

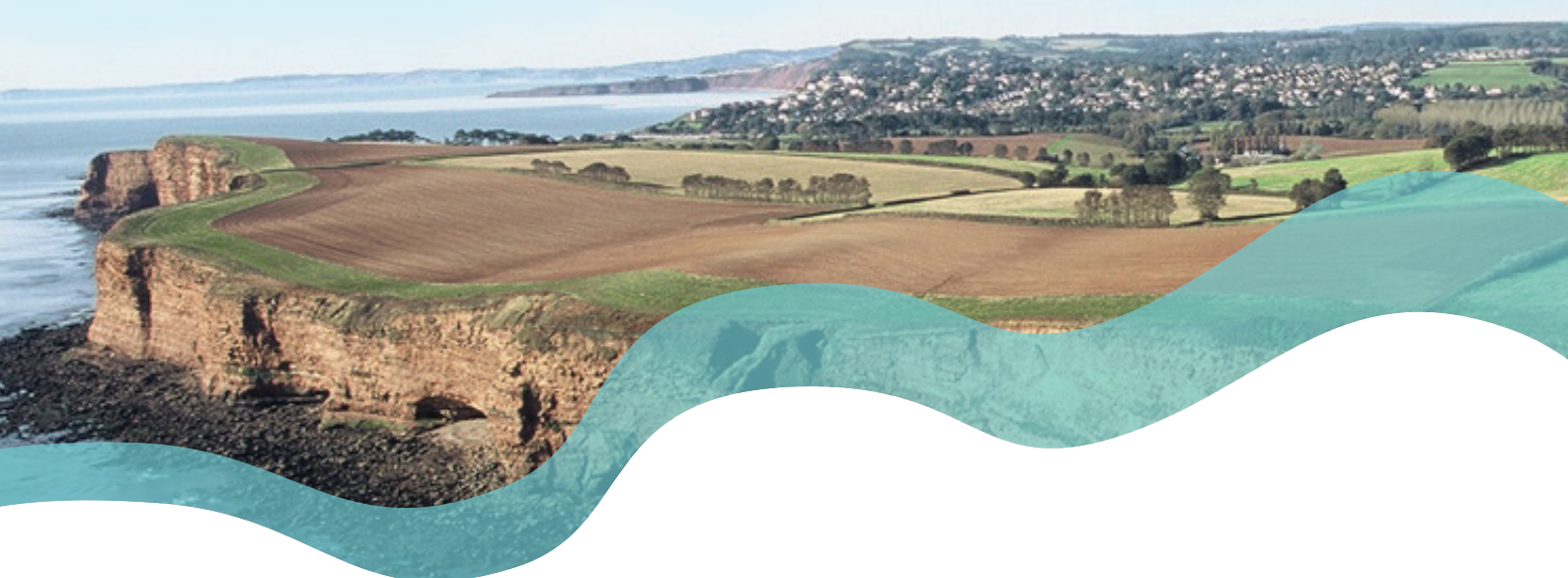
PACCo  **Promoting Adaptation to Changing Coasts**
Promouvoir l'Adaptation aux Changements Côtiers

Interreg 
France (Channel Manche) England
 European Regional Development Fund



INFORMATION PACK

PROMOTING ADAPTATION TO CHANGING COASTS



PROMOTING ADAPTATION TO CHANGING COASTS

Promoting Adaptation to Changing Coasts (PACCo) is a cross-border initiative financially supported by the Interreg VA France (Channel) England programme.

The broad aim of PACCo is to demonstrate that it is possible to work with stakeholders in estuarine regions to deliver a range of benefits for people and the environment by adapting pre-emptively to climate change.

Funding

PACCo has a total value of €27m, with €18.7m coming from the European Regional Development Fund (ERDF). The initiative will recreate 100ha of inter-tidal and wetland habitat, enhance ecosystem services and bring socio-economic benefits across two case study locations, as well as providing a 'PACCo Guide' to influence policy makers at national and EU level and enable climate change adaptation at more sites.

The key project messages are:

- Climate change threatens rivers, coasts and estuaries, and adaptation will be necessary for many communities.
- Pre-emptive adaptation of coastal regions is possible and presents an opportunity to bring long-term social, environmental and economic benefits.
- Pre-emptive adaptation to climate change is likely to be more cost-effective and provide better value for money for society than late action or inaction when considered over the medium and long term.
- Late adaptation to climate change is likely to result in a greater burden on future generations who must then pay the costs of inaction as well as the cost of adapting late.



PACCo Objectives

Through the delivery of its five Work Packages PACCo will demonstrate:

- **How to manage risk related to climate change and improve ecosystem quality** by providing guidance, with examples, of how risks increased by climate change can be assessed and how adaptation might be achieved in estuaries that have been heavily modified.
- **How to enhance socio-economic value** by providing guidance on how to: develop a protocol for undertaking socio-economic valuations; promote sustainable socio-economic uses of estuaries; monitor and evaluate the socio-economic impact of adaptation; engage with communities when considering and undertaking an adaptation scheme; and develop interpretation hubs and educational resources to show long-term benefits of adaptation

A key project output will be a scalable and replicable Guide which will highlight successful approaches to adaptation and help impacted communities assess whether adaptation is right for them and, if so, how they might best proceed. This guide will promote the benefits of adaptive management and provide a resource for over 70 coastal communities and policy makers in England and France.

Background

The project focuses on two pilot sites: the lower Otter Valley, East Devon, England and the Saône Valley in Normandy, France.

The ecological functionality of these two estuarine locations is negatively impacted by historical human modifications, with their current value to society threatened by climate change. Together they present an opportunity to create a case study model for sustainable management of coastal and estuarine areas that can help show how multiple problems can be resolved to create multiple benefits. The initiative will recreate 100ha of inter-tidal and wetland habitat, enhance biodiversity and bring socio-economic benefits to the two sites.

This initiative is the first time that the benefits of proactive coastal intervention have been demonstrated on this scale at two sites in different countries, giving greater international visibility. The intention is to use this increased profile to promote PACCo's transferable Guide to an extensive stakeholder network to influence policy makers at national and EU level and enable climate change adaptation at more sites. Key anticipated adaptation benefits include: the costs of repair and replacement of existing flood defences is avoided; increased socio-economic benefits from increased tourism and local recreational opportunities; public health cost savings; and increased natural capital value of the restored wetland habitat, with greatly increased ecosystem services.

SITE OVERVIEWS

LOWER OTTER RESTORATION PROJECT (LORP)

The Lower Otter Estuary meets the sea at Budleigh Salterton in East Devon. The estuary, along with the cliffs of Otterton Point, is a nationally important site for biodiversity and is designated as a Site of Special Scientific Interest (SSSI).

It contains a range of inter-tidal habitats including saltmarsh and tidal creeks. The current area of the SSSI is 33 hectares, but the estuary itself was once significantly larger, with much of the original area reclaimed from the sea for agriculture over 200 years ago through the building of an embankment.

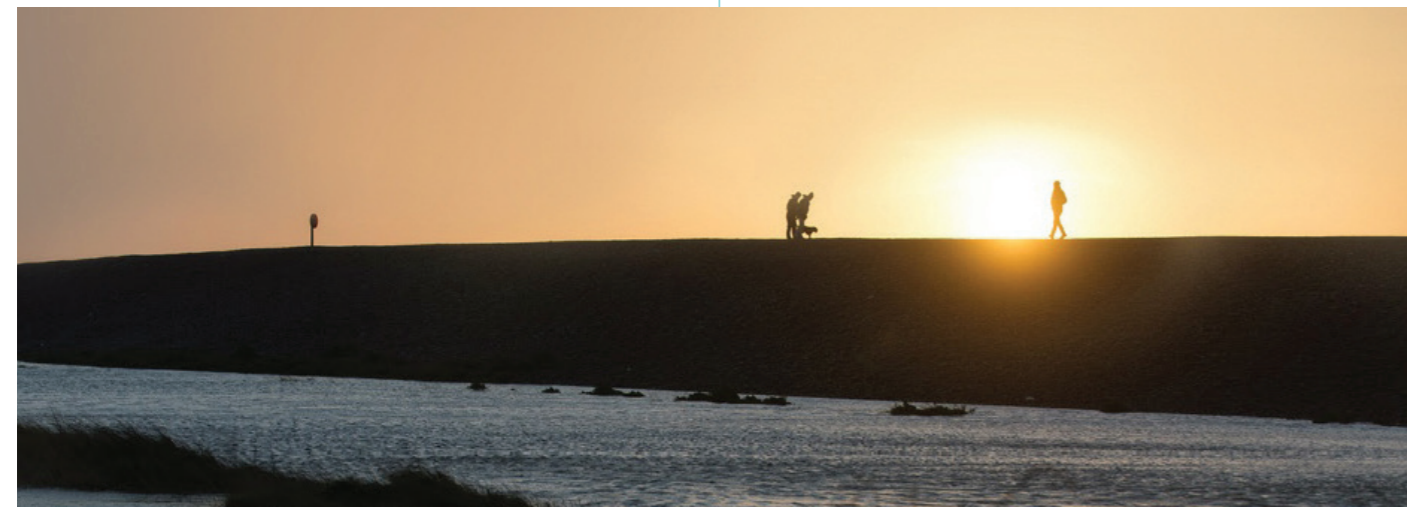
The natural environment of the River Otter and its estuary has been modified by humans for hundreds of years. In addition to the construction of an embankment in the early 19th century, the lower length of river has also been straightened and disconnected from its floodplain. Further alterations to the valley include: the construction of an aqueduct disconnecting a tributary of the river from the floodplain, the development of a refuse tip and a cricket club, and the building of a road also all within the floodplain.

The overall result of all these changes is a disruption of natural processes with the river no longer able to adapt and move naturally across the floodplain as it once did. Nor can it cope effectively with flooding events. The natural environment itself is also poorer, resulting in reduced biodiversity and lower-quality habitats, with a constant need for costly infrastructure maintenance.

Man-made changes to the river and estuary mean the flood flows after heavy rainfall cannot pass down the river channel to the estuary. Water spills into the remaining floodplain but then backs up behind the embankment as it is unable to re-join the river and drain out to sea, except via an outfall of a land drain that lies below the high tide mark.

Climate change, with increasing storminess and changing weather patterns, means that these floods are becoming more frequent, while rising sea levels pose a growing threat to the embankments through erosion, making them more likely to be overtopped at high tide. Damage to infrastructure as a result of flooding is already on the rise. There is a significant risk that a future major flood or extreme tidal event could lead to catastrophic failure of the embankment, with unpredictable impacts on the environment. Such an event would compromise one of the most heavily used public footpaths in Devon that runs along the crest of the embankment, and a public highway which serves a community and associated businesses. In addition, unmanaged flooding of the refuse tip presents an environmental liability with the cricket club having no sustainable future in its current location.

The impacts of climate change are placing increasing financial demands on those responsible for the maintenance of local infrastructure, including Devon County Council and East Devon District Council. Maintaining the status quo is becoming ever more difficult and there is a common desire for a more sustainable way forward. There is a strong argument for a pre-emptive and planned approach to climate change.



Otter Valley in Devon, England

SITE OVERVIEWS

BASSE SAÂNE 2050 PROJECT

The Saâne is a coastal river in Seine-Maritime, measuring 34km in length and situated to the west of Dieppe. The Vienne serves as its primary tributary. As with many of the coastal rivers in Normandy, and all those of Seine-Maritime, its outlet to the sea consists of a drainage pipe and a valve.

The Saâne's old estuary is closed off by a dyke-road that runs along the coastline, connecting Dieppe with the Pays de Caux.

Beginning in the 16th century, the Saâne estuary has undergone a number of dramatic modifications. Prior to this period, the Saâne flowed into a brackish marsh, separated from the sea by a pebble beach.

The first works on record were carried out for military purposes between 1560 and 1768, with the aim of frustrating English attempts at invasion. During the 18th century, a network of dykes was built in an effort to promote agriculture in the lower valley. In 1864, the Saâne estuary's first wooden drainage pipe was installed. Its purpose was to clean up the area by facilitating water drainage and limiting the impact of sea water on the surrounding land. In addition, the valley began to welcome its first recreational bathers as early as 1856. Between 1963 and 1973, the Quiberville campsite was built. Situated alongside the dyke-road and the Saâne, it has allowed for the preservation and development of local activities such as fishing, restaurant services and water sports.

This area, built around a wet valley framed by chalk cliffs, is subject to several risks: coastal erosion, river flooding and tidal flooding. The past evolution of agricultural practices, such as the conversion of pastureland to cropland, has exacerbated the effects of flooding by increasing erosion and runoff of rainwater laden with mud and silt. These changes have not come without consequences for water quality and soil fertility. Furthermore, the development of local tourism and the increasing attraction of the Cauchois coastline have also brought about changes to land use, with decreased naturalness of land and less effective drainage of surfaces. All of these factors worsen the effects of flooding.



The recent history of the lower valley is marked by several such events, some of which live long in the memory: the river floods of January 1995, December 1999 (the most extensive ever recorded) and May 2000, as well as a coastal flood in 1977. The area is vulnerable, and the effects of climate change serve only to accentuate this situation, as demonstrated by Storm Eleanor in January 2018. With every event come casualties, property damage, and the campsite located just in front of the sea, is partially destroyed.

These elements have together led the communes of the Saâne Valley to reflect on solutions that could be implemented in order to reduce the area's vulnerability to flooding.

Simultaneously, changes in regulations have made it necessary to review plans for the Saâne's development. The 2006 law on water and aquatic environments, for instance, raises the question of ecological continuity (involving obligations to ensure the free movement of fish and to re-establish hydro-sedimentary equilibrium).

A forward-looking vision for the development of the lower Saâne Valley that would be embraced by stakeholders and citizens alike and provide a robust response to the challenges of river and coastal flooding, maintaining the area's socio-economic attractiveness, and improving environmental and water quality in the lower valley is needed. All of this requires adaptation to climate change.



Saâne Valley, France
Conservatoire du littoral / Frédéric LARREY

PARTNERS



Environment Agency

The Environment Agency (EA) is an executive non-departmental public body responsible for the protection and management of main rivers, lakes, estuaries and Transitional Coastal Waterbodies (TCWs). Its role is to balance the needs of the environment with the needs of those that use it. The Environment Agency works to address risks and opportunities posed by a changing climate through the Government's Flood and Coastal Erosion Risk Management Strategy (FCERM) for England. This sets out their long-term ambition to create a nation resilient to flood and coastal erosion risk. As lead partner within PACCo, the EA will be involved in the project management and delivery of all work packages.



Department
for Environment
Food & Rural Affairs

Department for Environment, Food and Rural Affairs (Defra)

Defra is the UK Government department responsible for safeguarding the natural environment, supporting the UK's food and farming industry, and sustaining a thriving rural economy. Defra is a ministerial department supported by 33 agencies and public bodies, including the Environment Agency. Defra has produced the UK National Climate Adaptation Programme and Strategy, with which the PACCo project is closely aligned. Defra will be involved with finance-related tasks such as: paying partners' eligible Interreg grant claims, preparing budget modifications (if required), and identifying financial risks and reporting on expenditure against budget. Defra will also be involved in dissemination actions across the project.



PEBBLEBED HEATHS
CONSERVATION TRUST

East Devon Pebblebed Heaths Conservation Trust (EDPHCT)

Created in 2006 by the landowner Clinton Devon Estates, EDPHCT manages the habitat and visitors of the Otter Estuary and the adjacent East Devon Pebblebed Heaths. The Trust is widely respected as a leader in environmental management and manages one of the UK's most important wildlife conservation sites. In PACCo, the Trust will be working across all work packages. It will use its knowledge and experience of working with local organisations and communities to deliver habitat creation (including monitoring and evaluation), and to facilitate socio-economic adaptation to environmental change.



Syndicat Mixte Littoral Normand (Conservatoire du Littoral) (CDL)

Acting with various partners, the CDL is involved in studies and action programmes across Europe supporting the sustainable management of coastlines and contributing to adaptation to climate change. In France, the CDL launched Adapto, a programme to showcase innovative approaches to managing coastlines in an integrated way. In Normandy, the CDL supports the territory's stakeholders working on operational strategies to adapt to climate change. Since 2012, the CDL has facilitated and coordinated the lower Saône Valley territorial project in conjunction with local stakeholders, state departments, local authorities and users involved in the project. The CDL is the principal PACCo French partner, in charge of coordination and administrative monitoring of the Interreg project. The CDL will be involved in all work packages.



Communauté de Communes Terroir de Caux

Communauté de Communes (Grouping of municipalities) has a tourist information office in the municipality of Quiberville, attached to the Terroir de Caux Tourist Office (TIO). The municipality is linked to the Saône territorial project working group via the Communauté de Communes, under the terms of its tourism policy, its jurisdiction over land use planning and its involvement in flood protection. Jurisdiction also covers water and sanitation services. Communauté de Communes wishes to see sustainable land management and, a reversal in declines in the environmental quality of the lower Saône river. The role of the Communauté de Communes will be to improve sanitation systems in the lower valley by replacing outdated sanitation systems, which are the cause of pollution to the environment, with a modernised efficient collective sanitation network.



Commune de Quiberville sur Mer

Commune de Quiberville

Quiberville is a coastal town exposed to flooding and a receding coastline. To reduce the impact of climate change on economic activities, population and habitats, Quiberville has a programme of defence against the sea including the installation of groynes and pebble beach nourishment. The local policy is to anticipate and adapt to climate change. The aim is to reduce the number of assets at risk and avoid costly rehabilitation works after such events. Many economic assets are directly at risk making the area vulnerable. Quiberville will actively contribute to the project on the preservation of the area's socio-economic use, which will include the relocation of the Saône valley campsite.



For more information contact:

UK Contact:
Environment Agency
Manley House
Kestrel Way
Exeter
EX2 7LQ

Tel: +44 2030 25238

For more information contact:

France Contact:
PACCo
Citis - Le Pentacle BP81,
5, Avenue de Tsukuba,
14203 Herouville Saint Clair
CEDEX

Tel: +33 2 31 15 03 69

Email: karen.baxter@environment-agency.gov.uk
www.pacco-interreg.com