

The Arch-Manche Project

Archaeology, Art and Coastal Heritage - tools to support coastal management and climate change planning across the Channel Regional Sea.

This project is demonstrating how archaeology, art and maritime coastal heritage can be used to show long-term patterns of coastal change and the impact on human settlement. Study of this data allows understanding and modelling of past reactions to climate change to help with planning for the future. The results are important for 'Integrated Coastal Zone Management' (ICZM) and will inform sustainable policies for adapting to coastal climate change. This project is timely due to predicted increases in erosion, flooding and instability affecting Channel coasts. The project will both benefit from and contribute to developing practice in the study of submerged and intertidal archaeology, palaeoenvironment and intertidal coastal features.



Arch-Manche partners visiting the Er Lannic Stone Circle in the Golfe du Morbihan (Image courtesy of Marie Yvane-Daire, CNRS)

Welcome to the third newsletter of the Arch-Manche project. Over the last few months all partners have continued their research into archaeological and palaeoenvironmental evidence, as well as assessing the potential of art, historic photos and maps and charts to help improve our understanding of coastal change across the Channel and southern North Sea.

This data has now been added onto the project database and scored using our ranking system developed as part of the project, the data is now being analysed in order to understand what types of sites and evidence can best provide information on coastal change in the long term, and how these can be used to inform coastal climate change policies and management.

In October all partners participated in the fourth project partner meeting, hosted by the French partners in the city of Vannes. As well as discussing the progress of the project and our plans for the coming months, the partners were also able to visit several sites which are being used as case studies by the French project partners. This included the mesolithic site in Quiberon and a number of stone circles and megaliths in the Golfe du Morbihan.

This newsletter covers some of the work carried out over the last few months, further information and past newsletters can be found on the project website;



Seismic cone penetration tests in Doelpolder Noord. A sledge hammer and heavy beam were used to create acoustic waves (Image Courtesy RCMG).

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The UK and French partners working on the Serval Lannion fishtrap site in June 2013, an open day was also held during the excavations and this image shows several visitors being shown around the site (courtesy M.Godest)

The UK partners have continued to record the submerged Mesolithic landscape at Bouldnor Cliff, recovering worked flints and environmental material which can help us to understand the formation of the Solent.

Also in the UK, utilising the expertise of the Belgian partners, a marine seismic survey was carried out in Langstone Harbour. The goal was to identify possible archaeological remains, buried or exposed on the sea bed. A number of marked observations were made that can be linked to archaeological artefacts, such as the possible remnants of the Sinah Circle. No clear indications were found of the submerged forest near Baker's Island, first identified in the 1980's, which has possibly been largely eroded, although the data seemed to indicate the presence of some scattered, partly buried tree stumps and branches. Several submerged palaeochannels were also recorded between the islands in the north of the harbour.

The Belgian partners continued research in the Scheldt polders, a land seismic test line was recorded on the tidal marsh, using an array of 72 geophones and a sledge hammer + heavy wood beam. Electrical cone penetration tests (CPT), using both seismic and conductivity cones, were carried out in the adjacent polder. The results of these tests allowed further identification of the sequence of peat, clay and sandy layers that mark the late Quaternary deposits in the polder area. This has helped to reconstruct the drowning history, resulting in a series of palaeogeographical maps ranging from the early Holocene (11000 BP) to the early Medieval times (1000 BP).

Excavations of the Mesolithic site at Beg-er-Vil in Quiberon continued over the summer, the extent of a remarkably well preserved shell layer was recorded along with a burnt layer of stone. The team have also continued to study aerial pictures of the site to record the rate of coastal erosion, and geophysical surveys off the coast have been carried out to record the now submerged deposits.

The French partners have also continued their work on fish traps around Brittany, alongside the excavations at Serval, 2013 has also seen the adoption of geophysical and underwater diver surveys to record fish traps now completely submerged.

Activity One:

This Activity involves the study of archaeology, palaeoenvironmental data and coastal heritage features to demonstrate coastal change. Since the project started several weeks of fieldwork have been carried out by the English, French and Belgian partners.

This Activity has produced a database with ranked examples that can be integrated using GIS with the results from Activity Two, to show their potential to add to understanding of coastal climate change across the 2-Seas region. The case studies will apply, test and review methods of investigating coastal climate change, and the results will be used within the project best practice guide to show how archaeological sites can be used to support the management of coastal risks and develop policies to manage coastal change.



The UK partners continued to survey the submerged Mesolithic site of Bouldnor Cliff, this particular section is being impacted by rapid erosion (Image courtesy MAT)



Activity Two:

This Activity involves studying a range of art works from across the 2 Seas region. Artistic representations of the coast are being reviewed to identify depictions of geology geomorphology and coastal heritage features which can help demonstrate change over time.

The project is consulting a range of sources including maps, charts, historic photographs, and postcards. All partners are contributing to this Activity and gathering images which can be assessed and scored for their potential to provide data on coastal change, this information will then be added to the project database. Deltares are also focusing on creating palaeogeographic reconstructions of the South-West Netherlands, to show landscape change over time. A selection of these images are on the website.



Painting by John Moore 'Slaughden Quay', 1883. (Image courtesy of Robin McInnes).

Activity Two of the Arch-Manche project is examining how historical works of art (coastal landscape paintings, watercolours and prints) painted between 1770-1940, along with historic photos, maps and charts can be used as a qualitative tool to support our understanding of long-term coastal change across the Channel – Southern North Sea region.

In England this is being investigated at six study sites – Norfolk and Suffolk coasts, East Kent coast, Hastings in East Sussex, the Solent – Isle of Wight, West Dorset – East Devon and West Cornwall. The focus has been on historical works of art, however, the methodologies for assessing historic photos and maps and charts, developed by the partners, are also being adopted in the UK case study areas.

In France the University of Rennes is assessing ancient postcards and photos from the late 19th and early 20th centuries, which illustrate coastal changes in Brittany, as well as, for some areas, paintings, maps and charts. The image to the left shows a bay where an ancient Roman road used to cross the bay became a religious trackway in the Medieval period, and has now been completely abandoned due to coastal change.

Partners from Belgium and the Netherlands have been working together to look at historic maps across the border around the Scheldt estuary, an assessment of historic maps combined with archaeological and palaeoenvironmental evidence has allowed for the production of several evolution maps which illustrate how the area has changed in the long and short term.

All partners are assessing the various datasets in order to understand how reliable the images are and also what they can tell us about coastal change, this is being incorporated into the project database and analysed ready for the final report.



The French partners have continued to analyse historic maps charts and photos, above is a map of the St Michel en greve bay showing the existence of a Roman road which was later used as a religious medieval trackway (© Ministère de la Défense).



