Lydgate, Kauai, Hawaii

AREA DESCRIPTION

The Lydgate study area (transects 0 – 144) is located on the east coast of Kauai south of the Wailua River mouth. The shoreline is composed of carbonate sand beach interrupted by occasional outcrops of beachrock with a fringing reef offshore. The area is exposed to persistent tradewinds and rough seas throughout the year.

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 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

Annual shoreline change rates are shown on the shoreline change graph. Red bars on the graph indicate a trend of erosion, while blue bars indicate a trend of accretion. Approximately every fifth transect is used as an erosion rate measurement location.

Latitude/Longitude coordinates were obtained from the National Geodetic Survey (NOS) NGS GIS database. UTM (Universal Transverse Mercator) coordinates were used to calculate shoreline change rates (ft/yr). Where necessary, 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.