

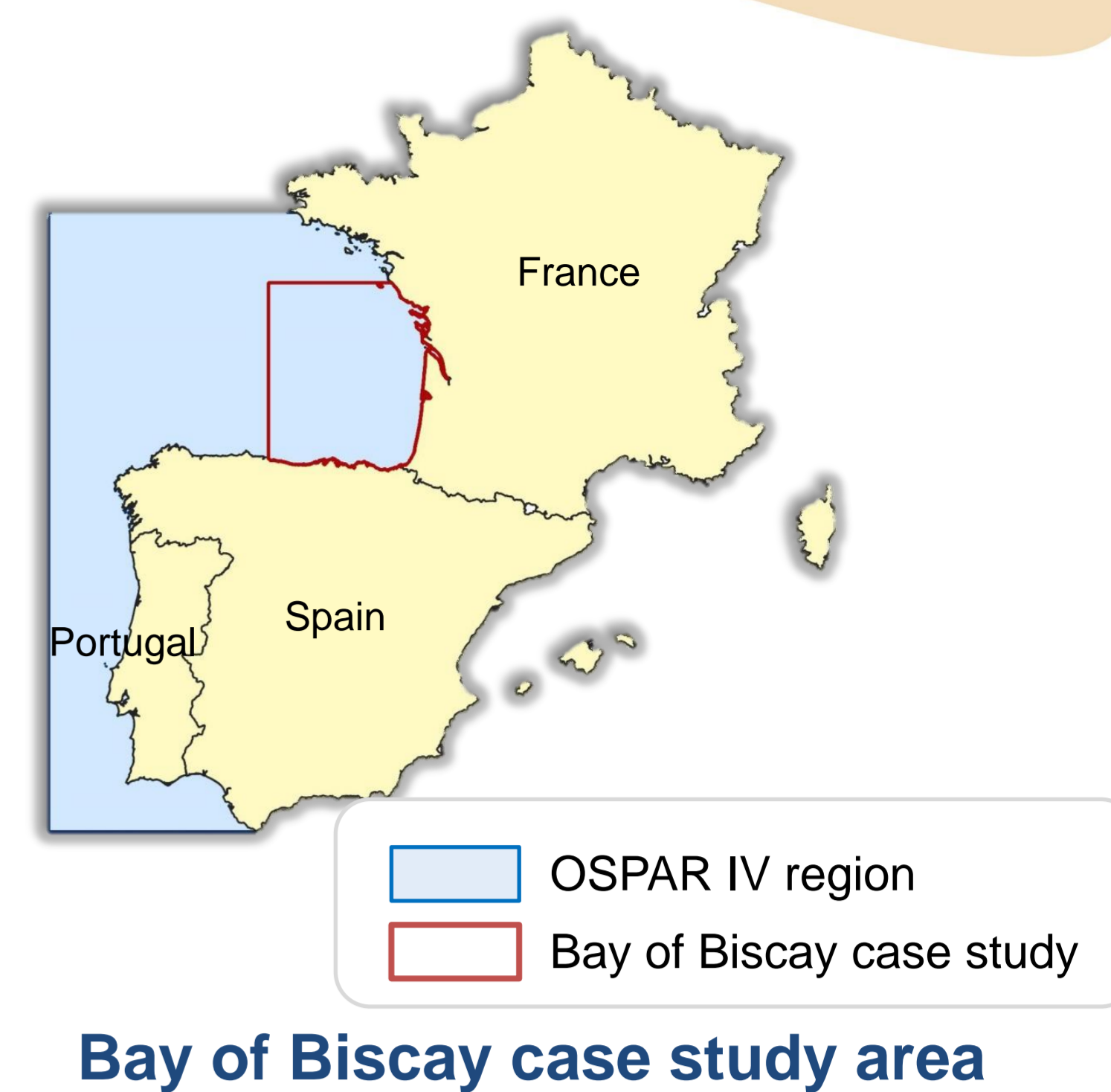
Assessing anthropogenic pressures to support Maritime Spatial Planning implementation

Cetaceans and seabirds: Exposure risk to anthropogenic pressures in the Northern European Atlantic

The SIMNORAT case study "Bay of Biscay" aims to demonstrate the cross-border cooperation between Spain and France in conducting technical analyses to support the implementation of Maritime Spatial Planning (MSP). This case study draws perspectives on the evaluation of offshore anthropogenic pressures and their effects on cetaceans and seabirds.

These species are common in this area, have a high mobility and face multiple cross-border anthropogenic pressures. Furthermore, they are on the top of the marine food chain and are therefore good indicators of the global state of the ecosystem.

Spanish-French collaboration was established to select, standardize and share relevant datasets (activities, pressures, ecological components) between the two countries and to carry out first cumulative effect assessment attempts.



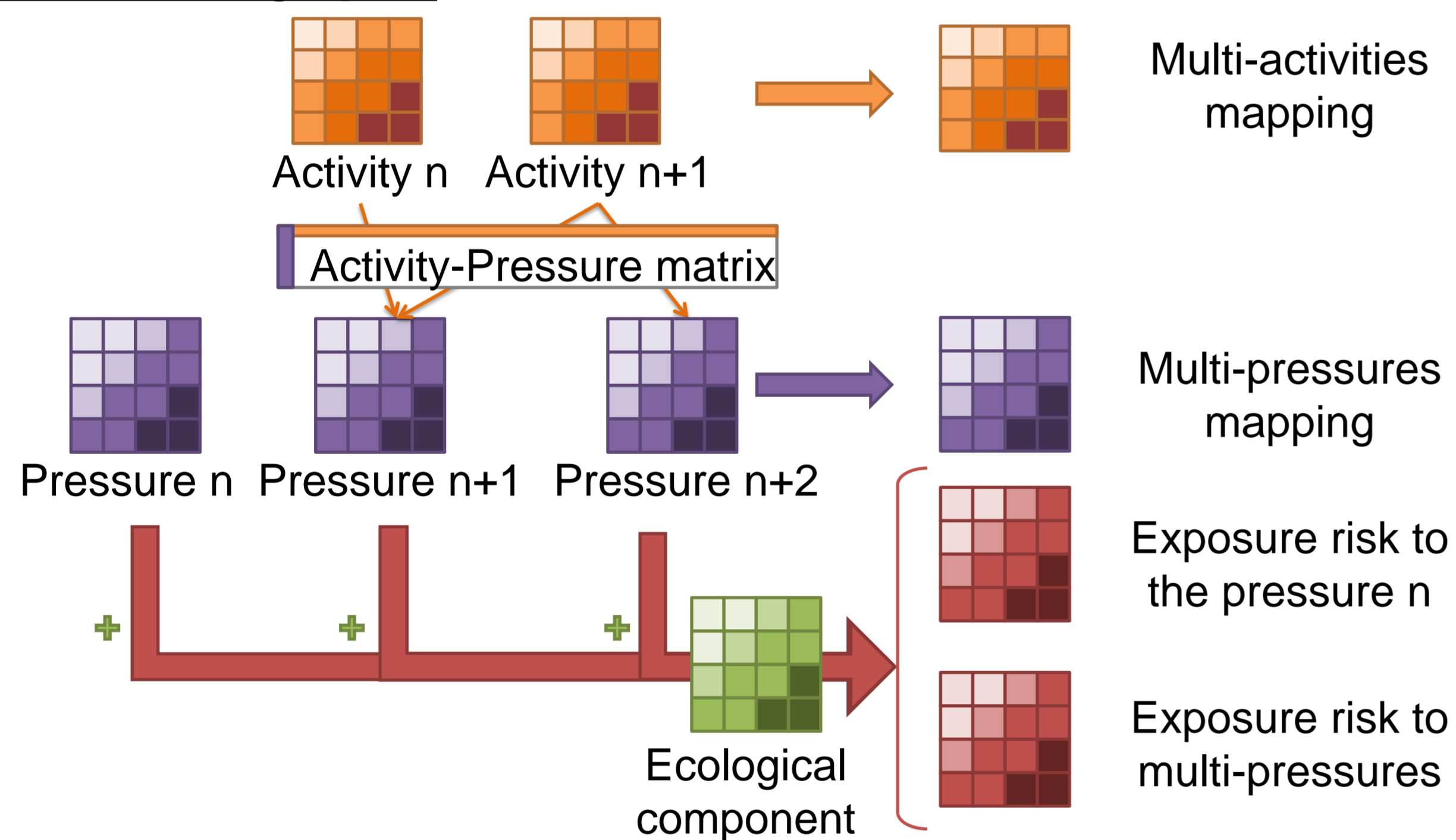
Dataset

Category	Type	Data source*	
Activity	Navigation	CEDEX	CEREMA
	Fishing	IEO	DPMA
Pressure	Noise	CEDEX	SHOM
	Marine litter	-	PELAGIS observatory
Ecological component	Cetaceans and Seabirds	-	PELAGIS observatory

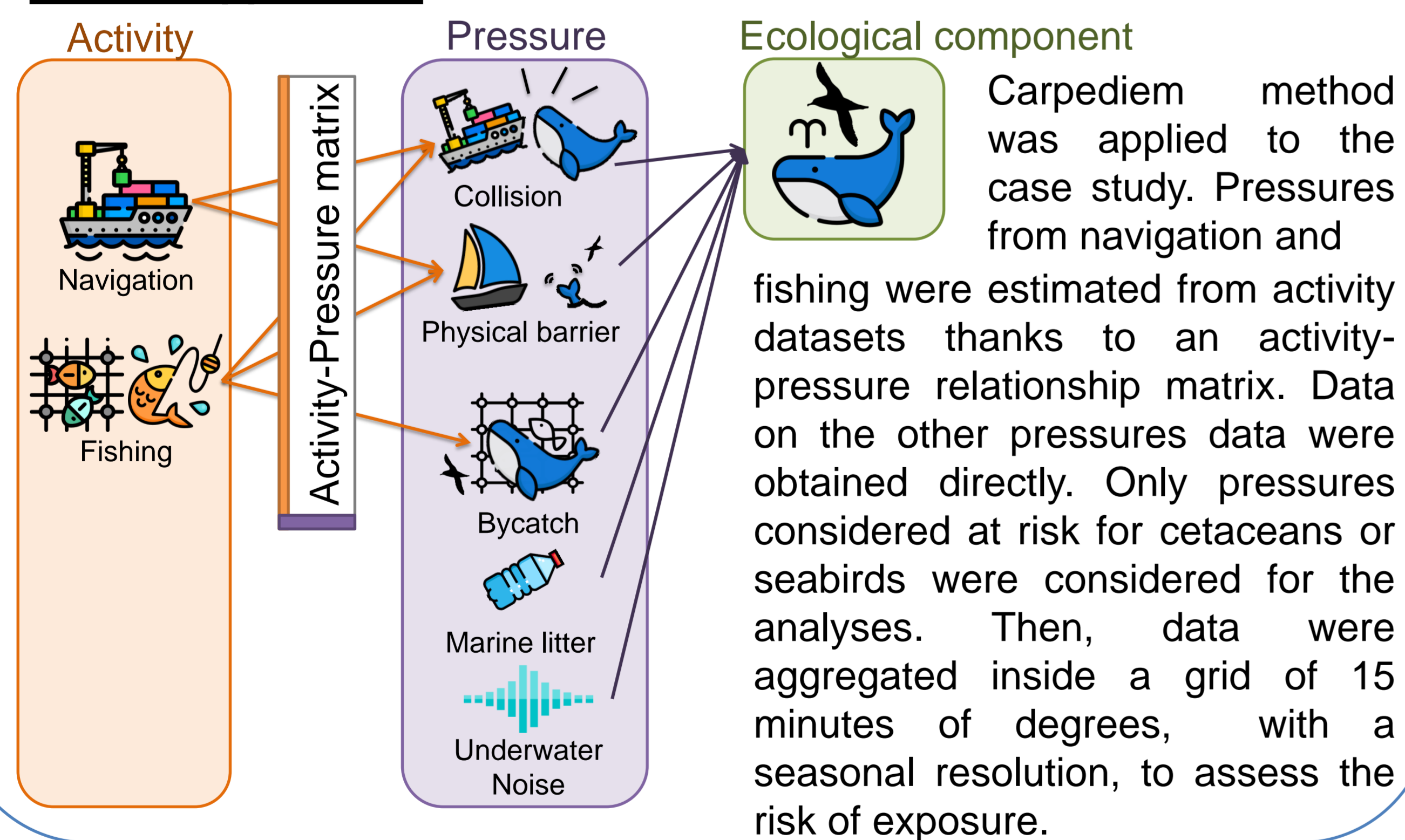
* CEDEX: Centro de Estudios y Experimentación de Obras Públicas (Spain), CEREMA: Centre d'Études et d'expertise sur les Risques, l'Environnement, la Mobilité et l'Aménagement (France), DPMA: Direction des Pêches Maritimes et de l'Aquaculture (France), IEO: Instituto Español de Oceanografía (Spain), SHOM: Service Hydrographique et Océanographique de la Marine (France)

CARPEDIEM methodology

Theoretical graphic

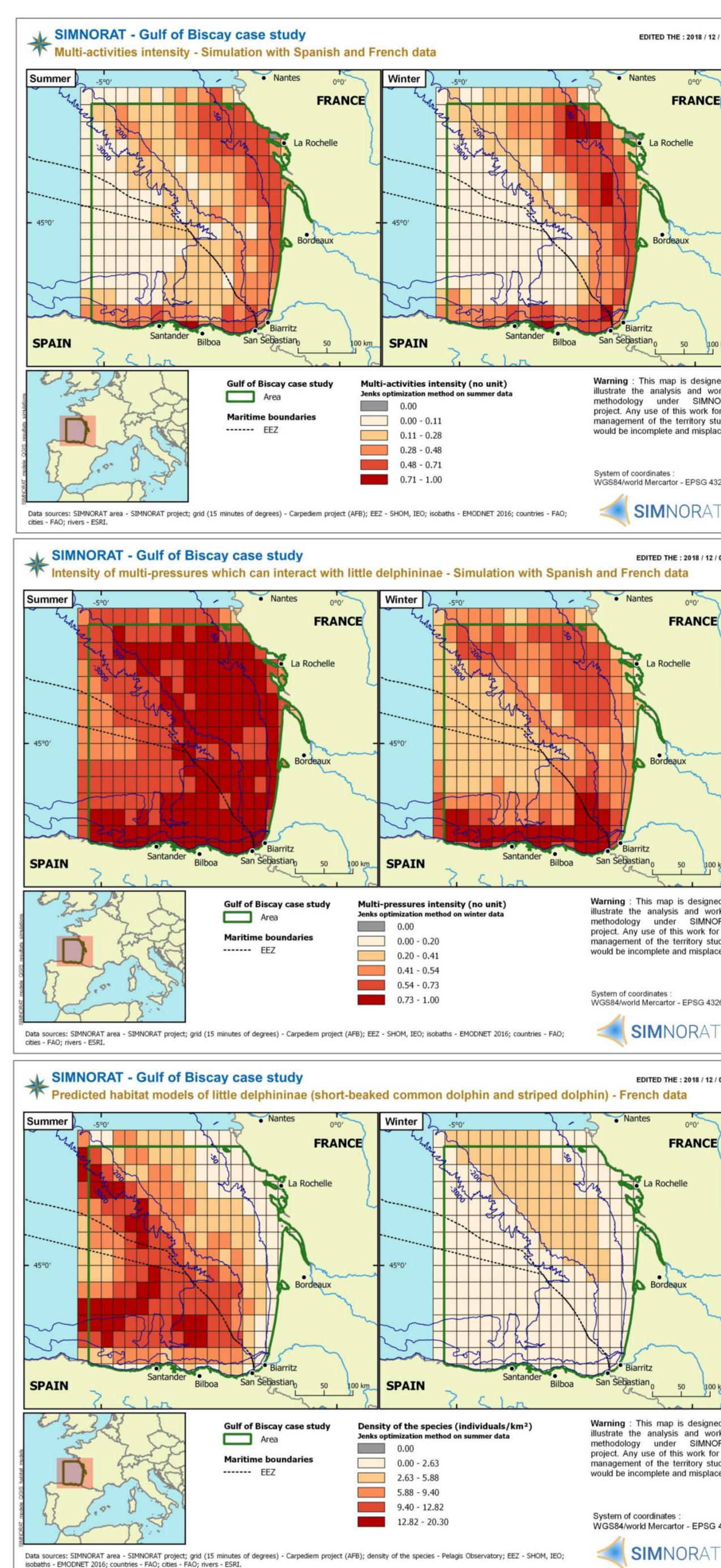


Method application



Results

Implementation example on the little delphininae group



Multi-activity intensity

In this analysis, the activities considered are fishing (effort underestimated due to data gaps) and navigation. Major intensities are concentrated on the continental shelf.

Multi-pressure intensity

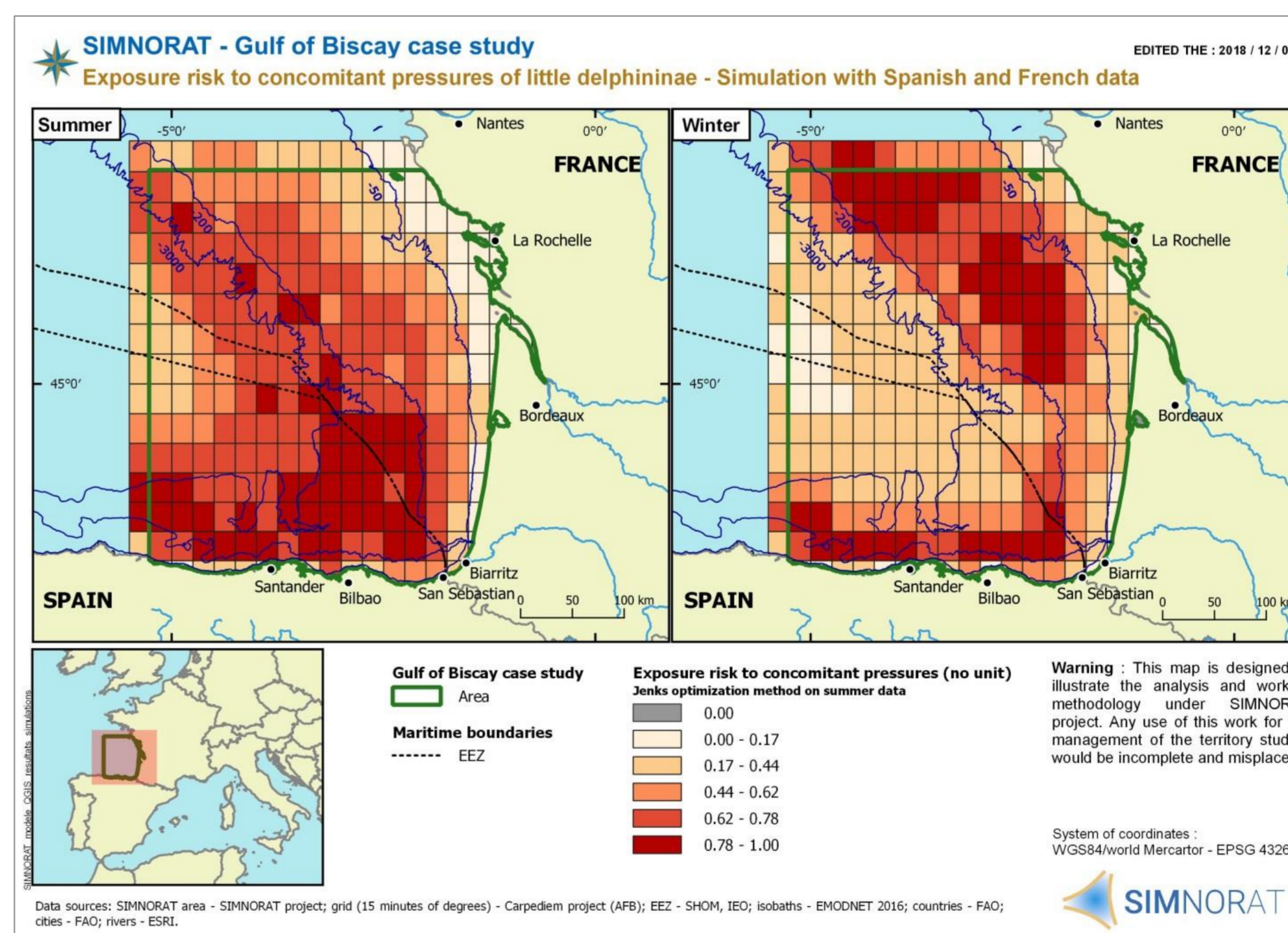
Pressures taken into account were selected with regard to their effect on the little delphininae group, thanks to expert judgment considered in the relationship matrix: bycatch, collision and physical barrier. Additional pressures were added: marine litter and underwater noise.

Habitat model of little delphininae group

These species (short-beaked common dolphin and striped dolphin) are more frequently observed in offshore waters, along the slope and also on the continental shelf. Their distribution is seasonally contrasted with an important abundance in summer. As data come from a unique aerial survey campaign realized in 2011-2012, the assessment has to be interpreted with caution.

Exposure risk to multi-pressure

The exposure risk to multi-pressure is higher along the slope in summer and on the continental shelf in winter.



Peaks of exposure risk have two different explanations. On the one hand, major values are explained by high dolphin abundances and at least a moderate multi-pressure intensity. On the other hand, it is justifiable by a high multi-pressure intensity and at least a moderate abundance of dolphins.

This first test in the Bay of Biscay allowed to initiate a cross-border collaboration and data sharing between France and Spain. This is a step forward in the assessment of anthropogenic pressures occurring in the pelagic domain, very poorly addressed until now. By delivering synthetic and understandable visual results (maps), this kind of approach is undeniably a progress to better inform MSP processes.

However, it has also pointed out the well known issue of data availability and compatibility across border. There is still need for large scale comprehensive datasets encompassing the whole range of maritime uses and related pressures. Moreover, these analyses still need to be improved and validated to be effectively taken into account in cross-border MSP. Confidence in species distribution data requires to be improved and knowledge on pressure effect on each species need to progress.