# COASTAL HABITAT MAPPING

## DESCRIPTION

This service will provide coastal habitat maps and will extend across supra-tidal and intertidal zones. Optical data-gaps caused by cloud covers will be filled with SAR observations and historical optical-data that have hydro-meteorological conditions similar to the missing data, e.g. the same growing season with comparable patterns of annual precipitation and temperature.

## USE

› Assessment of current state of coastal habitats in the supra and intertidal zones based on extent, type and density.

› Change detection as part of on-going monitoring efforts.

› Comparison with historical data to assess longer term change.

› Monitoring to asses efficacy of conservation measures such as habitat restoration.

## INPUT PRODUCTS

› Sentinel-1 and Sentinel-2 MSI data.

› For global products, Sentinel-3 OLCI data.

› Land cover/land use maps of the area.

## SPATIAL RESOLUTION AND COVERAGE

› Local/national (10-30m) and regional (300m) scales.

## BENEFITS

› Better understanding of coastal habitat dynamics.

› Assess the impact of natural and human forcing.

› Allowing policy makers to set evidence-based management objectives as part of efforts to support SGD target 6.6 (protection and restoration of water-related ecosystems).
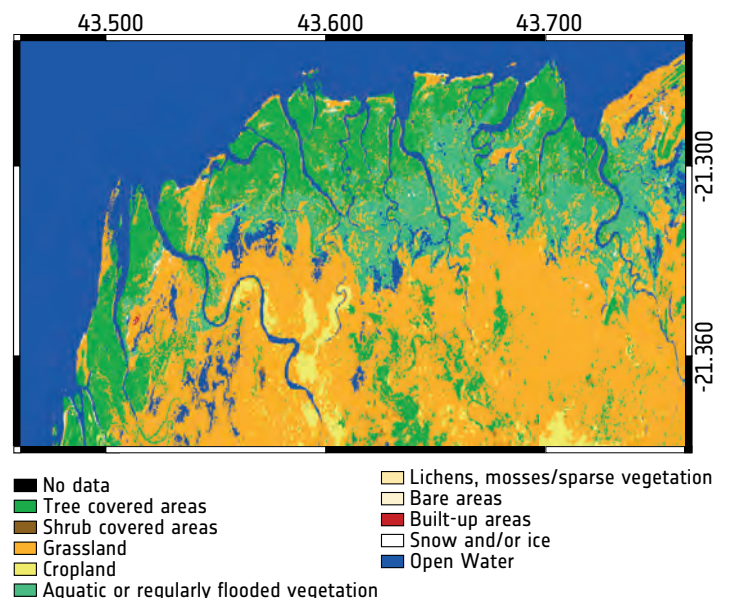
## DELIVERY FORMAT

› GEO-TIFF, NetCDF.

## FREQUENCY

› Monthly.

Coastal habitats lie in the interface between land and water and are habitats of constant change due to the interaction between land and ocean and growing human population. These ecosystems produce dis-proportionately more services relating to human well-being than most other systems. However, the extensive usage of coastal areas comes at the cost of accelerated degradation; for example, 35% of mangrove area has been lost or converted.

This service will provide maps of the coast, the shore and the nearshore, covering dunes and coastal wetlands, estuaries, lagoons, and mangroves 10 to 300m resolution for selected coastal areas. A global products covering a full region may be provided, as in the example below for the Ayeyarwady delta.

Optical data-gaps due to cloud will be filled with SAR observations and historical optical-data that have hydro-metrological conditions similar to the missing data, e.g. the same growing season with comparable patterns of annual precipitation and temperature.



**No data** · **Tree covered areas** · **Shrub covered areas** · **Grassland** · **Cropland** · **Aquatic or regularly flooded vegetation** · **Lichens, mosses/sparse vegetation** · **Bare areas** · **Built-up areas** · **Snow and/or ice** · **Open Water**

Example of coastal habitat mapping using land cover classification for the Ayeyarwady Delta in Myanmar base on a Sentinel 3 image acquired on 22 November 2018. The Sentinel-2 data used for the classification is seen below as a colour composite image.

River delta near Freetown, Sierra Leone seen from Sentinel-2A.