

KUALOA AREA DESCRIPTION

Kualoa is located on the east coast of O‘ahu between Kalaeoka‘ō‘io Point and Kāne‘ohe Bay. The northern half of the study area (transects 0 - 81) is lined with seawalls, shore-perpendicular groins, and homes located close to the shore. Shallow fringing reef protects the narrow calcareous sand beach from the full energy of northeast tradewind waves and refracted north swells.

The beaches at northern Kualoa (transects 0-81) have experienced low to moderate shoreline change rates (< 1 ft/yr) since 1928. Long-term accretion at transects 0-56 results from accumulation of sand transported to the south, against the north sides of groins constructed in the early to mid-1900's. Inspection of plots of shoreline positions for northern Kualoa shows that accretion ended at most transects in the last few decades as the shoreline reached the seaward end of the groins.

The shoreline at Kualoa Regional Park (transects 82-197) has experienced some of the highest erosion and accretion rates on O‘ahu. The highest erosion rates are found at Kualoa Point (around transect 125, 4.9 ft/yr) where the shoreline has retreated over 400 ft since 1928. A low concrete structure at Kualoa Point now offshore between transects 119 and 138 has failed to slow erosion. Accretion rates of similar magnitude (up to 4.5 ft/yr) are found along Mōli‘i Fishpond and Secret Island (transects 145 -197). The shoreline at Secret Island has grown seaward as much as 400 feet since 1928, and a sand spit has extended to the west toward the Kaneohe Bay shoreline, suggesting that eroded sand from Kualoa Park is being deposited in this area.

Previous studies (Hwang, 1981 and U.S. Army Corps of Engineers, 1977) also documented long-term erosion at Kualoa Regional Park.

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; Kalaeokaoio Point; Kaneohe Bay; Kualoa; Kualoa Regional Park; Moli‘i Fishpond