarily, hydrologists and climate scientists have recently provided evidence, since the signing of the Record of Decision, that Lakes Mead and Powell have a 50/50 chance of going empty as soon as 2021. Regardless of

the odds or the dates, these reservoirs will empty for reasons of over-consumption and increased evaporation due to atmospheric warming.

We strongly recommend that the Bureau of Land Management do what the Bureau of Reclamation for Shortage Criteria did not: model the water supply of the Colorado River using paleoclimate and climate change data to make a sound determination of the hydrologic condition of the Colorado River basin for the 21st century.

Again, we thank you for this opportunity to comment and if we can be of any assistance to you please do not hesitate to call us.

Sincerely yours,

John Weisheit
Conservation Director
Colorado Riverkeeper

References:

Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lakes Powell and Mead (Shortage Criteria). http://www.usbr.gov/lc/region/programs/strategies.html

Barnett, T. P., and D. W. Pierce (2008), When will Lake Mead go dry? Water Resources Research, doi:10.1029/2007WR006704, in press. http://www.onthecolorado.org/Resources/ClimateDocs/2008BarnettPierce.pdf

Colorado River Open Source Simulator http://www.onthecolorado.org/cross.cfm

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LR Letter 03/20/08

Comments: EA Castle Rock Cut

Mr. Kevin Schneider
Public Affairs Office
Glen Canyon National Recreation Area
P.O. Box 1507
Page, AZ 86040-1507
Sent Via Fax: 928-608-6259

Re: Environmental Assessment (EA) for the Castle Rock Cut

Dear Mr. Schneider,

Thank you for this opportunity to provide comments concerning the excavation of bedrock near Castle Rock at Glen Canyon National Recreation Area (GCNRA) for the purpose of creating a short-cut on Lake Powell when reservoir levels are below 3620

feet (mean sea level). Our comments are written on behalf of the following organizations:

Living Rivers, www.livingrivers2.org
Colorado Riverkeeper, www.coloradoriverkeeper.org
Colorado Plateau River Guides, www.riverguides.org
Red Rock Forests, www.redrockforests.org
River Runners For Wilderness, www.rrfw.org
Southern Utah Wilderness Alliance, www.suwa.org
Water Advocacy Center, www.wateradvocacy.org
Wildlands CPR, www.wildlandscpr.org

In the Environmental Assessment the National Park Service made no comment in regard to our scoping request for an Environmental Impact Statement to consider not only this federal action, but all impacts associated with declining reservoir levels at GCNRA. To piece-meal a single impact on the reservoir is not internally consistent.

Since submitting our scoping comments in December, scientists from the Scripps Institute provided further evidence that Lakes Mead and Powell will naturally drain due to the effects of over-consumption and increased overall evaporation due to atmospheric warming. Their report has forecasted that the reservoirs have a 50/50 chance of going empty by 2021.

See: Barnett, T. P., and D. W. Pierce (2008), When will Lake Mead go dry? Water Resources Research, doi:10.1029/2007WR006704, in press.

http://www.onthecolorado.org/Resources/ClimateDocs/2008BarnettPierce.pdf

This science journal cites the comment letter by Living Rivers for the Draft EIS for Shortage Criteria (now called 2007 Interim Guidelines): Living Rivers letter Shortage Criteria DEIS

Regardless of the odds and the dates of this forecast (including all the previous scientific reports that reach the same conclusion), reservoirs levels will likely be in a situation of decline for the 21st century. This scientific forecast compels the Park Service to complete, instead, an Environmental Impact Statement to manage all the facilities in the GCNRA and for all benefit of all the different kinds of users in the NRA.

Though some may argue that this science justifies deepening the cut near Castle Rock in the short-term, but it does not justify this federal action for the long-term. Does the Park Service intend to continue deepening Castle Rock Cut until the reservoir reaches the level the penstocks at Glen Canyon Dam (3490 feet), or the level of the bypass tubes (3375 feet)? Rather than create an ever-deepening eyesore to this federal reserve land, it makes more sense to just leave Castle Rock Cut the way it is and educate and encourage the public to accept and work with this situation.

Our organizations want the federal government to provide effective leadership toward conserving and managing our finite natural resources wisely in a new century of uncertainty. This includes preserving all the natural features and resources in our

federal reserve lands. This also includes the conservation of diminishing fuel resources, improving the degraded condition of the atmosphere, and to protect our diminishing water resources for people and endangered species.

The majority of comments provided so far on this issue have come from a specific recreation group that is dependent on motorized boat activities at Lake Powell. This user group claims they need this excavation to save time, fuel and ensure their safety.

It is important to our members and partners that we educate the public about the impacts of popular motorized recreation at Lake Powell. This form of recreation is consumptive no matter what the reservoir level is. A boat owner/renter will spend anywhere from $500 to a $1000 in fuel alone for a typical motorized vacation at Lake Powell. This includes the fuel to get to and from Lake Powell by highway. Our question to the federal government is who or what is the real impact here to our diminishing and altered natural resources? Is it the consumer or the half-full reservoir?

This proposal is not about saving fuel. This proposal is about providing convenience. The federal government should encourage consumers of fuel to provide alternatives that will reduce their personal consumption at Lake Powell, rather than consumers of fuel asking the federal government and taxpayers to provide expensive alternatives for the sake of convenience with a trade-off that incurs permanent destruction to a natural landscape on federal reserve lands.

Safety is always an issue at Lake Powell. There are narrow channels throughout the reservoir. Boat accidents occur when the reservoir is full and when it is low. The Park Service claims the cut will reduce the dangers of congestion inherent at The Narrows near Antelope Point Marina. Yet the Park Service is responsible for creating this liability in the first place, because it approved the development of the marina. Again, the Park Service is not internally consistent in its management of GCNRA because the environmental studies are not comprehensive and instead done in a piece-meal fashion.

The Castle Rock Cut will be tight and narrow too. Indeed, it is possible the cut will increase the danger of boating at Lake Powell. It is possible that the risk to non-motorized boaters will actually be higher at the cut than The Narrows. Our organizations are compelled to suggest that the problems of boat safety have not been properly addressed at all in this Environmental Assessment.

Thank you for this opportunity to comment. We again ask that the Park Service perform a comprehensive Environmental Impact Statement to address the impacts of declining reservoir levels at GCNRA before engaging in any action at Castle Rock Cut. Please do not hesitate to contact us should you have any questions.

Sincerely yours,

John Weisheit, Conservation Director
Living Rivers/Colorado Riverkeeper
Colorado Plateau River Guides

Terry Shepherd, Executive Director
Redrock Forests

Jo Johnson and Tom Martin, Co-Directors
River Runners For Wilderness

Scott Groene, Executive Director
Southern Utah Wilderness Alliance

Laurel Hagen, Utah Program Director
Wildlands CPR

Harold Shepherd, Executive Director
Center For Water Advocacy

LR Letter 05/05/08

LR letter to Western Area Power Administration: Rate Increase Review

Living Rivers comment letter on Rate Order No. WAPA-137 for Colorado River Storage Project Transmission and Ancillary Services Rates for new rate schedule (SLIP-F8) that expires September 30, 2010, and that the current rate is insufficient to meet within the allowable period the revenue requirements for the Salt Lake City Area/Integrated Projects.

The requirements include operation, maintenance, interest expenses, and the required repayment of investment, commonly called the Basin Fund.

This proposal will extend the service rates for five years to 2015. The long-term contracts (20-year) will expire on September 30, 2024.

Download letter

ADDITIONAL INFORMATION

WAPA's Rate Order #137 web page

March 2008 - Federal Register Notice

September 2008 - Federal Register Notice

2006 - Informal Rate Adjustment Meeting

2004 - Report to the Upper Colorado River Commission

Congressional Testimony 06/05/08

Scientist: Warming bodes ill for water

By Phoebe Sweet for The Las Vegas Sun

Federal scientists and Western water managers will call Congress' attention Friday to the potentially devastating effects of climate change on the Colorado River, warning that an expected warming trend would reduce the amount of water in the river.

All told, the Colorado is a water source for more than 25 million people in seven states and Mexico. The volume of the river is particularly critical for Southern Nevada because the Colorado feeds Lake Mead, which supplies 90 percent of the Las Vegas Valley's water.

At Friday's congressional briefing, research scientist Gregory J. McCabe will present a study that shows even a 1.5-degree increase in the overall temperature of the Southwest will decrease the river's flow and increase the likelihood that it will fall short of the amount needed to meet the annual allocations upon which Nevada and the other members of the Colorado River Compact rely.

"I live in the West. I worry about water supply," McCabe said. "We have lived in an anomalously wet century. A shift to a much drier climate coupled with additional warming spells trouble for the future."

"Because the water usage is so large in the (Great) Basin, it is very sensitive to even small warmings," McCabe said.

McCabe's study estimated the effects of 0.86-degree Celsius warming, which is 1.548 degrees Fahrenheit — the same amount as the climate has changed in the past century — and the 2-degree Celsius, or 3.6-degree Fahrenheit, warming of the climate that scientists say is possible in the next century. He analyzed these changes against the backdrop of tree ring records used to estimate river flows going back more than 500 years, as well as more than 100 years of data from the river.

Friday's hearing comes on the heels of the release last week of a report detailing effects of warming on fish, forests, rangelands and arid lands. The U.S. Agriculture Department report predicts dwindling rivers, an increase in extreme weather — droughts and floods — and the death of plant life.

None of these conclusions should come as a surprise, said Eric Kuhn, general manager of the Colorado River Water Conservation District. Kuhn said he hopes Friday's briefing will impress upon congressional staffers — including two from the office of Nevada Rep. Jon Porter, a sponsor of the briefing — that continued funding for scientific studies and river flow monitoring is crucial.

But Tim Barnett, author of a controversial study published in February that predicted a 50 percent chance that Lake Mead would go dry by 2021, said Wednesday that no

matter how much new science is done, the future is clear. The professor with the Scripps Institution of Oceanography said every credible Southwest water study has concluded that serious water shortages will hit in the 2020s.

If global climate models are anywhere close to correct, Barnett said Wednesday, “we’ve got a real problem coming.” The time line is so short that preventing global climate change before the predicted water shortages become reality is impossible, so it’s time to plan, instead, for how we’ll deal with the inevitable deficits when they arrive, he said.

And shortage guidelines agreed upon in December by state and federal water management agencies, designed to cut water deliveries to Western states if river flows and reservoir storage dip below certain levels, won’t cut it, he said.

We are heading toward a future in which water will probably be rationed, Barnett warned.

Study by McCabe
Study by Barnett

Regional News 06/25/08

CAP official's vision for 2048: Mexican-gulf desalination

Salt water foreseen as vital to Southwest

By Tony Davis for the ARIZONA DAILY STAR
Tucson, Arizona | Published: 06.25.2008

PHOENIX — It's 2048 in the Sonoran Desert. Do you know where your water will come from? Thomas McCann, a top official with the agency that runs the Central Arizona Project, laid out a vision in response to that question Tuesday at a conference on the future of the Colorado River:

- Three desalination plants are on line by that year to increase the supply of CAP water flowing to Phoenix and Tucson. One is removing salt from seawater along the Gulf of California in the Mexican state of Sonora, and its booty is shared by Arizona, California, Nevada and Mexico.
- Two others are treating salt-laden groundwater in the areas of Buckeye and Gila Bend.
- A huge nuclear power plant is humming along the Gulf of California in Sonora, producing 600 megawatts of power to provide the juice for the adjoining seawater desalination plant.
- Construction is under way to expand the size of the concrete CAP canal running from the Colorado River to Tucson to deliver up to 2.2 million acre-feet of water a year. An

acre-foot — 325,851 gallons — will supply enough water for two to three families for a year. Currently, the aqueduct can deliver 1.8 million acre-feet.

- The Colorado River, over- allocated by 1.5 million acre-feet a year to the seven river-basin states and Mexico, has been boosted in supply by about one-third that much through cloud seeding and other forms of weather modification.

McCann, resource-planning manager for the three-county Central Arizona Water Conservation District, which oversees the CAP. was looking at how the state could furnish water to support a 2048 population of 11.5 million in Pima, Pinal and Maricopa counties, compared with less than 6 million today.

It was a controversial vision, with many conservationists, led by Sierra Club members and others in the crowd of more than 300, attacking it as a fantasy. They questioned whether the money would be available for such a large number of projects and whether the increased energy use for desalination would make it economically and environmentally unfeasible.

The critics also said leaders should concentrate on conserving water rather than simply searching for more water to serve population growth.

And they questioned whether solutions would ever be found to handle the waste produced by the nuclear plant. Bob Cook, a planner and economist active in Sustainable Tucson, an environmental group, said the presentation ignored the rising costs of energy that already are causing crises in the airline and trucking industries.

"People will migrate to where the water is," Cook said. "There's no real analysis here of the factors behind our population growth — cheap water, cheap land and cheap energy — and how they are changing."

It's good that CAP officials are looking that far ahead, but "I didn't get a sense of the problems to be overcome, so we can do all the things to get us where we need to be," said University of Arizona professor Karl Flessa, head of the geosciences department.

But the CAP's top official predicted that at least some of the ideas in McCann's vision will come to pass, although the agency has no formal blueprint for turning them into reality.

"Every element of what Tom talked about will be addressed by 2048, although I'm not sure how large of a scale," CAP General Manager Sid Wilson said to the crowd immediately after McCann's talk. "I'm absolutely sure he hit the right buttons."

The ideas also had many supporters in the audience. One was Sahuarita-area pecan farmer Richard Walden, whose father, Keith Walden, pushed for congressional approval of the CAP 40 years ago.

Walden said it's realistic to start looking at desalination now, given that water projects are something that needs planning 40 years in advance.

"We built CAP and started getting water from it (nearly) 25 years ago, and for a while we had more water than we needed," said Walden, of Farmers Investment Co. "Years later, we have to start looking for more."

The CAP has four Pima County representatives on its board and runs the day-to-day operations of the country's largest water project.

Educators, activists, economists, planners, consultants and researchers came to the Colorado River conference from at least 45 cities and towns around the state, including a substantial contingent from Tucson. The conference, held at the Arizona Biltmore, was sponsored by the University of Arizona Water Resources Research Center and a host of other parties.

The prospect of desalination has in recent years gained more currency among water leaders in Arizona and the West as they try to deal with the twin pressures of population growth and drought that have kept flows in the river below normal for seven of the past 10 years. State and Mexican officials have started preliminary talks on possibly building a plant along the Gulf of California.

The CAP agency has hired a consultant to explore the feasibility of desalinating salt-laden groundwater inside Arizona.

After his speech, McCann said his ideas were based on population projections for Pima, Maricopa and Pinal counties for the late 2040s. His vision also assumed that people would reduce their water use by about 5 percent per person by then, that local governments increase the amount of sewage water captured from homes by 5 percent, and that they increase the re-use of wastewater by the same amount.

He also assumed that the river would have minor shortages of water in 2018-19 and in 2025, but nothing affecting urban users until a major five-year shortage hits in the 2030s. He acknowledged, however, that those projections were based on simple speculation.

Contact reporter Tony Davis at 806-746 or tdavis@azstarnet.com

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Arizona mulls new water source: Ocean Mexican city considers desalination plant; U.S. partnership a possibility

By Shaun McKinnon - Aug. 31, 2008 12:00 AM
The Arizona Republic

The water for Arizona's future needs may lie off the coast of a popular Mexican resort, in the Gulf of California.

State officials are studying the idea of importing filtered ocean water from an as yet unbuilt desalination plant in Puerto Peñasco, 60 miles south of the U.S. border. The water - potentially billions of gallons a year - would help sustain urban supplies in

Arizona and could someday bring relief to rural residents, who have long sought a water source to replace rapidly depleting aquifers.

A Scottsdale company already is looking at possible designs for the plant in Puerto Peñasco, where overworked groundwater wells are on the verge of running dry. Arizona water managers see an opening for the state to team up with the seaside resort on a larger plant to serve both countries.

Such a project would raise a host of political, economic and environmental issues, and it's not clear who would pay the construction costs, which could top $250 billion.

But if backers can clear those hurdles, Arizona and neighboring states could tap a plentiful supply of water largely immune to the effects of drought and climate change.

"Desalinated ocean water is the future sustainable source," said Herb Guenther, director of the Arizona Department of Water Resources. "It's only logical that eventually we'll migrate toward it. We don't need interim supplies now. We need a permanent supply."

Oceans, which hold 97 percent of the Earth's water, were long considered a source of last resort, mostly because of the high cost of removing enough salt to produce drinking water.

Big desalination plants operate widely in arid Middle Eastern nations, where water is pricey and energy is cheap, but only recently has the ocean emerged as a viable resource in the United States. At least two dozen plants are now on drawing boards in California, a state beset with water woes.

"People explored and utilized the most cost-effective sources of water as long as they could," said Randy Truby, past president and a current director of the International Desalination Association, an industry group. "In California, they had the state water project, the Colorado River, sewage-water reclaim, conservation . . . but once you exhaust all of those things, seawater desalting is about the only place you can go."

That's where Puerto Peñasco finds itself. The city's groundwater resources have dwindled after years of steady use. The wells produce poor-quality water, and many are nearly exhausted. With growing interest from American developers, the city decided to turn to the most obvious alternative: the ocean.

"The water needs are severe," said Walt Bouchard, whose Scottsdale-based environmental consulting company was hired to study desalination options for Puerto Peñasco. "There are concerns that water may not be available for future development."

A need for water

The city, also known as Rocky Point, has long drawn Arizonans looking for a quick trip to the coast, but in recent years it also has attracted American investors eager to build hotels and time-share condominiums. About 81 projects sit in the planning stages, Bouchard said, and "they are going to need water."

Bouchard's company was asked by city officials to determine the feasibility of a seawater desalination plant, settle on a technology, produce a blueprint and prepare a bid package for a company that would design, build and operate the plant.

The study is based on a desalter that would produce 11.4 million gallons a day at the start and up to 45.6 million gallons a day by 2020, when the final stage is completed. That is enough water to serve at least 250,000 people a year.

Construction costs will depend on the technology, the location, the workforce and other factors. Poseidon Resources, a private company, is working on a plant near Huntington Beach, Calif., that could produce up to 50 million gallons of drinking water a day. The company estimates it will cost $250 million to build.

Mayor Heriberto Rentería put the Puerto Peñasco project on a fast track, with a goal of firing up the first desalination module by 2010 or 2011. Bouchard said his team expects to deliver its findings by the end of the year.

So far, the plan calls for a plant that would produce water for the local and tourist demand, but Bouchard said the city is aware of Arizona's interest and could consider a joint project once Puerto Peñasco's needs are met.

"Could they supply water to Arizona? The answer to that is very likely yes," Bouchard said. "We believe it is feasible. The question becomes what about the cost of conveyance? Could it work for Arizona? As part of the state's overall water portfolio, it might have a place."

A Mexican partnership

Arizona isn't desperate for water yet, but the prospect of finding a Mexican partner in Puerto Peñasco persuaded state officials to start planning now. In June, the Arizona-Mexico Commission, a non-profit trade and business group that works with government officials, endorsed a plan to study the feasibility of a jointly operated U.S.-Mexico desalination plant on the Gulf of California.

That study will look at a range of issues, including cost, funding sources, energy needs and environmental effects on the gulf. Its findings could point toward a joint project with Mexico or to some other alternative. The major players so far are Puerto Peñasco; the states of Arizona and Sonora; and Arizona's two largest water providers: Central Arizona Project and Salt River Project.

"CAP does not need the water today or for a good long while, not for 20 years, maybe 30," said Tom McCann, CAP's resource planning manager. "But the opportunity presented itself, and if we don't do it now, it could slip away for another 40 years. Just because we don't need it, others could."

McCann said neighboring California and Nevada, which are desperate for water, could participate in the project and use their share of water early, before Arizona needs it. Other Arizona cities also could help build infrastructure that could allow water exchanges as far away as Flagstaff or Prescott.

Although water from a plant would probably be used mostly in southwestern Arizona to start, it would give the entire state added security. Water normally drawn down the lower Colorado could remain in Lake Mead, offsetting the risk of shortages. Water made available to rural areas could help protect rivers and riparian habitat.

"Water is limited in Arizona, and it's a lot easier to help people find supplies than to fight over supplies," said John Hetrick, water-rights analyst for SRP. "One of our tactics has been to augment Arizona's water supplies. If we can help solve a community's problems, we can avoid a conflict in the future."

The price of water

Potential roadblocks exist. One of the biggest unanswered questions for this project and any new desalination plant is how it will be powered. Desalting ocean water requires significant amounts of energy, which is why many of the early plants were built alongside power plants.

The proposed Puerto Peñasco plant would likely be built in stages. The first stage could operate using power from the existing electrical grid, but at full operation it would need additional sources. Bouchard, the consultant on the project, said his team is exploring clean technologies, such as a solar-energy array that uses molten salt, a technology that allows a power plant to store electricity after the sun sets.

A higher-capacity U.S.-Mexico plant would require even more electricity, which is another issue under study by the Arizona consultants.

The environmental effects of a desalination plant also raise red flags. Seaside plants can disturb or damage ocean habitat and risk contaminating the water with chemicals used in the process. The waste product - a concentrated brine - threatens sea life and water quality.

A National Research Council study released earlier this year warned that significant uncertainties remain about the environmental effects of seaside desalination. The council said researchers need to more thoroughly explore what happens on both ends of the process.

Protecting the ocean will make the water more expensive, but "part of the real cost of desalination means spending the money to properly address the environmental impacts," said Peter Gleick, president of the Pacific Institute, a non-profit research center in Stanford, Calif., that monitors water and the environment.

"It's a classic economic issue, making sure the full costs are addressed. We can't ignore environmental costs."

The institute studied California's plans to expand desalination and concluded that cities in that state could find water more quickly and cheaply through conservation and better management of existing resources.

For an inland state like Arizona, desalinating mineral- laden groundwater might be cheaper and require less energy, Gleick said. Filtering seawater and moving it even a short distance could push prices so high that no one will buy it.

An acre-foot of desalinated seawater costs from $750 to more than $1,200, depending on the location and the technology used. CAP and SRP sell water to cities and agricultural customers for $30 to $110 per acre-foot, and farmers along the Colorado River rarely pay more than $50 an acre-foot. An acre-foot is 325,851 gallons, enough to serve one or two typical households for one year.

California's higher water costs have made desalinated supplies more attractive. Municipal customers pay about $600 per acre-foot to the Metropolitan Water District of Southern California, the region's largest water provider.

The break-even point could take longer to reach in Arizona, especially if rising energy prices push the cost of desalination higher. The gap could close faster if the same high energy prices raise the cost of traditional water sources, such as the CAP Canal, which moves supplies 336 mostly uphill miles.

"We are spoiled by cheap water," said Guenther, the state water chief. "Right now we're fighting over the few remaining scraps of an inexpensive water supply. We'll have to get used to the fact that these alternative or sustainable supplies are going to be considerably more expensive than we're used to. We're going to have to bite the bullet."

###

Arizona mulls new water source: Ocean

Mexican city considers desalination plant; U.S. partnership a possibility

by Shaun McKinnon - Aug. 31, 2008 12:00 AM The Arizona Republic

The water for Arizona's future needs may lie off the coast of a popular Mexican resort, in the Gulf of California.

State officials are studying the idea of importing filtered ocean water from an as yet unbuilt desalination plant in Puerto Peñasco, 60 miles south of the U.S. border. The water - potentially billions of gallons a year - would help sustain urban supplies in Arizona and could someday bring relief to rural residents, who have long sought a water source to replace rapidly depleting aquifers.

A Scottsdale company already is looking at possible designs for the plant in Puerto Peñasco, where overworked groundwater wells are on the verge of running dry. Arizona water managers see an opening for the state to team up with the seaside resort on a larger plant to serve both countries.

Such a project would raise a host of political, economic and environmental issues, and it's not clear who would pay the construction costs, which could top $250 billion.

But if backers can clear those hurdles, Arizona and neighboring states could tap a plentiful supply of water largely immune to the effects of drought and climate change.

"Desalinated ocean water is the future sustainable source," said Herb Guenther, director of the Arizona Department of Water Resources. "It's only logical that eventually we'll migrate toward it. We don't need interim supplies now. We need a permanent supply."

Oceans, which hold 97 percent of the Earth's water, were long considered a source of last resort, mostly because of the high cost of removing enough salt to produce drinking water.

Big desalination plants operate widely in arid Middle Eastern nations, where water is pricey and energy is cheap, but only recently has the ocean emerged as a viable resource in the United States. At least two dozen plants are now on drawing boards in California, a state beset with water woes.

"People explored and utilized the most cost-effective sources of water as long as they could," said Randy Truby, past president and a current director of the International Desalination Association, an industry group. "In California, they had the state water project, the Colorado River, sewage-water reclaim, conservation . . . but once you exhaust all of those things, seawater desalting is about the only place you can go."

That's where Puerto Peñasco finds itself. The city's groundwater resources have dwindled after years of steady use. The wells produce poor-quality water, and many are nearly exhausted. With growing interest from American developers, the city decided to turn to the most obvious alternative: the ocean.

"The water needs are severe," said Walt Bouchard, whose Scottsdale-based environmental consulting company was hired to study desalination options for Puerto Peñasco. "There are concerns that water may not be available for future development."

A need for water

The city, also known as Rocky Point, has long drawn Arizonans looking for a quick trip to the coast, but in recent years it also has attracted American investors eager to build hotels and time-share condominiums. About 81 projects sit in the planning stages, Bouchard said, and "they are going to need water."

Bouchard's company was asked by city officials to determine the feasibility of a seawater desalination plant, settle on a technology, produce a blueprint and prepare a bid package for a company that would design, build and operate the plant.

The study is based on a desalter that would produce 11.4 million gallons a day at the start and up to 45.6 million gallons a day by 2020, when the final stage is completed. That is enough water to serve at least 250,000 people a year.

Construction costs will depend on the technology, the location, the workforce and other factors. Poseidon Resources, a private company, is working on a plant near Huntington

Beach, Calif., that could produce up to 50 million gallons of drinking water a day. The company estimates it will cost $250 million to build.

Mayor Heriberto Rentería put the Puerto Peñasco project on a fast track, with a goal of firing up the first desalination module by 2010 or 2011. Bouchard said his team expects to deliver its findings by the end of the year.

So far, the plan calls for a plant that would produce water for the local and tourist demand, but Bouchard said the city is aware of Arizona's interest and could consider a joint project once Puerto Peñasco's needs are met.

"Could they supply water to Arizona? The answer to that is very likely yes," Bouchard said. "We believe it is feasible. The question becomes what about the cost of conveyance? Could it work for Arizona? As part of the state's overall water portfolio, it might have a place."

A Mexican partnership

Arizona isn't desperate for water yet, but the prospect of finding a Mexican partner in Puerto Peñasco persuaded state officials to start planning now. In June, the Arizona-Mexico Commission, a non-profit trade and business group that works with government officials, endorsed a plan to study the feasibility of a jointly operated U.S.-Mexico desalination plant on the Gulf of California.

That study will look at a range of issues, including cost, funding sources, energy needs and environmental effects on the gulf. Its findings could point toward a joint project with Mexico or to some other alternative. The major players so far are Puerto Peñasco; the states of Arizona and Sonora; and Arizona's two largest water providers: Central Arizona Project and Salt River Project.

"CAP does not need the water today or for a good long while, not for 20 years, maybe 30," said Tom McCann, CAP's resource planning manager. "But the opportunity presented itself, and if we don't do it now, it could slip away for another 40 years. Just because we don't need it, others could."

McCann said neighboring California and Nevada, which are desperate for water, could participate in the project and use their share of water early, before Arizona needs it. Other Arizona cities also could help build infrastructure that could allow water exchanges as far away as Flagstaff or Prescott.

Although water from a plant would probably be used mostly in southwestern Arizona to start, it would give the entire state added security. Water normally drawn down the lower Colorado could remain in Lake Mead, offsetting the risk of shortages. Water made available to rural areas could help protect rivers and riparian habitat.

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http://www.azcentral.com/arizonarepublic/news/articles/2008/08/31/20080831river-desalter0831.html#comments

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Regional News 07/06/08

Water: A Special Feature by The Las Vegas Sun

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LR Letter 07/07/08

LR Scoping Letter for Lake Powell Pipeline (and regional news)

Scoping comments by Living Rivers about environmental issues for the proposed Lake Powell Pipeline Project, Utah and Arizona, to the Federal Energy Regulatory Commission (Project No. 12966-002).

Click here to download letter

Click here to download Coalition letter of November 19, 2008

Click here to download Coalition letter of January 5, 2009

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Projections have doubled
Inflation driving up cost estimate of planned Lake Powell pipeline
Plan now tabbed at $1.1 billion, but that's before debt service

By Patty Henetz for The Salt Lake Tribune
Article Last Updated: 07/18/2008 09:43:55 PM MDT

The estimated cost of building the Lake Powell pipeline has nearly doubled in three years and could continue to grow.

State officials on Friday say they expect construction of the 174-mile pipeline that would bring water to Washington, Kane and Iron counties would cost at least $1.1 billion. In 2005, the cost estimate was $585 million.

"We're still working through the economic analysis," said Eric Millis, spokesman for the Utah Division of Water Resources. "This is a good snapshot of where the project is now."

But the estimate doesn't include debt service on bonds, which pipeline critics say could push the ultimate cost much higher, perhaps beyond residents' ability to pay.

Paul Van Dam, a former Utah attorney general and director of Citizens for Dixie's Future, said debt repayment would at least triple the pipeline cost to $3 billion, and could reach $6 billion by the time the project is finished.

"It's pretty striking that this cost estimate can double in three years. What's going to happen in the next three years?" Van Dam said. "I wonder how in the world anyone thinks these counties can pick up these costs?"

The engineers who put together the construction estimate included building small hydroelectric stations on the pipeline.

A line-item breakdown of the estimate shows the hydroelectric components account for $95.5 million of base construction costs for Washington County.

Necessary electrical transmission lines would cost about $73.3 million. Together, they come to about one-quarter of Washington County's total cost. A 15 percent contingency would be added to the base.

Power transmission would account for $14.8 million of the Cedar City spur, which would incur a base construction cost of about $100 million. Kane County's base cost estimate is $5.3 million.

The pipeline would provide about 100,000 acre-feet of water per year, with 70 percent going to Washington County, 20 percent to Iron County and 10 percent to Kane County. An acre-foot is enough for one or two households a year.

While the hydroelectricity generated by falling water in the 69-inch diameter pipes could offset the cost of the power needed to pump the water uphill, there still would be a net energy loss, Millis said.

But he couldn't say whether it might be less expensive to build the pipeline and pump the water uphill without the added hydroelectric construction costs.

"We know that we have to pay for the pumping regardless," Millis said. "We know first and foremost that it's a water development project.

Strong has said the state chose the Federal Energy Regulatory Commission as the lead agency on the water-delivery project because licensing the hydro and then doing required environmental studies of the massive project would be quicker and less expensive than with the U.S. Bureau of Land Management at the helm as originally planned.

FERC says it could produce 300 megawatts of power, equivalent to the needs of at least 225,000 households. But even FERC acknowledges it will take far more power to pump the water uphill than the little electric projects could yield. The hope is that selling the electricity at peak-hour prices will raise extra cash.

The money would go to a state-run enterprise fund set up to pay for operations, maintenance and other costs associated with the project, Millis said.

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Pipeline costs: Lake Powell project looks less like smart idea

Tribune Editorial
Article Last Updated: 07/21/2008 06:57:53 PM MDT

More scientists are making more dire predictions about how much the Colorado River water levels could shrink in coming years due to climate change and less snowpack in the Rockies.

At the same time, the estimated price tag on a pipeline to carry 100,000 acre feet of that dwindling water from Lake Powell 139 miles to three Utah counties grows ever bigger. In fact, it has nearly doubled in the three years the pipeline project has been on the Utah Division of Water Resources' drawing board, from its original $585 million to $1.1 billion at least.

The uncertainty about future water flow and the eventual cost of the pipeline makes the project too risky. Taking that risk would be foolhardy, when conservation of existing water sources could make the pipeline unnecessary.

Opponents of the project, many of whom live in the St. George area, where the additional water would encourage more growth (read: sprawl), say the project could end up costing $6 billion.

That is speculation, of course. So is the DWR estimate, which does not include debt service on bonds needed to finance the project. The three counties that would benefit from the additional water - Washington, Iron and Kane - will pay off the debt. At least, that's the current plan. But if the cost continues to escalate as steeply as it has so far, it's doubtful the counties would be able to raise connection fees and water rates enough to make the payments. Who would be on the hook then? All Utah taxpayers.

But the most speculative - and most important - of these unknowns is whether the pipeline will be worthless by the time it is built because the 100,000 acre feet of water it is designed to transport no longer flows into Lake Powell.

Climate scientists believe the American West will feel the effects of climate change more intensely than other areas. Some predict the annual mountain snowpack that feeds not only the Colorado but all the other streams Westerners rely on for drinking water and irrigation will shrink drastically or even disappear. That would leave all Utahns holding the bag - an empty bag attached to hefty debt payments.

The more we learn about the potential effects of this project, both intended and unintended, the less appealing it is. Moving ahead with it could be disastrous.

Regional News 07/20/08

Is growth over?

California's continuing water crisis may mean the end of the state as we have known it.

By Cary Lowe for Los Angeles Times
July 20, 2008

Gov. Arnold Schwarzenegger's recent executive order certifying that California is in a drought and directing state agencies to start thinking about what to do about it is only the latest sign that a way of life built on cheap and readily available water is coming to a close. For much of the state, June was the driest month on record, according to the National Climatic Data Center. The continuing water crisis raises the question of whether we are approaching the limits of growth in California.

For the last century, it seemed there was no limit. More than any other state, California's economy and population exploded, a growth spurt fueled in large part by abundant water supplies. Now we may be at a turning point, especially in Southern California.

Growing Western cities at crossroads, report says

The most obvious indicators certainly point in that direction. Snowmelt in the Sierras, which historically has filled the state's major reservoirs and aqueducts, has been shrinking steadily. California's rights to Colorado River water have been gradually scaled back by regional agreements and mounting claims by other states. Court orders in response to environmental lawsuits aimed at protecting endangered fish species have slashed water deliveries from the San Joaquin-Sacramento River Delta. And reduced rainfall throughout the region has made it increasingly difficult to replenish groundwater basins.

Initially, the public agencies responsible for ensuring water supplies were cautious in their response to the signs of a growing water crisis, perhaps fearing a political backlash from Californians who expect to be able to open a tap and let it flow, without limits, any

time, anywhere, for any purpose. Adding a reservoir, drilling a few more wells or cutting deals with farmers to transfer some of their water to nearby cities helped soften, if not avoid, the effects of the state's growing water shortage. Now, however, the situation is becoming sufficiently dire that the water agencies are beginning to give the public a taste of what lies ahead.

Earlier this year, the Metropolitan Water District of Southern California, the largest water agency in the region and the principal supplier to the cities of Los Angeles, San Diego and numerous others in between, announced a 30% reduction in deliveries to agricultural customers, which means that farmers will have less water for their crops and to give to cities. And things could get worse. The agency also adopted a contingency plan that could result in similar cutbacks to urban consumers and rate hikes of up to 20%. Local water agencies, including the Los Angeles Department of Water and Power, followed suit, beginning with voluntary conservation programs but warning of mandatory ones to come.

Such steps alone will probably not make enough of a difference to avert a water-supply crisis. There is a finite amount of water available in Southern California, and it has not increased since 1990. The MWD annually imports 2.1 million gallons of water to the region. Without a plan of action by state and local governments, coupled with across-the-board changes in how we consume, major sectors of the state's economy such as agriculture and real estate development will soon face previously unimagined restrictions.

Meanwhile, environmental groups such as the California Water Impact Network are contending that many of our water-use practices violate the state's constitutional mandate that water be put to beneficial use to the maximum possible extent and that waste or unreasonable use be prevented.They particularly object to pumping water from the San Joaquin-Sacramento River Delta to irrigate thirsty crops like cotton and alfalfa, as well as lawns. These environmentalists plan to petition the state Department of Water Resources to permanently reduce Delta pumping. If state officials or the courts agree, it would affect virtually every aspect of water use.

Real estate development already is feeling the pinch. State laws that took effect six years ago require water agencies to document sufficient long-term water supplies to support large developments. If they can't, they must block the developments, and these agencies are increasingly doing just that. The Eastern Municipal Water District, the largest water agency in Riverside County, recently delayed approval of a huge industrial development because it couldn't guarantee water supplies to the facility. The agency also indicated that it may withhold certifications of water availability for other projects if conditions do not improve.

Courts are increasingly weighing in on the issue. Last year, the state Supreme Court overturned approval of a major new planned community in the Sacramento area because the project's environmental impact report did not adequately address long-term water supplies. Earlier this year, a court in Riverside County reversed the go-ahead for a large residential project in Banning, in part on similar grounds. All told, dozens of

planned developments throughout Southern California already have been delayed or abandoned because of uncertainty about long-term water supplies. And that number will soar once the recession in real estate eases.

Scaled-down developments that clear the water-supply hurdle must still meet tough new water-use standards. For instance, don't expect new homes to be built along the fairways of a new golf course or the shores of a man-made lake. The appliances in the new homes will be low-flow, and the pavement outside permeable to help replenish groundwater. State legislation that would have required developers to utilize all feasible water-efficiency measures in new construction and carry out other conservation measures in the surrounding community didn't pass earlier this year, but it undoubtedly will be back. Meanwhile, the Legislature is considering a requirement that all urban water agencies reduce their consumption by 20% within 12 years.

Agriculture, which consumes two-thirds of the delivered water in the state and remains a huge component of the California economy, is also feeling the sting of dwindling water supplies. Beginning with the MWD's reduction in water supplies, agencies throughout the state are pressing farmers to cut their water consumption by not growing water-intensive crops, investing in more efficient irrigation systems and even taking land out of agricultural use altogether. Pending state legislation would establish agricultural water conservation requirements.

The entire state economy ultimately will be affected by the water crisis. Yet it is unrealistic to expect that California's population and economy will stop growing. Accommodating that growth will require major commitments to reducing water consumption and increasing supply.

Unlike previous droughts, the current shortage of water is largely the product of long-term climate change because of global warming. This means that the shortage will not abate without major changes in how we consume water.The cheapest and easiest way to increase water supplies is conservation. Even small increases in the efficiency of agriculture's use of water can produce huge savings. Cutting back landscape irrigation, which accounts for more than half of urban and suburban consumption, is another option, as is treating and recycling water. Finally, rain and snowmelt can be collected and stored for future use.

As things stand now, California is rapidly approaching the limits of growth. Those areas of the state with limited local water supplies already are off-limits for development, and those sectors of the economy that are big users of water, such as agriculture, are cutting back. We can extend the period of growth and prosperity by pursuing the measures mentioned above. What remains to be seen is whether that will just postpone the day of reckoning -- when we have done all we can do to cut consumption but demand still exceeds supply. At the point, California will have reached the limit of its growth.

Cary Lowe is a land-use lawyer and urban planning consultant.

Regional News 08/25/08

McCain stirs uproar with call for renegotiating Colorado River Compact

By Patty Henetz for The Salt Lake Tribune
Article Last Updated: 08/21/2008 09:32:13 AM MDT

The bonfire has been stacked for some time, but Arizona Sen. John McCain tossed in a match last week when he said the 86-year-old law that governs use of the Colorado River 'obviously' should be renegotiated.

The presumptive Republican presidential nominee clarified his statement Wednesday, saying it may have been "mistakenly construed as a call to rescind the Colorado Compact" when all he wanted was a more measured approach - which nevertheless could mean less water for Utah.

But Wednesday morning, after speaking during a water-conservation symposium in the tiny mountain town of Alta, Republican Gov. Jon Huntsman Jr. said he, too, would be open to at least looking at changes to Colorado River law--as long as regional governors lead the way.

Click here to read the rest of the story.

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By Kristen Wyatt for THE ASSOCIATED PRESS

2:38 p.m. August 20, 2008

DENVER – Sen. John McCain has backed off his comment that a key Western water agreement should be renegotiated, but Democrats signaled they plan to pummel him for his remarks, which even Republicans in swing-state Colorado denounced.

The GOP presidential candidate told the Pueblo (Colo.) Chieftain last week that the 1922 Colorado River Compact ought to be “renegotiated over time.” But in a letter Wednesday to Sen. Wayne Allard, R-Colo., McCain wrote that his comments were misconstrued.

“Let me clear that I do not advocate renegotiation of the compact,” the letter said. McCain aides said the letter was e-mailed across the West after even fellow Republicans derided McCain for suggesting the water agreement may need to be retooled.

The Colorado River is one of the most important water sources in the West, and the 1922 compact allocates the river among the lower basin states – Arizona, California and Nevada – and the upper basin states – Colorado, New Mexico, Utah and Wyoming.

A second agreement signed last year a 2007 was designed to ease tension among the compact states caused by a long-term drought.

Despite McCain's letter, Democrats heated up their criticism of McCain's comments, apparently seeing political traction in their criticisms.

Several Mountain West states once considered solid GOP country are now seen by Democrats as within reach of their candidate, Barack Obama. Democrats pounced on McCain's water remark last week and renewed their criticism Wednesday.

Sen. Ken Salazar, D-Colo., a former head of the state's Department of Natural Resources, said McCain's comment was “dangerously naive.”

“It reflects, in my view, a fundamental misunderstanding” of the importance water politics has in the arid West, Salazar said. He cited the old Colorado political adage that “whiskey's for drinking, water's for fighting.”

Wyoming Gov. Dave Freudenthal, also a Democrat, said McCain's water comment could provide an opening for Democrats.

“I was absolutely astonished that anybody running for president would suggest it,” Freudenthal said Wednesday at a news conference in Casper, Wyo.

Democrats argued that McCain's misstep shows that, if elected, he may give Southwest population centers such as Los Angeles or Phoenix priority over the less-populous states along the Colorado River.

“I don't think his suggestion was premised on the idea that he'd like to have the upper Colorado basin states keep their water. Quite the contrary,” Freudenthal said.

Arizona Democratic Gov. Janet Napolitano said she hoped McCain misspoke in his original comments “because he obviously doesn't know that we actually went in and revised that compact and signed that agreement” in 2007.

“I think he needs to be briefed on what's actually happening with the Colorado River,” she said.

In his letter, McCain said he is a Westerner who understands water is scarce. He said he advocates cooperation and dialogue among the seven states – but “in a way that is fully consistent with the compact.”

An Allard aide did not immediately return a call for comment on the letter. Last week, Allard denounced McCain's comment.

Democratic Colorado Gov. Bill Ritter brushed aside McCain's letter and said his comment shows the Republican has “a bias for the lower basin states” such as Arizona.

“The word 'renegotiate' does not have double meaning,” Ritter said.

A political scientist at Colorado College in Colorado Springs, Bob Loevy, said Democrats would love to establish an image of McCain as someone more concerned with California and Arizona than the Mountain West. But Loevy said McCain's water comment likely won't remain on voters' minds until November.

“Above all, he didn't say, 'We're going to reduce Colorado's allotment,'” Loevy said.

Associated Press Writers Paul Davenport in Phoenix and Ben Neary in Cheyenne, Wyo., contributed to this report.

###

A new set of negotiations need for The Colorado River Compact

Robert W. Adler
Article Last Updated: 08/30/2008 12:19:59 AM MDT

In its Aug. 24 editorial, "Law of the river: Don't dis the Colorado River Compact," The Salt Lake Tribune suggested that Sen. John McCain's proposal that the 1922 Colorado River Compact be revisited might generate costly and divisive conflict among the Colorado River Basin states.

Strategic amendments to the compact, however, could prevent rather than generate conflict, correct mistakes made when the compact was originally negotiated, and address issues that were beyond consideration in 1922.

The Tribune suggests that the compact is like the Constitution, and equally resistant to change. But we have amended the U.S. Constitution 17 times (not including the 10 in the Bill of Rights). The Colorado River Compact has never been amended in 85 years.

The Southwest is a very different place than it was in 1922. The region's population has grown dramatically, and shifted from rural to urban. Recreational and other instream water uses compete with traditional offstream uses such as farming and ranching. We know more about the river's hydrology. We better understand the environmental impacts of dams and water diversions, and the public places a higher value on environmental protection.

As The Tribune noted, compact negotiators relied on a 20-year hydrological record and assumed they could safely dole out at least 16.5 million acre-feet of water per year. Unfortunately, the rest of the 20th century was much drier. The average flow from 1896 to 2004 was less than 15 million acre-feet, but even that may understate the long-term picture. Based on tree-ring records, scientists have identified periods of longer and much more severe droughts in the basin than anything in the 20th century.

But other factors also support renegotiation of some aspects of the compact. First, recent scientific models show that global warming is likely to exacerbate water shortages in the basin. We may face as much as 25 percent declines in streamflow by 2030, 45 percent by 2060, and flows too low to meet even current water demands in as little as 20 years.

Second, neither Mexico nor Native American tribes had a seat at the compact negotiating table. Although the United States negotiated a treaty with Mexico two decades later, questions remain about the fairness of that allocation, especially during

dry periods. Some tribal water rights have been quantified, but water rights for other tribes remain unsettled.

Third, environmental impacts of water development were not considered in 1922. The Colorado River once hosted the largest percentage of endemic fish - species found nowhere else on the planet - of any river system in the world. Some are now extinct, and many more species of fish, birds, amphibians, reptiles and mammals are threatened or endangered. The American public has supported new environmental laws that profoundly affect how and where Colorado River water can be used.

Fourth, growth patterns in the basin have shifted dramatically. In 1922 it was obvious that rapid growth would continue in Southern California, but no one anticipated the urban booms in Nevada, Arizona and along Utah's Wasatch Front.

Fifth, while the upper basin states (including Utah) have not used all of the water they are entitled to under the compact, that water may not be available when they are ready to do so. So what happens when we try to use those allocations, honor tribal rights and our treaty obligations to Mexico, try to restore the river's endangered ecosystems, and satisfy demand in growing urban areas, all with less water to go around?

All negotiations require parties to guess about the future and then live by their predictions. A deal is a deal. However, it is one thing to apply that principle to commercial transactions, but quite another to apply it to decisions made by one generation on behalf of another across an entire region.

Interstate agreements with profound implications for growth and development, ecological health and societal welfare across seven states should not be revisited lightly. But neither should reconsideration be off-limits.

A new set of negotiations will implicate a broader, more complex set of tradeoffs between offstream and instream uses, international and domestic factors, economic versus environmental needs, and private versus public uses and values.

If the federal government, the basin states, tribes, environmental groups, Mexico and other players wait for water conflicts to become more acute, the likely response will be litigation and/or political warfare. A fairer and more reasoned agreement would be more likely if we addressed the future of the Colorado River sooner rather than later.
ROBERT W. ADLER is associate dean for academic affairs, James I. Farr chair and professor of law at the University of Utah's S.J. Quinney College of Law. He also is the author of "Restoring Colorado River Ecosystems: A Troubled Sense of Immensity" (Island Press, 2007).

Regional News 08/27/08

Poll says half of Nevadans willing to live with tighter restrictions on water use

By HENRY BREAN for Stephens Media

Half of Nevada residents would support restrictions on their water use to help stretch the region's shrinking supply in the face of climate change, according to a Las Vegas Review-Journal opinion poll.

Fewer than one third of Nevadans polled said they would oppose new restrictions on water use, while 19 percent of respondents were undecided.

Among the likely voters interviewed in six Western states, those in Nevada and Utah were most willing to accept new limits on their water use.

Activist Bob Fulkerson was pleasantly surprised by the results in Nevada.

"It shows that people are willing to do a lot more with water conservation, and that's encouraging," said Fulkerson, who is executive director of the Progressive Leadership Alliance of Nevada.

Several recent scientific studies warn that climate change could reduce rainfall and snow accumulation in the Rocky Mountains, leading to longer and more severe droughts on the Colorado River. The Las Vegas Valley gets 90 percent of its water from the river.

Though Nevadans remain split over whether climate change is real or unproven, 57 percent of those polled said the benefits of reacting to the phenomenon will be worth the economic costs.

Fifty-six percent of respondents said they thought efforts to address climate change would create new jobs in agriculture and alternative energy research and production.

The questions on climate change came as part of a wide-ranging survey commissioned jointly by the Las Vegas Review-Journal, the Denver Post and the Salt Lake Tribune.

The poll was conducted in mid-August by Mason-Dixon Polling & Research of Washington, D.C., which interviewed 400 likely voters each in Nevada, Arizona, Colorado, New Mexico, Utah and Wyoming.

The margin of error for the regional results is plus or minus 2 percentage points.

The margin of error for state-specific results is plus or minus 5 percentage points.

The level of support for water restrictions among Nevada residents comes as no surprise to J.C. Davis, spokesman for the Southern Nevada Water Authority.

In a desert state that ranks as the nation's driest, the importance of water is never far from people's minds, he said. "It hits home. It's not some invisible factor to us."

There are limits to which conservation measures people are willing to support.

If pollsters asked about harsher punishments for water wasters, the response would be overwhelmingly positive. If they asked about making it illegal to wash a car in your driveway, "they'd get what we got when we tried that in 2003: torches and pitchforks," Davis said.

Of the seven Western states that share water from the Colorado River, all but one was included in the Review-Journal poll. Davis said he was "surprised" by the omission of California, whose share of the river is 14 times the size of Nevada's and the largest among the seven states.

Fewer than half of the Westerners polled, and 48 percent in Nevada, consider climate change to be "scientifically established reality." Arizona residents were the most confident and Wyoming residents the most skeptical about climate change.

Slightly more than half of those polled in the six states said climate change is no more of a threat in the West than it is throughout the country.

A similar percentage said taking action to deal with climate change would be worth the economic costs, though neither the action to be taken nor the costs were spelled out in the poll question.

Some 54 percent of those polled in the region believe addressing climate change in the West would create jobs "through the development of new energy and agricultural technologies."

A breakdown of the responses in the six states polled also reveals:

-- More women than men, 53 percent to 45 percent, consider climate change to be scientific reality;

-- More women than men, 51 percent to 45 percent, favor conservation measures to curb water use;

-- And Western Democrats and independents, at 59 percent and 54 percent respectively, support conservation measures more than do Republicans, at 36 percent.

And, finally, there is this striking result from the poll, a disparity for which Al Gore might bear some responsibility:

While 74 percent of Democrats in the West see climate change as a reality, 70 percent of Republicans consider it "unproven and subject to debate."

Click here for more detail.

Contact reporter Henry Brean at hbrean@ reviewjournal.com or 702-383-0350. http://media.lvrj.com/images/2930818.jpg

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Regional News 09/09/08

Crucial Grand Canyon sandbars have rapidly eroded

By AMANDA LEE MYERS for The Associated Press

PHOENIX (AP) — Newly built-up sandbars crucial to wildlife in the Grand Canyon have rapidly eroded in the last four months, some shrinking back to the size they were before a costly manmade flood.

Torrents of water were released from the Glen Canyon Dam on the Arizona-Utah line in March to mimic natural flooding and rebuild sandbars along the 277-mile river in the Grand Canyon, where the ecosystem was forever changed by the dam's construction more than four decades ago.

Officials had expected erosion following the three-day flood, but they hadn't expected so much so fast.

"Circumstances conspired against our being able to protect the beaches as long as we had hoped," Grand Canyon National Park Superintendent Steve Martin said Tuesday. "Substantial erosion has occurred."

The accelerated erosion is the result of a requirement to release extra water from Lake Powell above the dam into the Colorado River, said John Hammill, chief of the Grand Canyon Monitoring and Research Center.

The requirement says that when Lake Powell has extra water, some of it needs to be released and go to Lake Mead on the Arizona-Nevada line. The requirement is designed to ensure that Colorado River states all get an equal share of water, a precious and limited resource in the West.

Lake Powell rarely has extra water because of extended drought, but a wet winter led to the highest water level in the reservoir in six years. That triggered the requirement in April, a month after the three-day flood in the Grand Canyon.

Between April and Sept. 1, officials increased flows from the Glen Canyon Dam by 20 percent. Time-lapse videos taken by the U.S. Geological Survey of two sections of the Grand Canyon show that the three-day flood created sandbars as large as football fields. But the sandbars began shrinking in April and by August, appear to be much smaller and about the same size they were before the flood.

Four to five times the normal amount of water was released from the dam during the flood, picking up sediment and depositing it in sandbars.

The 20 percent higher flows this summer then washed away much of it. Compounding the erosion is the practice of sending more water through the dam in the daytime to maximize power generation, then trimming output at night.

Martin said some benefits remain from the three-day flood, and despite the erosion, more floods should be released into the canyon whenever there's enough sediment to be deposited along the shoreline — about every one to two years.

Since 1963, the Glen Canyon Dam has blocked sediment from the Colorado from flowing downstream, turning the once muddy and warm river into a cool, clear environment that helped speed the extinction of four fish species and push two others near the edge.

The sediment provides a habitat for plants and animals, builds beaches for campers and river runners and helps protect archaeological sites from the elements.

Watch time-lapse videos of erosion in the Grand Canyon:
http://www.gcmrc.gov/research/high_flow/2008/timelapse/

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Grand Canyon flood results erode. Some of the sandbars and beaches built up in the March high-flow release are back to pre-flood levels.

By CYNDY COLE for Sun Staff Reporter
Wednesday, September 10, 2008

A half-year after a manmade flood built bigger sandbars and beaches in the Grand Canyon that are boon to native fish and plants, U.S. Geological Survey researchers say beaches are again eroding.

The data at this point is incomplete, researchers say, but some of the photos to date point to eroding sand bars as water releases from Glen Canyon Dam vary to meet peak power demands and interstate water-sharing agreements. A group of federal agents, tribes, environmentalists and power agencies that advises the Interior Department on how the Colorado River in Grand Canyon should be managed is meeting in Flagstaff Tuesday and today to discuss the latest research and propose next steps.

A budget up for discussion by the group today could determine whether there are any more experimental floods in the next five years. The next one called for in an earlier report by the Bureau of Reclamation is not until 2012.

About $3.3 million is projected to be spent on USGS research related to the flood this year and next.

The amount of sand in the Colorado River is of interest because it is believed to be linked to the creation of backwaters that could help promote the survival of some fish species, and because boaters use beaches for camping.

All of the sand that once flowed into the lower Colorado River upstream of Lake Powell is now trapped by the dam, leaving it to the remaining tributaries to supply sand to the main channel during periods of high water.

The advisory group did some battle publicly this spring, when Grand Canyon Superintendent Steve Martin proposed more regular floods to improve the canyon's ecosystem, to the disagreement of power producers and his bosses.

The floods are conducted as part of an experimental program to manage the Grand Canyon ecosystem to allow for power generation at the dam, while offsetting the dam where possible.

USGS researchers say it is possible to maintain some sandbars and beaches along the Colorado River with the dam in place.

But for that to happen, according to researchers' findings, power production would often suffer.

Environmental groups, including the Grand Canyon Trust, have litigated over dam operations, saying what's beneficial for peak power production puts some of the canyon's few remaining endangered fish species in jeopardy.

Trust employee Nikolai Lash, who works on this issue, said it's hopeful that the coming presidential election could change the Colorado River.

"The orientation has been completely backwards," he said. "This dam has been operated not for the benefit of Grand Canyon, but for the benefit of hydropower interests."

The third experimental flood since 1996, the March experiment was timed to move around three times more sand than was available in the tributaries to the Colorado River in 2004.

Cyndy Cole can be reached at 913-8607 or at ccole@azdailysun.com.

LR Letter 09/11/08

Proposed pump station, reservoirs and hydroelectric power plant in Grand County, Utah.

FERC Project Nos. 13227 and 13146. Comments on the application for a preliminary permit known as Bull Canyon Pumped Storage Water Power Project and Long Canyon Pumped Storage Water Power Project by Utah Independent Power, the applicants. Pursuant to Federal Register Notice of July 16, 2008, Vol. 73, No. 137.

Click here to download letter.

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Proposed hydro-electric reservoirs raise concerns about environmental impact

By Ron Georg for The Times-Independent

Representatives of Utah Independent Power, including company president Frank Mazzone, will make a presentation at the Grand County Council's Aug. 19 evening session detailing their plans to create two reservoirs – that would comprise a pumped water energy storage facility – in the Bull Canyon area.

The plan appears simple. The company would build two reservoirs, one higher than the other. They'd allow the higher reservoir to drain into the lower one, through a set of turbines to create electricity. Then they'd pump it up and start over.

Mazzone said that because there is much less demand on the electrical grid during low-peak hours and electricity is cheaper, Utah Independent Power would purchase the inexpensive, surplus electricity to pump the water. Then they would turn the stored water back into electricity during peak times, when power is at a premium.

"What we do is we displace the use of high cost fossil fuel with low cost energy that's available when people aren't using it," Mazzone said.

The plan has a potential ecological benefit, he said. The nation's electrical power grid is dominated by coal-fired plants, as well as some nuclear facilities, which can't vary their output easily. So they operate at a level slightly below peak need, and they are supplemented by plants which can be ramped up quickly, mostly natural gas facilities.

The need to supplement the grid with natural gas plants can be offset by storage, according to Mazzone. Since there is no battery technology that can handle this task, pumped water energy storage is one of the few available options. Because wind power is more effective during off-peak hours, the technology can be used to store green energy. According to Mazzone, there are more than 100 such plants operating worldwide, mostly owned by major utilities in this country.

Utah Independent Power has applied for a permit with the Federal Energy Regulatory Commission, which will be a 30-month, $5 million process, according to papers filed with FERC. That process will include input from the Bureau of Land Management, though Moab Field Office Manager Shelley Smith said she is uncertain how much input the agency will have. "I'm not sure how that FERC process works," she said.

Further complicating matters for the BLM is the transition between resource management plans, which set the context for all BLM decisions. "We're kind of between plans, so we have to operate under our 1985 plan until our new plan is final," Smith said. "We're identifying what the resource conflicts would be under both plans."

Those conflicts could include some that preclude disturbance of natural areas. "I think there's bighorn sheep habitat, but I'm waiting for our specialists to see what sort of conflicts exist," Smith said. She emphasized that the agency doesn't make judgments. "We identify the conflicts within our resource plan; we don't opine one way or the other. We would have to issue the right of way, and we would conduct that environmental assessment."

The Southern Utah Wilderness Alliance won't be quite so objective in their response, according to field advocate Scott Braden. "We're opposed, and we're going to be participating," he said. "While we're sympathetic to people's need for energy, we feel this is unsuitable. It would be tragic to lose more wild areas."

Braden said the proposal would affect an area known for its wilderness qualities. "It would not be appropriate in an area the BLM has identified as having wilderness characteristics, especially in a place like Moab, where the economy is based on the scenery," he said.

Mazzone said he hopes other aspects of his plan will outweigh those concerns. "We have nothing to hide. The facility produces no air emissions, no water emissions, no noise, and we are looking to build the facility so the only thing you see will be the surface of the lakes," he said. "All we can do is be honest with what we have, and trust that people will be logical about decisions they make. We look upon this as a public good."

LR in the News 11/14/08

Moab mayor plans to protest BLM's planned lease sale

By Patty Henetz for The Salt Lake Tribune
Article Launched: 11/14/2008 02:25:44 AM MST

Moab's sole source of drinking water could be in jeopardy unless federal officials back off a plan to sell an already-disputed oil and gas lease next month during a regular quarterly sale.

Mayor Dave Sakrison said Thursday that he has met with U.S. Bureau of Land Management officials about a 600-acre parcel in the aquifer the city and Grand County tap for all of their municipal uses. Sakrison said he would ask the Moab City Council on Nov. 25 to submit an official protest against the sale of the lease parcel, which also underlies several neighborhoods.

"Obviously we've got some major concern. It's our sole-source aquifer protection area," Sakrison said. And despite federal assurance that any actual drilling would have to occur outside the neighborhoods, "that's still problematic as far as we're concerned," he said.

"Part of our golf course sits in this lease parcel and a whole lot of private property. We're taking this very seriously," Sakrison said.

Moab residents were shocked earlier this week to discover that a BLM oil and gas lease sale scheduled for Dec. 19 includes a parcel in unincorporated Grand County just beyond the Moab city line. Several residential neighborhoods in Spanish Valley, parts of the municipal golf course and popular hiking trails are on the parcel.

That was bad enough. But the prospect of petrochemical pollution in the 10,000-acre aquifer is even more unacceptable, said John Weisheit, conservation director of the nonprofit group Living Rivers in Moab.

"If we have accidents in our aquifer, the toxic material would move very quickly into our water [taps]," Weisheit said. A cleanup would have to be done in a matter of hours, which is impossible, he said.

Shelley Smith, the BLM's Moab field office director, said the long-range management plan for the region prohibits "surface occupancy" - that is, no drill pads would be allowed on the 600-acre lease parcel. However, drillers could reach the oil from an angle, which means pipes and other industrial apparatus would be intruding on the aquifer that lies just under the ground's surface.

The Moab resource management plan has stricter protections on the watershed that feeds the aquifer; absolutely no oil or gas drilling is allowed around the springs and wells on the sandstone rims above the valley. Once the water is in the aquifer, however, restrictions are no stricter than those in place for the Moab airport and landfill.

The Environmental Protection Agency has certified the aquifer as pristine. The certification means that as the sole source of potable water, special guidelines and policies are in place to ensure the aquifer is not put at risk.

Smith said the BLM knows the parcel doesn't have high potential for oil yield; in fact, there is very little oil and gas development in the area - just a few pumps operate around Dead Horse Point State Park and the BLM's Island in the Sky.

So who nominated the parcel? And why? Smith said she doesn't know the answer to either question. Even if she had the name of the person who made the nomination, there likely would be no direct link to a developer.

"Maybe whoever nominated it won't be interested now that it would have development costs it wouldn't have had before," she said. "We're giving it a real close look."

The BLM already is battling the National Park Service over oil and gas lease parcels near Arches and Canyonlands national parks and Dinosaur National Monument also on the list. The Park Service wants to delay the Dec. 19 lease sales. The BLM has refused to do so. Senior officials with the two agencies, both administered under the Interior Department, are in negotiations that Mike Snyder, the Denver-based Park Service regional director, says he expects to conclude by Nov. 24.

Moab's concerns

* At issue: BLM oil and gas lease plans include local pristine water source.

* Complaint: Locals believe the plan poses a danger of contamination.

* Response: BLM maintains proper planning process and protections are in place.

* Ahead: Moab's mayor is asking City Council to make a formal protest.

Regional News 11/29/08

Drought deepens strain on a dwindling Colorado Flows falling

California first in line as Utah, other states fight for water.

By Patty Henetz for The Salt Lake Tribune

Updated: 11/29/2008 08:49:15 AM MST

Utah's water forecast: Thirsty times are a-brewin' The drought gripping Utah, Southern California and the rest of the Southwest this century shows no sign of ending. Scientists see it as a permanent condition that, despite year-to-year weather variations, will deepen as temperatures rise, snows dwindle, soils bake and fires burn.

That's grim news for all of us in the West, perhaps most especially for the 10 million residents along the northern stretch of the Colorado River -- Utah, New Mexico, Wyoming and Colorado -- whose water rights are newer, and therefore junior, to those in Southern California, Nevada and Arizona.

Making matters worse, the Colorado -- the 1,450-mile-long lifeline that sustains more than 30 million souls and 3.5 million acres of farmland in seven states, 34 tribal nations and Mexico -- is in decline, scientists warn.

Even so, demand for the Colorado's water echoes from city leaders, industry giants, oil drillers, farmers, fishers, ranchers, boaters, bikers and hikers -- along with silent pleas from wildlife and the ecosystem. Trend analyses by federal scientists, probably conservative, predict the population dependent on the river will reach at least 38 million during the coming decade.

Right now, California, with the most senior rights and the largest share of the Colorado under a 1922 law, is struggling with a statewide water shortage. Not enough rain has fallen in the southland, as weathercasters like to call it, home to 18 million people, roughly half the state's population.

California already uses all of its Colorado River allocation. As the drought has worsened, Southern California water bosses have labored to keep the taps running through a host of conservation schemes.

Meanwhile, water managers in Utah and the Upper Basin are working to get all of their water rights in use, even as their cities and counties register some of the highest per-capita consumption in the nation.

Demand is up. Flows are down. Something has to give. And when it does, Utah could be in trouble if it doesn't change its wasteful ways -- just as 19th-century explorer Maj. John Wesley Powell predicted.

The West lacks water, he wrote in his 1879 Report on the Lands of the Arid Region of the United States, With a More Detailed Account of the Lands of Utah. "Disastrous droughts will be frequent."

Law of the River

The 1922 Colorado River Compact may have given California water rights senior to the other six states, but the Metropolitan Water District (Met), which supplies up to 60 percent of the water for 19 million people spread across six Los Angeles-area counties, made its claims after the state's allocation already had been divvied up. That means the most populous part of California is last in line among its peers when water runs low.

"If California ever did take a shortage," said Assistant General Manager Roger Patterson, "Met would take the hit."

That's already happened.

In 2003, California had to curtail its Colorado River use to its 1922 allocation of 4.4 million acre-feet per year, enough water for about 8 million households. Previously, under water-sharing deals with Arizona, the Golden State had been funneling about 5.2 million acre-feet. Because of its junior standing, Met had to eat about half the total shortage. No one else in the state had to cut supplies, Patterson said.

In February, Met agreed to a rationing plan for most of Southern California, including Los Angeles and San Diego. It expects to add 5 million residents during the next five years. Since the Pacific Ocean blocks growth to the west, the district is pushing eastward, where it's hotter.

A federal judge has ordered California water managers to leave 30 percent more water in the Sacramento-San Joaquin Delta in Northern California to stave off fish kills and keep the massive estuary healthy. More for the environment means less for Los Angeles.

Other populous regions of California also have taken steps to ensure a good water supply.

-- Developers in Riverside, Kern, Santa Barbara and San Luis Obispo counties must guarantee a 20-year water supply before they build.

-- The state has brought back a water bank, last used 17 years ago, in which Southern California cities can buy water from willing Sacramento Valley farmers. However, given the high prices farmers can get for their crops, especially rice, willing sellers might be hard to find.

-- Orange County residents are drinking recycled sewer water.

-- In San Diego County, the Coastal Commission greenlighted a $300 million desalination plant adjacent to a state beach. The operation still has to meet lots of conditions -- which probably will make the plant more costly to build and run -- but even if completed would supply no more than 9 percent of San Diego's current needs.

Met residents have cut back to about 185 gallons of water per person per day. Residents of Long Beach are down to 115 gallons.

"If Long Beach can do this," said Kevin Wattier, the city water department's general manager, "so can every other city in Southern California."

Splish, splash

Upstream, Utahns on average use 291 gallons of water per person per day, a rate second only to Nevada. In Salt Lake County, it's 255 gallons; Washington County, 350 gallons; Kane County, a bloated 430 gallons. Sixty percent of Utah's water goes for outdoor use, including landscaping and agriculture. In California, agriculture consumers about 85 percent. California, however, is the fifth-largest farm economy in the world.

By comparison, Utah's agriculture profile is nearly nonexistent, contributing less than 1 percent to the state's economy.

The system might seem out of balance. Yet no state, not even Nevada, which has the measliest Colorado allocation, wants to reopen the 1922 Colorado River Compact that divided the water. Each fears getting an even worse deal. Nor does anyone know what soon-to-be-settled Navajo claims on the river will mean to both basins.

There is, however, a growing sense that the Colorado Basin states are all in this together.

"Everybody ought to share in the reality of the river," said former Utah Attorney General Paul Van Dam, now director of Washington County-based Citizens for Dixie's Future. "And there ought to be great flexibility in how we use it without losing it."

Dozens of scientific studies issued since 2004 have documented the Colorado's decline.

The river's annual flow has averaged 11.7 million acre-feet this decade, according to federal records. In 2002, the U.S. Bureau of Reclamation measured only 6.2 million acre-feet passing Lee's Ferry below Glen Canyon Dam, the lowest flow of the decade. Even after this year's above-average precipitation, Lake Powell and Lake Mead combined are at 57 percent capacity.

A 2007 U.S. Geological Survey report found that, by 2050, rising temperatures in the Southwest could rival those of the nation's fabled droughts, including the Dust Bowl of the 1930s. Hotter weather is expected to reduce Colorado River runoff by at least 30 percent during the 21st century.

If the USGS is correct, and if this century's trend persists, average annual flow in the Colorado could fall to 8.2 million acre-feet per year.

Imagine that. The Law of the River requires 9 million acre-feet to pass Lee's Ferry on the way to the Lower Basin and Mexico. Under a strict interpretation of the law, the Upper Basin could be left with nothing.

A far more likely scenario would have the states banding together to rework the river allocations. But when Arizona Sen. John McCain suggested just that during his failed presidential campaign, the shrieks emanating from Colorado's halls of power were enough to prompt the Republican nominee to back down.

Pipeline dream

Dennis Strong, director of the Utah Division of Water Resources, in October told the state Water Development Commission that the state is using about 1 million acre-feet of its yearly 1.4 million acre-foot allotment from the Colorado.

Tribal water settlements yet to be signed would take up about 186,000 acre-feet, he said. New agricultural uses, mostly dedicated to controlling the salinity of the water that flows back to the Colorado, would take 35,000 acre-feet. Municipal and industrial uses along the river corridor would account for 5,000 acre-feet, and the proposed Lake Powell Pipeline would need 100,000 acre-feet, leaving about 74,000 acre-feet unused, theoretically.

Utah water managers are pushing the $1 billion-plus pipeline, which would lavish more water on a Dixie desert region likely to feel the full brunt of global climate disruption and permanent drought within the next 40 years.

The state hasn't actually secured rights to the 100,000 acre-feet for the pipeline. Strong said that would have to be nailed down by 2010, when the Federal Energy Regulatory Commission is expected to issue the license necessary to start building it. He's confident the water will come.

By 2040, the pipeline's water would be entirely committed to a regional population of about 400,000, Strong said.

Given current scientific warnings about the shrinking Colorado, that prospect looks shaky.

But Strong isn't worried. He's skeptical about global warming, though he "sees evidence" of it. "Water managers," he said, "have been dealing with drought forever."

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Climate change, drought to strain Colorado River

By MIKE STARK – December 5, 2008

SALT LAKE CITY (AP) — Seven Western states will face more water shortages in the years ahead as climate change exacerbates the strains drought and a growing population have put on the Colorado River, scientists say.

"Clearly we're on a collision course between supply and demand," said Brad Udall, director of the Western Water Assessment at the University of Colorado.

Although there is some disagreement about when the most dire conditions will materialize, scientists at a conference in Salt Lake City said Thursday they expect less water to be available in the coming decades. Without fundamental shifts in water management, the result will be shortages and difficult decisions about who in the seven states the river serves will get water and who will go without, said Dave Wegner, science director for the Glen Canyon Institute, which organized the one-day conference at the University of Utah.

"To me, it's not going to be a pretty debate," Wegner said.

The changes are already being seen in reduced water flows, higher air temperatures and an unrelenting demand on the Colorado, which snakes across more than 1,400 miles and provides water for farms, businesses, cities and homes. The river serves Arizona, California, Colorado, Nevada, New Mexico, Wyoming and Utah, an area where 30 million people live.

Last year, officials from the seven states and Interior Secretary Dirk Kempthorne signed a far-reaching agreement aimed at conserving and sharing scarce Colorado River water. The 20-year plan formalized rules for cooperating during the ongoing drought.

A study released in February by the Scripps Institution of Oceanography in San Diego said there's a 50 percent chance that Lake Mead, which straddles the Arizona-Nevada state line, could run dry by 2021.

Several models by different scientists have made predictions about the future flow of the Colorado, all of which forecast less water, said Tim Barnett, one of the Scripps study's authors. The prospect of warming temperatures only increases the strain on an already strained system, he said.

"The current usage is simply not sustainable," Barnett said.

Udall quibbled with Barnett's prediction about 2021 but not the overall speculation that water in the Colorado River basin will become more scarce. "It's a question of when," he said.

Even if the West's climate doesn't get as warm as predicted, the river system will likely be faced with shortages, said Gregory McCabe, a project chief at the U.S. Geological Survey's water resources division in Denver.

Building more reservoirs to store water probably won't be enough to mitigate the effects of changes to the system — especially warming temperatures, he said. One of the best approaches will be to drive down demand by finding better and more ways to conserve water, McCabe said.

The Colorado has long been the source of controversy as thirsty states fight for their share to quench growing economies.

The 20th century was one of the wettest going back several centuries. But it shouldn't be assumed that water levels will remain as plentiful in the future, researchers said.

Connie Woodhouse, a University of Arizona scientist, said tree rings in the basin indicate that the amount of moisture has fluctuated widely over hundreds of years, but has tended to be drier than was seen in the last 100 years.

It's time to consider a "new normal" for shrinking water supplies in the Colorado River basin, Wegner said. That will require a sweeping re-evaluation of allocations, use, conservation, dams and legal obligations, he said.

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Water agency needs an overhaul, congressman says

Conservation award » George Miller was honored for leadership on natural resource policies.

By Judy Fahys for The Salt Lake Tribune
Updated: 12/05/2008 09:16:21 AM MST

The federal government's water-management agency can no longer operate as though Colorado River water is abundant, said one of Congress' leaders on natural resources Thursday night.

"The Bureau of Reclamation has to reinvent itself," said U.S. Rep. George Miller, D-Calif. and longtime leader on natural resource policy. "It has to address the future in an innovative way and not be tied so strongly to the past."

Miller made the remarks as he accepted the David R. Brower Award for Conservation by the Salt Lake City-based Glen Canyon Institute, an organization that made its name by calling for the draining of Lake Powell.

The institute now focuses on scientific issues surrounding the vitality of the Colorado River, and much of Thursday's program was devoted to updates about how climate change might affect the 27 million people and 3.5 million acres of farmland that rely on the 1,450-mile river.

Miller was a driving force behind legislation in the early 1990s to complete the Central Utah Project -- the water program behind construction of the Jordanelle Dam in Wasatch County -- along with the creation of a mitigation fund to address the environmental damage caused by decades of dam-building in Utah.

He also pushed for moderating flows through the Glen Canyon Dam to lessen the harm high-energy water releases were causing to Grand Canyon National Park The northern California lawmaker served from 1991 to 1994 as the chairman of the House committee that oversees the nation's mining programs, water, national parks and other natural resources.

Miller attacked the departing Bush administration for what he described as a culture of corruption in the Interior Department. Science, he added, was "tampered with" and "pushed aside.""You don't get to change the conclusions for political reasons," he said.

Instead, with a change in administration in Washington, science should be harnessed to help make smarter decisions about preserving already-taxed water supplies.

Scientists who spoke at the conference talked about Western water resources that are dwindling in the face of growing populations and are threatened by global warming.

Tim Barnett, a researcher at the Scripps Institution of Oceanography in San Diego, told the conference that no models of Colorado River water -- even without climate change factored in -- predict an increased flow.

"You have a river that's on the brink of failure," he said.

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Regional News 12/16/08

Abrupt Climate Change: Will It Happen this Century?

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The United States faces the potential for abrupt climate change in the 21st century that could pose clear risks to society in terms of our ability to adapt.

"Abrupt" changes can occur over decades or less, persist for decades more, and cause substantial disruptions to human and natural systems.

A new report, based on an assessment of published science literature, makes the following conclusions about the potential for abrupt climate changes from global warming during this century.

Climate model simulations and observations suggest that rapid and sustained September arctic sea ice loss is likely in the 21st century.

The southwestern United States may be beginning an abrupt period of increased drought.

It is very likely that the northward flow of warm water in the upper layers of the Atlantic Ocean, which has an important impact on the global climate system, will decrease by

approximately 25-30 percent. However, it is very unlikely that this circulation will collapse or that the weakening will occur abruptly during the 21st century and beyond.

An abrupt change in sea level is possible, but predictions are highly uncertain due to shortcomings in existing climate models.

There is unlikely to be an abrupt release of methane, a powerful greenhouse gas, to the atmosphere from deposits in the earth. However, it is very likely that the pace of methane emissions will increase.

The U.S. Geological Survey led the new assessment, which was authored by a team of climate scientists from the federal government and academia. The report was commissioned by the U.S. Climate Change Science Program with contributions from the National Oceanic and Atmospheric Administration and the National Science Foundation.

"This report was truly a collaborative effort between world renowned scientists who provided objective, unbiased information that is necessary to develop effective adaptation and mitigation strategies that protect our livelihood," said USGS Director Mark Myers.

"It summarizes the scientific community's growing understanding regarding the potential for abrupt climate changes and identifies areas for additional research to further improve climate models."

Further research is needed to improve our understanding of the potential for abrupt changes in climate. For example, the report's scientists found that processes such as interaction of warm ocean waters with the periphery of ice sheets and ice shelves have a greater impact than previously known on the destabilization of ice sheets that might accelerate sea-level rise.

To view the full report, titled Synthesis and Assessment Product 3.4: Abrupt Climate Change, and a summary brochure on abrupt climate change, visit this web page http://www.climatescience.gov/default.php

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Regional News 12/21/08

How the West's Energy Boom Could Threaten Drinking Water for 1 in 12

by Abrahm Lustgarten for ProPublica
David Hasemyer for The San Diego Union-Tribune
December 21, 2008 11:23 am EDT
Dec. 22: This post has been corrected [1].

This story was co-published with the [2]San Diego Union-Tribune [2] and also appears in that newspaper's Dec. 21, 2008 issue.

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The Colorado River, the life vein of the Southwestern United States, is in trouble.

The river's water is hoarded the moment it trickles out of the mountains of Wyoming and Colorado and begins its 1,450-mile journey to Mexico's border. It runs south through seven states and the Grand Canyon, delivering water to Phoenix, Los Angeles and San Diego. Along the way, it powers homes for 3 million people, nourishes 15 percent of the nation's crops and provides drinking water to one in 12 Americans.

Now a rush to develop domestic oil, gas and uranium deposits along the river and its tributaries threatens its future.

The region could contain more oil than Alaska's National Arctic Wildlife Refuge. It has the richest natural gas fields in the country. And nuclear energy, viewed as a key solution to the nation's dependence on foreign energy, could use the uranium deposits held there.

But getting those resources would suck up vast quantities of the river's water and could pollute what is left. That's why those most concerned are water managers in places like Los Angeles and San Diego. They have the most to lose.

The river is already so beleaguered by drought and climate change that one environmental study called it the nation's "most endangered" waterway. Researchers from the Scripps Institution of Oceanography warn the river's reservoirs could dry up in 13 years.

The industrial push has already begun.

In the eight years George W. Bush has been in office, the Colorado River watershed has seen more oil and gas drilling than at any time in the past 25 years. Uranium claims have reached a 10-year high. Last week the departing administration auctioned off an additional 148,598 acres of federal land for gas drilling projects outside Moab, Utah.

As still more land is leased for drilling and a last-minute change in federal rules has paved the way for water-intensive oil shale mining, politicians and water managers are now being forced to ask which is more valuable: energy or water.

"The decisions we are making today will be dictating how we will be living the rest of our lives," said Jim Pokrandt, a spokesman with the Colorado River Conservation District, a state-run policy agency. "We may have reached mutually exclusive demands on our water supply."

Some experts and officials say the economic and ecological importance of the Colorado is just as vital to American security as the natural resources that can be extracted from around it.

"Without (the Colorado), there is no Western United States," said Jim Baca, who directed the Bureau of Land Management, or BLM, in the Clinton administration and says the agency's current policy is narrow-sighted. "If it becomes unusable, you move the entire Western United States out of any sort of economic position for growth."

Balancing that risk with the need for energy is complicated, because scientific understanding of the Colorado is limited and no single agency manages the river as a national resource.

The Interior Department, which includes the BLM, oversees where the water goes, but not how it is kept clean. The EPA is charged with maintaining water quality, but it can't control who uses it and doesn't conduct its own research.

Furthermore, the EPA delegates much of its authority to the states that the river runs through, and the federal, state and local authorities in charge of separate aspects of the river don't always coordinate or cooperate. "I don't know that there is, quite honestly, anyone that looks at an entire overview impact statement of the Colorado River," said Robert Walsh, a spokesman for the Bureau of Reclamation, which governs the allocation and flow of the southern part of the waterway.

Oil and natural gas drilling in Colorado already require so much water that if its annual demand were satisfied all at once, it would be the equivalent of shutting off most of Southern California's water for five days. If Colorado's oil shale is mined, it would turn off the spigot for 79 days.

Although company executives insist they adhere to environmental laws, natural gas drilling has led to numerous toxic spills across the West. According to the Environmental Protection Agency, mining has contaminated four out of 10 streams and rivers in the West. Similarly, mining has topped the government's list of the most polluting industries for the past decade, and new mine problems continue to arise today.

Industry representatives and the Bush administration say breaking America's dependence on foreign oil makes using all available energy resources here at home a priority.

"I believe this country needs to offer domestic resources to be energy independent," said Tim Spisak, a senior official who heads the BLM's oil and gas development group. "The way to do that is to responsibly develop public resources on our lands."

Critics of Bush's energy policies said they favor business interests at a time when climate change demands a fundamental shift in the way the nation values water. They also complain that the administration doesn't grasp the West's looming water problem.

"When Lake Mead goes dry, you cut off supply to the fifth largest economy in the world," said Patricia Mulroy, general manager of the Southern Nevada Water Authority, referring to the reservoir that sits behind the Hoover Dam and controls water flow to the Southwest's cities. She points out that while some dispute the timing of Lake Mead's demise, no one says it won't happen. "We've ignored the need to adapt," Mulroy said. "We've never looked at what the secondary impact of, say, an energy decision is."

Both the U.S. House and Senate are considering bills that would require better management of the nation's water quality and water assets. But the bills focus more on the threat of climate change than the threat of industrial development. A growing number of water professionals say even a congressional act isn't enough to clarify the government's responsibility. They want the president to appoint a new national water authority -- or even a cabinet-level water czar.

"If you are really going to deal with water, the nation needs to deal with it in a far more comprehensive manner," said Brad Udall, director of the National Oceanic and Atmospheric Administration's water assessment program at the University of Colorado. "We can't afford to play around with potentially damaging activities."

The Southern Nevada Water Authority, the state of Arizona and the Metropolitan Water District, which governs the water supply to Los Angeles and San Diego, have implored Bush's Interior to proceed with caution as it races in these last days to develop mining, gas and oil near the river.

"We have other sources of power," said Jeffrey Kightlinger, MWD's General Manager. "We don't have other sources of water."

Hot Water

One of those alternative sources of energy is uranium, which is essential to the production of nuclear energy. In the last six years, new uranium mining claims within five miles of the river have nearly tripled, from 395 to 1,195, according to a review of BLM records by the Environmental Working Group, a Washington-based policy organization.

Although few of those claims will actually be mined, mining has a track record of contamination that alarms water officials dependant on the river. The Metropolitan Water District points to a 16 million ton pile of radioactive waste near Moab as a warning of what can happen when mining isn't carefully controlled.

The pile sits on the banks of the Colorado at the site of a mill that once processed uranium for nuclear warheads.

The plant closed in 1984, but the Grand Canyon Trust estimates 110,000 gallons of radioactive groundwater still seep into the river there each day. The U.S. Department of Energy decided in 2000 to move the pile away from the river. But the planning was so complicated and the cost so high -- estimates top $1 billion -- that the first loads of waste won't be hauled off until next year.

The industry says the Moab case is an outdated blight from the distant past.

"What gets my ire up is when we get compared to stuff that happened in the 60s. There is no argument from us now about being careful... with an eye to preserving the environment," said Peter Farmer, CEO of Denison Mines, a Canadian company that operates seven U.S. mines as well as the nation's only operating uranium mill in Blanding, Utah.

Denison recently spent more than $5 million to triple-line a waste pit and outfit it with leak detection sensors. It's cheaper to pay up front, Farmer says, than to clean up later.

Roger Haskins, a specialist in mining law at the BLM, agrees that concerns over mining are overblown. He says landmark environmental regulations in the 1970s prepared the industry for the 21st century. While it's still easy to stake a mining claim, projects must now undergo extensive environmental review before they can be turned into mines.

"Whatever happens out there is thoroughly manageable in today's regulatory environment," Haskins said. Scientists say some degree of pollution is inevitable, because mining sometimes uses toxic chemicals like cyanide. It also exposes naturally toxic metals that would otherwise remain deep underground.

Drilling for uranium creates pathways where raw, radioactive material can migrate into underground aquifers that drain into the river. Surface water can seep into the drill holes and mine shafts, picking up traces of uranium and then percolating into underground water sources. The milling process itself creates six pounds of radioactive and toxic waste -- including ammonia, arsenic, lead and mercury -- for every ounce of uranium produced.

"There has to be some impact to downstream water. Whether or not we can measure -- that is the question," said David Naftz, a hydrologist at the U.S. Geological Survey in Salt Lake City who studies uranium mining. Naftz has documented dangerous levels of uranium near waste dumps at more than 50 separate test sites in Utah.

While much of the mining happens in high, dry places where contaminants don't easily seep into surface water, he says periodic storms can still wash them into the river.

"What we've done is kind of upset the geochemical equilibriums in these basins by taking these ores and exposing them to conditions on the surface," he said. "The question is, how long is it going to take to transport them down to water systems?"

Pollution problems with gold, copper and other mines also challenge the assertion that technology and better regulation have eliminated the environmental risks.

One study compared the EPA's environmental impact statements for 25 sites to what really happened after mining took place. Water at three quarters of the mines was found to be contaminated, even though the mines used technology and techniques that the EPA had said would keep the environment clean, according to the research done for the Earthworks by Jim Kuipers, an environmental engineer in Butte, Mont. and Ann Maest in Boulder, Colo.

At least four large mines that operated as recently as the 1990s -- long after new regulatory standards were put in place -- have caused so much contamination that the EPA designated them as priority Superfund cleanup sites. One rendered a 20-mile stretch of a Colorado River tributary completely dead.

"Promises are made and promises are broken," said Roger Clark, who is director of the Grand Canyon Trust's air and energy program and has been monitoring the rise in

mining claims near the Grand Canyon. "This is not something we can sit back and take industry's word for."

Clark, who explored the Colorado River as a Boy Scout and later as a river guide, already has seen signs of the park's decline. On a recent hike along the Grand Canyon's rim, he passed a stream whose water he drank freely as a boy.

Now it's marked with a sign saying, "Drinking and bathing in these waters is not advisable." The Park Service posted the same warning along five other canyon streams that feed into the Colorado, because high concentrations of uranium have leached into the water, likely from old mines.

In June, the House Natural Resources Committee invoked a rarely-used authority to force the Bush administration to make one million acres of public land adjacent to the park ineligible for exploration. Two months later, though, Interior Secretary Dirk Kempthorne allowed some 20 new claims in the area by deciding that the committee's move violated executive authority.

Secret Chemicals

In the last decade, a pattern of contamination has also emerged in places where natural gas drilling has intensified. If drilling increases substantially across Colorado, Wyoming and Utah, it could also imperil the river.

Most wells rely on a process called hydraulic fracturing [3], which requires as much as two million gallons of water plus small amounts of often-toxic chemicals for a single well. The waste water then sits in open pits until it is treated, recycled or disposed of.

In February a waste pit high on a mesa overlooking the town of Parachute, Colo. sprang a leak, allowing some 1.6 million gallons of fluid to soak into the arid earth. According to state records, the spill migrated underground until it seeped from a cliff side and froze into a gray pillar of ice more than 200 feet tall. When it melted, the fluids dripped into the torrid currents of Parachute Creek and finally dumped into the Colorado River.

Although the number of gas drilling accidents in the upper Colorado River watershed is small relative to the amount of drilling, they have begun adding up. Colorado state records show that of some 1,500 spills in drilling areas since 2003, more than 300 have seeped into water. In one case last summer a truck carrying drilling fluids crashed into the Colorado, where it remained partially submerged for more than three weeks.

In neighboring Wyoming, the BLM found a 28-mile-long plume of benzene contamination in an aquifer beneath a gigantic gas field. The aquifer is near a tributary to the Green River, which in turn flows into the Colorado.

Doug Hock, a spokesman for the Canadian gas company Encana, which drills in Colorado and Wyoming, says that while there will always be spills, the fears of pollution are exaggerated. Encana uses steel and concrete casing around its drill pipes, lines its waste pits and, increasingly, cleans its waste water and re-uses it inside its wells.

"We have put in place safeguards to protect the water," Hock said. "There is always a balance -- this country has a great demand for energy."

But because the energy industry has been exempted from so many federal environmental regulations during the Bush administration, it's difficult to assess the industry's true impact on the river.

The mix of chemicals used in hydraulic fracturing is held as proprietary competitive information by the industry and kept secret from even the EPA. Scientists say that without knowing the specific ingredients in the mix, they don't know what compounds to test for after a spill and can't check to see if they've reached the river.

The 2005 Energy Policy Act exempted hydraulic fracturing from the Safe Drinking Water Act. Also exempted from federal control and water protection laws are the drilling industry's construction activities, including the sediments and dust produced from thousands of miles of road building, site grading and the drilling itself, even though that debris often ends up in waterways.

"We have seen an explosion in drilling, and at the same time we have seen a weakening of the federal standards under which drilling occurs," said Dusty Horwitt, an analyst with the Environmental Working Group.

Given the relaxation in regulatory authority, the development may be out-pacing scientists' ability to measure the implications.

In August drilling companies bid on 55,000 acres of federal parcels atop the Roan Plateau, a cherished wilderness area in central Colorado that drains into the Colorado River. A September report from the University of Colorado Denver predicted that in 15 years Garfield County, a western drilling area bisected by the river, will have 23,000 wells, six times what is has now, based on permit applications already filed with the state.

The push to drill continued last week, when the BLM opened 148,598 more acres of federal land near Moab to drilling.

Quarterly lease sales in that area during the last two years were typically about 75,000 acres.

"It seems reckless," said Bill Hedden, director of the Grand Canyon Trust. Near his home outside Moab, natural gas drilling rigs may soon be visible through Delicate Arch, the wind-hewn bridge of rock at Arches National Park that graces Utah's license plate.

"We Americans have tried to export a lot of our problems off to the boondocks -- but in this case the boondocks is the watershed and the problem is coming right back to us," Hedden said.

According to Spisak, the BLM official in charge of drilling, the Maob sale is the result of "pent up build-up" in the cue of requests the agency is handling. Companies that want to drill on federal land ask the BLM to consider listing that land for a future lease sale.

Over the past few years, Spisak said, environmental organizations have challenged some of the listings the BLM approved, delaying their sale. Now the agency is catching up. "We are required to push them forward," Spisak said. "It's due to pressures of prices and industry, and we are responding to the market demand."

An Unprecedented Demand

No project poses a greater threat to the Colorado River -- or better represents the choice between water and energy --than mining for oil shale.

In mid November the BLM quietly approved a rule change that paved the way for extracting oil from rock deposits in Colorado and Utah, smack in the heart of the river's watershed. If the vast deposits are mined to their potential -- and it could be a decade before any of the projects go forward -- the reserves could help the United States make a significant leap towards energy independence.

Getting oil from the shale, if researchers can find a reliable way to do it on a large scale, would be astronomically expensive. It might also require more water than the Colorado River can provide.

A recent study for the state of Colorado estimates that if the oil shale industry takes off in northwest Colorado, the region's energy industry will need at least 15 times as much water as it uses now. In 30 years, the report predicts, the energy industry in the upper Colorado River basin would stop the river's entire flow for nearly six weeks if it used the water all at once.

"It would take every bit of water rights that we currently have plus more," said Scott Ruppe, general manager of Uintah Water Conservancy District in northeastern Utah.

Counties across the Western states are apportioned a limited quota of water rights that can be used for industry, farming, or municipal use, he explained. Using Colorado River water for oil shale means less water for urban growth, agriculture and personal use. It means trading fresh fruit and vegetables – not to mention green lawns -- for energy.

"It just comes down to how needy the nation is for energy," he said. "If energy is short then some of the other concerns might get pushed aside."

These stark choices have driven Congress to begin examining the water problem in the absence of leadership from the White House. One of the bills that has been written would, if passed, direct the Interior Department to undertake the kind of comprehensive inventory of the nation's water quality and supply that critics say is missing.

It will be up to the Obama administration, though, to ultimately decide the nation's priorities. The appointment of Colorado Sen. Ken Salazar to head the Interior Department will inject a unique understanding of western water issues into Washington politics. Salazar is a long-time rancher and a former water attorney.

The new administration could temper some of Bush's decisions by limiting mining claims in sensitive areas, refusing to finalize leases sales that haven't been signed, and

rigorously enforcing existing environmental regulations. It also could try to reverse some of the rules the Bush administration has issued to speed development, although that will be difficult.

Obama's greatest opportunity to address the conflict between water and energy may lie not in undoing policies from the past, but in looking to the future.

"The administration has an opportunity to start thinking about water as a national resource," said Nevada's Mulroy. "We have no rear view mirrors anymore."

Correction: This post originally stated that the Bureau of Land Management had auctioned off 359,000 acres of land for natural gas drilling near Moab Utah. In fact, as a result of protests over that lease sale, the BLM made a last minute change to the total amount and auctioned 148,598 acres of land on Dec. 19, 2008. This story also refers to a study comparing real pollution at 25 mines to that anticipated by the EPA. That study was commissioned by Earthworks, not the Environmental Working Group, and was authored by James Kuipers and Ann Maest.

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