**SHORELINE CHANGES MAP FOR PURI DISTRICT**

This map provides information on shoreline changes for Puri District of Odisha for the period of 2009 to 2018. Long term rates of change are calculated using shoreline positions for 5 different years i.e. 2009, 2012, 2014, 2016 and 2018.

Shoreline change analyses are based on comparison of different shoreline positions digitized from satellite images. About 140 km long shoreline was mapped to analyze the changes using 5 data sets.

For the primary data source, satellite images are used which are available on [bhuvan website](https://bhuvan.nrsc.gov.in/data/download/index.php). Toposheets for the satellite data were received from advanced wide field sensor (AWiFS, spatial resolution = 56 m) of Resourcesat-1/Resourcesat-2 satellite. Data from toposheet number F45U, F45T, E45B and E45C are used for the above mentioned years as they cover the coordinates for our area of study.

District administrative boundary was extracted as a shape file (.shp) using “select feature by area option” in QGIS from the map named as India\_District\_Boundary.shp on <static.fossee.in/mapathon/Mapathon2020_Data>.

The raster data from all toposheets for the year 2009 are merged to get a single satellite image and a similar step was repeated for other years as well. For a better visualization and for distinguishing the spatial objects in the satellite image, inversion of color has been done and the hue was increased/ colorized to greenish yellow.

In the end, Puri district shape file was overlayed on the satellite image to observe the shoreline for the year 2009. For the shoreline, a layer for line feature was created and tracing has been done as per the pixels in the image. The similar process was repeated for all the mentioned years to get the desired result. In order to demarcate the shorelines for different years, different colors are used.

Moreover, tracing the shoreline is a tedious process because at times a condition arises where a number of grids of same value are obtained which makes it difficult to interpret the actual shoreline.

In essence, Shoreline change maps can be used to understand the assessment of coastal engineering problems. Shoreline changes studies can be done to evaluate the areas of erosion and accretion on a national or regional scale and they are the most important environmental indicators that directly affect the economic development and land management. Shoreline rates of change can also be applied to different sections to address issues including setbacks of activities from coastal features.