

FOR IMMEDIATE RELEASE

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## FACT SHEET: What Climate Change Means for Hawai'i



Today, the Obama Administration released the third U.S. National Climate Assessment – the most comprehensive scientific assessment ever generated of climate change and its impacts across every region of America and major sectors of the U.S. economy.

The findings in this National Climate Assessment underscore the need for urgent action to combat the threats from climate change, protect American citizens and communities today, and build a sustainable future for our kids and grandkids.

The National Climate Assessment is a key deliverable of President Obama's Climate Action Plan to cut carbon pollution, prepare America's communities for climate-change impacts, and lead international efforts to address this global challenge. Importantly, the plan acknowledges that even as we act to reduce the greenhouse-gas pollution that is driving climate change, we must also empower the Nation's states, communities, businesses, and decision makers with the information they need prepare for climate impacts already underway.

The Obama Administration has already taken a number of steps to deliver on that commitment to states, regions, and communities across America. In the past year alone, these efforts have included: establishing a Task Force of State, Local, and Tribal Leaders on Climate Preparedness and Resilience to advise the Administration on how the Federal Government can respond to the needs of communities nationwide that are dealing with the impacts of climate change; launching a Climate Data Initiative to bring together extensive open government data with strong commitments from the private and philanthropic sectors to develop planning and resilience tools for communities; and establishing seven new "climate hubs" across the country to help farmers and ranchers adapt their operations to a changing climate.

**HAWAII** is part of the National Climate Assessment's U.S. Hawai'i and U.S. Affiliated Pacific Islands Region. According to the third U.S. National Climate Assessment Highlights report:

"The U.S. Pacific Islands are at risk from climate changes that will affect nearly every aspect of life. The region includes more than 2,000 islands spanning millions of square miles of ocean. Rising air and ocean temperatures, shifting rainfall patterns, changing frequencies and intensities of storms and drought, decreasing streamflows, rising sea levels, and changing ocean chemistry will threaten the sustainability of globally important and diverse ecosystems on land and in the oceans, as well as local communities, livelihoods, and cultures.

On most islands, increased temperatures coupled with decreased rainfall and increased drought will reduce the amount of freshwater available for drinking and crop irrigation. Climate change impacts on freshwater resources will vary with differing island size and topography, affecting

water storage capability and susceptibility to coastal flooding. Low-lying islands will be particularly vulnerable due to their small land mass, geographic isolation, limited potable water sources, and limited agricultural resources. Sea level rise will increase saltwater intrusion from the ocean during storms.” (NCA Highlights, p. 84)

### **Regional Findings of the Third U.S. National Climate Assessment: HAWAII**

- “Warmer oceans are leading to increased coral bleaching events and disease outbreaks in coral reefs, as well as changed distribution patterns of tuna fisheries. Ocean acidification will reduce coral growth and health. Warming and acidification, combined with existing stresses, will strongly affect coral reef fish communities.
- Freshwater supplies are already constrained and will become more limited on many islands. Saltwater intrusion associated with sea level rise will reduce the quantity and quality of freshwater in coastal aquifers, especially on low islands. In areas where precipitation does not increase, freshwater supplies will be adversely affected as air temperature rises.
- Increasing temperatures, and in some areas reduced rainfall, will stress native Pacific Island plants and animals, especially in high-elevation ecosystems with increasing exposure to invasive species, increasing the risk of extinctions.
- Rising sea levels, coupled with high water levels caused by storms, will incrementally increase coastal flooding and erosion, damaging coastal ecosystems, infrastructure, and agriculture, and negatively affecting tourism.
- Mounting threats to food and water security, infrastructure, health, and safety are expected to lead to increasing human migration, making it increasingly difficult for Pacific Islanders to sustain the region’s many unique customs, beliefs, and languages.” (NCA Ch. 23: Hawai’i and Pacific Islands)

### **Selected Findings and Information from the Third U.S. National Climate Assessment Relevant to HAWAII**

- **Ocean acidification:** “The ocean currently absorbs about a quarter of human-caused carbon dioxide emissions to the atmosphere, leading to ocean acidification that will alter marine ecosystems in dramatic yet uncertain ways. Ocean acidification reduces the ability of corals to build reefs and also increases erosion, leading to more fragile reef habitats.” (NCA Ch. 23: Hawai’i and Pacific Islands; NCA Ch. 24: Oceans and Marine Resources)
- **Tuna:** “There will be large impacts to the economically important tuna fishery in the Pacific Island region. Surface chlorophyll data obtained by satellites indicate less favorable conditions resulting in reduced productivity for tuna in the subtropical South and North Pacific due to warming. This trend is projected to continue under future climate change.” (NCA Ch. 23: Hawai’i and Pacific Islands)
- **Water:** “In Hawai’i, average precipitation, average stream discharge, and stream baseflow have been trending downward for nearly a century, especially in recent decades, but with

high variability due to cyclical climate patterns such as the El Niño-Southern Oscillation and the Pacific Decadal Oscillation. On most islands, increased temperatures coupled with decreased rainfall and increased drought will reduce the amount of freshwater available for drinking and crop irrigation.” (NCA Ch. 23: Hawai‘i and Pacific Islands)

- **Sea level rise:** “Rising sea levels will escalate the threat to coastal structures and property, groundwater reservoirs, harbor operations, airports, wastewater systems, shallow coral reefs, sea grass beds, intertidal flats and mangrove forests, and other social, economic, and natural resources.” (NCA Ch. 23: Hawai‘i and Pacific Islands)
- **Ecosystems:** “Projected climate changes will significantly alter the distribution and abundance of many native marine, terrestrial, and freshwater species in the Pacific Islands. Existing climate zones on high islands are generally projected to shift upslope in response to climate change. The ability of native species to adapt to shifting habitats will be affected by ecosystem discontinuity and fragmentation, as well as the survival or extinction of pollinators and seed dispersers.” (NCA Ch. 23: Hawai‘i and Pacific Islands)
- **Tribes:** “The traditional lifestyles and cultures of indigenous communities in all Pacific Islands will be seriously affected by climate change. Drought threatens traditional food sources such as taro and breadfruit, and coral death from warming-induced bleaching will threaten subsistence fisheries in island communities.” (NCA Ch. 23: Hawai‘i and Pacific Islands)
- **Adaptation:** “In Hawai‘i, state agencies have drafted a framework for climate change adaptation by identifying sectors affected by climate change and outlining a process for coordinated statewide adaptation planning. Both Hawai‘i and American Samoa specifically consider climate change in their U.S. Federal Emergency Management Agency (FEMA) hazard mitigation plans.” (NCA Ch. 23: Hawai‘i and Pacific Islands)

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### Examples of Efforts Underway in HAWAII to Address Climate Change

In HAWAII, many efforts are already underway to mitigate and respond to the impacts of climate change, including:

#### **Preparing Communities for the Consequences of Climate Change:**

Many important preparedness, resilience, and adaptation efforts are already being led by local, state, and regional entities across the country. Mechanisms being used by local governments to prepare for climate change include: land-use planning; provisions to protect infrastructure and ecosystems; regulations related to the design and construction of buildings, road, and bridges; and preparation for emergency response and recovery. These local adaptation planning and actions are unfolding in municipalities of different sizes, and regional agencies and regional aggregations of governments are also taking actions. And States have also become important actors in efforts related to climate change.

- Governor Neil Abercrombie serves on the President’s State, Local and Tribal Leaders Task Force for Climate Preparedness and Resilience. Under the Governor’s leadership, the State

of Hawaii became the first subnational government to sign onto the international Majuro Declaration for Climate Leadership. He is also working to bolster Hawaii's climate resiliency and adaptation efforts, signing into law the crucial Climate Change Adaptation Priority Guidelines, which focus on integrated resiliency for agriculture, coastal areas, education, health and infrastructure through public-private partnerships; and championing the Rain Follows the Forest Watershed Initiative as an ecosystem based strategy to simultaneously protect freshwater resources and biodiversity.

### **Cutting Carbon Pollution in HAWAII:**

In 2012, power plants and major industrial facilities in Hawaii emitted more than 8 million metric tons of carbon pollution – that's equal to the yearly pollution from more than 1.8 million cars. Through the Climate Action Plan and state initiatives, there are many efforts already underway to mitigate and respond to the impacts of climate change in Hawaii, including:

- ***Investing in Clean Energy:*** Since President Obama took office, the U.S. increased solar-electricity generation by more than ten-fold and tripled electricity production from wind power. In Hawai'i, renewable energy generation from wind, solar, and geothermal sources increased nearly 50 percent. Since 2009, the Administration has supported tens of thousands of renewable energy projects throughout the country, including 2,571 in Hawaii, generating enough energy to power more than 40,000 homes and helping Hawaii meet its own goal of generating 40 percent of its electricity from renewable energy sources by 2030.
- ***Improving Efficiency:*** Using less energy to power our homes, businesses and vehicles is critical to building a clean and secure energy future. President Obama has made essential investments in research and development for energy efficiency advances, and set new standards to make the things we use every day – from cars to microwaves – more efficient.
  - President Obama established the toughest fuel economy standards for passenger vehicles in U.S. history. These standards will double the fuel efficiency of our cars and trucks by 2025, saving the average driver more than \$8,000 over the lifetime of a 2025 vehicle and cutting carbon pollution.
  - Since October 2009, the Department of Energy and the Department of Housing and Urban Development have jointly completed energy upgrades nearly two million homes across the country, saving many families more than \$400 on their heating and cooling bills in the first year alone.
  - As part of the President's Better Buildings Challenge, the University of Hawaii at Manoa committed to reducing energy intensity 50 percent by 2015 in 5 million square feet of campus buildings.<sup>i</sup> Additionally, Kauai County committed to a 20 percent reduction by 2020 in 360 thousand square feet of city-owned buildings.

*For more information about the third U.S. National Climate Assessment, please visit [www.globalchange.gov](http://www.globalchange.gov) or contact [engagement@usgcrp.gov](mailto:engagement@usgcrp.gov).*

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<sup>1</sup> <http://www4.eere.energy.gov/challenge/partners/better-buildings/university-of-hawaii-manoa>