

SUMMARY – THE RISK OF CURTAILMENT UNDER THE COLORADO RIVER COMPACT

When we're thinking about life insurance, we calculate, even if subconsciously, the odds we'll need it. How's my health? What happens to my family if I'm not around? How dangerous is my job? The risk we perceive determines how big a policy we want and how much we're willing to pay. But these are uncomfortable questions we'd rather not think about, and tend to avoid.

When considering the future of the Upper Basin of the Colorado River, we need to do the same, even though the answers can be unpleasant. If we do nothing and the water runs short, will we get the water we need? What are the risks we won't? What can we do to mitigate the risk? An objective risk assessment is needed so we can make good decisions about the right amount of insurance against catastrophic loss, or a decision to forego insurance and go bare.

Discussions about demand management and negotiation of new operating procedures for the Colorado River Basin must be based on an objective evaluation of the risk that Upper Basin water rights will be curtailed as a result of obligations under the Colorado River Compact. This paper connects the latest science on projected flows with an analysis of the legal framework governing the Colorado River's allocation. The risk to Colorado River water rights within the state of Colorado is specifically addressed. It is intended to inform negotiators and interested citizens about the future risk that Colorado River-sourced water rights won't be available. Coupled with a cost-benefit analysis, this risk assessment can be a foundation for assessing proposals for Colorado River operations and insurance policies.

LEGAL RISKS

Despite almost one hundred years of reliance on the 1922 Colorado River Compact, there are a number of fundamental questions and disagreements about key terms. The interpretation of these provisions has profound impacts on the obligations of the Upper Basin states and, therefore, on the risk of curtailment. The legal ambiguities include:

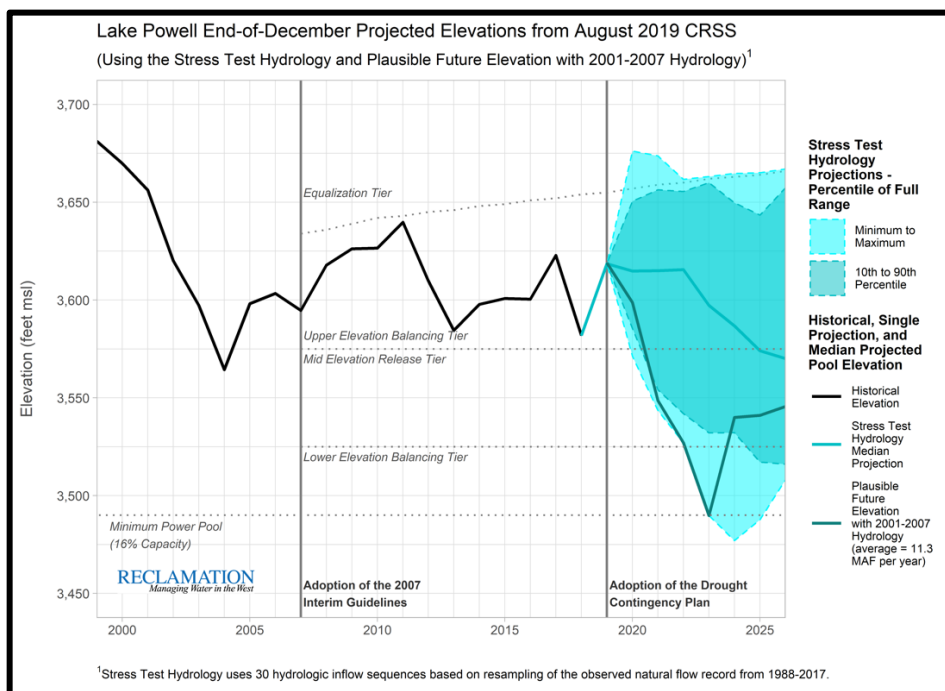
- Under the 1922 Colorado River Compact, the Upper Basin cannot "cause flow of the river at Lee Ferry to be depleted below an aggregate of 75,000,000 acre feet for any period of ten consecutive years." There has been a debate since the drafting of the Compact as to whether this imposes a delivery obligation on the Upper Basin states, or merely a requirement that those states not deplete the flows of the river by human activities beyond that amount. A delivery obligation (as opposed to a non-depletion obligation) would mean the Upper Basin must absorb any climate change reductions to the flows in the Colorado River to deliver 75 million acre feet over ten years at Lee Ferry, even if that requires curtailing existing uses. Actions of the states and federal government after the 1922 Compact have pointed toward a delivery obligation but there has been no agreement or conclusion on this point.

- The 1944 Treaty with Mexico requires the US to deliver 1.5 million acre feet to Mexico every year. The 1922 Compact specified that any such delivery to Mexico would first be met from surplus waters and one-half of any remaining deficiency would be delivered by the Upper Division states at Lee Ferry. But “surplus,” has never been defined, creating significant legal uncertainty about the Upper Basin’s obligation under the treaty. The risk is that the Upper Basin’s obligation at Lee Ferry includes one-half of the 1.5 million acre feet every year. This increases the overall obligation of the Upper Basin states and the risk that curtailment of existing uses will be required.

HYDROLOGICAL RISKS

A repeat of drought conditions seen in the first decade of the 20th century could nearly empty the Upper Basin’s primary storage reservoirs. While the risk of that happening remains low in the short-term, the threat increases substantially over time, and regardless of the time frame, the consequences could be dire. The paper describes the latest Colorado Basin science and translates it into the risk of curtailment.

- Even with the recently adopted Drought Contingency Plan, a repeat of hydrology experienced in the past could cause Lake Powell to fall below the critical level of 3,490 feet, the level at which hydropower generation is lost, as shown in the graph below. That would mean loss of funding to operate federal water projects in the Upper Basin, and potentially for endangered species and adaptive management programs that provide security for Upper Basin uses. The required flow at Lee Ferry would be in severe jeopardy and Lower Basin states would likely demand curtailment.



Reclamation, 2019, Research and Modeling Group

- Climate scientists have projected reduction in Colorado River flows of 20-30% below 20th century averages by 2050, and even more dire decreases of 35-55% by 2100. This would cause steeper and earlier declines in Lake Powell, increasing the risk of the consequences described above.

MITIGATING AND AGGRAVATING FACTORS

The best hope for avoiding curtailment rests in the continued efforts of Colorado River water managers to cooperatively reach agreements that bring better balance to the system through voluntary cutbacks in the amounts of water delivered and used. There is a history and culture of collaboration in the Basin and, therefore, reason to expect that Colorado River water leaders will devote considerable effort to reaching a negotiated solution that decreases the risk of curtailment. There are, however, forces pushing in the opposite direction that could increase Upper Basin risk.

- The recently executed Drought Contingency Plan (DCP) agreements will without question slow the decline of water levels in both Lake Powell and Lake Mead. But the latest modeling confirms that the DCP is inadequate to eliminate the potential that Lake Powell will reach critical levels with a risk of curtailment.
- New depletions to the River could occur in the Upper Basin through the development of unused tribal rights (which could total as much as one million acre feet) and planned water supply projects. This will increase the risk of Compact curtailment. Recent analyses in Colorado conclude that an 11.5% increase (500,000 acre feet) in Upper Basin uses approximately doubles the risk of the Upper Basin failing to meet its obligations.

COLORADO-SPECIFIC RISKS

The details of how Compact curtailment would be administered within Colorado have not been spelled out by the Colorado State Engineer's Office. But the most obvious means of administration would be based on prior appropriation, the mechanism through which all Colorado water rights are administered. Only water rights that are junior to the 1922 Compact are subject to curtailment. It has been estimated that approximately 1.6 to 1.75 million acre feet of Colorado River water use in Colorado (out of an annual total of about 2.5 million acre feet) is considered pre-Compact and not subject to curtailment. That's the good news. The bad news is that the burden of curtailment will fall on the much smaller quantum of post-Compact rights. Significant curtailment reaching far into the seniority ranking may be necessary to achieve reductions required for Compact compliance.

Simulations commissioned by a group of western Colorado water agencies found producing 300,000 acre feet of water to respond to a Compact call would require curtailment of water rights with priority dates junior to 1940. This means that water rights junior to that date would not be allowed to divert at all. Producing 600,000 acre feet would require curtailment of post-1935 water rights. Curtailment of all post-Compact water rights would be necessary in order to produce 932,000 acre feet.

The burden of curtailment would fall heavily on municipal transmountain diversions to the East Slope. While that might sound superficially attractive to West Slope agricultural interests, such a prospect

could motivate affected municipal water providers to buy or lease pre-Compact West Slope irrigation water rights, possibly in substantial volume. Although these would almost certainly be market-based, arms-length transactions, the resulting economic impact could be geographically concentrated and tremendously disruptive to commodity supply chains and rural communities.

LITIGATION – NOT A SILVER BULLET

The paper cautions against litigation against the Lower Basin states of Arizona, California, and Nevada as a path to settling the legal ambiguities. Such an interstate lawsuit could drag on for many years in the U.S. Supreme Court, creating even more uncertainty and hindering the types of collaborative agreements that have kept the River sustainable so far. None of the legal arguments is bullet-proof and frequently the questions initially asked remain unanswered even after years of fighting. The risks are massive in terms of time, resources, uncertainty of outcome, and depletion of political capital. It is wildly impractical to believe that the legal haziness surrounding the 1922 Compact and subsequent statutes can easily be resolved through litigation.

OPTIONS

Even if the risk of curtailment of Colorado River rights were judged to be low, the consequences are not. Curtailment could result in dire consequences to municipal providers and their customers and farmers and ranchers on the West Slope, with the attendant loss of economic activity, jobs, income, and community benefits in cities and rural areas that depend on the water. Analyzing a range of possible futures and setting up contingency plans for those with calamitous consequences is prudent. A contingency plan is a form of insurance against catastrophic events.

Demand management is being investigated in Colorado and the other Upper Basin states as one form of insurance policy. This type of voluntary, temporary, and compensated water conservation would create a pool of water in Upper Basin reservoirs from which obligations to the Lower Basin could be met, avoiding curtailment. There are many barriers - legal, operational, economic, and political - that must be addressed. While it is not clear that a demand management program is the right, or the only, appropriate form of contingency plan, it does seem to be the only viable insurance policy proposed thus far.

There is also the option to wait and see, letting the chips fall where they may. In insurance terms, this would be called “going bare.” Some suggest Colorado should rely on its rights under the 1922 Compact and the operation of the prior appropriation system, rather than establishing a complicated, disruptive, and expensive demand management system. The potential economic consequences of curtailment should be carefully weighed in any decision to forego demand management or other forms of insurance. Analyses of the impacts of reduced water supplies caused by drought suggest losses to Colorado’s economy of tens of millions of dollars, as well as thousands of job losses. The difference between suffering the inevitable consequences of the operation of the prior appropriation system when insufficient water exists in Colorado streams and going bare on the risk of Compact curtailment, is that we have the opportunity with the latter to take precautionary measures in the form of demand management. Passing up that opportunity is high stakes poker.

CONCLUSION

With the number of risks described in this paper that could cause curtailment of water rights in Colorado and the Upper Basin, and the grave potential consequences of that curtailment, it seems some type of insurance policy is needed. Hoping for big snowpacks, or that our lawyers will win a court battle, leaves us in enormous peril. Hope is not insurance. We hope that our houses will not burn down, but we also buy insurance. Such protection could take a number of forms, with a demand management program at or near the top of the list.

The paper acknowledges that there are significant logistical and implementation problems with demand management, such as verification and accounting, funding, agricultural and tribal impacts, and water law barriers, to name a few. But it is incumbent on those who reject demand management or other form of proactive water conservation to base a decision to go bare on an informed analysis of the consequences or to propose a different kind of insurance alternative to the turmoil and disorder of forced curtailment. Neither has yet occurred.

The Risk of Curtailment Under the Colorado River Compact, white paper by Anne Castle, Senior Fellow, Getches-Wilkinson Center for Natural Resources, Energy, and the Environment, University of Colorado Law School, and John Fleck, Director, University of New Mexico Water Resources Program, available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3483654.