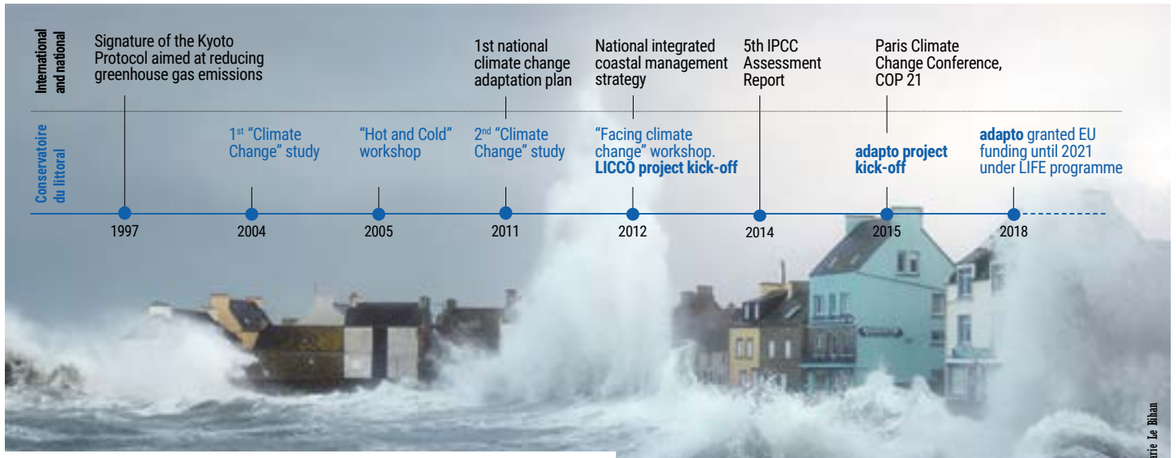

THE CONSERVATOIRE DU LITTORAL AND CLIMATE CHANGE

The Conservatoire du littoral has conducted several studies on global warming over the past decade. In 2004, an estimation of the physical effects of sea level rise showed that 20% of the land it owns could be at risk of coastal flooding, at varying frequencies, between 2050 and 2100. In 2012, a foresight study into these changes, followed by a workshop, provided the opportunity to test different scenarios applied to different coastal facies (wetlands, estuaries, etc.): resistance, endurance or adaptation.

From 2011 to 2014, the cross-Channel project LiCCo (Living with a Changing Coast) provided strong support for experimental sites in Normandy and England, working closely with coastal stakeholders. Since 2012, the Conservatoire has been actively contributing to the development of the French national integrated coastal management strategy.

The adapto project, comprising numerous local and national partners, was launched in 2015. It aims to develop and promote nature-based solutions, in accordance with the French Government's 2017 Climate Plan.

The project was granted funding under the LIFE programme for the 2018-2021 period.

The Conservatoire's 2015-2050 strategy takes into consideration forthcoming changes, both in terms of intervention areas and management approaches.

PARTNERSHIPS TO TAKE ACTION AND RAISE AWARENESS

Associated beneficiary

BRGM Bureau de Recherches Géologiques et Minières (French Geological Survey)

Main funding partners

European Union

Agences de l'eau (French Water Agencies)

Office française pour la biodiversité (French Office for Biodiversity)

Total Foundation

Fondation de France

Scientific and technical partners

ENSP Ecole Nationale Supérieure du Paysage (French National School of Landscape Architecture)

MNHN Muséum National d'Histoire Naturelle (French National Museum of Natural History)

UNCPIE Union Nationale des Centres Permanents d'Initiatives pour l'Environnement (French National Union of Permanent Centres for Environmental Initiatives)

LADYSS Laboratory of Social Dynamics and Spatial Reconstruction

LGP Laboratory of Physical Geography (University of Paris 1 Panthéon-Sorbonne)

Conservatoire du littoral

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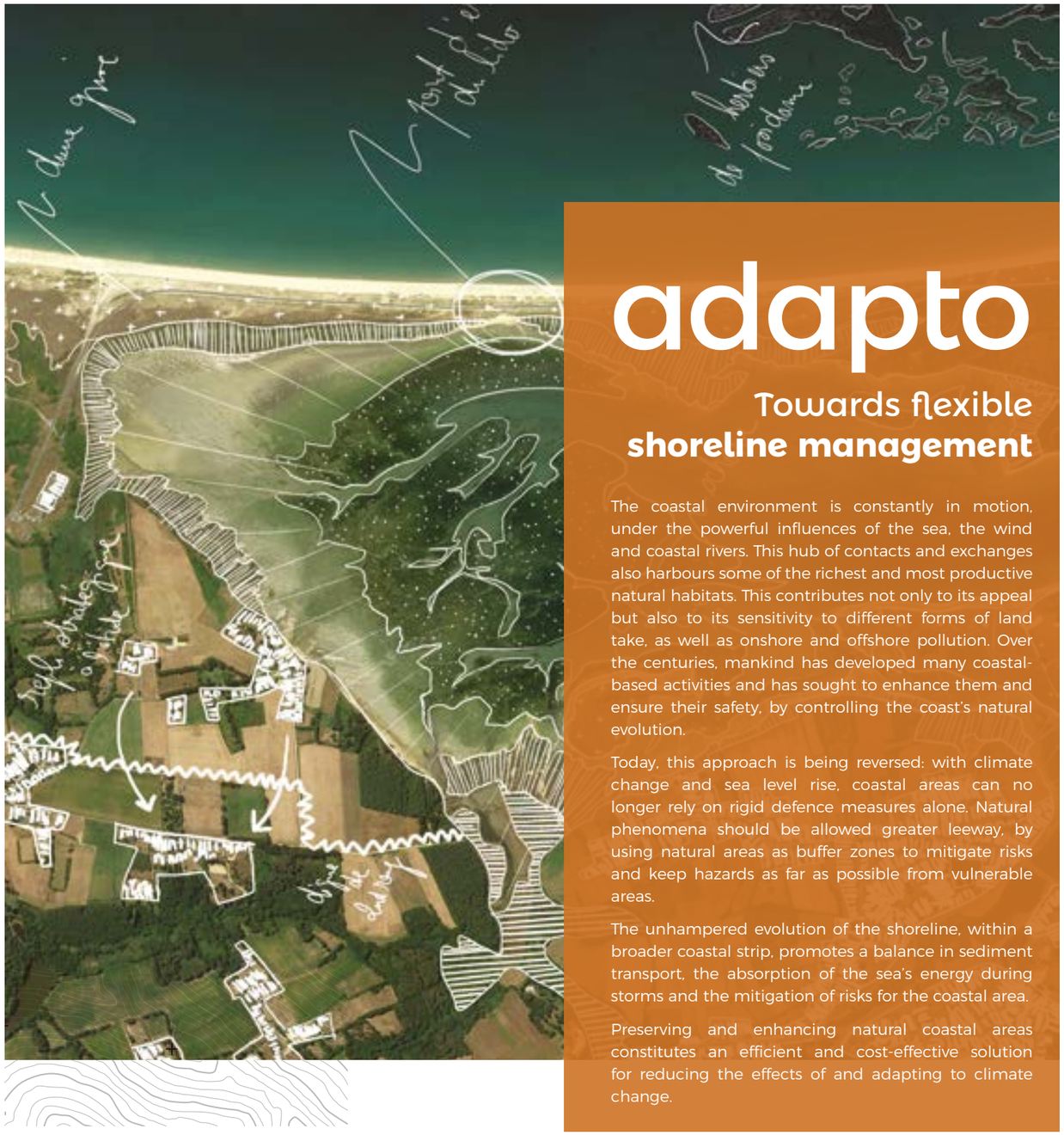
This publication reflects only the author's view and EASME is not responsible for any use that may be made of the information it contains.

Cdl JANUARY 2020

www.lifeadapto.eu **www.conservatoire-du-littoral.fr** **www.lifeadapto.eu**

Conservatoire du littoral | adapto | brgm — Géosciences pour une Terre durable



adapto

Towards flexible **shoreline management**

The coastal environment is constantly in motion, under the powerful influences of the sea, the wind and coastal rivers. This hub of contacts and exchanges also harbours some of the richest and most productive natural habitats. This contributes not only to its appeal but also to its sensitivity to different forms of land take, as well as onshore and offshore pollution. Over the centuries, mankind has developed many coastal-based activities and has sought to enhance them and ensure their safety, by controlling the coast's natural evolution.

Today, this approach is being reversed: with climate change and sea level rise, coastal areas can no longer rely on rigid defence measures alone. Natural phenomena should be allowed greater leeway, by using natural areas as buffer zones to mitigate risks and keep hazards as far as possible from vulnerable areas.

The unhampered evolution of the shoreline, within a broader coastal strip, promotes a balance in sediment transport, the absorption of the sea's energy during storms and the mitigation of risks for the coastal area.

Preserving and enhancing natural coastal areas constitutes an efficient and cost-effective solution for reducing the effects of and adapting to climate change.

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MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE ET SOLIDAIRE

adapto

INITIATED BY THE CONSERVATOIRE DU LITTORAL, FRANCE'S COASTAL PROTECTION AGENCY, THE ADAPTO PROJECT EXPLORES SOLUTIONS TARGETING THE EFFECTS OF CLIMATE CHANGE ON COASTAL AREAS BY ADVOCATING FLEXIBLE SHORELINE MANAGEMENT.
IT IS BASED PRIMARILY ON SUPPORTING AND PROMOTING LOCAL INITIATIVES CONDUCTED ACROSS 10 DIVERSE PILOT SITES. WHILE THE PROJECT'S ACTIONS ARE TAILORED TOWARDS THE SPECIFICITIES OF EACH SITE, A COMMON, METHODICAL, CROSS-DISCIPLINARY APPROACH IS NONETHELESS APPLIED.

Every local initiative is set within a network of stakeholders and a land-use planning framework. Adapto offers numerous tools to promote **a shared approach to coastal management:** historical analyses, landscape approach, joint scenario building and appraisal, study of social perceptions, etc.

Coastal ecosystems provide many services and are home to an often remarkable biodiversity. Their participation in flexible shoreline management leads to changes–sometimes major–in their composition. These changes should therefore be studied and predicted to preserve this heritage and the associated services.

The cost comparison of different management options is one of the vectors for guiding choices. Over and above immediate costs, there can be many economic repercussions in terms of the productivity of coastal waters, agricultural activities or tourist appeal and it is important that they are taken into account.

The inclusion of landscape is one of the specificities of the adapto project. Although often considered as "non-technical", this approach offers numerous advantages: it integrates the full range of dimensions of a territory and gives rise to representations that are easily shared by all stakeholders. It makes for a calmer appraisal of management scenarios and reveals impacts on the living environment.

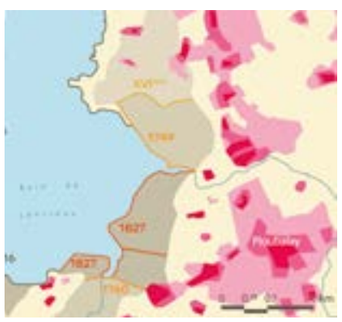
Educational tools are being developed, drawing on the experiments conducted, and are targeted towards school pupils, local authorities, and coastal users and officers. They also aim to boost the project's demonstrative impact both in France and across Europe.

In association with the relevant authorities, each site is analysed **in relation to coastal flooding or erosion risks.** This knowledge is refined through scientific partnerships to model the behaviour of the land-sea interface (salt marshes, mangroves, sand bars, agricultural polder, etc.) when exposed to climate events. When choices must be made, different scenarios can thus be put forward.

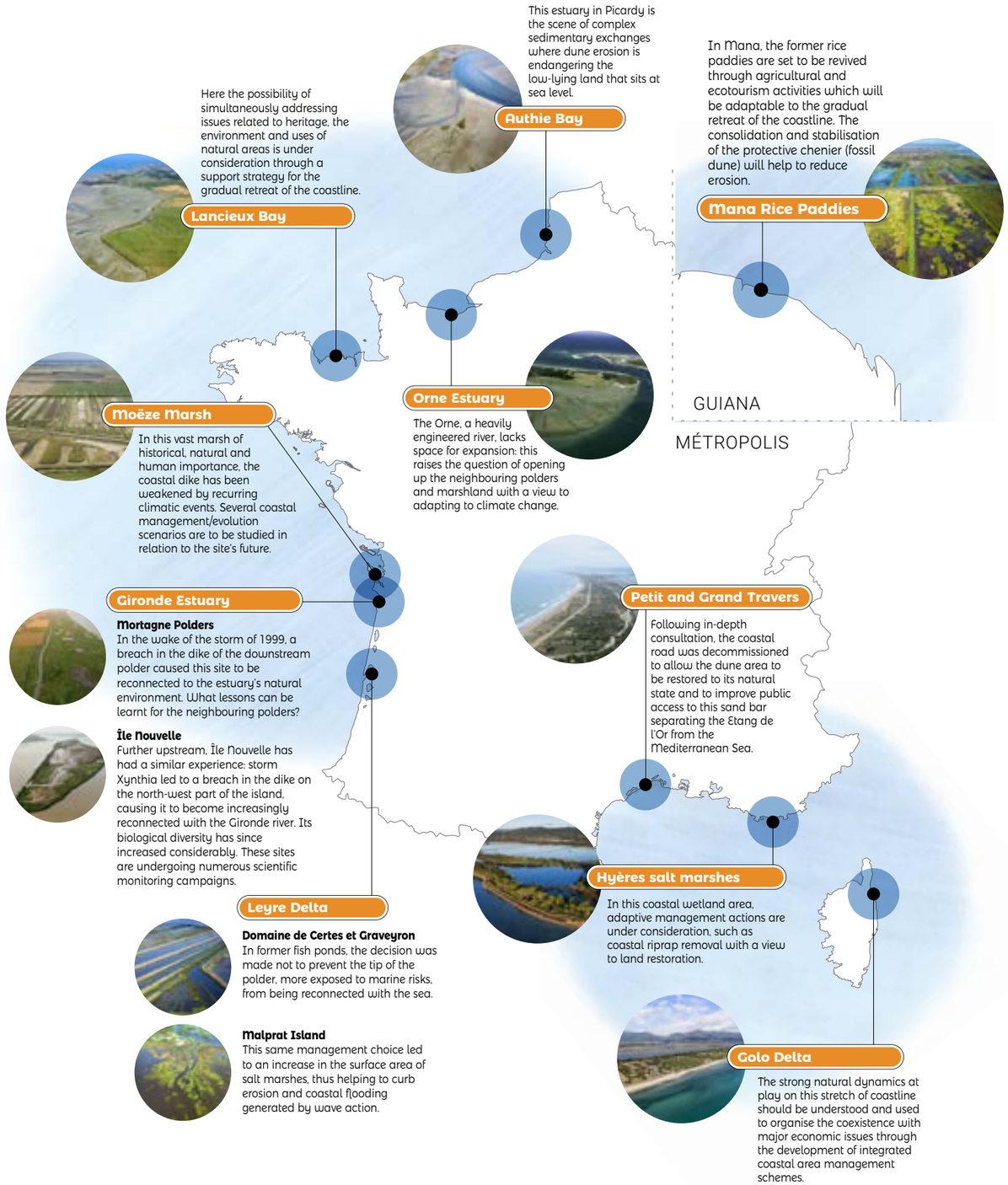
TOOLS FOR A SHARED APPROACH TO COASTAL MANAGEMENT

3D modelling
Analyses and graphically represents the different forecast scenarios.

Landscape analysis
Encompasses the many components of a given area through a sensitive interpretation.



Diachronic map
Highlights the mobile nature of the coastline throughout history, alongside the ever-increasing urbanisation of the coastal area.



EXPERIMENTAL APPROACHES REPRESENTATIVE OF THE CHALLENGES AT PLAY ALONG THE FRENCH COASTLINE

Today the ten key sites under the adapto project represent a diverse range of coastal facies. Each local initiative is implemented in close collaboration with the relevant local authorities, managers and users.