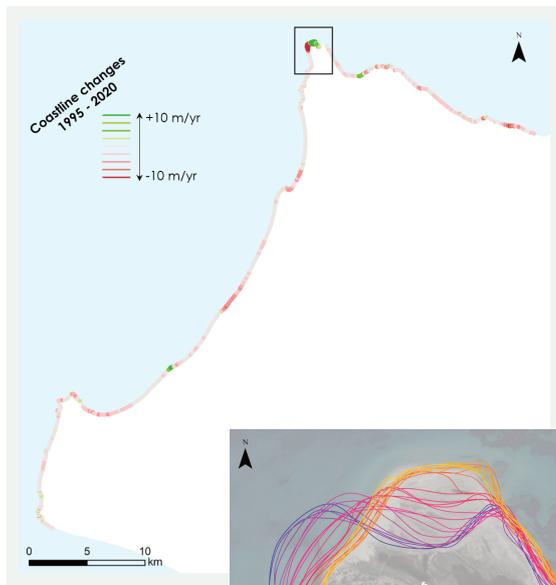




SPACE FOR SHORE

SUCCESS STORY
IN GREECE

Watching out large-scale waterline and coastal changes in Greece

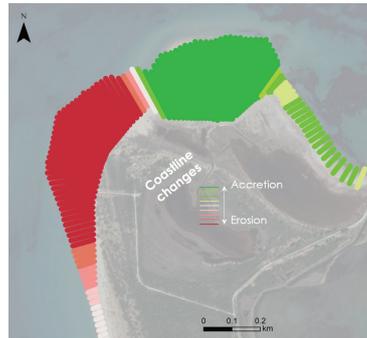
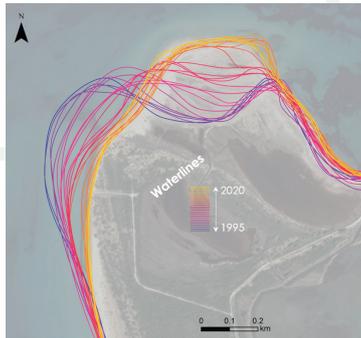


PELOPONNESE
Waterlines and
coastal changes



Terraspatium backed by i-Sea has processed hundreds of satellite images over the 1995–2020 period of time to perform the very first dataset describing the location and evolution of shoreline over time in Greece, which has been then turned into a preliminary coastal erosion assessment at the scale of the Peloponnese, Eastern Macedonia and Thrace regions.

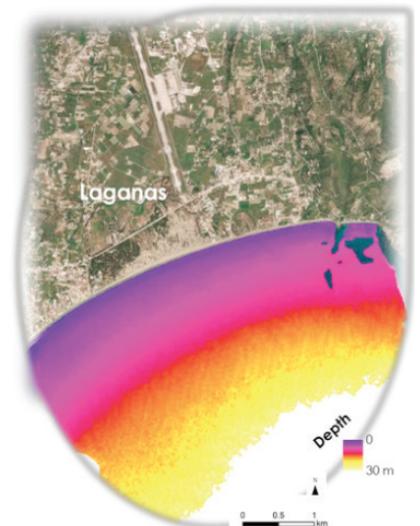
In Greece, as in every coastal mediterranean regions and similar enclosed seas where the tidal range is low, coastal erosion can be monitored by focusing on waterline temporal variations during low-energy wave conditions. Optical satellite archives (Landsat, Spot, Sentinel-2) have been processed using supervised classification algorithms to extract land/sea interface in a semi-automated user-controlled and robust way ensuring readiness for large database processing and method replicability at regional and national scales.



Changes in the waterline position are usually computed and estimated along regularly spaced profiles perpendicular to the coast highlighting hot spots of shoreline retreat which experience strong coastal dynamics or being particularly vulnerable to coastal erosion hazard.



A first demonstration of satellite-derived bathymetry has been made in Greece, here is an example obtained at Laganas Island, where the underwater topography has been retrieved up to depths of 30 m. This opens door to systematic monitoring of shallow water bathymetry changes over sandy areas suffering from coastal erosion and in complement to beach and shoreline monitoring with the overall objective of achieving a better understanding of coastal dynamics and sediment budgets.

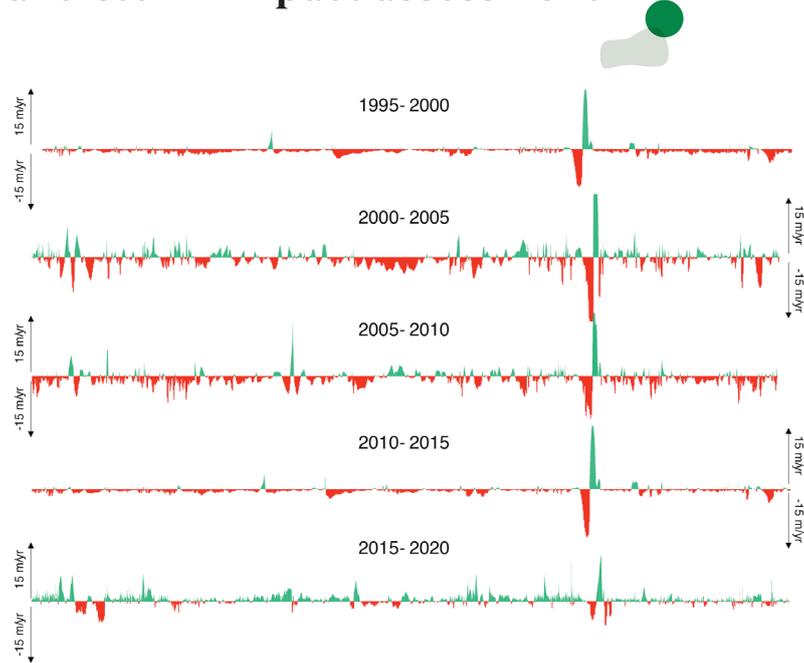


Tracking changes in the nearshore seabed and beach morphology using satellite-derived bathymetry
Focus on LAGANAS Embayment



<http://spaceforshore.eu/> - info@i-sea.fr
The ESA Coastal Erosion Project is funded under the ESA EOEP-5 program

From large-scale decadal variations in shoreline to yearly and storm impact assessment



Directly derived from satellite-based waterline time series, variations in shoreline position may be computed at every required time scale, as here along the Northern Peloponnese coast where shoreline evolution was computed on a 5-year basis. The same has been done in other European regions at higher frequency (monthly) enabling catching storm impact and beach natural recovery in the months following storm events.

The results obtained during the project lifetime #25-year of shoreline change over more than 900 kms of coastline# testify how mature is the Space for Shore coastal erosion service and ready to play an active role in the future coastal monitoring infrastructure the Greek authorities has been thinking about...

"Through the Space for Shore project, a comprehensive set of in situ scientific measurements, combined with numerous retrospective remote sensing data were produced. Thus, an evidence-based up to date assessment framework for the extent of coastal erosion was provided, rendering it an extremely helpful and substantially incomparable toolkit to the coastal managers throughout the Region, both for present and future use."

A. Nalmpantis (Region of Eastern Macedonia & Thrace)

"Outstanding first try, you set up the road for the coastal monitoring in Greece".

Dr. T. Papadopoulos (Peloponnese Technology and Innovation Centre)

Some numbers

25

Years analysed

>900

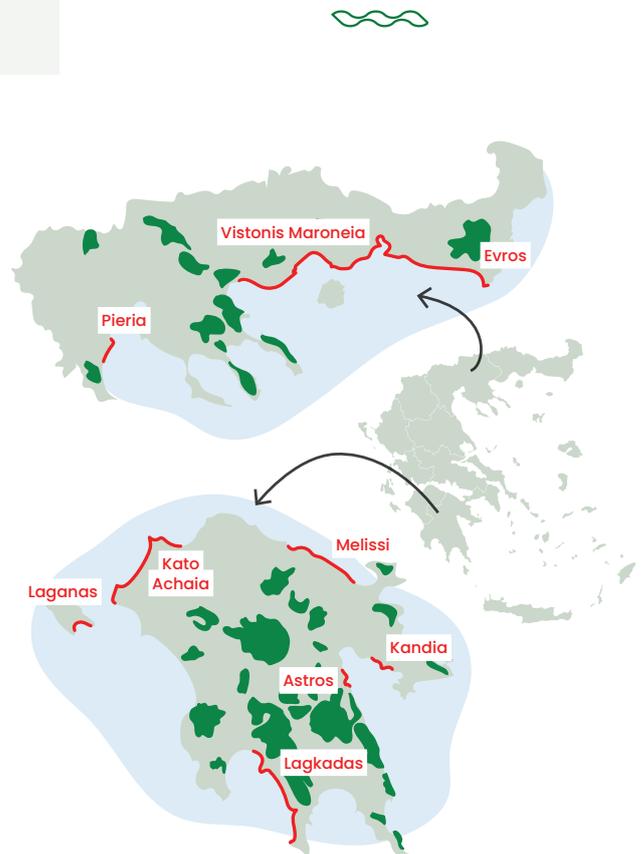
Km monitored

09

Sites of interest

385

Products



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