

SUNSET BEACH AREA DESCRIPTION

The shoreline fronting the community of Paumalū (transects 119 - 269) on the north shore of O‘ahu is the site of world-famous big wave surf breaks including Sunset and Velzyland. The area is exposed to swells from the north Pacific in winter months and easterly tradewind waves year-round. Sunset Beach is the central portion of a continuous (4 mi long) beach composed of carbonate sand and characterized by occasional outcrops of limestone that may be intermittently buried or exposed by shifting sand.

Shoreline change rates at Paumalū (1928- 2015) are mostly low (< 1 ft/yr). Large winter swell causes dramatic changes in shoreline position that largely recover the following season. Because of this, shoreline change rates at Paumalū have high uncertainty due to short-term variations in shoreline position. Despite wide variations in beach width, the vegetation line has remained approximately stable since 1928. The high rate uncertainty and stable vegetation line suggest that the shoreline has remained approximately stable over the long-term or that seasonal variations are masking the true long-term change. These characteristics may also reflect shoreline stabilization by armoring that holds the vegetation line in place. Short-term erosion is a significant hazard to beach-front homes, especially in winter with run-up from large waves. A number of beach-front homes were destroyed during a massive winter 1969 swell. Recent episodic erosion at Sunset Beach Park resulted in damage to the existing bike path.

Previous studies by Hwang (1981) and Sea Engineering (1988) found little net change or small seaward growth of the vegetation line at Paumalū 1949 - 1988, except at Sunset Beach Park and at the west end of Kaunala Beach where the vegetation line eroded. The vegetation line has since recovered at Kaunala Beach (1988 - 2015).

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; Sunset Beach; Velzyland