

Assessing current and future effects of climate change on groundwater in Kaloko-Honokohau National Historical Park

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Abstract. Kaloko-Honokohau National Historical Park was established in 1978 to preserve, interpret, and perpetuate traditional Native Hawaiian activities and culture. The Park's groundwater dependent resources such as anchialine pools and fishponds are vulnerable to the effects of decreased precipitation and increased temperature due to a changing climate. Changes in precipitation and temperature affect groundwater recharge and ultimately affect freshwater discharge to surface resources and submarine groundwater discharge to the near shore environment. We analyzed climate observation records within the Keauhou Aquifer System for evidence of statistically significant change. The results of the statistical analysis along with IPCC projections are being used in an analytical model to assess the current and future effect of climate change on recharge and groundwater salinity within the Keauhou Aquifer System.