

## MĀKUA AREA DESCRIPTION

The beaches at 'Ōhikilolo and Mākua Valley (transects 52 - 122) are located on the west shore of O'ahu. The shoreline is composed of carbonate sand and limestone and basalt rock. 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.

'Ōhikilolo Beach south (also known as Barking Sands, transects 52 - 58) has eroded at -0.5 ft/yr since 1967 averaged along the length of the beach. 'Ōhikilolo Beach north (transects 59 - 66) has accreted at 0.5 ft/yr since 1967 averaged along its length. Shoreline data prior to 1967 was omitted from rate calculations to remove the effects of sand mining, which likely performed. The 1910 T-sheet indicates sand dunes as high as 60 ft at 'Ōhikilolo. The modern dunes are much lower, suggesting a large quantity of sand was removed. An aerial photograph from 1949 shows vegetation stripped from beach dunes, typical evidence of sand mining operations. Sand mining during that era has been documented at several nearby beaches. An exposed limestone shelf near the water line may be protecting the remaining beaches at 'Ōhikilolo from further erosion.

Mākua Beach (transects 67 - 122) has eroded at -0.2 ft/yr since 1967, averaged along the length of the beach. A 1949 aerial photograph may show a sand mining operation at Makua Beach. A previous study (Hwang, 1981) also notes evidence for sand mining at Makua in a 1965 air photo. Erosion in the north half of Makua Beach appear to have slowed since the 1960's.

Hwang (1981) found little net change in the position of the vegetation line at Makua Beach and no clear trend in the position of the water line from 1949 to 1975.

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; 'Ōhikilolo Beach; Barking Sands; Makua Beach