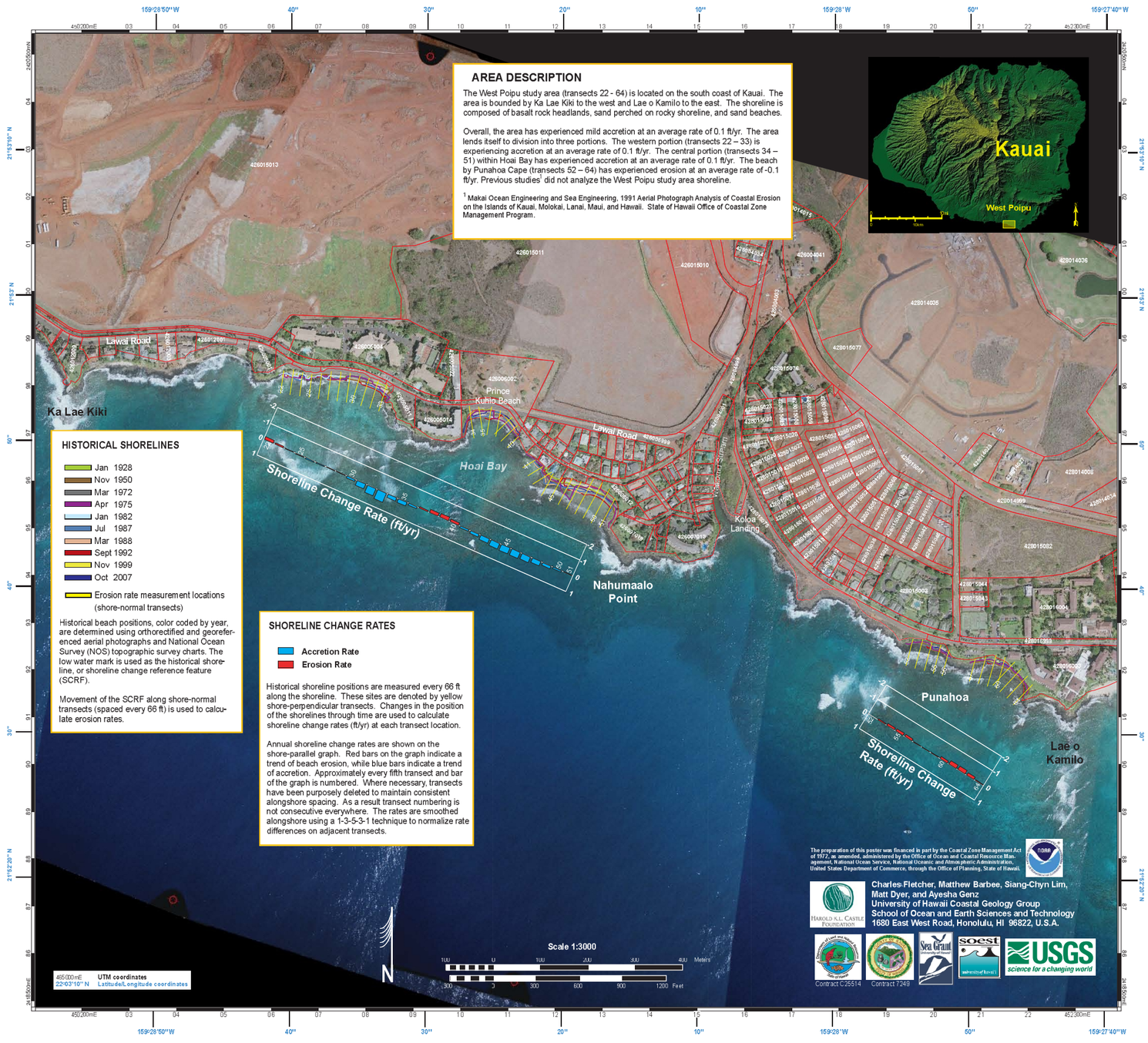
West Poipu, Kauai, Hawaii



AREA DESCRIPTION

The West Poipu study area (transects 22 - 64) is located on the south coast of Kauai. The area is bounded by Ka Lae Kiki to the west and Lae o Kamilo to the east. The shoreline is composed of basalt rock headlands, sand perched on rocky shoreline, and sand beaches.

Overall, the area has experienced mild accretion at an average rate of 0.1 ft/yr. The area lends itself to division into three portions. The western portion (transects 22 – 33) is experiencing accretion at an average rate of 0.1 ft/yr. The central portion (transects 34 – 51) within Hoai Bay has experienced accretion at an average rate of 0.1 ft/yr. The beach by Punahoa Cape (transects 52 – 64) has experienced erosion at an average rate of -0.1 ft/yr. Previous studies[1] did not analyze the West Poipu study area shoreline.

[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.

HISTORICAL SHORELINES

- Jan 1928
- Nov 1950
- Mar 1972
- Apr 1975
- Jan 1982
- Jul 1987
- Mar 1988
- Sept 1992
- Nov 1999
- Oct 2007
- 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.

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.

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