

Study Description

This website contains data and products produced by the University of Hawaii under contract with the County of Maui. The study is divided into mapped areas. Each map is a reduced scale copy of an original poster map produced at 1:3000. Data includes plots of reweighted shoreline positions with Annual Erosion Hazard Rates (AEHRs) and End Point Rates (EPRs) (described below). See Fletcher, et al., (2004) for more details.

Historical Shoreline and Erosion Rates Description

Historical shoreline positions, color coded by year, are determined using ortho-rectified aerial photographs and georeferenced National Ocean Survey (NOS) topographic survey charts ("T-sheets"). The crest of the beach toe is used as the historical shoreline, or Shoreline Change Reference Feature (SCRF). The beach toe is a geomorphic feature typically present on Hawaiian beaches. It marks the position of mean lower low water (the seaward edge of the beach at low tide).

For situations in which there is coastal armoring or rocky shoreline seaward of any vegetation, the vegetation line is drawn along the seaward side of the rock or armoring. If there is no sandy beach in these areas, both the vegetation line and the SCRF are delineated along the mean high water line.

Movement of the SCRF is used to calculate erosion rates along shore-normal transects spaced every 20 m (66 ft) along the shoreline. The projected 30-year erosion hazard line is delineated by multiplying the AEHR by 30 years, projected inland from the position of the vegetation line, as seen on the 1997 aerial photographs.

Historical erosion rates are measured every 20 m along the shoreline. These sites are denoted by yellow shore normal transects. Two types of erosion are calculated: the AEHR (red), generally based on the most recent trend in shoreline position; and the EPR (1912 - 1997, purple). These rates are shown in the shore-parallel graphs. Colored bars on the graphs correspond to shore-normal transects; approximately every fifth transect and bar is numbered. Where necessary, some transects have been purposely deleted during data processing; as a result the transect numbering is not consecutive everywhere. Where complete beach loss has occurred, erosion rate calculations apply only to the time period when the beach existed.

Shoreline Positions and Erosion Rates

Each map area contains plots of reweighted shoreline positions and erosion rates for each transect in the study area. The x-axis is time in decimal years, the y-axis displays distance from the off-shore baseline. Red crosses indicate shoreline position. Blue boxes denote hard shoreline. The AEHR line is indicated on the plot with a red solid line. The EPR is a dotted blue line.

