

Land Cover Amendment in Coastal Areas of Surabaya due to Coastline Change based on Multi-temporal Satellite Imagery.

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- **Abstract:** Land cover on the earth surface is very dynamic and can change dramatically. This is due to various factors. One factor which can influence land cover changes is coastline changes. The coastline and land cover influence each other. Coastline is a very important area in Indonesia which is a country consisted of many islands. The sea area in Indonesia is larger than the land area. That makes reliable information about the coastline is crucial for determining the boundary between the land and sea and the management of marine resources. Regarding land cover changes, coastline monitoring is required to observe the dynamics of land cover change in coastal areas. Through satellite remote sensing, land cover and coastline change can be monitored. The use of satellite imagery for monitoring land cover and coastline change is highly recommended because data collected through remote sensing using satellite provides more dynamic and near real-time data compared to data collected through an on-site observation. This study aimed to monitor land cover amendment due to coastline change in 1994-2018. Monitoring was carried out using Landsat satellites which had an acquisition period of those years. To obtain more detailed data, monitoring was also carried out using the Sentinel-2 satellite which had a greater spatial resolution than Landsat satellites. The result showed that there are three coastline changes phenomena happened i.e., erosion, accretion, and anthropogenic. The major changes occurred due to accretion. During 1994 to 2018, the pond class was the largest class among all of the land cover classes. The second largest class was the urban area class, and the smallest class was the vegetation class.
- **Keywords:** Land cover, coastline changes, vegetation class, anthropogenic