

YOKOHAMA AREA DESCRIPTION

Keawaʻula Beach (transects 0 - 52), also known as Yokohama Beach, is located on the west shore of Oʻahu. The shoreline is composed of carbonate sand, limestone, and basalt. The area is exposed to southerly swells in summer months, northerly swells in winter months, and southerly to westerly waves from Kona storms throughout the year but most often in the winter. Large waves may break on or near the shoreline causing temporary erosion as the deep nearshore reef provides little protection in most areas.

Shoreline position at Keawaʻula Beach is highly variable as limestone outcrops are intermittently exposed and buried by shifting sand. Beach profile surveys conducted in summer and winter at Keawaʻula since 1994 (near transect 36) indicate that the beach erodes, on average, 87 feet in winter and recovers in summer. Over the long term, the southern half of the beach (transects 0 - 29) appears to be losing sand with erosion rates up to -1.5 ft/yr at the southern end of the beach. The shoreline in the northern half of the beach (transects 30 - 52) has remained approximately stable, except for erosion up to -1.1 ft/yr at the northern end of the beach. Yokohama Beach has eroded -0.6 ft/yr averaged along its length since 1910. Removal of sand by mining operations may be partly responsible for landward movement of the shoreline at Yokohama. In 1957, 54,455 cubic yards of sand was removed to build Ala Moana Beach (Campbell and Moberly 1978, Hwang, 1981). Omitting pre-sand mining data was not performed because the shortened time series, in combination with large seasonal beach movement, resulted in unstable shoreline change rates.

A previous study of Yokohama Beach by Hwang (1981) found long-term erosion to the vegetation line and water line from 1949 - 1979.

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

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

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

Keywords:

Oʻahu; Yokohama (Keawaula) Beach