

Laboratoire d'Etudes en Géophysique et Océanographie Spatiales

**Environnements et
Paléoenvironnements
Océaniques et
Continentaux**

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USE CASE

Monitoring coastal erosion at Soulac, North Medoc/Gironde estuary (Aquitain coast, France)



Application: Coastal erosion, - risk Management

Location: Soulac, North Medoc/Gironde estuary - Aquitain Coast, France

Products: Pleiades Neo



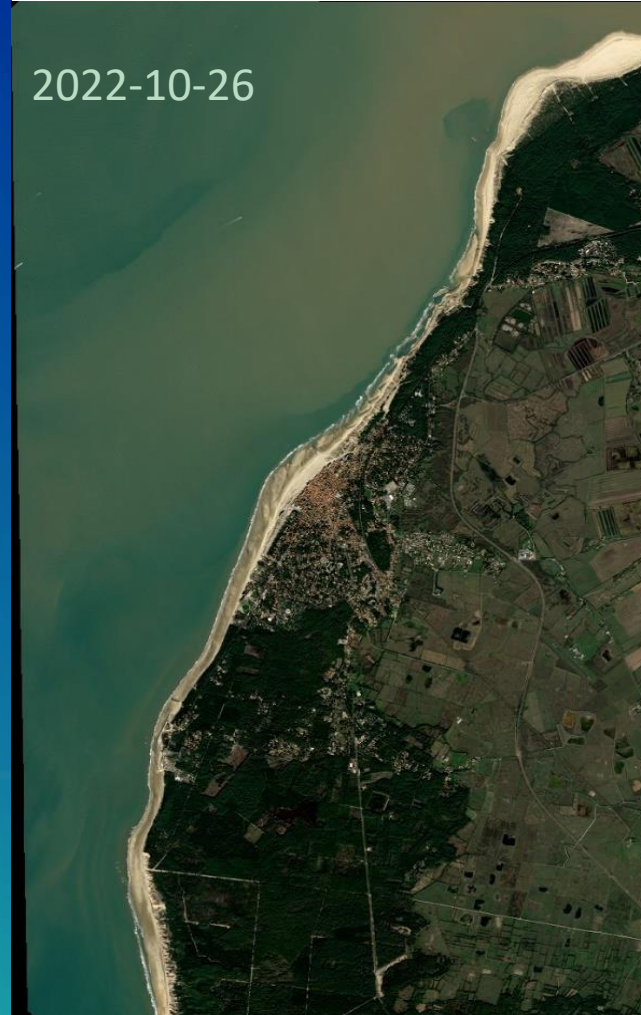
Challenge

Understanding and predicting coastal change requires monitoring morphological changes in the land-sea continuum at the largest possible spatial scale.

Traditional coastal monitoring techniques used to survey coastal topo-bathymetry but none of them can provide such an overview at a reasonable cost

Here, we applied the workflow on the Gironde estuary, Aquitaine coast, France, where the rapid erosion observed (>5 m/year in some areas) and the morphological changes in the estuary threaten navigation, coastal dune, state forest and infrastructures. This work is conducted within the framework of a local observatory runs by the Communauté de Communes Nord Médoc Atlantique

2022-10-26



2022-12-01



Pleiades Neo images of the North Medoc area, Aquitain coast ,
France



Solution & Results

Methods

After tri-stereoscopic processing with ASP software (NASA), we reconstructed digital elevation models (DEMs), comparing them on a 2 m resolution grid. To compare the images, the digital terrain model DTM (vegetation, topsoil and buildings removed) from the 2020 Lidar OCA (Observatoire de la Côte Aquitaine) airborne survey was used.

Pléiades Neo Imagery helped to:

- Identify fine scale protection structures
- Capture morphological beach changes



Pleiades Neo in October 2022 showing coastal defences



Benefits

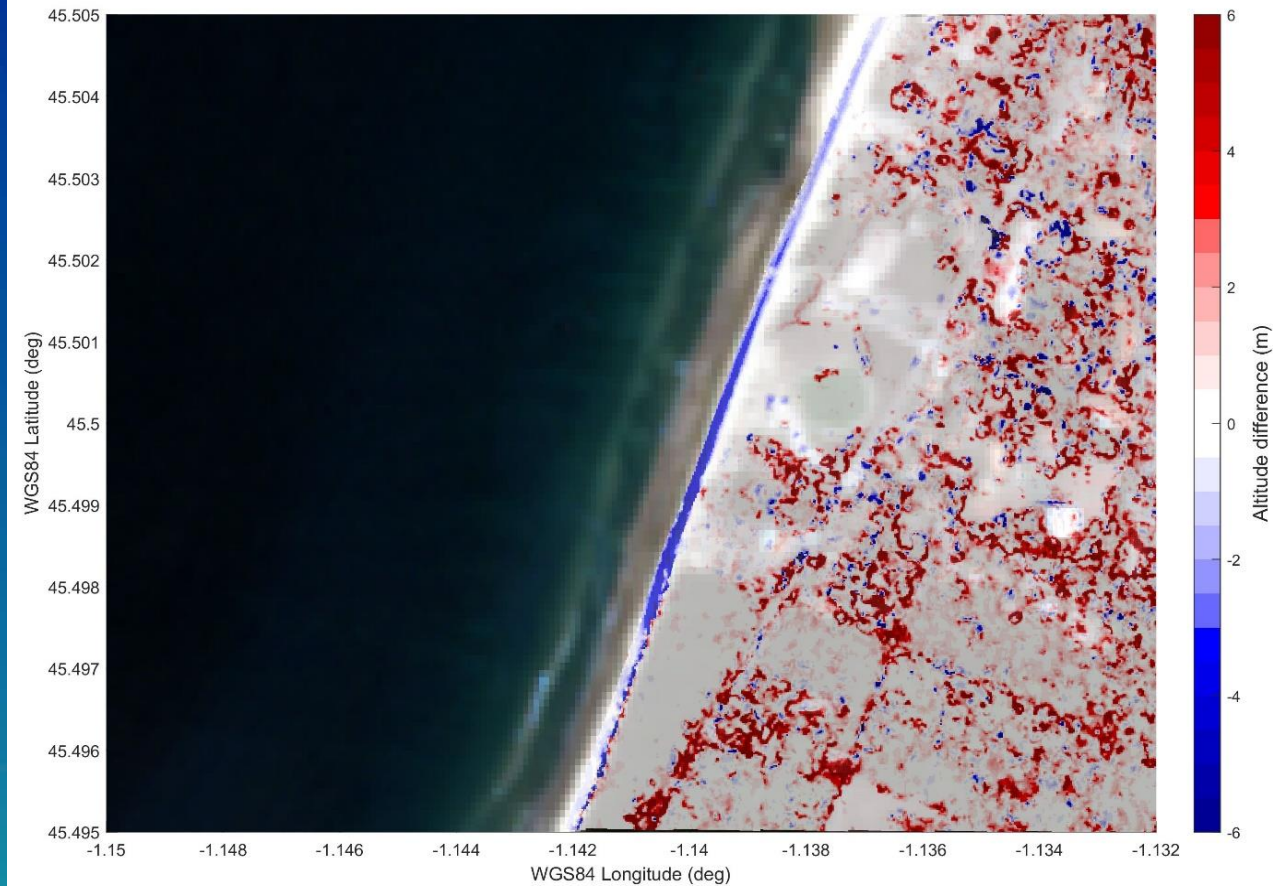
With the tri-stereo at very high resolution, Pleiades Neo was able to capture :

- morphological changes between
- key coastal protection features

Organisations Involved:



EPOC



Difference between DEMs from Pleiades Neo at October and December 2022 for the southern area of Soulac