

KAWELA BAY AND TURTLE BAY AREA DESCRIPTION

‘Ōi‘o is located on the north shore of O‘ahu. Kawela Bay Beach lies between two limestone headlands and is typically characterized by small waves due to protection from the shallow reef at the mouth of the bay. The shoreline at Turtle Bay and Kuilima is composed mostly of exposed limestone shelf with 'perched' calcareous beach above the water line. Beach rock is also prevalent. Several small beaches are found between limestone headlands. The area is exposed to north and west swells during winter months and easterly tradewind waves year-round.

Long-term (1928-2015) shoreline change rates for Kawela Bay Beach (transects 0-34) are low (< 0.4 ft/yr). Historical shorelines since 1949 indicate that Kawela has been stable or slowly accreting. The beaches inside Turtle Bay (transects 35-55) have experienced low to moderate rates of change with the highest erosion rates (up to -0.5 ft/yr) around transect 47. Kuilima Cove Beach (transects 56 - 62) has experienced stable to mild rates of erosion (< -0.2 ft/yr) since 1975. Early shorelines (pre-1975) were omitted at Kulima Cove to remove bias from construction activities associated with rerouting of Kuilima Stream away from the cove in the early 1970's. Shoreline positions extracted from 1910 and 1932 T-sheets were omitted from the study area due to overall poor data quality.

Previous studies by Hwang (1981) and Sea Engineering (1988) found the shoreline to be stable or accreting at Kawela Bay. Hwang found no significant long-term change (1949-1978) to the beaches inside Turtle Bay and did not provide analysis of Kuilima Cove Beach.

For more information see: <http://www.soest.hawaii.edu/asp/coasts/oahu/index.asp>

¹ Hwang, D. (1981) "Beach changes on O‘ahu as revealed by aerial photographs", State of Hawaii, Department of Planning and Economic Development.

² Sea Engineering, Inc. (1988) "O‘ahu shoreline study", City and County of Honolulu, Department of Land Utilization.

Keywords:

O‘ahu; Kawela Bay; Turtle Bay; Kuilima Cove Beach