FISHOWF

Effective monitoring strategies to identify and evaluate effects of offshore wind farms and their export cables on fish communities (2021 - 2024)

NEWSLETTER #1

June 2023

A word from the project coordinator...

« By monitoring over the long term species with different movement behaviours (sedentary, mobile, migratory) and varying degrees of sensitivity to electromagnetic fields, we will be better able to assess the effects of offshore wind farms on fish and crustacean populations. »

Lydie Couturier | Researcher at France Energies Marines

In short

With the development of offshore wind energy, thorough monitoring of fish and crustacean communities is essential to detect and quantify the potential impacts of wind farms. Cutting-edge indirect approaches, such as passive acoustic telemetry combined with a robust sampling design, offer alternatives to traditional monitoring methods for offshore renewable energy projects.

1 project, 3 questions

1.

Is acoustic telemetry an appropriate tool for monitoring the behaviour of fish and crustaceans within offshore wind farms and for detecting potential impacts?

2.

How do species of high conservation and/or commercial value use offshore wind farms and their export cables?

3.

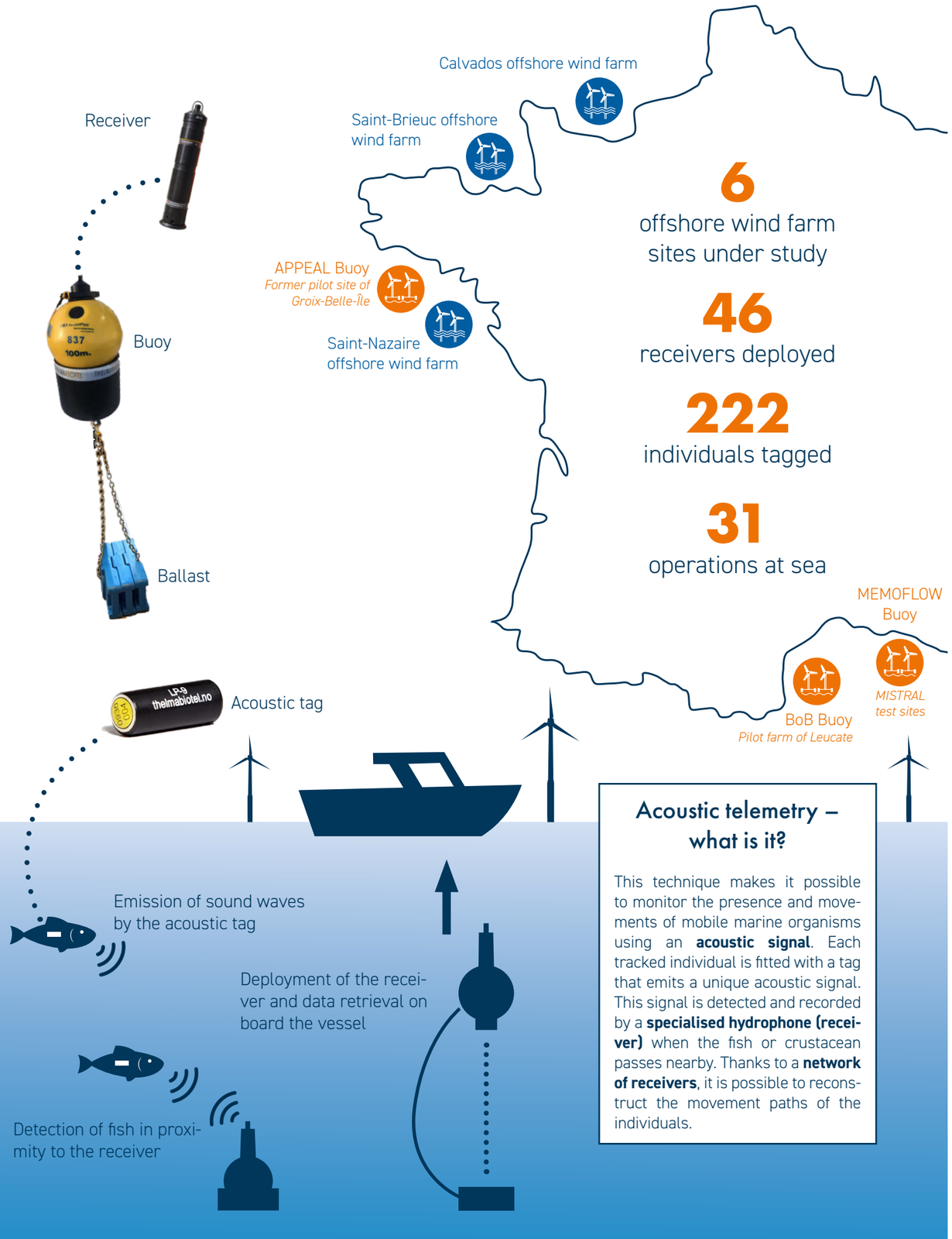
What is the degree of connectivity between offshore wind farms and other marine habitats for these species over the years?

Partenaires

This project receives funding from the French government, managed by the National Research Agency (ANR), as part of the France 2030 investment plan.

With financial support from Université de Bretagne Occidentale, régions SUD Provence-Alpes-Côte d'Azur and Brittany regions .

Overview



6
offshore wind farm sites under study

46
receivers deployed

222
individuals tagged

31
operations at sea

Acoustic telemetry – what is it?

This technique makes it possible to monitor the presence and movements of mobile marine organisms using an **acoustic signal**. Each tracked individual is fitted with a tag that emits a unique acoustic signal. This signal is detected and recorded by a **specialised hydrophone (receiver)** when the fish or crustacean passes nearby. Thanks to a **network of receivers**, it is possible to reconstruct the movement paths of the individuals.

News

Tracking fish in offshore wind farms

Since spring 2022, and in collaboration with the FISH INTEL project, more than 40 acoustic telemetry receivers have been deployed within offshore wind farms and their export cables off the coasts of Saint-Brieuc, Courseulles-sur-Mer, and Saint-Nazaire. This marks the first time in France that an **operational acoustic telemetry network** of this scale has been implemented in open coastal waters and in areas dedicated to offshore renewable energy.

Partners / Local players involved: Ailes Marines (Saint-Brieuc offshore wind farm), EDF Renewables (Calvados and Saint-Nazaire offshore wind farms), RTE, and Fisheries Committees of Côtes d'Armor, Normandy, and Pays de la Loire

Tagging Campaigns for Fish and Crustaceans in the Channel and Atlantic

185 individuals have been tagged in the Channel and Atlantic since the deployment of acoustic telemetry receivers in the offshore wind farms of Saint-Brieuc, Courseulles-sur-Mer, and Saint-Nazaire in spring 2022. These include **small-spotted catsharks, thornback rays, nursehounds, starry smooth-hounds, porbeagle sharks, and lobsters**. Each fish or crustacean is fitted with a tag that emits a unique acoustic signal, which is picked up by the receivers.Notably, around a hundred individuals were tagged in autumn 2022 off the coasts of Normandy and Brittany during the CGFS campaign aboard the oceanographic vessel Thalassa. Including sea bass, pollack, and red spiny lobsters tagged along the French coast as part of the Interreg FISH INTEL project, over 450 fish and several dozen crustaceans are now being tracked. These data are essential for better assessing the effects of wind farms and the role of certain habitats in the spatial dynamics of these species.

Partners / Local players involved: Ifremer, APECS, MNHN, Fisheries Committees of Côtes d'Armor, Normandy, and Pays de la Loire, professional fishers

Monitoring in the Mediterranean

In the Mediterranean, floating wind farms are currently in the planning stages. To better understand how floating structures influence the behaviour of fish species that move between the surface and the seabed, two marine environmental monitoring buoys have been equipped with acoustic telemetry receivers. One is located off the coast of Leucate, and the other at the MISTRAL test site off Port-Saint-Louis-du-Rhône. In conjunction with the CONNECT-MED and RES-MED telemetry networks deployed along the Gulf of Lion, these buoys aim to track the movements of highly mobile fish species such as the European seabass (locally known as loup) and the blue shark. **To date, 24 seabass, 7 blue sharks, 4 starry skates, and 3 hakes have been tagged.**

Partners / Local players involved: Ifremer, Université de Perpignan, Ecocean, Association Ailerons, Fédération nationale de la plaisance et des pêches en mer (pêcheurs de loisirs), pêcheurs professionnels

In pictures

Tagging fish and crustaceans is no easy task! A qualified team and official authorisations are required to carry out this work. The fish are first caught, anaesthetised and then fitted with an acoustic tag before being released.

Two flyers were produced to inform fishers and the general public about the equipment deployed.

Agenda

International Conference on Fish Telemetry (ICFT)
- 11 - 16 June 2023
- Sète (France)

Conference on Wind Energy and Wildlife (CWW)
- 18 - 23 September 2023
- Šibenik (Croatia)

COAST CAEN 2023
- 24 - 27 October 2023
- Caen (France)

In the news

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STRICT REGULATIONS

All France Energies Marines projects involving animal handling comply with a very strict regulatory framework. They have been approved by an ethics committee and have obtained authorisation from the French Ministry of Research, which must be renewed every five years. All staff involved in these operations have attended and passed specific training courses on animal experimentation. In addition, the Institute has developed collaborations with approved partners to ensure the monitoring of protocols and their adjustment to any new practices, as well as ongoing staff training.