SERVICE NATIONAL D'OBSERVATION

DYNALIT

THE FRENCH OBSERVATORY ON COASTAL MORPHODYNAMICS

KEY FACTS

- **A research and observation service on coastal morphodynamics**
- **Formed in 2014** from existing and new monitoring programs
- **Over 30 study sites along the metropolitan and overseas coasts of France**
- **3 coastal environments :** beaches, cliffs and estuaries, across **5 oceanic facades**

OBJECTIVES : SCIENTIFIC & SOCIETAL

To provide observational data to :

- understand, model and predict coastal morphological evolutions
- help adapting coastal planning strategies to future changes

METHODS

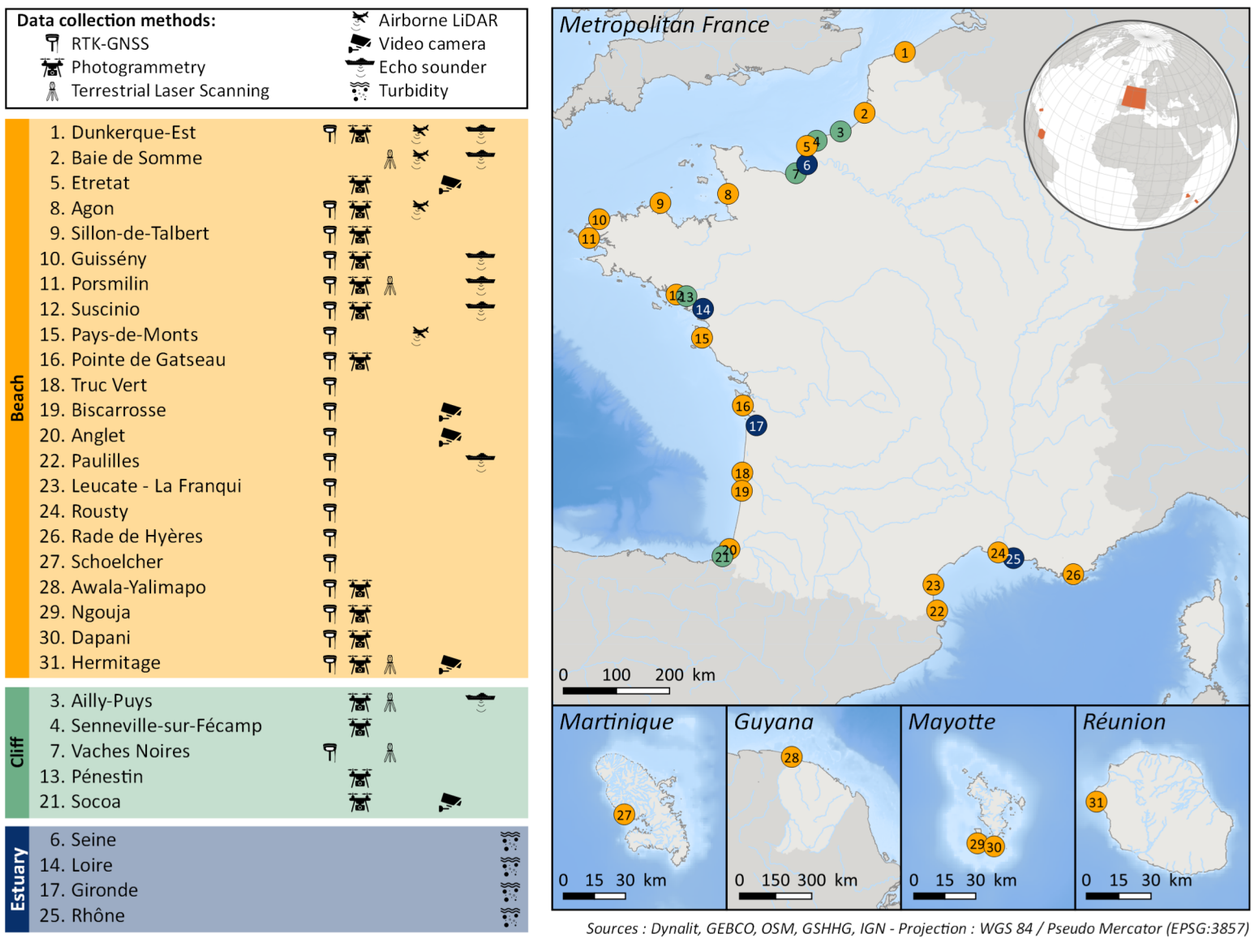
- **Subaerial coastal morphology** (e.g., profiles, shorelines and DEMs) measured at monthly to yearly frequency using GNSS and topographic remote-sensing (e.g., UAV photogrammetry, terrestrial and airborne LiDAR), eventually accompanied by **subtidal bathymetry** and **environmental forcing conditions** (e.g., waves, tide)
- **Turbidity** measured at high frequency for estuaries

WHAT'S NEXT ?

- **High-resolution sea-state hindcasting** → wave parameters to facilitate the interpretation of morphological evolutions
- **Deployment of permanent pressure transducers in ~10 m water depth** in front of pilot field sites → **wave, tide and surge observational data**

DATA SETS

- **Accessible** (download/visualisation) at : http://www.dynalit.fr/
- **Open licence** (e.g., Etalab 2.0)
- **Historical data** (e.g., beach profiles, shorelines) **from the 1900s**
- **Continuous coastal monitoring since the 2000s**
- **Enables analysis of coastal change at daily (storm), seasonal and decadal time scales**



Sources : Dynalit, GEBCO, OSM, GSHHG, IGN - Projection : WGS 84 / Pseudo Mercator (EPSG:3857)

FIG.1 : Field sites and data acquisition methods

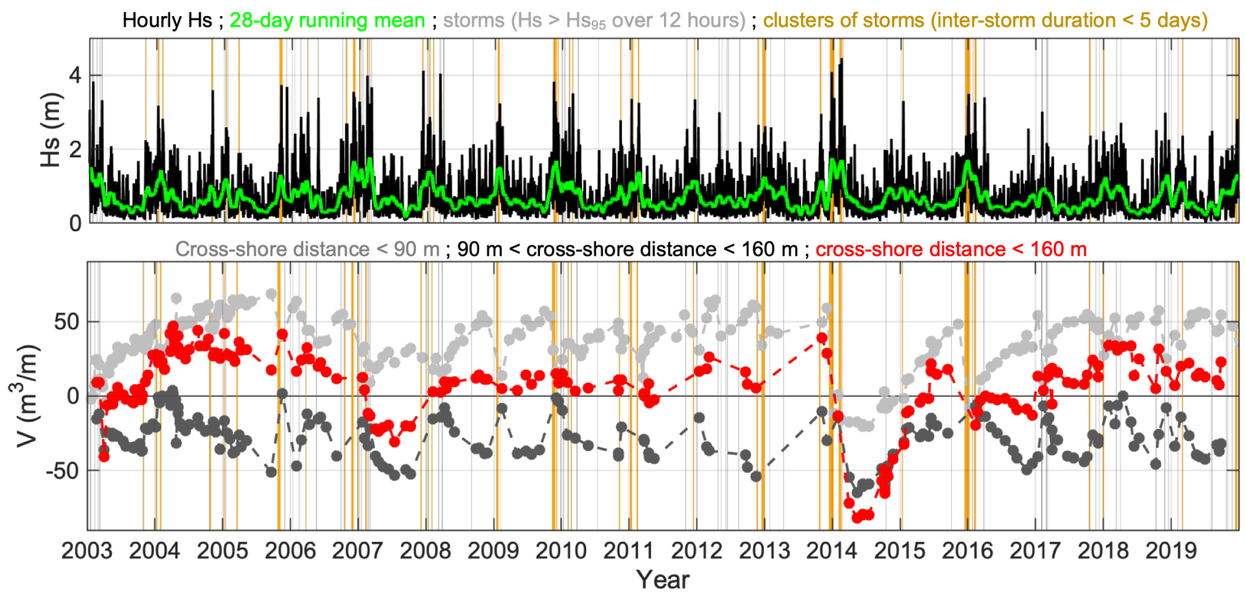


FIG.2 : Example of Porsmilin (Brittany, NW France) : beach volume change with regards to wave forcing

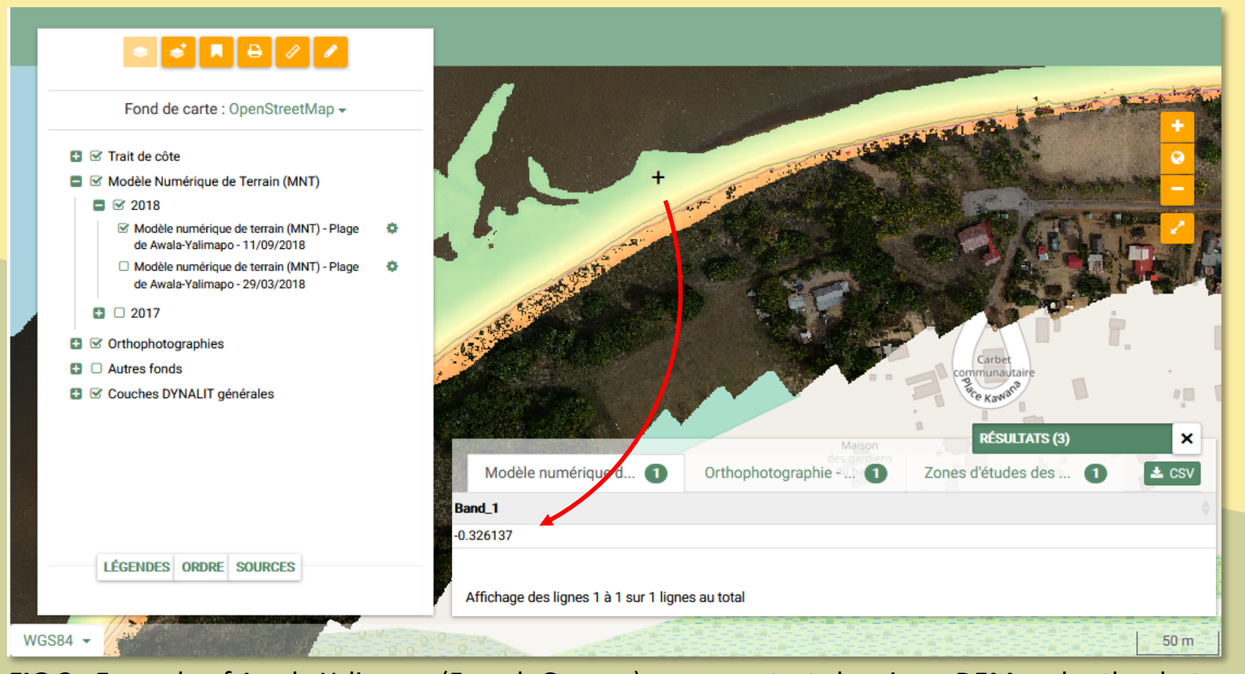
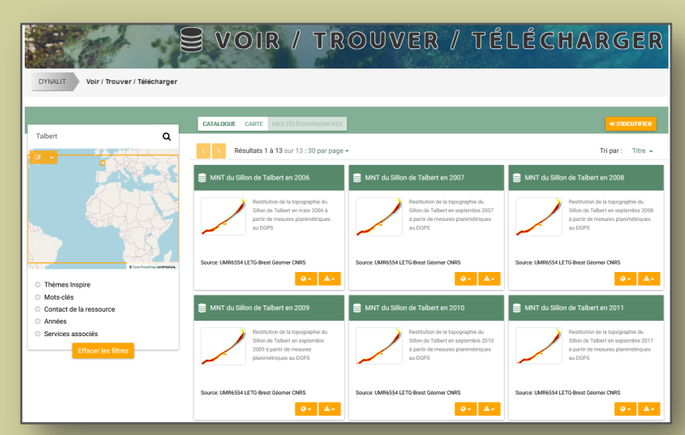


FIG.3 : Example of Awala-Yalimapo (French Guyana) : map context showing a DEM and orthophoto



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