

## KAILUA AREA DESCRIPTION

Kailua Beach (transects 0 - 224) is a 2.2-mile crescent-shaped carbonate sand beach bounded to the north by limestone at Kapoho Point and to the south by basalt at Alāla Point on O‘ahu. The coast in this area is exposed to easterly tradewind waves year-round and refracted northerly swell in winter. The beach is protected from the full energy of open-ocean waves by a wide fringing reef platform. A sinuous 700ft wide sand-floored channel bisects the reef platform. The channel widens toward the shore into abroad sand field at the center of Kailua Beach.

Overall, Kailua Beach is experiencing long- term accretion (1928-2015) with an average rate of all transects of 1.3 ft/yr. The highest accretion is occurring near the center of Kailua Beach (around transect 72, 2.4 ft/yr). Accretion at central Kailua Beach is evident in seaward-advancing vegetation on low dunes, which have formed in front of many beachfront properties.

Kailua Beach Park (transects 178 - 224) has experienced erosion in the last 10-20 years (2000's) under-mining trees and leaving a scarp in the shorefront dune. However, long-term analysis (1928-2015) of shoreline change at Kailua Beach Park shows little change with most rates less than 0.5 ft/yr. Inspection of plots of shoreline positions show that this portion of shoreline is highly variable. Another period of erosion occurred through the 1970's after the beach accreted through the 1960's. The shoreline at Kailua Beach Park appears to be especially sensitive to climate fluctuations, such as, changes in the strength and direction of tradewinds. An extended period of Kona wind conditions in early 2010 coincided with accretion along much of the beach park

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

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

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

Keywords:

O‘ahu; Kailua Beach; Kapoho Point; Alala Point