DIAMOND HEAD AREA DESCRIPTION

Lē‘ahi is located on the south shore of O‘ahu. The narrow calcareous and olivine sand beach is lined with seawalls in the east and west and steep cliffs eroded into the base of Lē‘ahi crater in the middle. A shallow fringing reef protects the shoreline from the full energy of southern hemisphere swells and tradewind waves, which commonly affect this side of the island.

The eastern portion of the Lē‘ahi shoreline (transects 1 - 59) is approximately stable with rates less than 0.2 ft/yr. Rates are not calculated between transects 59 and 61 as it is predominantly natural hard rock shoreline with narrow beach "perched" above the water line. Rates are also low (< 0.1 ft/yr) for most of the western portion of the Diamond Head shoreline (transects 61 - 102), except at the far west end (transects 103 - 107) where the beach disappeared between 1988 and 2005 (up to -0.8 ft/yr). Waves break against seawalls at high tide along most of western Diamond Head shoreline.

Hwang (1981) found no net change at Ka‘alāwai Beach, net accretion at the eastern end of Kuilei Cliffs Beach, and net erosion at the western end of Kuilei Cliffs Beach for the years 1949-1975. Sea Engineering (1988) found erosion at all beaches in the study area except Ka‘alāwai from 1975-1988.

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; Diamond Head; Ka‘alāwai Beach; Kuilei Cliffs Beach