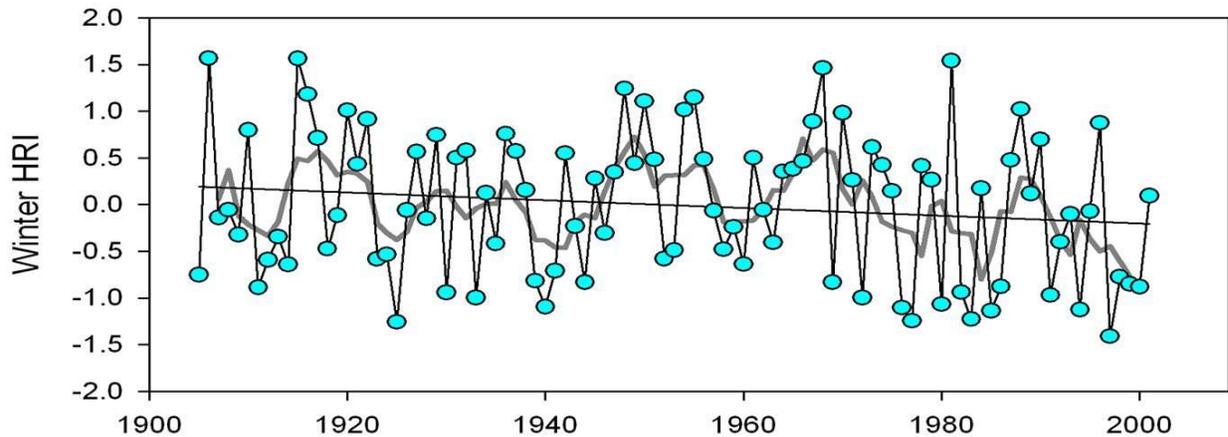


# WATER RESOURCE PROTECTION PLAN UPDATE

## SUMMARY OF CHAPTER 8– DROUGHT (DRAFT)

July 24, 2014

Drought is a persistent and extended period of below normal precipitation and has affected Hawai'i throughout its recorded history. According to the U.S. Drought Monitor, Hawai'i has experienced severe drought conditions in at least one location in the state since June 2008. The *Pacific Islands Regional Climate Assessment (2012)* reports a downward trend in rainfall across the state since the beginning of the 20<sup>th</sup> century and an even steeper decline since 1980. There has also been an increase in the number of annual consecutive dry days and a decrease in stream base flow.



Chu, P.-S., and Chen, H. 2005. *Interannual and interdecadal rainfall variations in the Hawaiian Islands. Journal of Climate 18: 4796-4813.*

There is some uncertainty about how climate change may affect drought occurrence and severity in Hawai'i, however recent research has shown that there may be a continuing trend towards declining annual rainfall. Data and research suggest that Hawai'i should be prepared for a warmer climate, diminishing rainfall, and declining stream base flows.

Drought can lead to difficult decisions regarding the allocation of water, as well as stringent water use restrictions, water quality problems, and inadequate water supplies for fire suppression. In Hawai'i, droughts and wildland fires can threaten all the islands in any given year. There are also additional issues such as growing conflicts between agricultural uses of surface water and instream uses, "surface and ground water" interrelationships, and the effects of growing water demands on traditional and cultural uses of water.

Drought planning occurs at the federal, State, and county levels and was previously addressed as a temporary emergency: actions were taken in response to impacts in a reactionary fashion, i.e., drought response. Recently, disaster planners have concluded that the best time to address the impacts of drought is before they occur, i.e., drought mitigation. The *Federal Disaster Management Act (2000)* requires each state and territory to conduct hazard mitigation planning and implement projects to reduce hazard impacts prior to a disaster occurring. This requirement places an emphasis on proactive management and mitigation, rather than response and recovery.

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Federal law requires states to develop Standard State Mitigation Plans in order to receive FEMA mitigation and disaster recovery funding. The *State of Hawai'i Multi-Hazard Mitigation Plan* (2010) addresses nine natural hazards, including drought, as well as human actions that could exacerbate hazard event impacts. County and other local governments also must develop hazard mitigation plans and update them every five years in order to receive future funding following a disaster. The county multi-hazard mitigation plans are scheduled for update in 2015-2017.

The *Hawaii Drought Plan, Phase I* (2000) and its update (2005) is a statewide drought planning framework that addresses many drought-related issues and is referenced by the *State of Hawai'i Multi-Hazard Mitigation Plan*. The *Drought Risk and Vulnerability Assessment and Geographic Information System Mapping Project* delineates risk areas, providing context for the *Hawaii Drought Plan* to develop drought response actions and mitigation strategies.

DRAFT  
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