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July 8, 2011

Ms. Pam Adams

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Dear Ms. Adams:

Thank you for the extension provided to all stakeholders to submit comments by Friday July 8th. We also appreciate the effort by the federal government and the seven basin states to finally look at the future implications of climate change, and how these impacts on water supplies will affect water demands in the Colorado River basin. However, we would like to remind all stakeholders that we stated the need to conduct such a study six years ago (July 25, 2005) during the scoping period for the Shortage Criteria EIS:¹

Developing a forward-looking policy on the future operations of Glen Canyon and Hoover Dams is critical to meeting the immense challenges facing Colorado River managers.

Preserving this resource requires achieving a sustainable balance between water supply and demand. ...it is critical that the scope of this analysis be expanded...

On April 30, 2007, during the review for the Draft EIS, we then stated our disappointment that a study and a policy to seriously address these imbalances, including the forcing of climate change, would not be formally considered.²

With this DEIS, it was hoped that the seven basin states and the Bureau of Reclamation (Reclamation) would take an important step in articulating the need for, and response to, the increasing likelihood that Colorado River water users will experience shortages...Unfortunately, the DEIS fell well short in meeting these expectations.

¹ <http://livingrivers.org/pdfs/TheOne-DamSolution.pdf>

² http://www.livingrivers.org/pdfs/LR_Shortage_DEIS.pdf

With the development of Colorado River Basin Water Supply & Demand Study (Basin Study), for which we are now providing comments, it would appear that system imbalances in the basin, and the stressors of climate change, are now considered ripe for discussion and analysis. It is indeed unfortunate and untimely that this study was not a component to the Record of Decision of December 13, 2007 for Shortage Guidelines.³

Though an improvement in scope from Shortage Criteria, we find the Basin Study as presented is still confined within very narrow parameters. It also is without substance, since the Basin Study is not associated with any affirmative action policy with clearly defined time-frames and secured funding mechanisms. Like Shortage Criteria, the study assumes that voluntary cooperation amongst the stakeholders will produce water security for all in the near future. We completely disagree with this assumption, because when the curtailments finally do arrive, contention will indeed occur.

It could be said the Basin Study is a much-needed educational document, but the basin's water managers have been well-informed about the problem of water scarcity for over 60 years. Not to mention that objective hydrologists and analysts have been recommending policies to do more-with-less since John Wesley Powell published the Lands of the Arid Region in 1879.⁴

For example, the biggest err of the 2007 Interim Guidelines was the permission it gave to continue water development projects in the Upper Basin. Allowing development for water resources that simply do not exist was entirely inappropriate. Dutifully, the Upper Basin water users are presenting a suite of proposed water projects that assures conflicts amongst stakeholders in the future.

One such project includes the Lake Powell Pipeline in southwestern Utah. This is a water delivery project to satiate the largest consumers of domestic water per capita in the nation.⁵ Whereas a more tangible and urgent alternative to this project, which could be completed in a smaller time-frame and for less money, would be to develop simple and affordable efficiency/conservation programs. But no, these promoters of irresponsible growth want to instead spend 1.5 billion dollars to grab distant Colorado River water that doesn't even exist.

With this kind of behavior expressed after the development of Shortage Criteria, or this Basin Study for that matter, why should the public be compelled to believe that water wisdom and knowledge comes from the agencies that have the most command over the resource?

The tone of the Basin Study's Interim Report is that the sky is not falling and this problem can be solved. As far we can discern the Basin Study serves as a welcome mat

³ <http://www.riversimulator.org/Resources/USBR/Shortage/RODshortage2007.pdf>

⁴ <http://www.riversimulator.org/Resources/Books/AridRegionPowell1879.pdf>

⁵ <http://www.riversimulator.org/Resources/Graphs/WaterPerCaptitaUseIntermountain.jpg>

to dispense yet another layer of complex and expensive augmentation technology that the people and the environment can't afford to implement, and no different than the grandiosity of the Lake Powell Pipeline. Money, technology, and the command of power that water purveyors have over the basin, is precisely what created the problem in the first place. How could the basin possibly fix this problem with augmentation schemes with modest investment and with less vulnerability?

For example, if river augmentation is the answer, then why have the purveyors not supplemented the system with the 2 million acre-feet necessary right now to bring balance to the system? If the reservoirs go empty in this interim period, how could managers possibly refill them considering that surplus water no longer exists and demand is eating into what storage yet remains?

Is it safe or not to say that balancing the water budget in this basin cannot be achieved in a timely manner? Has the basin already surpassed its carrying capacity? Considering the present financial instability worldwide, how will the basin ever finance the infrastructure and energy demands for augmentation programs in a timely manner? Will the demand for energy to support augmentation programs increase carbon emissions and cumulatively decrease the annual yield of the snow melt? Is the money better spent to rather improve the efficiency of existing infrastructure? Can agriculture produce more nutritious food, for more people, and with less water? It is possible that there is redundant storage and the system would actually perform better with a few less dams? How can managers achieve balance in the basin's ground-water reserves without stable surface water supplies?

We request that the Basin Study answer these questions objectively by the summer of 2012.

Another request we have is to ask the analysts of the Basin Study look into the 2005 Energy Policy Act. This legislation encourages oil and gas corporations to transform the upper basin of the Colorado River into a fossil fuel energy colony that will have huge cumulative impacts on land, air and water resources that will negatively effect both water quality and quantity in the Colorado River basin.

RECORD OF NATURAL FLOW IN TIME-PERIODS OF FIFTY YEARS

We would like to focus back to 1957, because this was the year that Roger Revelle (and others) at Scripps Institute confirmed that loading the atmosphere with carbon would eventually alter the assumed stationarity of the hydrologic cycle. Fifty-year time-frames of the instrument record also compliment the parameters of the Basin Study. Since 1957, the Colorado River basin's annual natural flow at Lee's Ferry has declined one million acre-feet, and the Basin Study informs us that the next 50 years will result in a similar reduction. It is reasonable to say that the basin has already been impacted by climate change, and the next 50-years is merely a cumulative result to the existing impact. This would be true as well for the time-period between 2050 to 2100.

The following table displays the decline in the annual average yield of the Colorado River, according to the best available information provided solely by the Department of Interior.

Annual Average Natural Flow at Lee's Ferry	Million acre-feet
Yield as of 1922 Compact (Leopold & Prairie)	16.6
51-year average yield as of 1956 (Prairie)	15.6
52-year average yield from 1957 to 2008 (Prairie)	14.5
Projected yield as of 2050 (Basin Study)	13.7
Projected yield as of 2100 (trend line estimate)	12.7

REFERENCES: Leopold & Prairie⁶ & Prairie⁷

The basin has been losing, and is projected to lose, a million acre-feet every 50 years or so. The Basin Study confirms what hydrologists knew as far back as 50-years ago. Since the Basin Study did not look at the dust on snow problem, or other necessary land management reforms, the reduction in yield will likely be even more severe.⁸

For example, the Upper Colorado River Commission recognized the declining trend in 1950 and reported the annual average yield was then only 15.6 maf,⁹ which conforms with the updated (2008) spreadsheet by Reclamation hydrologist James Prairie. It also conforms with the work of hydrologist Raymond A. Hill in 1953¹⁰, and hydrologist R. J. Tipton in 1965¹¹.

Even the most ardent defender of the Colorado River Compact, Northcutt Ely, recognized in 1953 and 1954,¹² that system imbalances would eventually cause hydropower production to cease at Hoover and Glen Canyon dams, and without ever mentioning reductions via global climate change.

⁶ <http://www.riversimulator.org/Resources/Graphs/BestDataAnnualFlow1922.jpg>

⁷ <http://www.riversimulator.org/Resources/Graphs/NaturalFlow1906to2008AnnualAverage.pdf>

⁸ <http://www.riversimulator.org/Resources/ClimateDocs/ColoradoRiverRunoffDustRadiativeForcingPainter2010.pdf>

⁹ <http://www.riversimulator.org/Resources/Hydrology/HydrologicDeterminationUCRC1950.pdf>

¹⁰ <http://www.riversimulator.org/Resources/Hydrology/HillReport1953ocr.pdf>

¹¹ <http://www.riversimulator.org/Resources/Hydrology/TiptonReport1965ocr.pdf>

¹² <http://www.riversimulator.org/Resources/Testimony/ColoradoRiverBoard1954.pdf>

WHAT SHOULD BE DONE?

The opening statement from a 1979 GAO report¹³ about the Colorado River basin had this to say about the urgent need to solve the system's imbalances:

The Colorado River Basin is in trouble. Soon after the year 2000, there will not be enough water to serve the region's booming population, sustain its rapid industrial growth, and support its fertile agricultural lands. Even before 2000, the water is likely to become too salty for many uses.

These problems are likely to occur despite the millions of dollars the Federal Government has spent on water resource projects in the seven-State area. Many of these complex water problems can be solved if Federal, State, and local governments work as partners to manage the region's water. Cooperation, long-range planning, financial resources, and a decision-making body are needed soon to find cost-effective solutions to the region's problems.

On the next page of this GAO report, they admonished that the process of managing shortages and salinity was already overdue by ten-years:

Actually, a solution is needed before then [2000]. It takes at least 30 years to plan and construct a water storage or distribution facility. Therefore, the planning and decisionmaking organization GAO envisions should have been in operation in 1970 if the most pessimistic estimates are valid, or need not be established until 1990 if the optimistic estimates are accurate.

Between 1980 and 2000, the urgency of the situation dissipated for reasons of temporary water abundance, even though GAO still recognized the need for an action plan should the basin's hydrology prove optimistic. Reclamation and the basin states did nothing during these two decades until the very end of the century, namely the development of documents such as Surplus Criteria, the California 4.4 Plan, and the Quantitative Settlement Agreement.

Why conditions of shortage were not addressed simultaneously with conditions of surplus, and why these operating guidelines were framed into interim time-periods, indicates that the state and federal agencies are still reluctant to forward a realistic and long-term analysis, water budget, and affirmative action plan.

Purveyors continue to look under rocks, so to speak, with the hopes of eking more water out of the system, especially when a wet-cycle arrives. Why this pervasive attitude has been tolerated for so long is actually a bigger problem than the forcing of climate change.

¹³ <http://www.riversimulator.org/Resources/GAO/CRBwaterProblems1979.pdf>

We agree with GAO that it takes 30-years to plan and build the infrastructure for developing water security in the basin. Decades of time have already been wasted, and now that the nation better understands that it's economic framework is no longer based on firm and measurable values, developing interim strategies with suggestible programs that are extremely expensive and vulnerable is nothing but a spinning wheel of chance.

We strongly suggest that Reclamation and the states stop this nonsense and give the people something that is real to work with. Additionally, there is nothing in this Study that focuses on the other related hydrologic imbalances within the basin which include, to name but a few, flooding, sediment and productive habitat for the aquatic species.

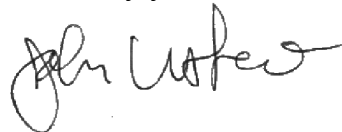
Moreover, every manager knows that the basin's ground-water and surface water are intrinsically linked, yet the Basin Study intentional ignored analyzing the ground-water budget of the basin. Innovative ground-water management could save the day. Aquifers can be replenished for water storage without evaporation, which can later serve as a water buffer during times of shortages, or during emergencies such as damage to dams and conveyance systems caused by earthquakes (which happened just last year in Mexico).

CONCLUSION

Like the Glen Canyon Dam Adaptive Management Program, Reclamation and the seven states are merely observing and studying the incremental demise of a precious natural resource. What the public observes once again, is a continuation of the same behavior that comes at the end of every resource review process by Interior: one step forward, two steps back. Is it not true that the basin's imbalance is exactly where it was in 1902 when the Reclamation Act was passed?

If the federal and state agencies want to work cooperatively together and solve these huge water problems, this study is not the correct approach. A lot more honesty will be required than what this study has revealed so far. Until this myopic basin approach is entirely abandoned and replaced with a meaningful and long-term planning document, that includes national and state legislation to address and fund all these critical problems, a serious intervention will surely arrive.

Sincerely yours,



John Weisheit
Living Rivers Conservation Director
Colorado Riverkeeper