

STATEMENT OF  
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BEFORE THE  
SENATE COMMITTEE ON ENERGY AND NATURAL RESOURCES

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Senator Hirono and Members of the Committee, thank you for your invitation to appear here today to discuss the U.S. Department of the Interior's role in integrated water-resource management and efforts to improve water security in Hawaii.

Water is essential to life and is the Nation's most widely used natural resource. In Hawaii, water resources help shape our culture, economy, and environment. As climate variability and change continue to stress limited water resources, water security will grow as a national concern. Water needs are diverse and increasingly in conflict. Integrated water-resource management will be critical to support healthy, thriving environments and societies.

Water availability is governed by an ever-evolving, complex system of natural and human-induced processes. Water is a critical commodity for human consumption, agriculture, energy, and industry; it is a fundamental requirement for ecosystem health, biodiversity, and resilience; and it has important cultural and aesthetic values.

The Department, through the U.S. Geological Survey (USGS), National Park Service, Pacific Islands Climate Science Center, and the Pacific Islands Climate Change Cooperative, is actively working to bring people together and form partnerships to ensure a sustainable and secure water future. Through this process, the Department has formed partnerships with cultural stewards to help scientists understand the importance of culturally sensitive water resources; academic researchers to develop climate change projections needed to understand potential impacts to water resources in the future; and watershed managers and State and Local agencies to understand how management activities can impact water resources.

As part of this effort, the USGS provides objective knowledge of the Nation's water resources to support human well-being, healthy ecosystems, economic prosperity, and anticipate and help resolve impending water-resource conflicts and emergencies. The bureau accomplishes this through integrated activities and partnerships with Federal, State, and local agencies and private organizations.

The USGS also serves society through water-resource monitoring, assessment, modeling, and research to provide tools that managers and policymakers can use for preserving the quality and quantity of water resources; balancing competing uses of water; understanding, predicting, and mitigating water related hazards such as floods and droughts, as well as understanding the effects of climate variability on water resources; and quantifying the vulnerability of human populations and ecosystems to water shortages and surpluses and degradation of water quality.

In Hawaii, the USGS is working in cooperation with the Hawaii Commission on Water Resource Management and other State and local agencies to expand and enhance monitoring of groundwater, streamflow, and water quality; assess groundwater recharge and availability; estimate low-flow conditions in streams needed to establish instream flow standards; quantify the impacts of high-priority non-native and dominant native plant species on freshwater availability and assess water quality related to land-use

activities. Most of these programs include an assessment of impacts of climate variability and change. In Fiscal Year 2016, the USGS contributed about \$1.1 million in cooperative matching funds to these programs.

The SECURE Water Act (P.L. 111-11) authorizes the National Water Census to be implemented through DOI's WaterSMART initiative. Through the National Water Census, the USGS is taking an integrated approach to research water availability and use by bringing together diverse avenues of hydrologic and ecological research.

Work conducted under the Water Census builds our national capacity to scientifically identify, assess, and analyze water availability. The Water Census is built around the concept of understanding and quantifying water budgets. Similar to financial budgets, water budgets give us the ability to look at each component of the water cycle and understand how water moves from one component to another. Knowing how much of a resource is flowing into or out of an account allows us to anticipate developing stresses and provide information needed to manage limited water resources.

The Water Census includes new and improved methods of accounting for human factors, such as water use, and environmental and ecological criteria that can affect water management decisions. It is designed to build decision-support capacity for water-management agencies and other natural-resource managers. The National Water Census is publically available on USGS's website (<http://water.usgs.gov/watercensus/>).

In Hawaii, USGS is developing information and tools to evaluate groundwater availability on several of the main islands as part of a regional study of the Nation's principal aquifers. With respect to water use, USGS compiles and estimates water-use information every 5 years in cooperation with State, Federal, and local agencies. The USGS also is providing a funding opportunity to the State to enhance the understanding of surface water use in Hawaii. Finally, the USGS maintains a network of wells to monitor the effects of droughts and other climate variability on groundwater levels.

The Hawaii Fresh Water Initiative was launched in 2013 to bring multiple, diverse parties together to develop a forward-thinking and consensus-based strategy to increase water security in Hawaii. Organized by the independent nonprofit Hawaii Community Foundation, the Initiative relied on a blue ribbon advisory panel of experts including farmers, landowners, scientists, conservationists, and government officials.

The USGS served as a non-voting technical liaison on this panel, providing information and data in support of the Initiative. The panel developed a "Blueprint for Action" that provides policy and decision-makers in Hawaii with a set of solutions that have broad, multi-sector support that will put the State on a path toward greater water security. These solutions focus on improving efficiency in how water is transported and used; capturing more rainwater in our aquifers by expanding and actively protecting watershed areas while improving storm-water retention; and increasing the amount of reclaimed wastewater being reused to irrigate parks and local crops. This initiative demonstrates the benefits of government officials collaborating with and supporting communities as they address long-term water security needs.

DOI will continue to partner with the public and private sectors in Hawaii to support the understanding of watershed-management activities that affect water security and to develop cost-shared activities for understanding how best to ensure a water-secure future. Given its mission, the USGS is ideally positioned to use and develop the best science- and technology-based tools to evaluate water-supply solutions and continue helping water managers to establish adaptive-management strategies that address

water sustainability and to partner with cultural stewards to address the importance of long-term water-security needs.

This concludes my statement. I am happy to answer any questions you may have.