Oomano Point, Kauai, Hawaii

AREA DESCRIPTION

Oomano Point study area is characterized by a narrow sand beach and hardened shoreline. The area is bounded by Kekaha Beach to the west and Kikiaoloa Small Boat Harbor to the east. The beach is composed of black volcanic sand, mud, and calcareous sand. Terrestrial material is primarily delivered by the Waimea River which is located to the east.

The shoreline is exposed to south wave swell during the summer and occasional wrapping of northwest waves during the winter as well as persistent tradewinds. Oomano Point (*aka* Davidson's Point, transects 59 - 61) lies central to the area and effectively divides the area into two sections for description purposes. Previous studies[1] discuss the impact of Kikiaoloa Small Boat Harbor, built in 1959, which interrupts alongshore sediment transport from the east. The resulting erosion at and near Oomano Point has threatened Kaumualii Hwy. and led to the construction of an extensive revetment by the U.S. Army Corps of Engineers to mitigate further erosion.

Overall, the Oomano study area (transects 0 - 106) is experiencing erosion at an average rate of -2.1 ft/yr. The eastern section of the area (transects 0 - 59) is experiencing erosion at an average rate of -2.7 ft/yr while the western section (transects 61 - 106) is eroding at an average rate of -1.3 ft/yr.

[1] Makai Ocean Engineering and Sea Engineering, 1991 Aerial Photograph Analysis of Coastal Erosion on the Islands of Kauai, Molokai, Lanai, Maui, and Hawaii. State of Hawaii Office of Coastal Zone Management Program.

SHORELINE CHANGE RATES

Accretion Rate

Erosion Rate

Historical shoreline positions are measured every 66 ft along the shoreline. These sites are denoted by yellow shore-perpendicular transects. Changes in the position of the shorelines through time are used to calculate shoreline change rates (ft/yr) at each transect location.

Annual shoreline change rates are shown on the shore-parallel graph. Red bars on the graph indicate a trend of beach erosion, while blue bars indicate a trend of accretion. Approximately every fifth transect and bar of the graph is numbered. Where necessary, transects have been purposely deleted to maintain consistent alongshore spacing. As a result transect numbering is not consecutive everywhere. The rates are smoothed alongshore using a 1-3-5-3-1 technique to normalize rate differences on adjacent transects.

HISTORICAL SHORELINES

- Jan 1926
- Nov 1950
- May 1966
- Apr 1975
- Sept 1981
- Jun 1982
- Jul 1987
- Mar 1988
- Sept 1992
- May 1992
- Nov 2006

Erosion rate measurement locations (shore-normal transects)

Historical beach positions, color coded by year, are determined using orthorectified and georeferenced aerial photographs and National Ocean Survey (NOS) topographic survey charts. The low water mark is used as the historical shoreline, or shoreline change reference feature (SCRF).

Movement of the SCRF along shore-normal transects (spaced every 66 ft) is used to calculate erosion rates.

Kekaha Beach

Oomano Point

Kikiaola Small Boat Harbor

Shoreline Change Rate (ft/yr)

Shoreline Change Rate (ft/yr)

Kauai

Oomano Point

Scale 1:3000

100 0 100 200 300 400 Meters

300 0 300 600 900 1200 Feet

2427800mN UTM coordinates

159°42'50" W Latitude/Longitude coordinates

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