

## ABSTRACT

In current technological developments of satellite imagery to detect environmental changes, which one is the change in the shoreline. Indonesia is an archipelagic country that has more sea area and have a lot of dynamic changes in coastlines. If it's left untreated, it will result in low surface area sink. Therefore made a simulation aims to detect changes in the shoreline using Neural Network Backpropagation method and discrete wavelet transform. To be able to identify changes in the shoreline, at the manufacturing of the test data required training data system, the training data retrieved by processing the image data using conventional segmentation then differentiated according to the conditions, sea and land areas. The extraction of training data then processed in backpropagation neural network that has been created and tested using several pairs of test data with a size of 512 x 256 pixels taken in recent years, and analyzed the changes occurring shoreline.

The results obtained with the training data training MSE value 0.00065. The results successful demonstrated identification of test data to detect changes in the coastline on 10 pairs of test data with the results of 7 pairs of data is detected dominant abrasion and 3 pairs of test data is detected dominant accretion. The calculation comparing the level of accuracy of 30 data samples with size 64 x 64 pixels which have been identified by wavelet neural network backpropagation with those identified manually, and obtained the level of success achieved is 86.67%.

**Keywords** : Neural Network, Backpropagation, Wavelet, Shoreline