# Fisheries, archaeological evidences of the last sea level rise around the Island of Yeu

### Study area

French Atlantic Coast, Isle of Yeu



## Introduction

During the last glacial maximum, the island of Yeu was an inselberg along the french atlantic margin. The Holocene sea-level rise progressively transformed this part of the land into an island, deeply modifying the landscape and the way of life of the inhabitants. This study combines different methods to identify the evidences of this story, to reconstruct the evolution of the landscape, and to understand the impacts on human populations.

#### Fig. 1 : Digital Elevation Model along the French West Coast (Vendée dpt.) Source : SHOM, HOMONIM project





# Fisheries and Palaeogeography

## Methods

The Digital Elevation Model was compared to the relative sea-level curve along Vendée coasts (Figs 1 & 2).

Marine geophysical investigations using high resolution echo sounders and acoustic systems for precision seafloor exploration were used to establish the geometry of the bedrock, to position the ancient hydrographic network and the modern sediment accumulations (Fig. 3). On this basis, the positions of palaeocoastline at different ages were estimated (Fig. 4). LIDAR data were compared to orthophotographs to position fisheries (Fig. 5).



*Fig. 2 : Relative Sea-Level (m) curve along Vendée coasts according to Garcia-Artola et al. (2018).* 

According to the morphology of the bedrock, the island was probably isolated from the main land around 8,5 Ka (B.P.). The palaeogeography and the sedimentary system quickly became very close to modern ones.

	$\frac{1}{2}$ Fig. 3 : example of a profile obtained off the estern coast of Yeu			
ne	Time (r	ancient valley	Modern sediments (sand bars)	ancient valley
.)	20	(LGM?)		(LGM?)



Modern coast

- 10 Ka ( B









To work properly, fisheries need to be intertidal. Along the eastern coast of the island, about thirty fisheries (or structures associated to fisheries) were identified between -3 and -5.5 m below the modern mean sea level (Fig. 5). Only a few ones are situated in the modern intertidal range (0 to -2m). The different bathymetries of submerged fisheries suggest they were built at the very end of the Mesolithic or the Early Neolithic (Fig. 1). Those fisheries evidence that the inhabitants of the island had to adapt to this rapid transgression, reconstructing progressively new fisheries higher on the foreshore.

Those fisheries constitute the first evidences of living on the island.





Fig. 4 : Evolution of palaeogeography along the Vendée Dpt. coastline.

Fig. 5 : Position of fisheries. Some of them can be seen on orthophotographs, others are clearer with LIDAR data.





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Modern low tide leve