

Integration of acoustic monitoring of OWF in a regional scale infrastructure

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- Increase the number of **transition sites** in **Good Ecological Status** in the English Channel
- By identifying the most important habitats for several fish species
- By assessing the effects of **anthropogenic habitats** on these species
- Facilitating **ecosystem-based management**

Transition sites



Pollack



European sea bass



Spiny lobster



Bluefin tuna

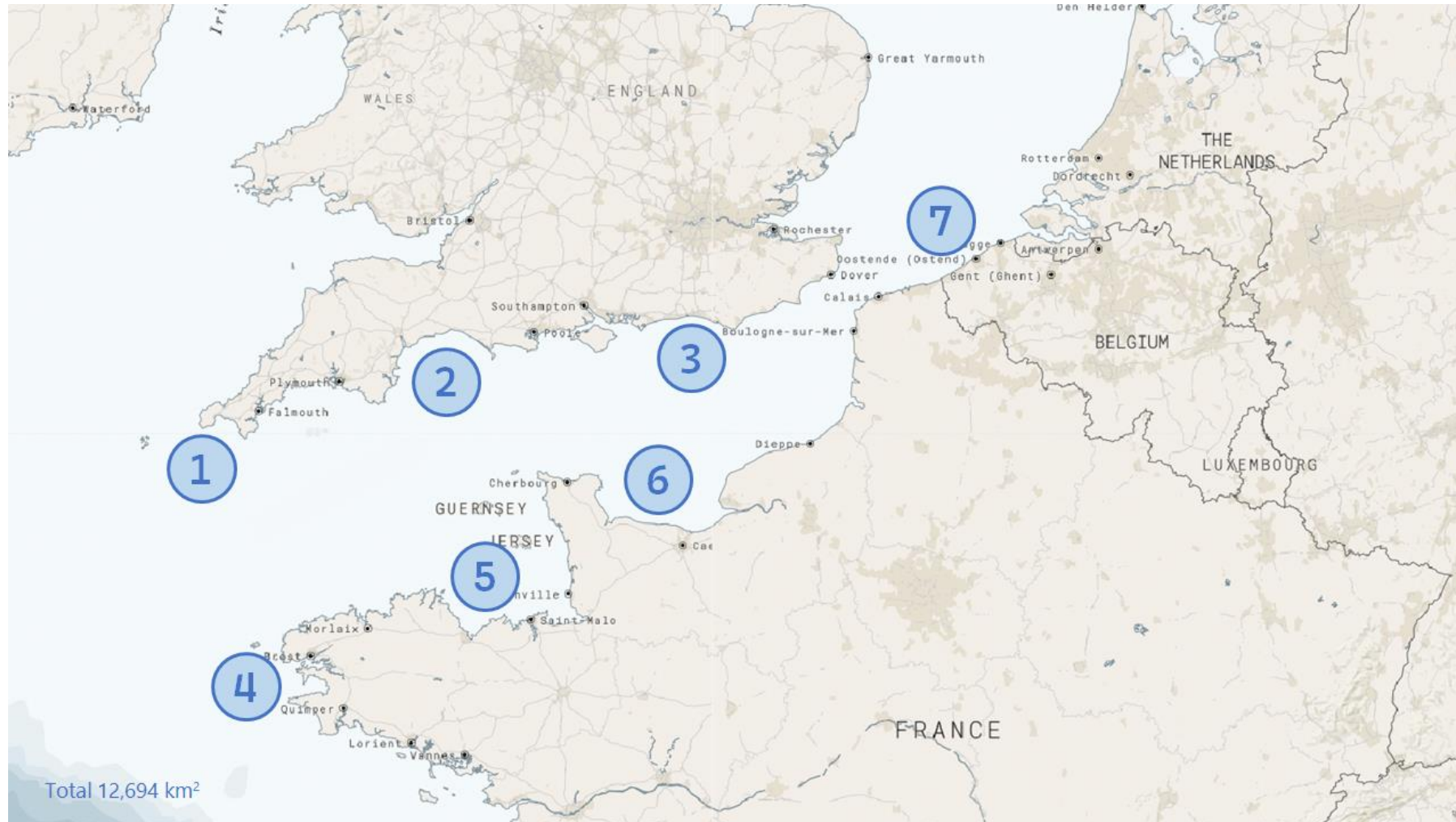


Sea bream

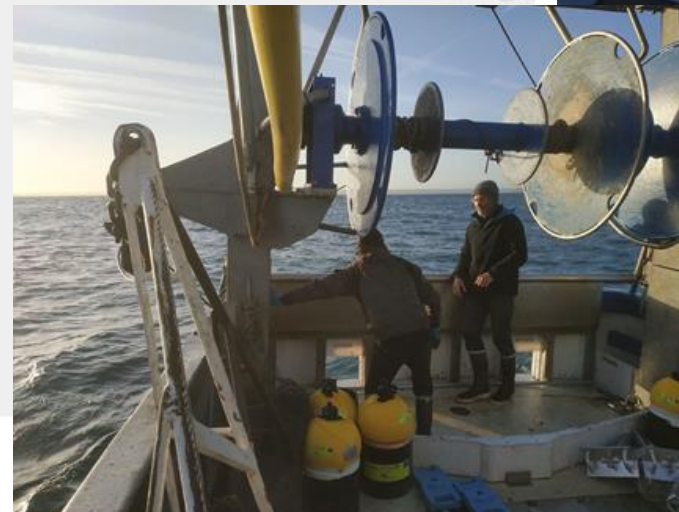
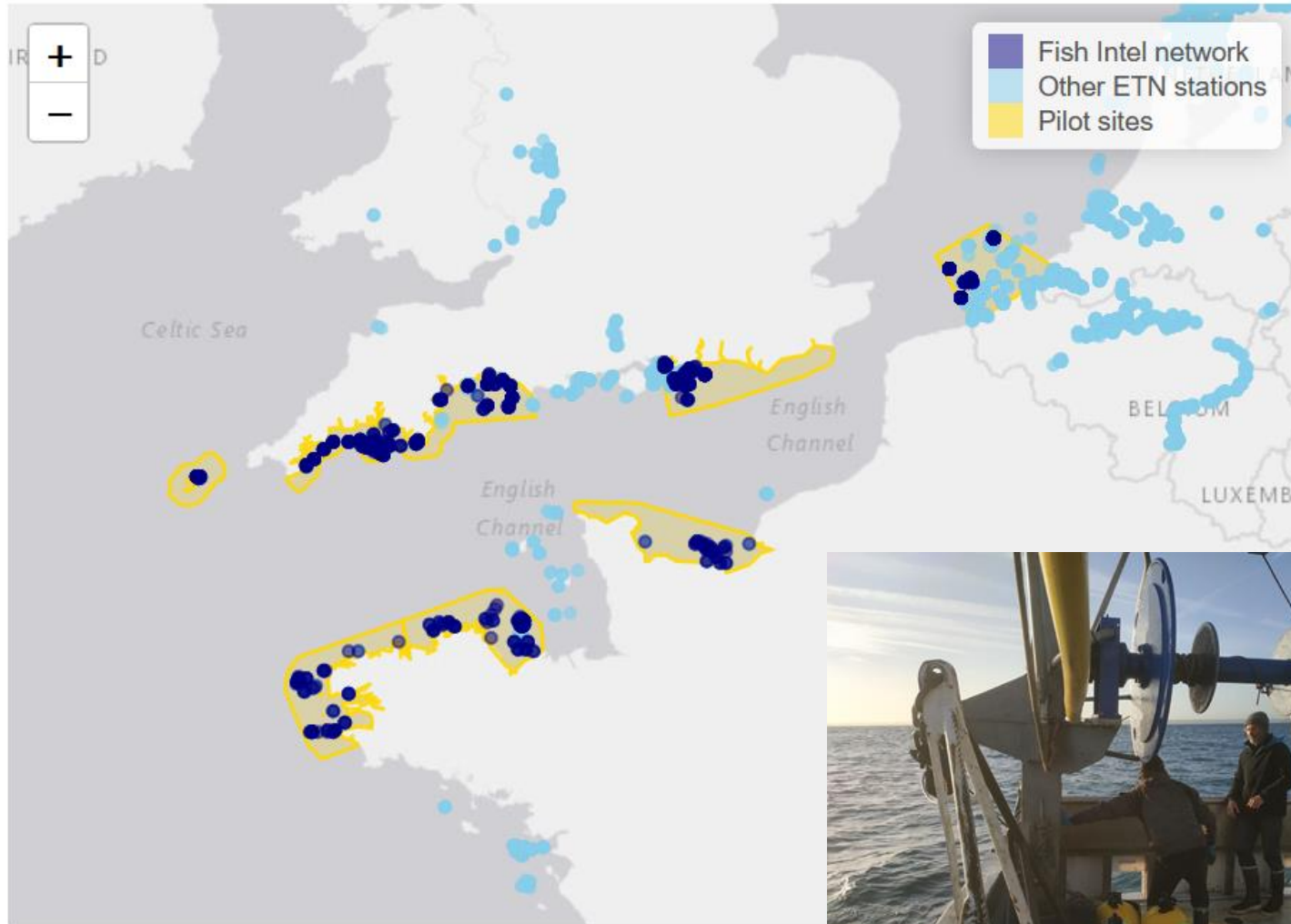


Important components of coastal ecosystems
Commercially important species

Where did we initiate our monitoring?



The network of acoustic receivers



- Consultation of fishermen with the support of the fisheries committees
- Definition of potential receiver positions
- Discussion of telemetry network maintenance operations and tagging surveys



Catching fish



Stalling and anesthesia



Implantation of tags



Releasing fish

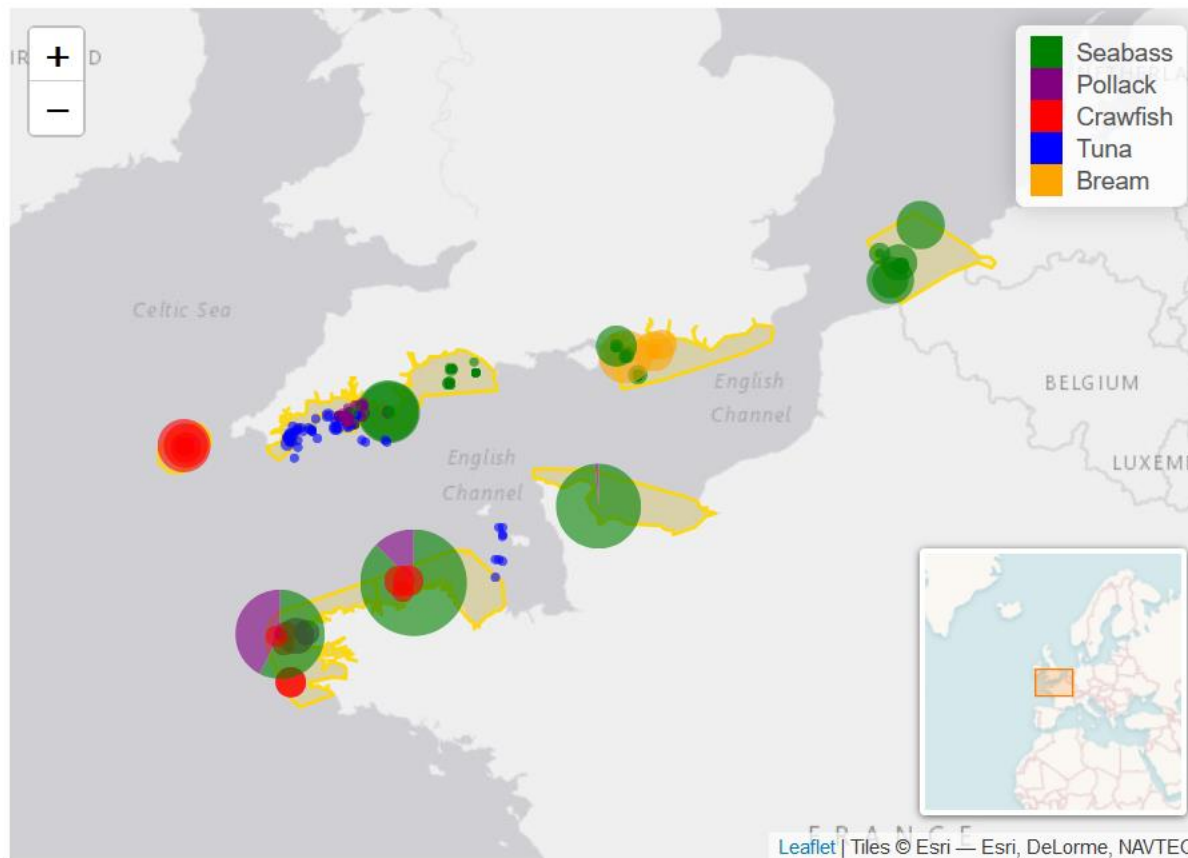
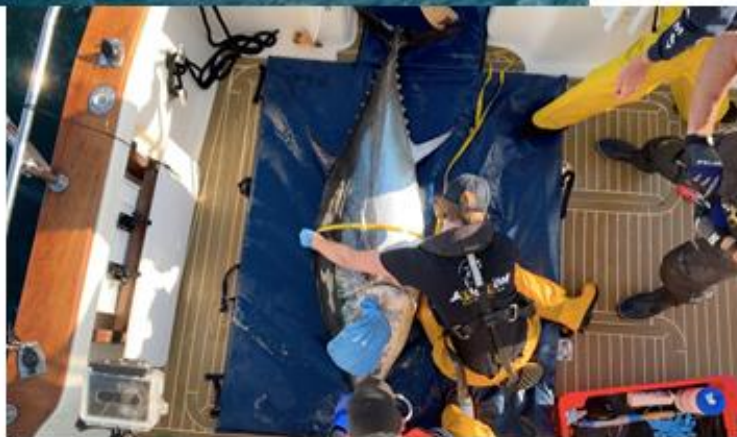


Waking up and housing

Spiny lobster tagging



FISH INTEL tagging summary



European sea bass = 524

Spiny lobster = 137

Pollack = 151

Sea bream = 64

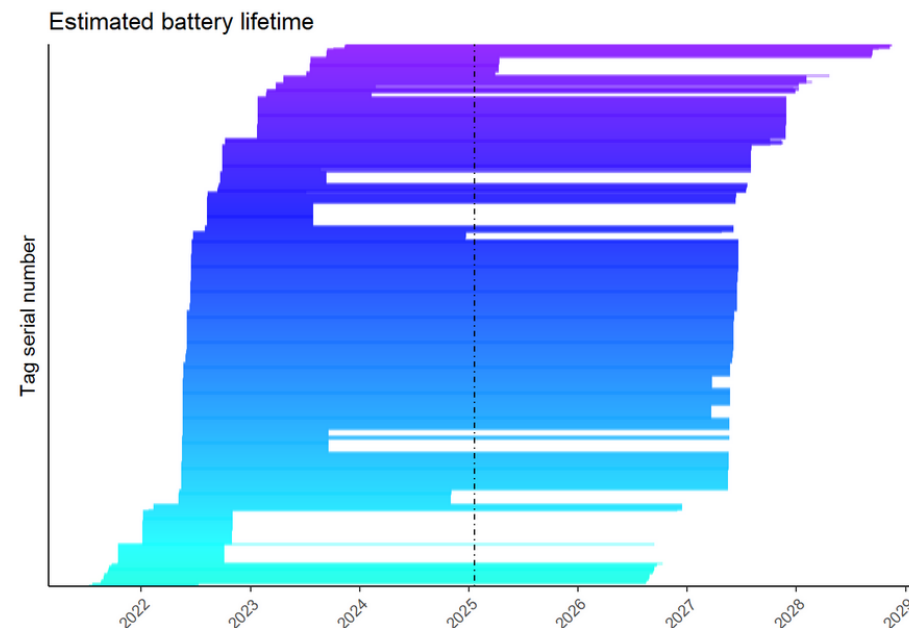
Bluefin tuna = 59

Summary of detections



Scientific name	Nb indiv tagged	Nb indiv detected	Nb detections
Dicentrarchus labrax	524	404	3911047
Palinurus elephas	137	123	2173950
Pollachius pollachius	151	93	518124
Spondyliosoma cantharus	64	58	146669
Thunnus thynnus	59	34	2113

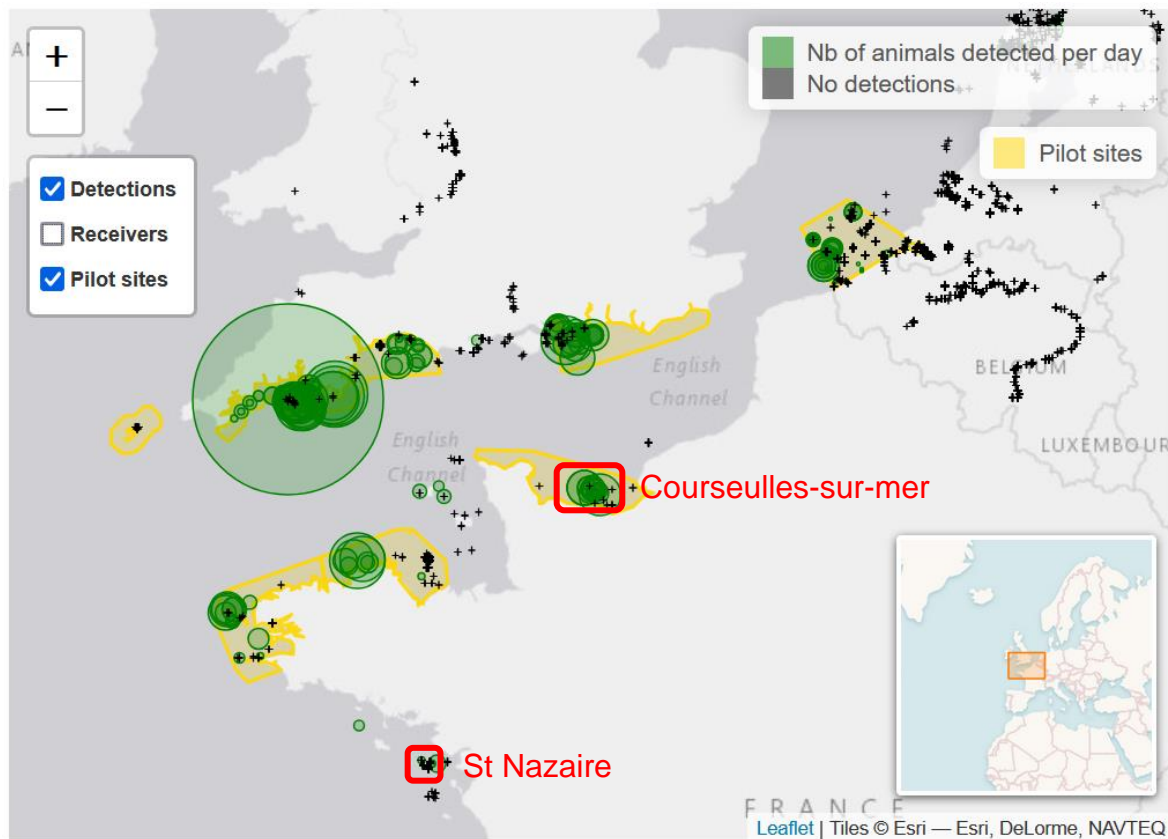
67% of the tagged animals were detected at least once by the network



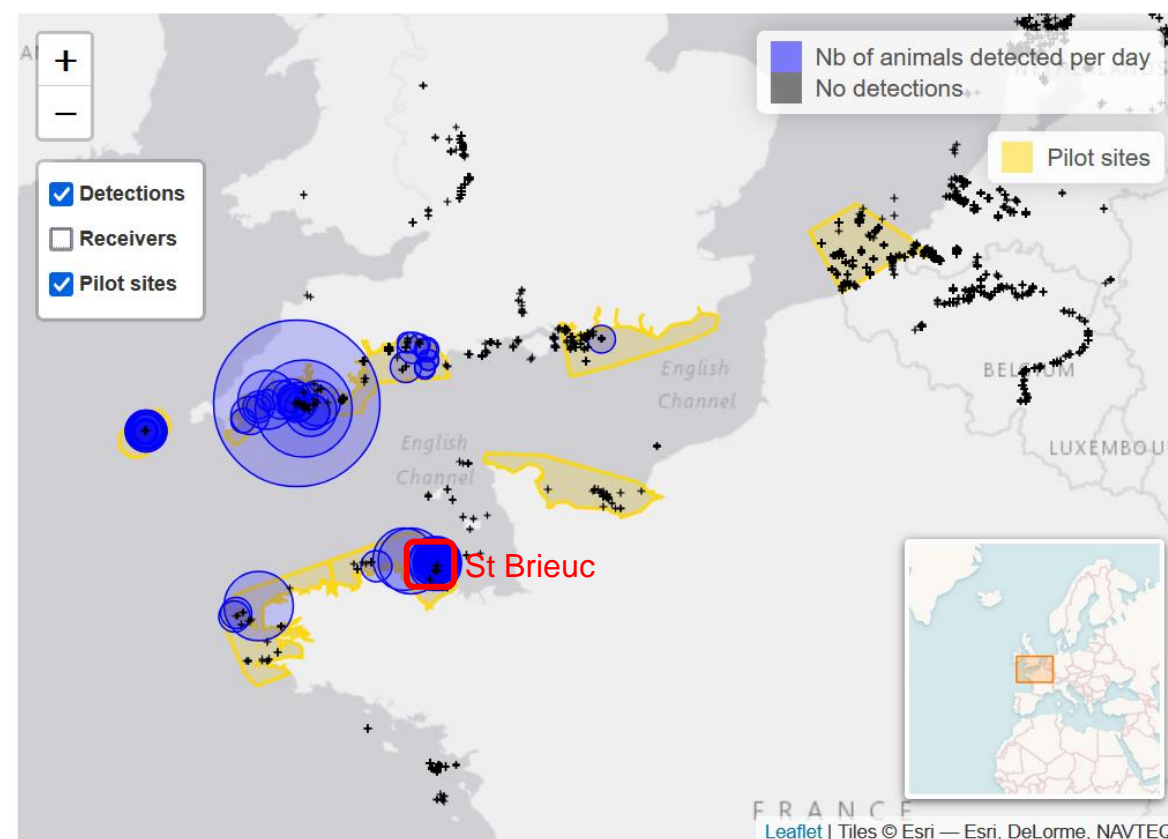
Presence in FISHOWF wind farms



Detections for...

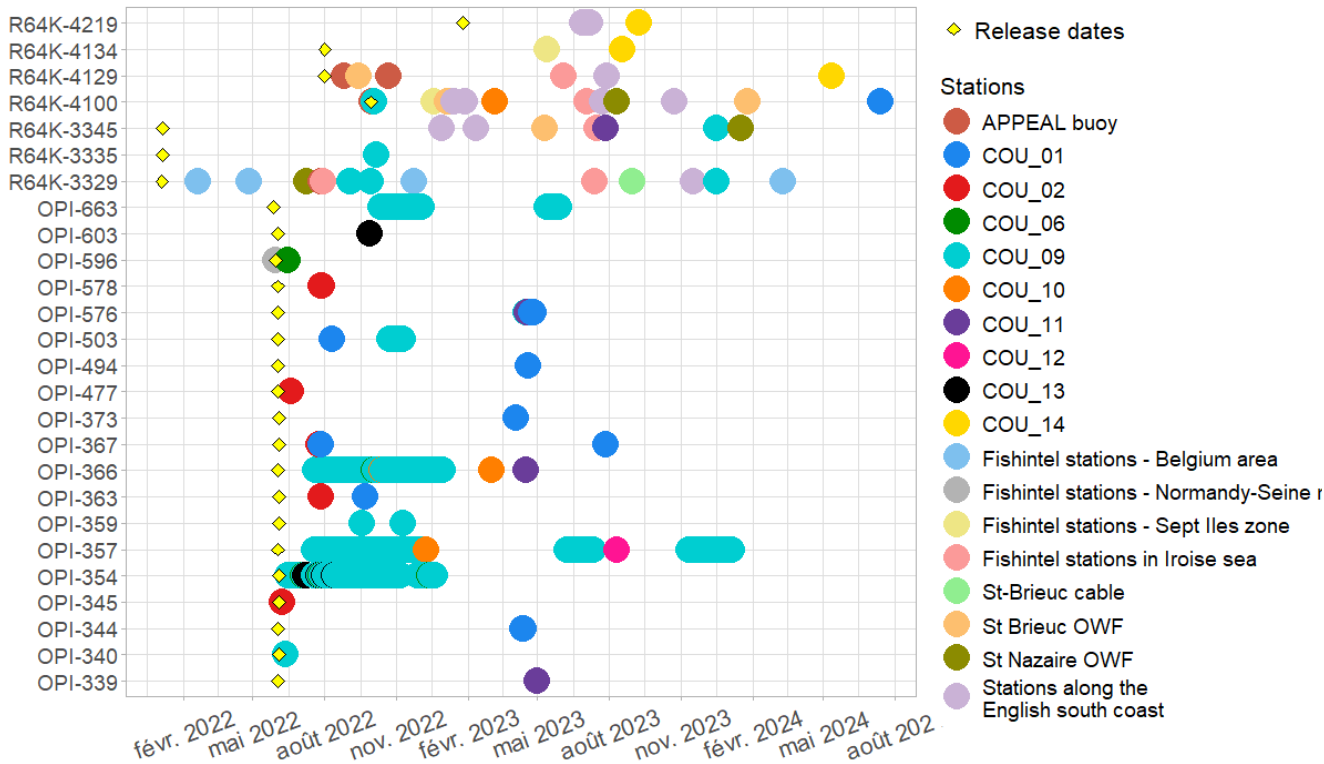


European sea bass



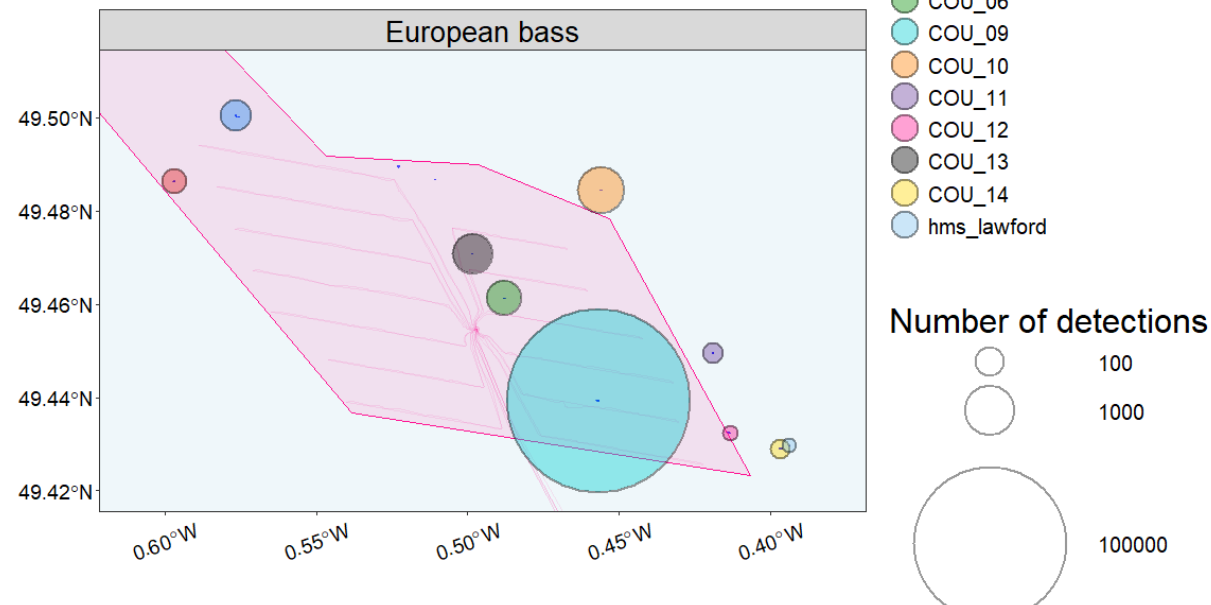
Bluefin tuna

Sea Bass in the future Courseulles-sur-mer wind farm

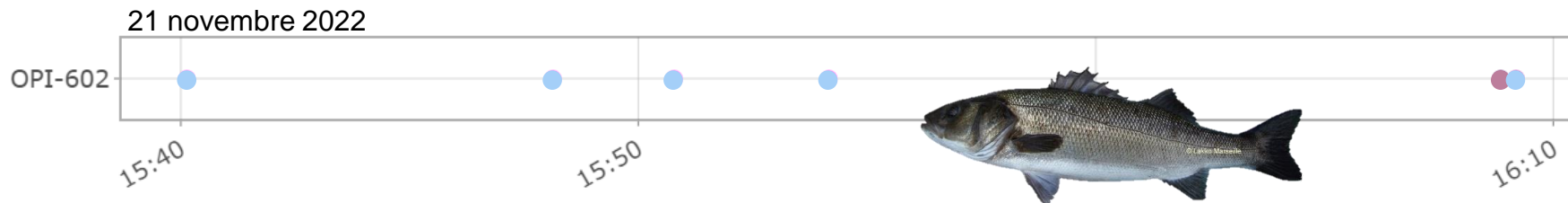


26 sea bass detected

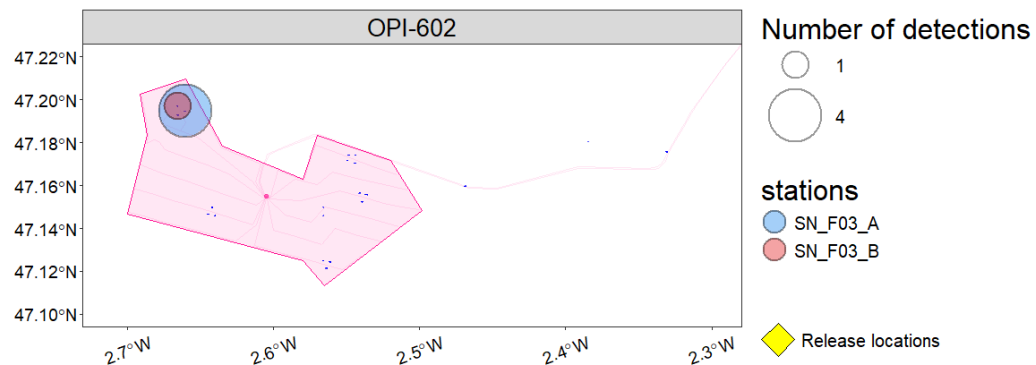
Fishintel seabass in Calvados OWF



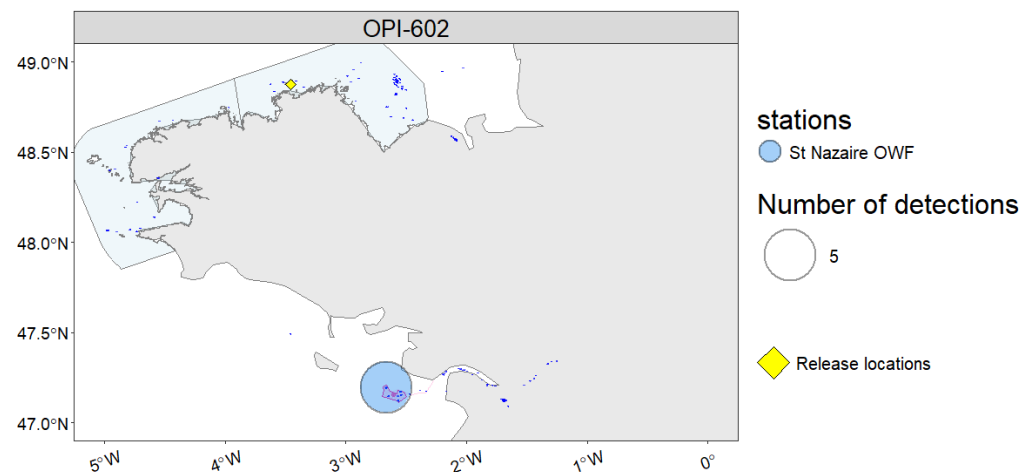
Detection in Saint Nazaire wind farm



Fishintel seabass detected in St-Nazaire OWF

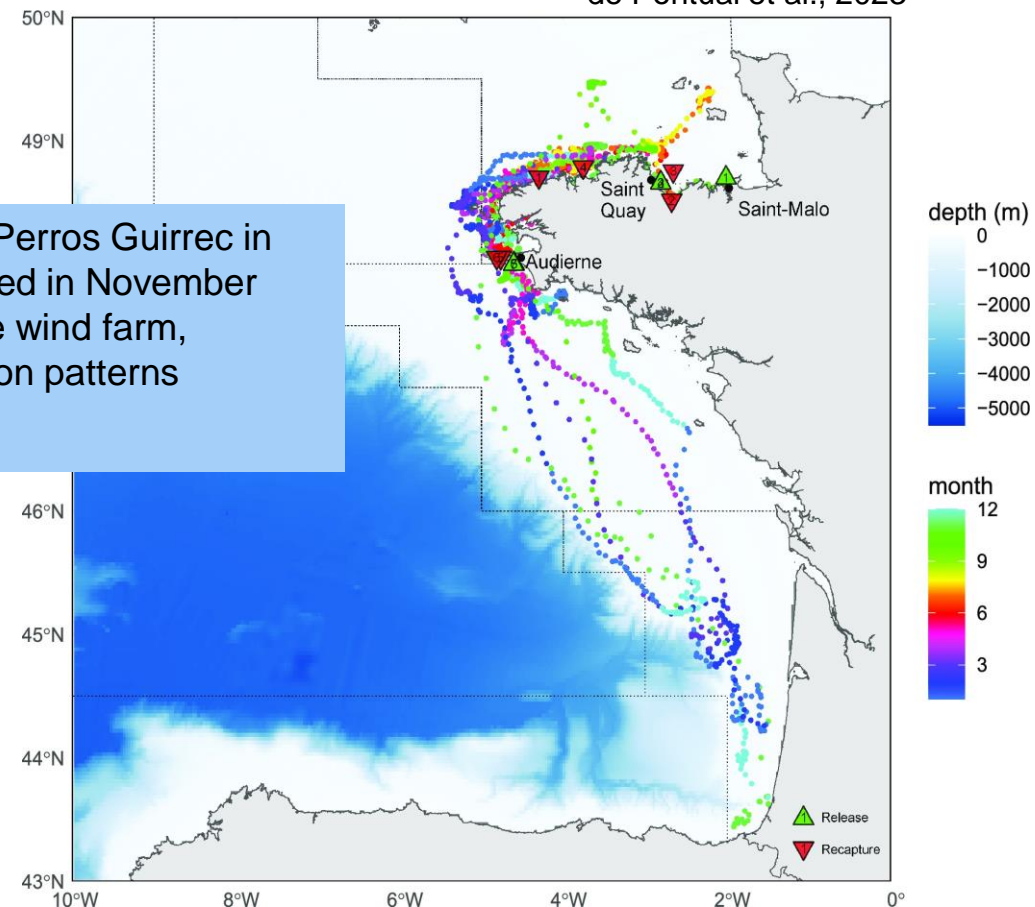


Fishintel seabass detected in St-Nazaire OWF

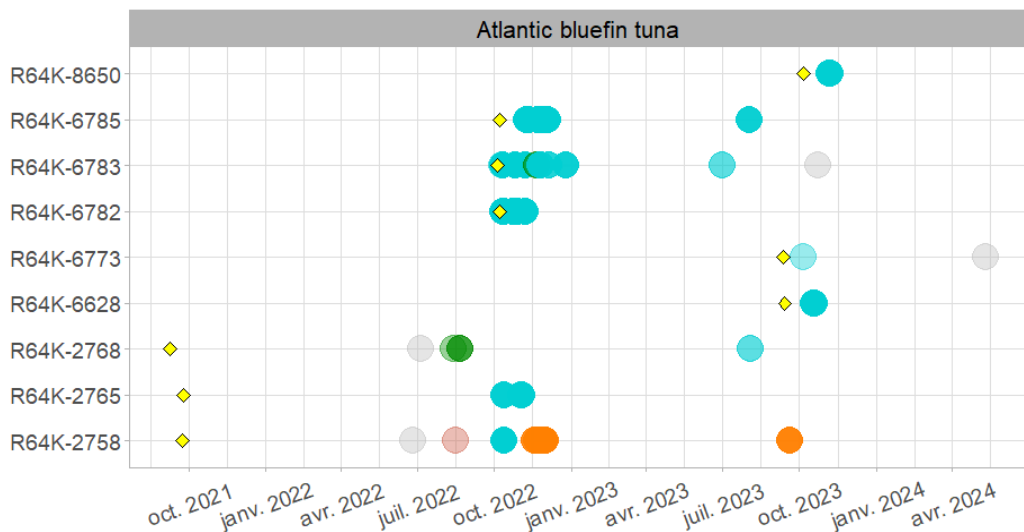


1 sea bass tagged in Perros Guirrec in June 2022 and detected in November 2022 in the St Nazaire wind farm, confirming the migration patterns obtained by modelling

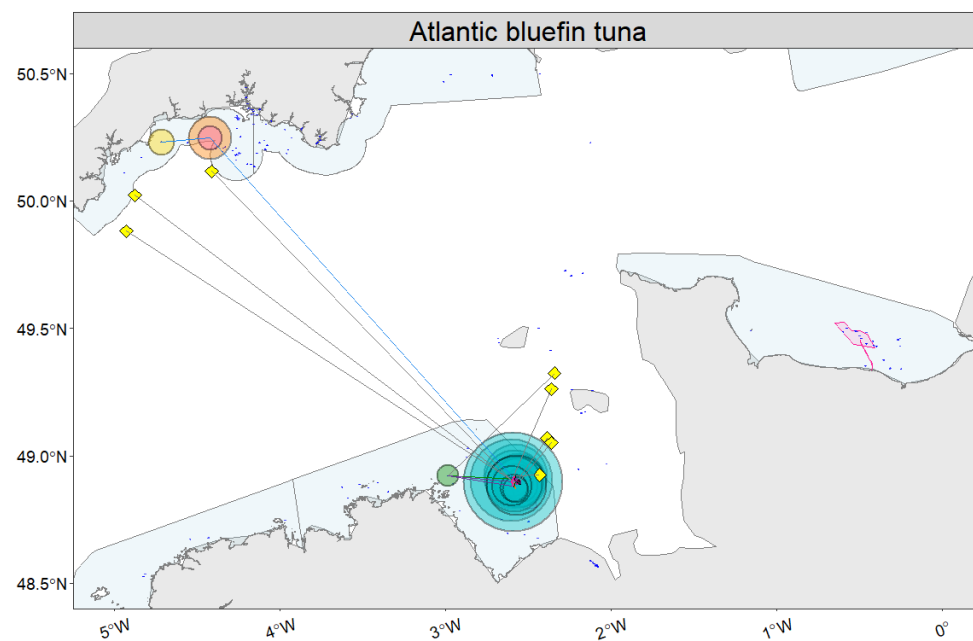
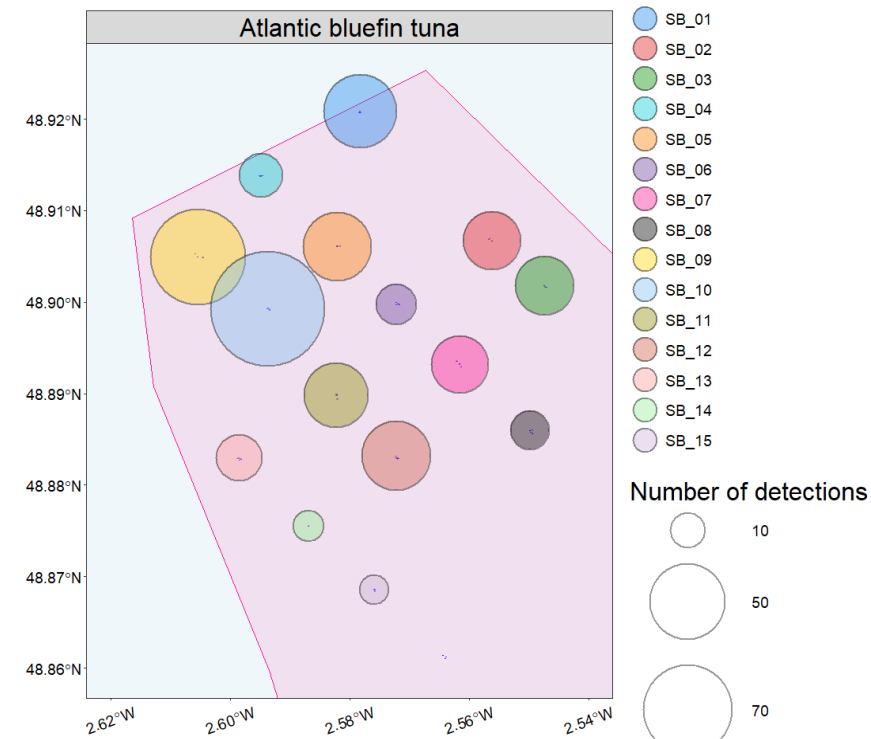
de Pontual et al., 2023



Bluefin tuna in the St Briec wind farm



- ◆ Release dates
- Stations**
 - Cies Island (Spain)
 - Fishintel stations - St-Brieuc bay
 - Fishintel stations in Iroise sea
 - St Briec OWF
 - Stations along the English south coast



- Number of detections**
 - 30
 - 60
 - 90
- roch_ar_bel
- Saint-Brieuc OWF
- UoE_Eddystone
- UoE_Falmouth
- UoE_Gwineas
- ◆ Release locations

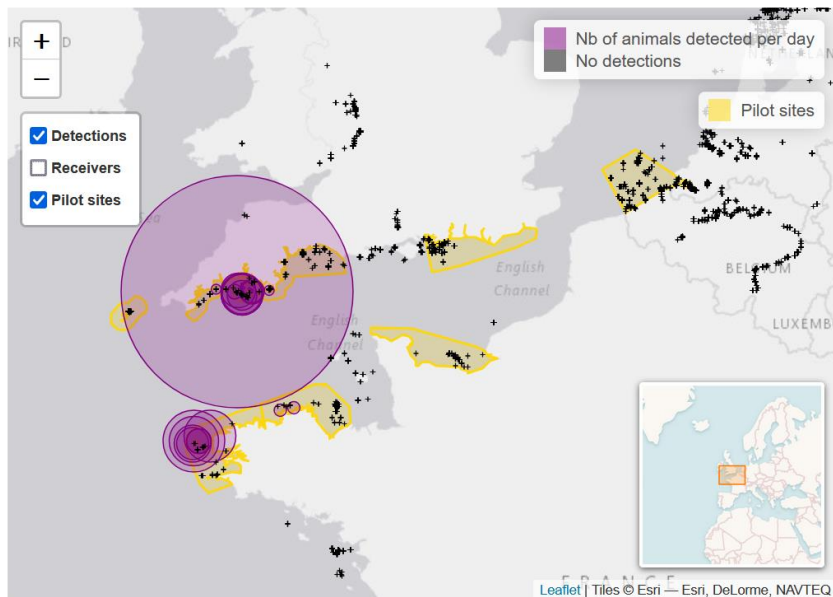


9 tuna detected

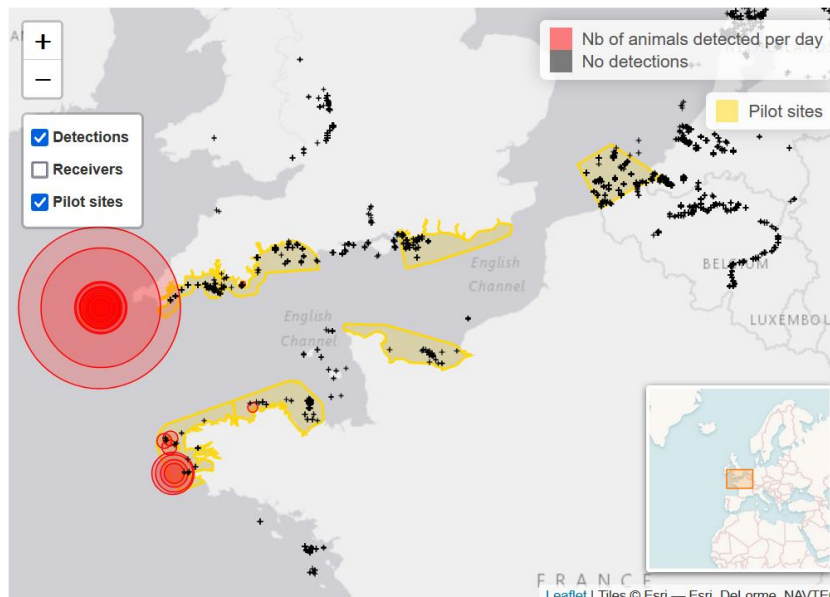
Presence in FISHOWF wind farms



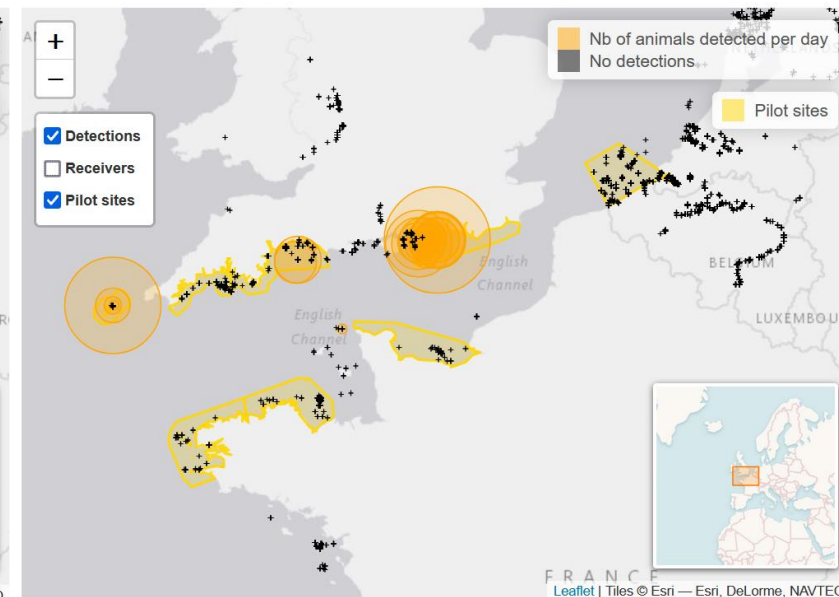
Absence of detections for...



Pollack

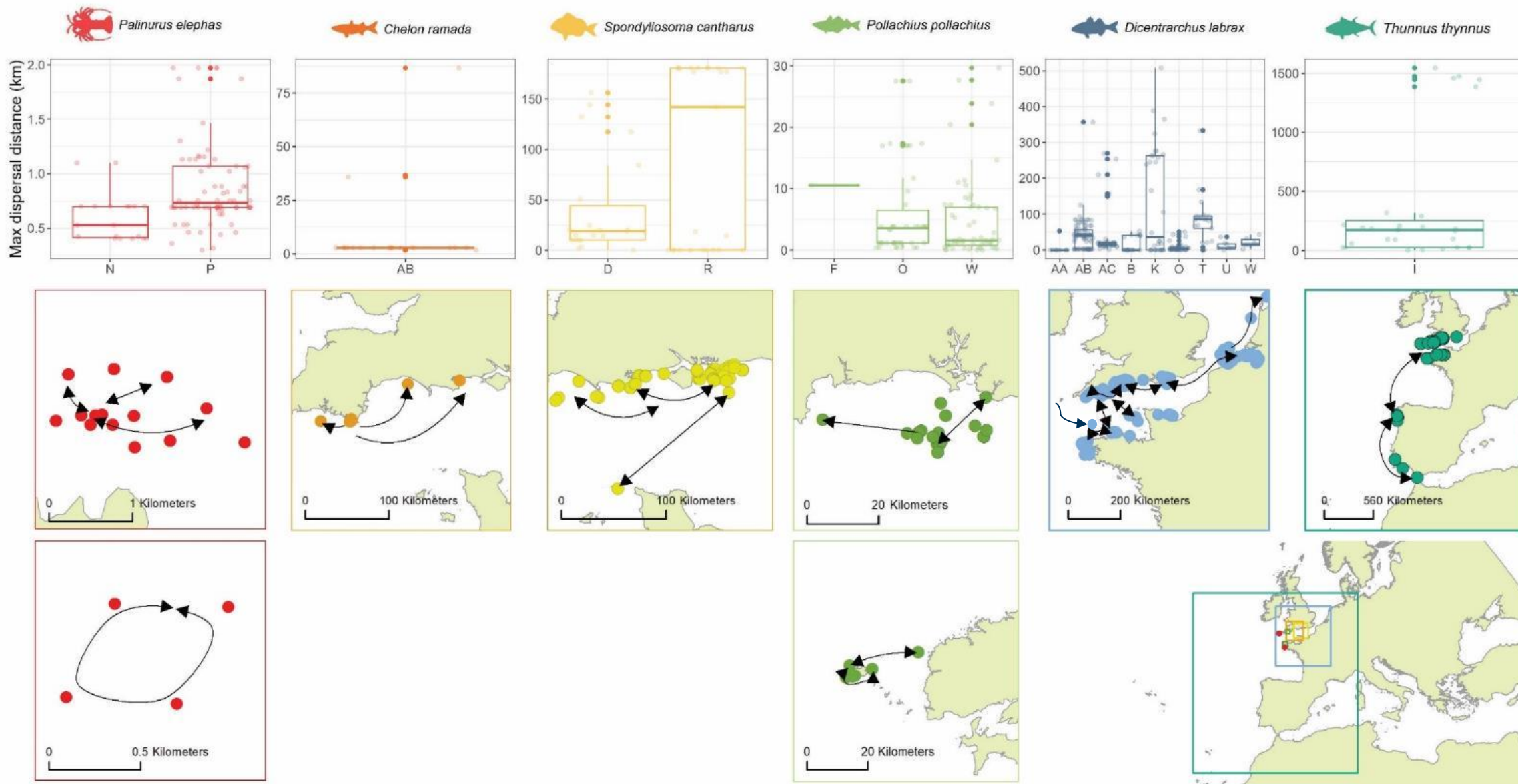


Spiny lobster



Sea bream

Regional movements of species tracked by FISH INTEL



- An **operational acoustic telemetry network** applicable to other species
- New insights into the **spatial ecology of fish**
- A new type of data for **ecosystem-based management** (feedback to stakeholders)
- In practice, it could contribute to the development of **marine spatial planning**
- Requires monitoring **over many years** to gain a good understanding of essential habitat and fish movements
- Essential knowledge to **protect these habitats** and **sustainably exploit fisheries resources**





We would like to thank the staff of Ifremer, the CDPMEM and the CRPMEM, fishermen and all stakeholders who assisted us in the tagging, network deployment and maintenance

