

Ewa Beach and Iroquois Point, Oahu, Hawaii

AREA DESCRIPTION

The Ewa Beach and Iroquois Point study area (transects 33 – 254) is located on the south coast of Oahu. The shoreline is composed of carbonate sand, limestone, and boulder reefs with a fringing offshore reef. The area is exposed to persistent tradewind waves year-round and seasonal swells in summer months.

Overall, the area is experiencing erosion at an average rate of -0.4 ft/yr. The highest rates of erosion are occurring at Keahi Point: up to -4.9 ft/yr (transect 65). Boulder revetments were installed along the shoreline at Keahi Point between 1979 and 1988. Previous studies (Hwang, 1981 and Sea Engineering, 1988) found similar trends in shoreline change for Ewa Beach and Iroquois Beach.

For more information see: <http://www.soest.hawaii.edu/asp/coasts/oahu/>

Hwang, D. (1981), "Beach changes on Oahu as revealed by aerial photographs," State of Hawaii, Department of Planning and Economic Development.

Sea Engineering, Inc. (1988), "Oahu shoreline study," City and County of Honolulu, Department of Land Utilization.

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 along-shore spacing. As a result, transect numbering is not consecutive everywhere.

The ST method is used to calculate shoreline change rates for the study area. The rates are smoothed along shore using a 1-3-5-3-1 technique to normalize rate differences on adjacent transects. For more information on erosion rate methods and results see: <http://www.soest.hawaii.edu/asp/coasts/oahu/index.asp>

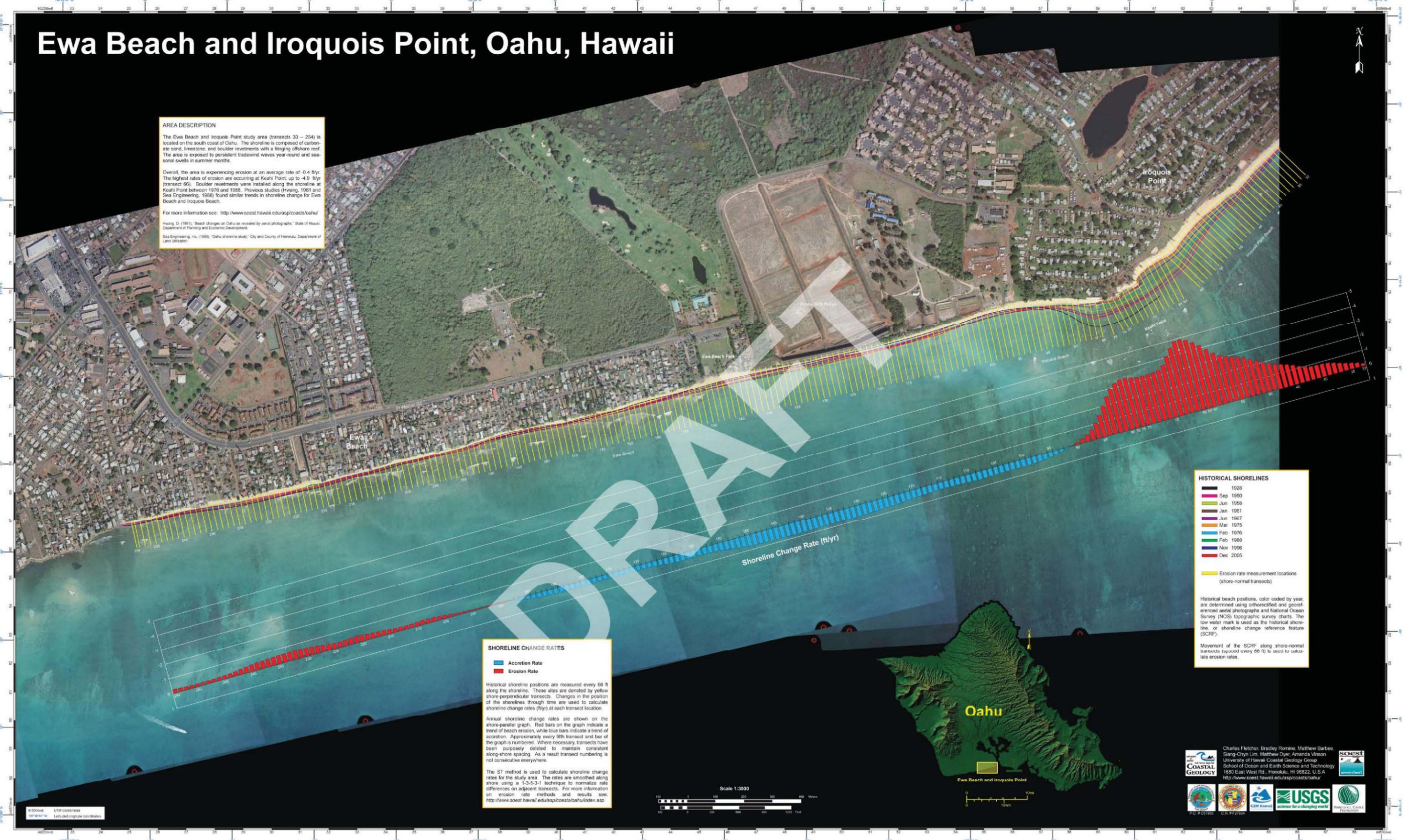
HISTORICAL SHORELINES

- 1928
- Sep 1950
- Jun 1958
- Jan 1961
- Jan 1967
- Mar 1975
- Feb 1976
- Feb 1988
- Nov 1996
- Dec 2000

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 (SCRFF).

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



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