

**Testimony of Taylor E. C. Hawes  
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Before the  
Subcommittee on Water and Power of the Senate Committee on  
Energy and Natural Resources**

**Hearing on the Bureau of Reclamation's Colorado River Basin  
Water Supply and Demand Study**

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Thank you, Chairman Schatz, Ranking Member Lee and Subcommittee members, for the opportunity to testify on the Bureau of Reclamation's Colorado River Basin Water Supply and Demand Study. I am honored to speak to you today about the Colorado River and how we can plan for its future to ensure it can meet the many demands it faces, including providing water for cities, agriculture, industry, environmental and recreational needs. I am the Colorado River Program Director for the Nature Conservancy. The Conservancy's Colorado River Program spans all seven Basin states and Mexico. The Conservancy seeks to find solutions for our rivers while also meeting the needs of people. I am one of the co-chairs of the Environmental and Recreational Flows Workgroup and will be co-chairing that committee with representatives from the State of Colorado and the Bureau of Reclamation.

The Nature Conservancy is a non-profit conservation organization founded in 1951 whose mission is "to conserve the lands and waters on which all life depends." The Nature Conservancy puts great emphasis on solutions and partnerships, and we rely heavily on science in deciding our direction, focus and priorities. Our staff lives and works in hundreds of communities across the U.S. and around the world. They are supported by almost a million members and by state Boards of Trustees made up of local leaders in conservation, business, agriculture and ranching, academia and philanthropy.

This testimony addresses three topics:

- The importance of the Colorado River system's environmental and recreational values and why it is necessary *and* possible to find solutions for the Basin that meet the needs of people and nature.
- A few of the long-term needs and opportunities coming out of the study.
- The scope of work for the Environmental and Recreational Flows workgroup over the next six months or so.

Before I delve into the details, I want to acknowledge the leadership of the Bureau of Reclamation in the Colorado River Basin. As we all know, water in the West is contentious, but in the case of the Colorado River Basin, Reclamation has successfully brought states and other water interests together to work towards solutions.

The Nature Conservancy, along with many partner conservation organizations, has worked closely with the Study team, the seven Basin states and Reclamation to inform the Basin Study, serving on technical teams and providing comments on drafts. The Study found that the combination of increasing demand and dwindling supply, threatens our communities, industry, agriculture, environment and recreational economy unless we take steps now to change our current course. Without healthy rivers, the region's economic vitality and its rich natural heritage are at risk. Drought sets the stage for conflict between water users. But the Basin Study seeks a path where municipalities and the agricultural and environmental communities can find practical solutions to the water supply and demand challenge. We look forward to working with Reclamation, the seven States and other partners as we prepare for a future in the Colorado River Basin that sustains agriculture, allows cities to grow and protects our iconic rivers.

### **The Colorado River Basin's Significant Ecological and Recreational Values**

The Colorado River boasts more than thirty fish species found nowhere else in the world. However, fifty percent of all native fish species in the Basin have either gone extinct or are considered vulnerable. The River no longer reaches the sea and some of its smaller headwater tributaries run dry on a seasonal basis. Dramatic changes in the river's flow regime have facilitated the dominance of invasive plant species, such as tamarisk and Russian olive, which creates poor riverside habitat and uses more water than native vegetation due to its spread up on to the benches above the river. At the same time, the river system still provides habitat for the much prized Colorado River Cutthroat Trout, and the Basin's beautiful rivers, with their dramatic cottonwood galleries, draw birds and visitors from far and wide.

The Basin features a \$26 billion recreational economy, much of which revolves around rivers. There are 10 National Park units, including the Grand Canyon as the Basin's centerpiece, as well as other parks and river reaches drawing hundreds of thousands of visitors annually. There are major rafting enterprises in Wyoming, Colorado, Utah, and New Mexico. Anglers come from around the world to fish both headwaters streams and gold medal trout fisheries in larger tributaries. World-class ski resorts in the region, which rely on snowmaking, support thousands of jobs. Finally, there are many who cannot think of a better vacation than a week on Lake Powell. More than five million adults visit the region for recreational excursions, supporting approximately 234,000 jobs in Arizona, Colorado, Nevada, New Mexico, Utah and Wyoming and generating more than \$10 billion annually in wages and earnings. Unfortunately, the Study showed that under all portfolios (solution sets), flow related values and resources would likely be negatively impacted in the future.

The conservation organizations participated in the Study to ensure that it considered healthy river flows at the same time that it evaluated the future needs of agriculture and cities so that stakeholders could simultaneously develop a long term plan to meet the varied needs in and outside of the Basin. The conservation organizations' vision was coordinated development and management of the River and its tributaries, in order to optimize economic and social welfare without compromising the health of the river itself. The next steps will involve tackling these issues at the Basin level. Recent examples in the Basin – two of which I highlight below – have proven that this kind of approach is possible, but its implementation requires political will and leadership.

While the Basin Study is considering basin-wide solutions, our communities must also be creative in finding local solutions. Smaller scale projects in the Basin demonstrate that the needs of people and nature do not have to be mutually exclusive. For example, consider the San Pedro River. It starts in Mexico and flows north into Arizona near the City of Sierra Vista. The region includes two significant national assets: a major U.S. intelligence and communications testing installation at the Army's Fort Huachuca and the BLM's San Pedro Riparian National Conservation Area. It provides critical riparian habitat to millions of migratory birds, many vulnerable animal species and an endangered aquatic plant. The combination of prolonged drought, increasing human water demands, and other factors have reduced the river's flows in many locations, which has adversely affected wildlife and fish as well as the long-term reliability of water supplies for area residents.

Finding a solution for the San Pedro started with good science and a better understanding of the river. Every June, the Conservancy works with more than 100 community members in the U.S. and Mexico to map over 270 miles of the river and its tributaries to define the extent of surface water, specifically, where the river continues to flow during the very hottest and driest time of the year. We then developed a computer simulation model with our local, State and federal partners to better understand underground groundwater flows in the aquifer that help sustain the river. Using this information, we were able to identify the best locations for groundwater recharge projects that enhance stream flows in the San Pedro by improving the aquifer where it is needed the most. In partnership with the Department of Defense, the Conservancy has acquired key lands from willing sellers and is now designing aquifer recharge projects in conjunction with our partners, including Cochise County, local developers, private foundations and Natural Resource Conservation Districts. By combining private and public dollars to concurrently meet both the water needs of people and nature, we developed innovative new technologies and infrastructure solutions to address what were seemingly unsolvable water shortage issues. That is the future we see for the arid West and its rivers: collaboration between private and public interests, development of smart science, technical tools, and infrastructure; and a commitment to

simultaneously address the water needs of all water sectors through informed decision-making. Water issues do not have to be focused on conflict.

### **Opportunities going forward**

The SECURE Water Act directed Reclamation to perform basin studies that considered risks to a number of resource values. For the first time ever, SECURE directed consideration of water-dependent recreation, fish and wildlife habitat and “flow and water-dependent ecological resiliency” on a par with Reclamation’s ability to continue water deliveries to traditional agricultural, urban and hydropower beneficiaries. §9503(b)(3). The Colorado River Basin Study was the first major effort of Reclamation and the States to look at flow and water-dependent ecological resources across the Basin. As a result,

The Study recognized the importance of considering river flows to support flow and water dependent ecological systems, power generation, and recreation, through its adoption of metrics used to approximate the performance of these resources, the inclusion of an Enhanced Environment water demand scenario, and the inclusion of an Upper Basin water bank of which the objective specifically includes improving the performance of ecological and recreational resources. [Chapter 10]

While this level of consideration of flows was ground breaking, the Study was, in large part, limited by the water supply model used to perform the study. Reclamation’s basin-wide model, known as Colorado River Simulation System (CRSS), was designed to manage water supply and reservoir operations. It was not designed to track environmental and recreational flow needs or develop solutions to protect or enhance those values. In other words, the model cannot tell us whether flow needs are being met at key locations, because it was not designed to assess flows. Consequently, many key flow needs and solutions were left out of the Study.

Another shortfall was that the Study was focused on identifying solutions to meet consumptive water supply needs. It was not aimed at developing solutions to meet ecological or recreational flow needs. Therefore, with a few exceptions, the Study’s performance measures were not set up to guide the selection of water management actions to meet flow needs. Moreover, many flow needs and solutions were left out of the Basin Study because CRSS was unable to assess them adequately. Without direct linkages between environmental flow needs and water management actions to meet those needs, the Basin Study could not develop flow-related solutions as it did for consumptive water needs. Such disconnects made it difficult to prioritize solutions that meet multiple water needs as described in the San Pedro example.

In the next phases of the Study, parties will be working to craft solutions to meet environmental and recreational flow needs in Basin communities, along with meeting consumptive water needs. The Basin Study will serve as the platform to discuss such long-term solutions that support not only communities, but the amenities everyone associates with the West, including its rivers. The

Basin Study, as others have said, is also a “call to action” because it shows that the water supply and demand imbalance for traditional water users, including irrigators and cities, is significant. What is exciting about the Basin Study is that it establishes a dialogue focused on finding feasible, financially prudent solutions for cities, agriculture, industry, recreation and the environment. We ask Congress to follow through on the promise of the Basin Study by fully supporting the agencies, programs and stakeholders that are working on finding solutions to the challenge of managing such a critical river system to the West.

Looking to the past, we can see that anything is possible with political will. For example, the Upper Colorado and San Juan Rivers Endangered Fish Recovery programs have shown that it is possible to meet the needs of endangered fish while also allowing continued consumptive water use. Specifically, the Upper Colorado River Recovery Program has found solutions that work, such as expanding Elkhead Reservoir, a small reservoir in northwest Colorado. The expanded capacity can be shared among a power plant, rural community, agricultural needs, and flows for the endangered fish. The project sailed through permitting, because it was a true model of collaboration with multiple benefits.

Another example is the recent agreement between the United States and Mexico that restores water to the Colorado River Delta while increasing water supply reliability for communities in both countries. In the past, the international boundary stood in the way of traditional approaches to restoring healthy river flows. When the Colorado River no longer reached the sea and habitat was lost in the delta, many decried Colorado River management as a failure. But water managers from both countries were able to overcome the challenge of the border by creating benefits for water users on both sides of the border. Flows for the environment will be created through cooperation between the United States and Mexico, as well as through private sector contributions. Water will help restore healthy habitat in the delta, water conservation will shore up supplies and both countries will benefit during wet periods and share the pain of cutbacks during drought. While these negotiations were arduous, and the agreement is a pilot planned to expire in five years, the benefits are expected to motivate both countries to negotiate for a successor agreement. Stakeholder processes are not quick, but they often result in the best and most durable solutions that satisfy multiple interest groups.

Additionally, river stewardship tools are necessary for the future as the region becomes more arid. As discussed above, the current model (CRSS) that we use to manage the Colorado River does not allow us “see” innovative solutions that meet multiple purposes. Through a Landscape Conservation Cooperative grant, the Conservancy is working with a broad cross-section of water users, federal agencies, tribes, local communities and other environmental organizations to explore ways to improve the existing model and create new management tools that will better allow us to evaluate solutions for both water users and rivers.

## **Environmental and Recreational Flows Work Group Scope of Work**

The Environmental and Recreational Flows workgroup, with representatives from a broad cross-section of environmental, recreational, urban, and state interests, will undertake several tasks in the coming months. While the scope of work will be finalized next week at our first in-person meeting, we will be seeking agreement on which rivers are most important for maintaining key ecological and recreational attributes, what is the role of flows in maintaining those rivers, what are the best tools to protect those rivers and related attributes, and whether additional data is needed to help us develop solutions. As mentioned above, we need 21<sup>st</sup> Century management tools that allow us to “see” opportunities for river management that protect the river’s health while meeting the needs of people. Therefore, we will consider and hopefully integrate The Nature Conservancy’s assessment of the model into the recommendations of this group for the subsequent phase of work. This workgroup will also seek to understand how hydropower might be affected in the future and possible solutions for protecting those resources.

Second, we will identify locations on the priority rivers identified through this process where opportunities exist to provide environmental and recreational flows. If opportunities exist that have broad support, we will focus on those opportunities first. Finally, we will prepare a report by the end of 2013 that summarizes this information and proposes Phase 2 activities to be conducted in 2014.

## **Conclusion**

The Basin Study has given us a glimpse into several possible future paths. The future will not look like the past as demands will continue to increase and supplies are expected to decrease. We need to be honest with our communities. We all have a role in creating a sustainable future for ourselves and this River system. To ensure a legacy of vibrant communities, state of the art urban and agricultural conservation, and healthy rivers, we must foster a water stewardship ethic that extends to our rivers. We are at a critical juncture in the Colorado River’s history – we must all pull together to develop and implement sustainable solutions.

Finally, let Australia be a cautionary tale for why water imbalance projections should be a call to action. It was not prepared for the extreme dry conditions it has experienced. Australia was just beginning to plan for a 6% reduction in supplies when they experienced a 38% reduction. It is adjusting to a new normal that has forced dramatic changes in how it manages water for all uses. We can learn from this experience and create a better, less contentious future for the Colorado River and for everyone and everything that depends on this iconic river.

Support from this committee and Congress will be critical to our success. The conservation community strongly supports continued funding of WaterSMART and Landscape Conservation Cooperative programs. Both of these programs provide critical assistance to facilitate urban and agricultural water conservation projects and environmental solutions. Water conservation in all

sectors will be crucial for meeting water needs in the future, both for our urban and rural communities, and for the health of the basin's rivers.

It is imperative to the success of the Environmental and Recreational Flows Workgroup that both the Agricultural and Urban Conservation workgroups produce real water savings. All these efforts must be integrated for us to succeed. In addition, it is important for this body to continue its oversight with regard to the next steps in the search for financially prudent, realistic and timely solutions to the imbalances in the Basin and the need to protect its important ecological and recreation values. The SECURE Water Act established a process where Basin Studies are the first step, followed by recommended solutions and feasibility studies for their implementation. The Colorado River Basin Study was ground-breaking as well as a call to action. The Nature Conservancy looks forward to working with our partners and the Congress to identify and implement solutions.

Thank you for the opportunity to provide testimony and to outline next steps on the Colorado River Basin Study. I would be happy to answer your questions.