

**Statement of Tanya Trujillo  
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Before the  
Natural Resources Committee  
Subcommittee on Water, Oceans, and Wildlife  
U.S. House of Representatives  
on  
H.R. 4832, H.R. 5001, House Resolution 320, and H.R. 5345**

**November 4, 2021**

Chairman Huffman, Ranking Member Bentz, and members of the Subcommittee, thank you for the opportunity to appear today on behalf of the Administration to testify on H.R. 4832, the Open Access Evapotranspiration Data Act; H.R. 5001, the Upper Colorado and San Juan River Basins Recovery Act; House Resolution 320, Recognizing the critical importance of access to reliable, clean drinking water for Native Americans and Alaska Natives and confirming the responsibility of the federal government to ensure such water access, and H.R. 5345, the Saline Lake Ecosystems in the Great Basin States Program Act of 2021.

**H.R. 4832, Open Access Evapotranspiration Data Act**

**Background on OpenET**

We are seeing the impacts of climate change manifested in drought, wildfires, hurricanes, and localized flooding. Today more than ever, it is important to have a detailed understanding of water availability and how we can use science to increase our accounting of the water budget, while making that information available to water managers across our Nation. The U.S. Geological Survey (USGS) is working to better understand, report, and predict the entire water budget for purposes of improving water prediction and assessment capabilities, and delivery through the National Water Census. A critical gap in our understanding of the water budget is consistent, accurate information on evapotranspiration (ET). ET is one measure of the consumptive use of water lost from a system. This water is removed from, and unavailable for other uses, within a watershed. ET is driven by a number of atmospheric factors, including temperature, relative humidity, air movement, and soil-moisture availability. Accurately reporting or predicting the consumptive use of water through ET, especially for agricultural uses, is one of the most important data gaps for water resource managers. Access to better information on ET is critical to improving water budgets, advancing irrigation water use planning and management, informing negotiations for Indian water rights settlements, and developing conservation and sustainability efforts for improving long-term water availability planning and management for both human and ecological uses.

## **Science and Management Need for OpenET**

The value of improved ET reporting is widely understood in the water resources science and management community. Accurate information on ET is required to balance water supply and water demand in a watershed and ensure that adequate water supplies for multiple uses are available over time. Further, access to existing data is often limited and cost prohibitive. ET data can be applied to support improved drought planning and adaptation; development of innovative management programs to promote water conservation and sustainability efforts; and promote improved management practices and understanding impacts of consumptive water use.

To date, research efforts into the feasibility of an operational national ET product have yielded a promising prototype system called OpenET which is capable of providing daily ET data for irrigated lands in the western U.S. However, much work remains to effectively operate OpenET as a national operational asset for water resource management. In response to the SECURE Water Act of 2009, USGS has been actively working to improve ET estimation techniques through the development of the Simplified Surface Energy Balance operationalized (SSEBop) method. This method is currently being applied across the continental U.S. to produce daily ET estimates at a 30-meter resolution (field scale) that can be accessed online. USGS has worked collaboratively with the OpenET team to establish the prototype system and continues to engage on research to improve methods and techniques associated with ET models.

### **H.R. 4832**

H.R. 4832 would require the Secretary of the Interior, acting through the Director of the USGS, to establish an Open Access Evapotranspiration Data Program to operationally deliver satellite-based, field-scale estimates of evapotranspiration to advance the quantification of evaporation and consumptive water use to sustain and enhance water resources in the United States. As noted above, USGS has actively engaged with the OpenET team to help develop and test a prototype system. This engagement has provided USGS unique insights into the program and its potential as well as current limitations.

Sections 4(a) and (b) of the bill authorize the Department to advance the quantification of evaporation and consumptive water use as well as provide data users with field-scale estimates of evapotranspiration data across large landscapes over certain periods of time. While the Department is supportive of improving ET reporting at the national scale, we would like to work with the Committee to ensure that we can responsibly plan efforts to expand beyond the reporting currently being done as part of the OpenET consortium's pilot effort for irrigated lands in the West. Specifically, the Department believes that satellite-based methods of determining ET values should be combined with other types of ET estimation methods that can validate and augment satellite-based delivery of nationwide ET data.

Section 4(c) of the bill recognizes the fundamental research that will be needed to develop the methods that operationally deliver national ET data to the public. Initial OpenET research efforts have been a valuable first step to developing an operational program; however, there is still a great deal of refinement to be done to operationally deliver ET data for the nation. The Department would like to work with the Committee to establish a two-phased program that

would allow for USGS and partners to bring the research to operational capabilities. Phase one would take approximately 3-5 years where USGS would continue to carry out the research components identified in Section 4(d). In addition, USGS would engage with partners and stakeholders to identify the most beneficial data and delivery mechanisms and then transition to phase two – operational production and delivery of ET data. This two-phased approach to operations would ensure that operational resource requirements are well-understood.

Section 4(f) of the bill would require USGS to enter into cooperative agreements with and provide nonreimbursable cost share to unspecified program partners for operational delivery. This is a productive way to research and test the applicability of various methods for estimating ET; however, relying on these partners to continually deliver ET data as part of a plan to operationally deliver ET data nationally is uncertain for the long-term. External partners are an important contributor to researching potential techniques and methods, but the responsibility for operational delivery, and the mechanisms with which to do so, should belong to USGS to ensure long-term continuity and success.

Section 5 of the bill requires a status update on the operational incorporation of program data into modeling, water planning, and reporting efforts of relevant federal agencies no later than 4 years after enactment. Given that the research-to-operations timeline would take 3-5 years, the Department would like to work with the Committee to extend the status report timeline to 5 years instead of the 4 years currently included in the legislation. This will ensure that USGS has adequate time to conduct the research needed to bring the program to an operational status.

Section 5 also authorizes \$14,000,000 annually from 2022-2026; however, the full cost estimates for the program are not yet known as an assessment has not been done to date. The Department would like to work with the Committee to develop a timeline for developing an estimate of what the costs would be as the program is established at USGS.

While the Department is supportive of continuing research to improve reporting ET nationally, we would like to work with the Committee to address these issues.

### **H.R. 5001, Upper Colorado and San Juan River Basins Recovery Act**

H.R. 5001 extends authority for the Upper Colorado River and San Juan River Basin endangered fish recovery implementation programs from 2023 to 2024. The Administration supports the reauthorization of these important, and demonstrably successful, recovery programs.

The Upper Colorado River Endangered Fish Recovery Program and the San Juan River Basin Recovery Implementation Program (the Programs) were established in 1988 and 1992, respectively. The goals of the Programs are to recover four endangered fish species in a manner consistent with state and Tribal laws, interstate compacts, the Endangered Species Act (ESA), other federal laws, and Indian trust responsibilities while water development proceeds. Participants in these two Programs include the States of Colorado, New Mexico, Utah, and Wyoming; federal agencies, including the Bureau of Reclamation, Fish and Wildlife Service, Western Area Power Administration, National Park Service, Bureau of Land Management, and Bureau of Indian Affairs; American Indian Tribes including the Navajo Nation, Jicarilla Apache

Nation, Southern Ute Tribe, and Ute Mountain Ute Tribe; water users; power users; and environmental organizations.

Actions taken by the Programs to recover the Colorado pikeminnow, humpback chub, razorback sucker, and bonytail meet ESA requirements for operation of federal multi-purpose projects, water projects benefiting the Tribes, and non-federal water projects. Activities and accomplishments of these Programs provide ESA compliance for more than 2,500 federal and non-federal water projects depleting approximately 3.7 million acre-feet per year in the Upper Colorado River and San Juan River Basins.

These two important recovery programs are intended to recover four species of endangered fish while allowing the states and Tribes to develop their full water entitlement and maintain compliance with interstate compacts and associated laws. Work focuses on four major areas:

1. Habitat management including providing and protecting instream flows;
2. Habitat development and maintenance, including fish ladders, fish screens, levee removal, and flooded bottomland restoration;
3. Augmentation and conservation of genetic integrity, development and operation of propagation facilities, and fish stocking; and
4. Management of non-native fish;

As evidence of the success of these Programs, the Fish and Wildlife Service recently reclassified the humpback chub from endangered to threatened on October 15, 2021, and proposed a similar reclassification for razorback sucker in July of 2021.

The Upper Colorado and San Juan River Basins Recovery Act would authorize continued implementation of endangered fish recovery programs for the Upper Colorado and San Juan River Basins through 2024 to protect and recover endangered fishes while water development proceeds in compliance with all applicable federal and state laws. The Upper Colorado and San Juan River Basins Recovery Act would also extend the deadline for the Report to Congress. The new legislation extends this reporting deadline to September 30, 2022. The report will detail, among other things, activities to be carried out after FY 2023 and the cost of such activities.

We look forward to working with the Committee to further these important recovery Programs.

**H.Res. 320, Recognizing the critical importance of access to reliable, clean drinking water for Native Americans and Alaska Natives and confirming the responsibility of the Federal Government to ensure such water access**

Access to reliable, clean drinking water has long been a significant problem in many Tribal communities and in many Alaska Native Villages. Many Native American households still do not have access to reliable, clean drinking water, and are significantly more likely than non-Native households to lack indoor plumbing. The coronavirus pandemic tragically highlighted the vast and long-standing inequities facing Tribal communities, including disparities in water access. COVID incidence has been higher among American Indians and Alaska Natives than among non-Hispanic Whites, and American Indians and Alaska Natives “have experienced disproportionate rates of infection and mortality during the COVID-19 pandemic,” according to

the Centers for Disease Control and Prevention Morbidity and Mortality Weekly Report (Arrazola J, 2020). Limited access to running water is likely one of the main factors contributing to this elevated rate of incidence according to the same report. Without a safe, reliable, affordable, and easily accessible water supply, these households are unable to meet basic personal hygiene, food preparation, domestic cleaning, and other needs required for good health.

Under the Biden Administration, the Department has prioritized the collaborative development of water infrastructure for rural American communities as reflected in FY 2022 budget requests including providing specific benefits to Tribal communities. For example, by means of its request for the Rural Water Program and the Native American Affairs Technical Assistance Program, the Bureau of Reclamation is establishing and rebuilding clean water infrastructure for underserved populations. The budget request for FY 2022 consists of \$68.1 million for construction and \$24.8 million for operation, maintenance, and replacement of rural water systems. The FY 2022 budget also includes \$20.0 million for the Native American Affairs Program to assist Tribal governments to develop, manage and protect their water and related resources, as well as to support Tribes in the resolution of their water rights claims and to develop sustainable water sharing agreements and management activities. Additionally, the President's budget proposes to reclassify amounts necessary to meet federal commitments for existing enacted Indian water rights settlements from discretionary to mandatory funding starting in 2023. With the Bureau of Indian Affairs, the FY 2022 budget includes \$29.9 million to address water safety and sanitation requirements. This new funding will provide dedicated resources for BIA-owned drinking and wastewater infrastructure. Funding will address significant water quality problems, including identified systems of concern identified by the Environmental Protection Agency (EPA). The Department commends the sponsor's goal in the Resolution to expedite the planning, design, development, and operation of the infrastructure necessary to provide drinking water in Tribal communities and Alaska Native Villages.

At least seven different federal agencies provide some type of funding for Tribal drinking water or sanitation projects through over twenty different programs. The primary agencies involved in water related projects include Indian Health Service through its Sanitation Facilities Construction Program; EPA through its Drinking Water Infrastructure Grants, Tribal Set Aside programs; Department of Agriculture's Rural Development Program; and Bureau of Reclamation as directed by Congress.

The Department supports the goal of the Resolution to encourage a "whole of government" approach to take advantage of the strengths of each relevant agency. This approach would help ensure the provision drinking water to households in Tribal communities and in Alaska Native Villages. There is an existing Federal Infrastructure Task Force, chaired by EPA and made up of the agencies listed above, which is focused on improving access to safe drinking water and basic sanitation to Tribal communities. The Resolution would elevate the work of the task force to support involvement of high-level representatives from departments and agencies with authority to provide water infrastructure that will work to remove barriers, optimize funding, and make immediate and tangible progress on meeting this objective.

The Resolution recognizes the critical importance of access to reliable, clean drinking water for Native Americans and Alaska Natives and highlights the great need to develop the infrastructure to provide such access. Access to reliable, clean drinking water is an essential human need that is critical to the public health, well-being, educational attainment, and economic development of all communities in the United States. This Resolution furthers the President's and the Department's environmental justice goals as well as our commitment to Tribal Nations to ensure access to clean, safe drinking water in their communities.

## **H.R. 5345, Saline Lake Ecosystems in the Great Basin States Program Act of 2021.**

### **Background on Saline Lakes in the Great Basin**

The Great Basin region includes most of Nevada, half of Utah, and sections of Idaho, Wyoming, Oregon, and California. It is bounded by the Wasatch Mountains to the east, the Sierra Nevada to the west, and the Snake River Plain to the north, while the south rim is less distinct. The Great Basin region is made up of many small basins, that together form a 200,000 square-mile, internally draining hydrographic area. This means that there is no outlet for surface water to either the Gulf of Mexico or the Pacific Ocean and all precipitation in the region either evaporates, sinks underground, or flows into lakes (mostly saline). As a result, saline lakes naturally have a higher concentration of dissolved minerals than freshwater lakes.

Across the Great Basin, saline lakes and their associated wetlands support an important network of habitats for migratory birds and other species. The National Audubon Society has identified nine species that are particularly dependent on the network of saline lakes. These species either gather at a few key lakes or rely on the entire network during migration. Specifically, saline lakes are critically important to migratory shorebird species whose populations have declined nearly 70 percent since 1973 and provide habitat that cannot be created or managed on existing national wildlife refuges and wildlife management areas. The ability of these systems to support and maintain necessary habitat depends on water supplies of sufficient quantity and quality at the right times of year. Unfortunately, the hydrology of saline lakes is changing, and water availability is declining in response to increased water demand, diversions, drought, and climatic stresses.

### **Science and Management Need for Assessment of Saline Lake Hydrology and Habitat**

Several years of below average stream flows have increased lake salinity, altering food webs and reducing invertebrate food sources for migrating and resident shorebirds and waterbirds. It is estimated that at Utah's Great Salt Lake, which provides critical habitat and food for millions of migratory birds and generates nearly \$200 million annually from recreational activities and the brine shrimp industry, reduced river inflows have decreased the lake volume by nearly half. Reduced inflows to Lake Abert in Oregon have increased salinity concentrations beyond tolerated levels, limiting migratory bird food production. In California and Nevada, some of the most important saline lake habitats have decreased by 50-95 percent due to declining lake levels. These systems are inherently vulnerable to even minor climatic shifts and recent changes in water availability, defined as quality and quantity, have altered the viability of these critical breeding sites and migratory pathways. As the hydrology of saline lakes continue to change,

habitat and food availability for migratory birds and other wildlife will continue to be impacted, as will other benefits these systems provide, such as industry, recreation, public health, and other community benefits. Improved understanding of the factors that are driving hydrologic change in saline lakes; the primary indicators of water availability; trends in water and habitat availability; and impacts on vulnerable migratory bird species, is essential to support coordinated management of this network of saline lake habitats.

#### **H.R. 5345**

H.R. 5345 would require the Secretary of the Interior to establish a Saline Lake Ecosystems in the Great Basin States Assessment and Monitoring Program to assess and monitor the hydrology of saline lake ecosystems in the Great Basin and the migratory birds and other wildlife that depend on those ecosystems. The Program is intended to inform, and support coordinated management and conservation actions to benefit those ecosystems, migratory birds, and other wildlife. The Department supports this legislation and appreciates the Committee's attention to these issues.

USGS is uniquely suited to establish such an assessment and monitoring, with a focus on assessing and monitoring the hydrology of saline lake ecosystems and the migratory birds and other wildlife that depend on those ecosystems through Integrated Water Availability Assessments (IWAAs). IWAAs are designed to provide national and regional assessments of water available for human and ecological needs and identify factors that limit water availability or could lead to conflict. When fully implemented, IWAAs evaluate current water supply and demand and the factors that influence availability, identify long-term trends in water availability and their causes, provide seasonal to decadal forecasts of availability, and support water-resource management through design and delivery of management-relevant data and water-availability assessment products. USGS has extensive experience and expertise in hydrology and ecosystems and species assessments to meet the goals of this legislation.

A saline lakes IWAA would build the scientific foundation needed to effectively inform coordinated management of the threatened Great Basin saline lake ecosystems and the birds that rely on them. If enacted, USGS would work cooperatively during the first year of the effort with partners and stakeholders to determine knowledge gaps and assess science needs and then develop an implementation strategy that will outline the data, tools, and information needed for effective water resource and habitat management decision-making in the short and long term. This strategy would include a synthesis of available information, literature, and data, and an assessment of scientific and informational needs relating to water quantity, water quality, water use, and water demand; migratory bird and other wildlife populations, habitats, and ecology; annual lifecycle needs of migratory birds; and environmental changes and other stressors, including climatic stressors. The plan would outline major activities, such as monitoring data infrastructure needs, and outline the development of tools necessary to implement the program; a cost assessment for the implementation of the plan; and such other matters as the Secretary determines to be appropriate.

USGS is committed to collecting the required data and conducting the necessary assessments and predictions that will inform and support management and conservation actions to benefit saline lake hydrology, migratory birds, and other wildlife. The bureau would use its unique capacity to work in an integrated manner across multiple disciplines to design monitoring, research, and development activities, in support of IWAAAs, to address the complex suite of saline lake specific decision-making and evaluation needs.

### **Conclusion**

Thank you for the opportunity to provide the Department's views on these pieces of legislation. We look forward to continuing our work with the sponsors and the Committee on these bills.