


LIVING RIVERSSM

CURRENTS

VOLUME 3 • NUMBER 3 • DECEMBER 2003

Published by LIVING RIVERS, an advocacy organization mobilizing people to protect and restore the integrity of rivers and watersheds  Printed on Vision tree-free, kenaf paper

SCIENCE PERFORMS Management Ignores

Scientists meeting in Tucson this past October were criticized by the Department of the Interior for expressing little confidence in federal efforts to mitigate the downstream impacts of Glen Canyon Dam operations on the Colorado River ecosystem in Grand Canyon National Park.

“Advocacy positions belong to lawyers,” said assistant Secretary of the Interior, Bennett Raley, to the assembled scientists, many who have expressed frustration that their research is being ignored.



High stakes: the endangered Humpback Chub

Dr. Jack Schmidt, a geologist who’s worked in Grand Canyon for 15 years, stressed that scientists have done their jobs well in reporting accurately to Interior’s Adaptive Management Working Group (AMWG) and then asked, “When is AMWG going to act upon this knowledge?” Raley stated that Interior could “drag it’s feet” if it did not like what was being recommended. Raley, a water attorney by profession, who has asked Congress to repeal the Endangered Species Act, openly advocated to the scientists the concerns of water and power suppliers, and that these interests maintain superior political and legal positions as compared to environmental interests. He argued that the Grand Canyon Protection Act should be subservient to prior Colorado River laws, and river management policy should therefore follow such a doctrine. Nonetheless, scientists should “continue to support” the adaptive management process.

Dr. Richard Valdez, a senior researcher of endangered fish, gave strong recommendations to AMWG concerning the endangered Humpback Chub by saying, “If you are not going to address the threats to their critical habitat, then you will continue to have endangered species in Grand Canyon.” Humpback Chub populations have declined 75% to just 2,000 adult fish over the past eight years.

Although this gathering was organized specifically for AMWG, very few of its members actually attended. The program is presently facing increased criticism as it was established to recover endangered species in Grand Canyon, but native species diversity has actually declined under their management.

Hydrologist William Vernieu reported on the impacts of drought on Lake Powell reservoir and the downstream implications for Grand Canyon’s water chemistry, which has so far been ignored by AMWG. The reservoir is currently experiencing a decrease in available oxygen along with increases in phosphorus, nitrates and salt. Such changes in water quality will exacerbate the decline in the river’s native food base for endangered fish.

The meeting illustrated that the political situation regarding Grand Canyon’s management is deteriorating as rapidly as its ecology. Several scientists admitted privately that absent some form of litigation, there will be little chance of recovering the natural and cultural heritage of Grand Canyon before these resources are lost forever as a result of operations at Glen Canyon Dam.

RIVERKEEPER LOG All Hands on Grand Canyon

In October, Living Rivers’ Colorado Riverkeeper undertook a 12-day science trip through Grand Canyon National Park. Our assignment was to aid in documenting the status of the river’s food supply for endangered native fish. Ten volunteers witnessed first hand how the river ecosystem is affected due to climate change.

“Because Lake Powell’s reservoir capacity has been reduced by 52%, the chemical and temperature output from the dam is further altering the food web in ways that we have never observed before,” said the Colorado Riverkeeper, John Weisheit. Given this recent turn of events in Grand Canyon, Living Rivers and the Colorado Riverkeeper are now devoting the majority of their resources toward mobilizing national support to save what’s left of the canyon’s native ecosystem. “If the public can’t support protection of this world heritage site, there’s probably little hope for the rest of the river,” concludes Weisheit.

The first obvious observation was a warmer than usual Colorado River. The volunteers knew from experience that the discharge from Glen Canyon Dam normally originates from the chilly depths of the reservoir. While sampling, the volunteers were amazed with the abundant zooplankton found. This indicates that the water used to generate power is coming from the warmer water zone near the reservoir surface, an area containing many exotic life forms, including pathogens and parasites. “It’s only a matter of time before these exotic species from Lake Powell become competitors for the available food that endangered native fish must have to survive. This new condition will become a serious issue for the stakeholders of Grand Canyon,” said volunteer David Haskell, retired science director of Grand Canyon National Park.

Tatiana Lawson, a river guide from Moab, was intrigued with the organisms now existing in the river. “A flatworm is something I expect to see in my biology class at school,” said Lawson, “not in the Colorado River system. But these newly introduced New Zealand Mud Snails are especially worrisome for me. Tiny as they are, by the millions they are effectively over-grazing the river bottom and depleting the food supply.”

Joe Shannon, a Northern Arizona University aquatic ecologist who has studied the river’s food base for 14 years, supervised the volunteers and staff. “The ecosystem here has changed since I first arrived,” remarked Shannon. “This river was loaded with algae called Cladophora and an invertebrate called Gammarus. Now there is another suite of algal types and Gammarus numbers have declined. The flows from Glen Canyon Dam are not managed consistently and consequently the food web is in constant flux.” Shannon laments how managers continue to be unresponsive to the sound recommendations of his fellow scientists who support flows that mimic the natural flows of the Colorado River. “They continue to manage the dam for hydropower revenues first, with the management mandates of our National Park coming last,” adds Shannon.

“It’s unbelievable how bad things are down here in the Grand Canyon,” remarked Michelle Harrington, coordinator for the Center for Biological Diversity. “The river ecosystem here has completely changed from its unique and natural condition because of Glen Canyon Dam. If the public was fully aware of this condition, I think they would respond in the same way as they have for protecting the Arctic National Wildlife Refuge, and would demand river management alternatives that include the decommissioning of Glen Canyon Dam.”



Colorado Riverkeeper: monitoring Grand Canyon

ACCESS DENIED

No Release of Inundation Maps

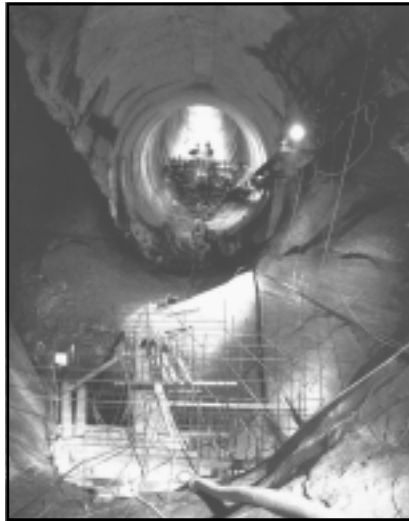
The public has no right to know who might be in the flood path should Glen Canyon or Hoover Dam fail. Using national security risks as their trump card, the Bureau of Reclamation was able to convince Judge Tena Campbell to deny Living Rivers' appeal for their inundation maps, effectively ending the 18 month effort to obtain this information.

If Glen Canyon Dam fails an estimated 500-foot wall of water would race through the narrow parts of the Grand Canyon toward Hoover Dam. Even if Hoover Dam withstood the initial impact of the flood, a waterfall over the top would last 11 days and would destroy the water delivery infrastructure and communities downstream.

"The funny thing about all this, is that some of this information is already in circulation, we had just hoped to obtain it through official channels," says Living Rivers' executive director, Owen Lammers.

Until the trial the Bureau's arguments for withholding the information had nothing to do with national security. They now claim this information is exempt from disclosure based on things like arrest procedures, or the design of the President's limousine; something that aids criminals in completing a crime. This is certainly not the case with inundation maps.

Since the 9/11 political scene, the government is using national security as a means to keep information from environmental groups. Living Rivers has been told that this case is being used to equip federal attorneys in fighting Freedom of Information requests. In this political climate Living Rivers does not feel it likely that an appeal would overturn the verdict and is not pursuing the matter further.



1983 spillway failure at Glen Canyon Dam

WAPA BLUES

Hydro Not Missed

The ongoing drought is seriously effecting hydroelectric power production on the Colorado River. Colorado River Storage Project (CRSP) dams are experiencing an overall reduction of 25% from normal. The Western Area Power Administration (WAPA), the agency which distributes federal hydropower, must now purchase electricity from private sources to meet their long-term obligations to their customers.

The Bureau of Reclamation has emphatically stated that the region could not survive without power from Glen Canyon Dam. The drought has demonstrated this to be untrue, with surplus power from non-federal projects easily making up the shortfall. Should the pattern of drought continue for another two years, Lake Powell reservoir will lower to the point where Glen Canyon Dam's powerplant will become inoperational.

This situation will effect US taxpayers. Congress mandated that hydropower revenues must repay the loans used to build CRSP projects. Lower reservoir levels mean less power and less revenue to meet these loan obligations. Additionally, power purchased by WAPA to replace the difference comes at premium price, further effecting loan payments which are scheduled for full payment in about fifty years.

According to WAPA spokesperson LaVerne Kriss, this is not yet a problem. "When we have cash flow problems, we use a pool called the Colorado River Basin Fund to float us through times of shortage, and we make up the difference when the reservoirs recharge and surplus water becomes available again."

"Not true," says Living Rivers' conservation director John Weisheit. "That fund has been near zero for some time, and with persistent drought it's not going to be replenished anytime soon."

This will also cause further strains for WAPA-supported recovery programs, which are designed to mitigate the negative impacts from CRSP operations on the critical habitat of endangered species. The failure of these recovery programs will only drive the budget up further and will undermine WAPA's payback schedule over time. "WAPA will never break even. In fifty more years they will be forced to mitigate other impacts such as sediment removal from the reservoirs. When this occurs the taxpayers will have to contribute to unprecedented subsidies to keep these projects operational," concludes Weisheit.

GC MANAGEMENT

Stepping Backwards

In 1986 the Department of the Interior requested that the National Academy of Sciences review their science program for the Glen Canyon [Dam] Environmental Studies (GCES). While many of the Academy's recommendations were applied by science managers in the Grand Canyon, and continued by subsequent program managers, politics and budget considerations are once again compromising the integrity of science.

The National Research Council of the Academy encouraged the GCES to "solicit scientific talent for the work based on a research plan [through a peer-reviewed request for proposals]," and to "use merit competition to select researchers, including a peer-review system outside the agency or agencies conducting the study."

David Wegner, former director of science for the Bureau of Reclamation, informed Living Rivers that, "The advice the Academy gave GCES was very helpful to the science community. We are very proud of the programs that later developed, which continued on through the EIS process of the early 1990s." Even after the Environmental Impact Statement this attitude prevailed during the research and monitoring phase under the auspices of the Grand Canyon Research and Monitoring Center (GCMRC), which is administered by the US Geological Survey in Flagstaff, Arizona.

Living Rivers has recently cautioned members of the Adaptive Management Program (AMP) that research programs are reverting back to old ways. This turn of events is gaining the attention of scientists who are fearful that heavy administrative costs will hinder their results. Additionally, a lack of competitive bidding and sufficient peer review will also detract from the quality and quantity of the monitoring undertaken.

For example, GCMRC recently decided to use in-house staff to mechanically remove trout in Grand Canyon. Bruce Taubert of Arizona Game and Fish Department (AGFD) pointed out to AMP members that, "GCMRC may do this at a cost of \$500,000, while AGFD could hire a consultant to do the same work for \$365,000. There would be a savings of \$135,000 that would return money back to the science programs in Grand Canyon."

DROUGHT FORECAST

Situation Unchanged

A barrage of reports and media advisories continue to come forth from scientists about the persistent drought in the Colorado River basin. The public has been reminded that the region experienced droughts of similar intensity before, notably 1901-1904 and 1953-1956. However, the year of 2002 was singled out as the driest year ever in recent history.

While common forecasting techniques allow for predictions of 3 to 6 months, scientists are beginning to observe two patterns of sea surface temperatures that provide a degree of confidence in predicting long-term droughts, notably the warming of the North Atlantic ocean with the cooling of the tropical Pacific ocean.

By obtaining tree ring data, scientists have reconstructed the climate of past centuries with tested credibility. The analyses of both instrumental and tree ring precipitation records should allow scientists to project drought conditions beyond a mere seasonal forecast. By comparing the data sets, the analyses demonstrate that a drought can persist for one or two decades and, in a few cases, even longer. Additionally, the data can be linked with the aforementioned ocean temperatures and thus provide the indicators necessary to forecast a persistent drought.

In 1998 observers were prompted to anticipate the current drought situation and the conditions remain unchanged and will likely persist into the coming decade. "In the context of shifting ocean climate, the current drought should give water and other resource managers in the Rockies and Southwest little cause for optimism about the drought ending any time soon," said Julio Betancourt of the US Geological Survey.

In a recent report Betancourt and others stated the implications, "It is always prudent to be conservative about water and other resources vulnerable to drought; it is particularly prudent now. ...Societal demands on surface water are on the increase. ...Clearly, the context for long-term drought is different now than it has been in the past."



Powell reservoir is now 100 feet below normal