Webinar - Monitoring fish in a context of offshore wind farm development

04/04/2025

With the financial support of:

Speakers

Lydie Couturier – *France Energies Marines*

Mathieu Woillez – *Ifremer*

Jan Reubens – VLIZ

Laura Iborra & Umberto Binetti – RWE

Agenda

Duration: 1h

~45 min of presentation and 15 min of questions

1. Acoustic telemetry studies within OWF in FISHOWF
   France Energies Marines
2. Integration of acoustic monitoring of OWF in regional scale infrastructure
   Ifremer
3. Environmental aluminium concentrations from in-situ measures and modelling
   France Energies Marines
4. Point of view and interest from an EU OWF developer
   RWE
5. Conclusion
   France Energies Marines
6. Q&A

"Q&R" or "Q&A" to ask questions that will be addressed during Q&A session

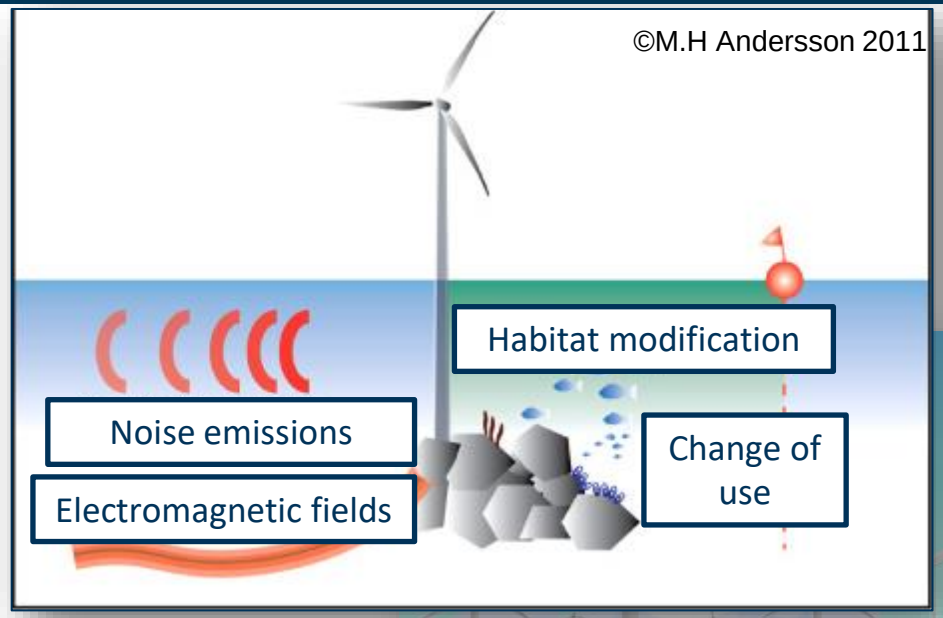
OWF = offshore wind farm

Acoustic telemetry studies within OWF in FISHOWF

Lydie Couturier, France Energies Marines

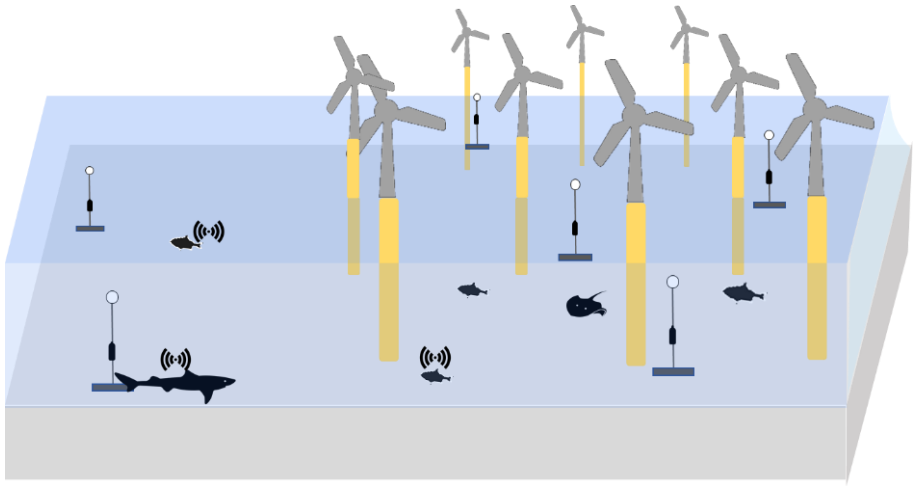
OWF = offshore wind farm

Addressing environmental stakes of offshore windfarm (OWF) development: What about fish communities?



Detecting and evaluating effects of OWF on fish requires improved ecological knowledge

- Limitations of reglementary fishing survey
- Need for adapted methods to monitor habitat use and movements of fish
- Integration of OWF into large-scale monitoring



OWF = offshore wind farm

FISHOWF

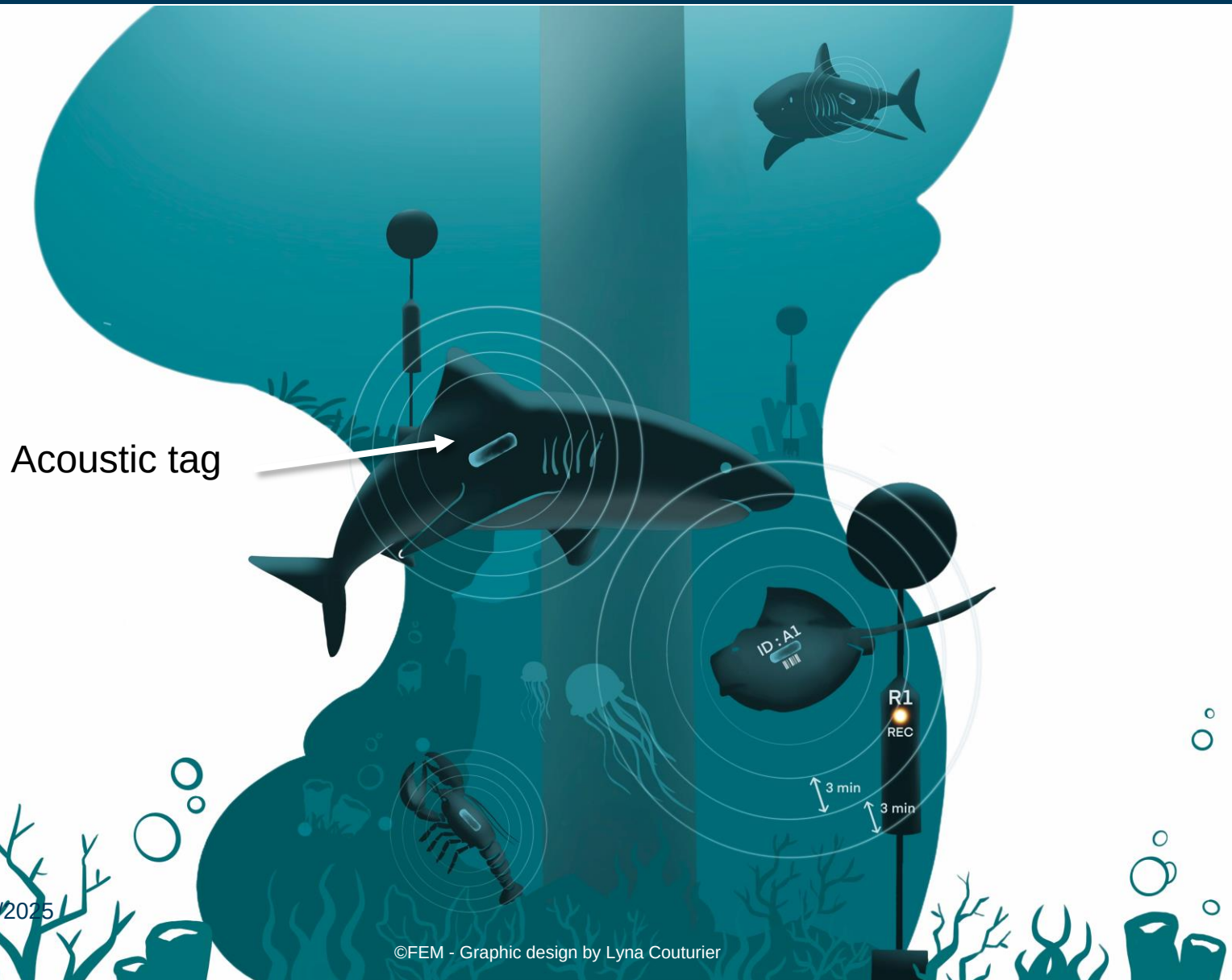
2021-2024

Effective monitoring strategies to identify and evaluate effects of offshore wind farms and their export cable on fish and large crustaceans

➢Multiscale monitoring applied to OWF
➢Electro-sensitive species with different mobility strategies

Acoustic telemetry

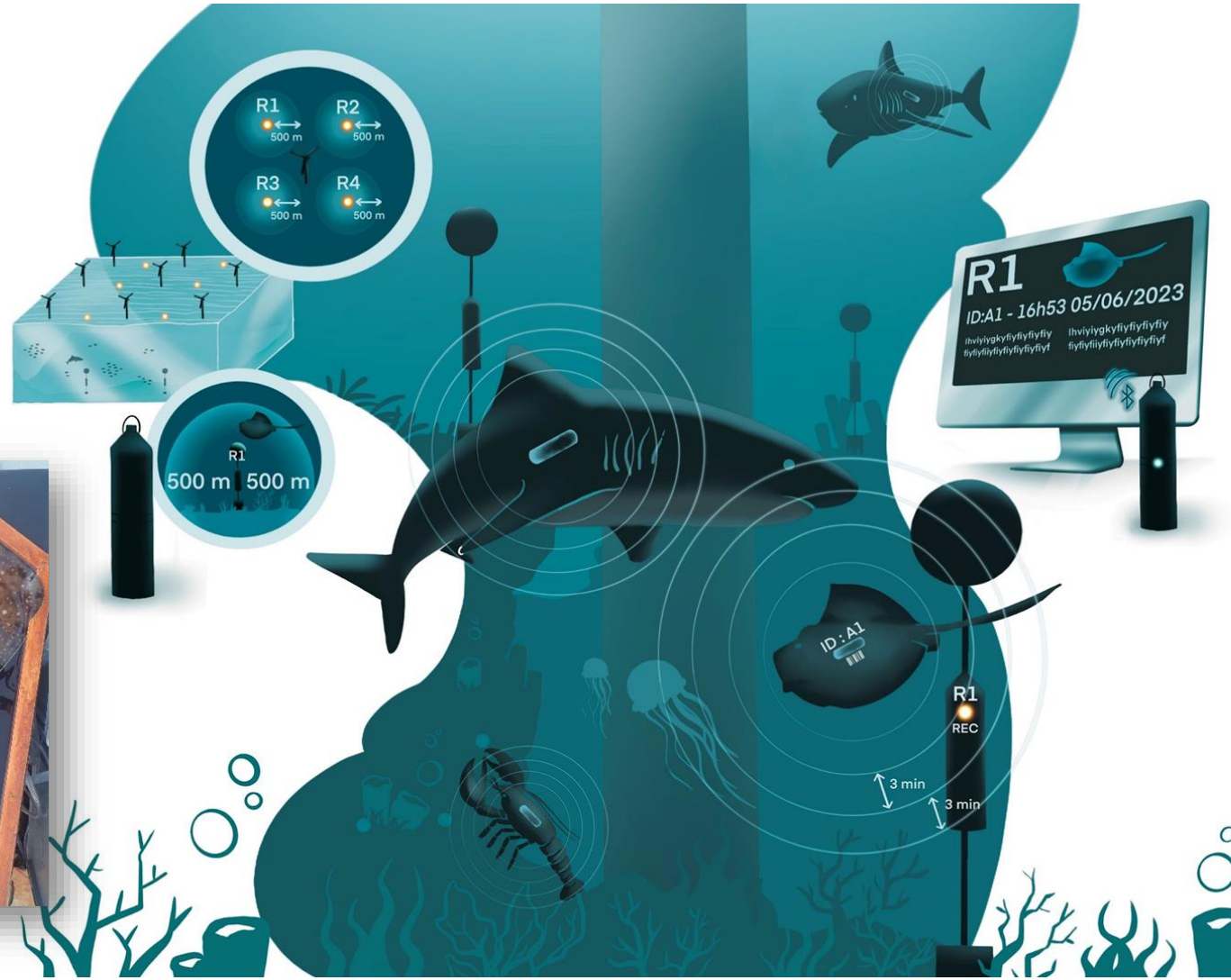
Acoustic telemetry



Acoustic telemetry

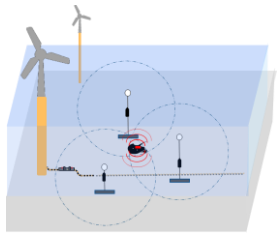
Acoustic telemetry

Acoustic telemetry



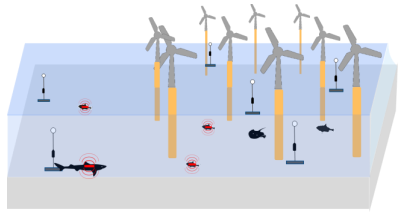
Implementation of acoustic telemetry monitoring within FISHOWF

Multi-scale approach



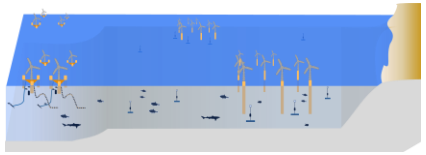
FINE SCALE

3D movements of fish around OWF structures



LOCAL SCALE

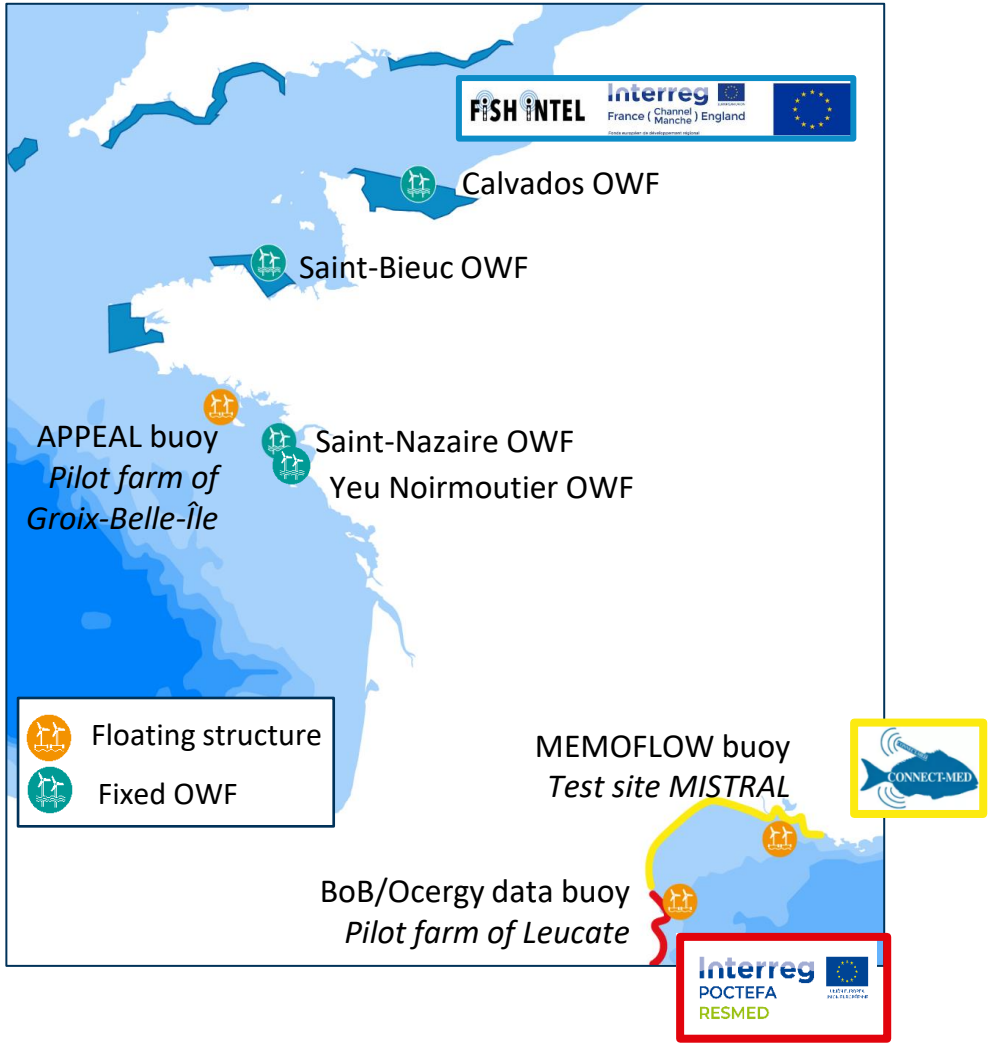
Occupancy patterns of fish within OWF



REGIONAL SCALE

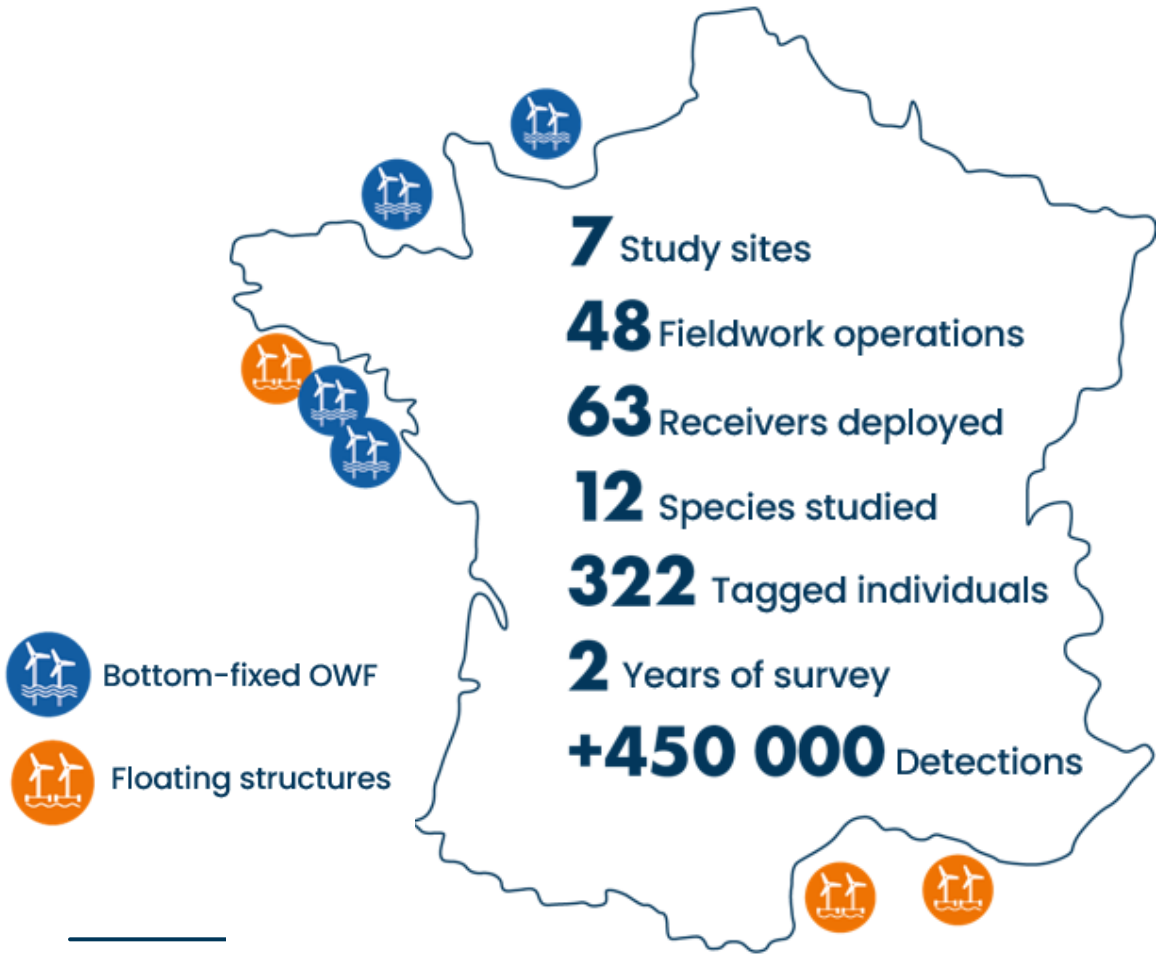
Fish movements and habitat connectivity across OWF sites

Study sites



FISHOWF acoustic telemetry monitoring - in brief

Project extent



Targeted species

Sharks

Rays

Fish

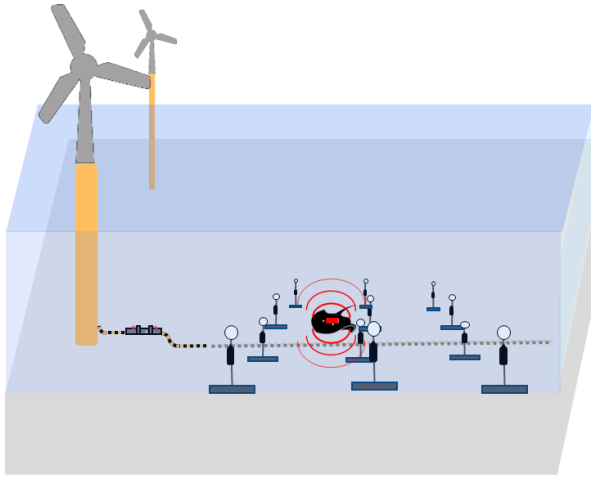
Crustacean

FINE SCALE

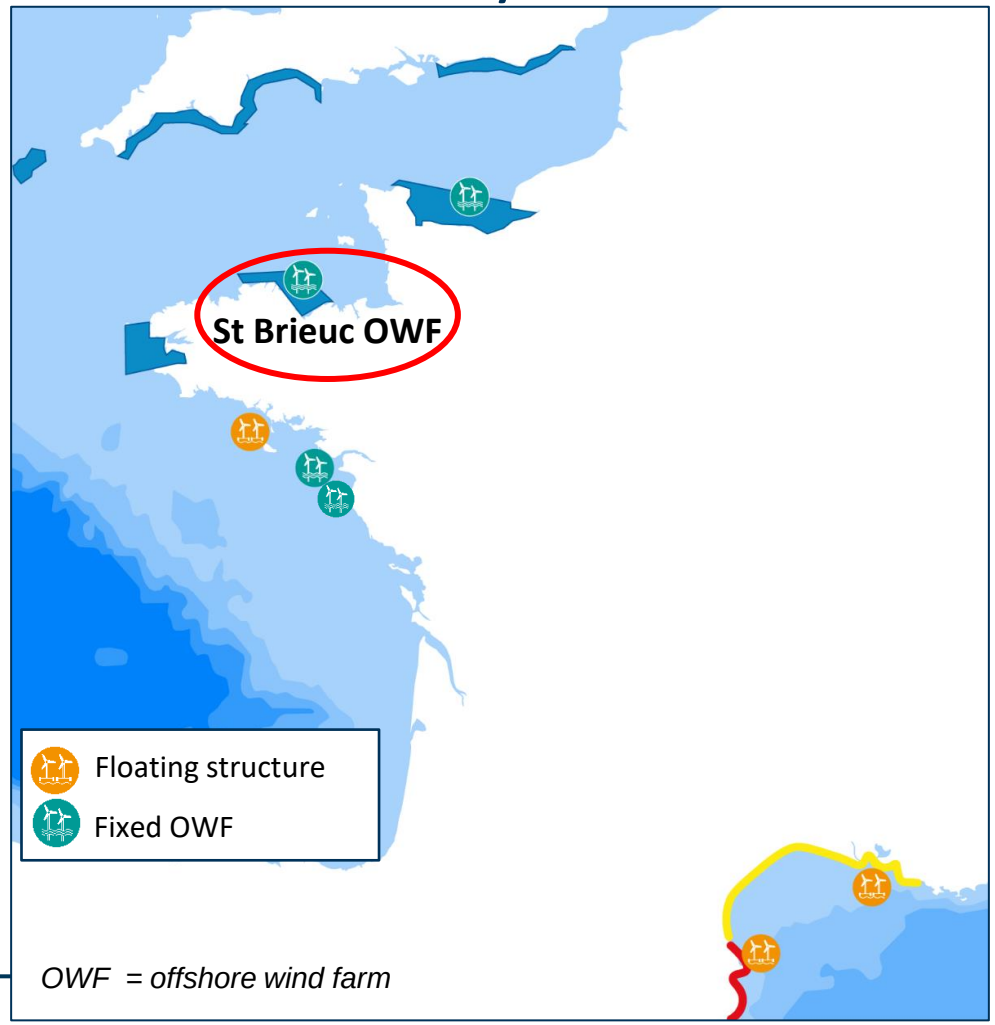
3D movements around an OWF export power cables

Method

Multilateral acoustic telemetry (0,25km² HD area)
Acoustic tags with pressure sensor, ~30 ” ping interval



Study site



OWF = offshore wind farm

Target species

Channel/Atlantic area

Sedentary/territorial electrosensitive sp.

2 elasmobranchs species

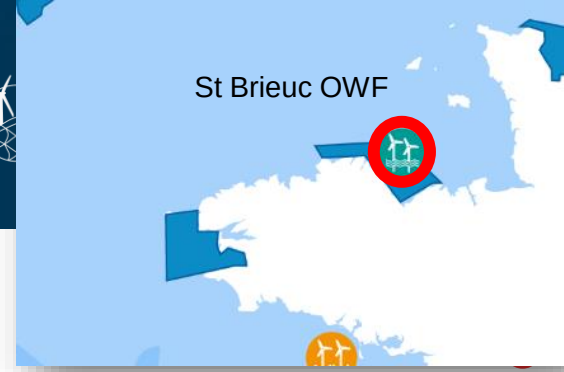
- *Small spotted dogfish*

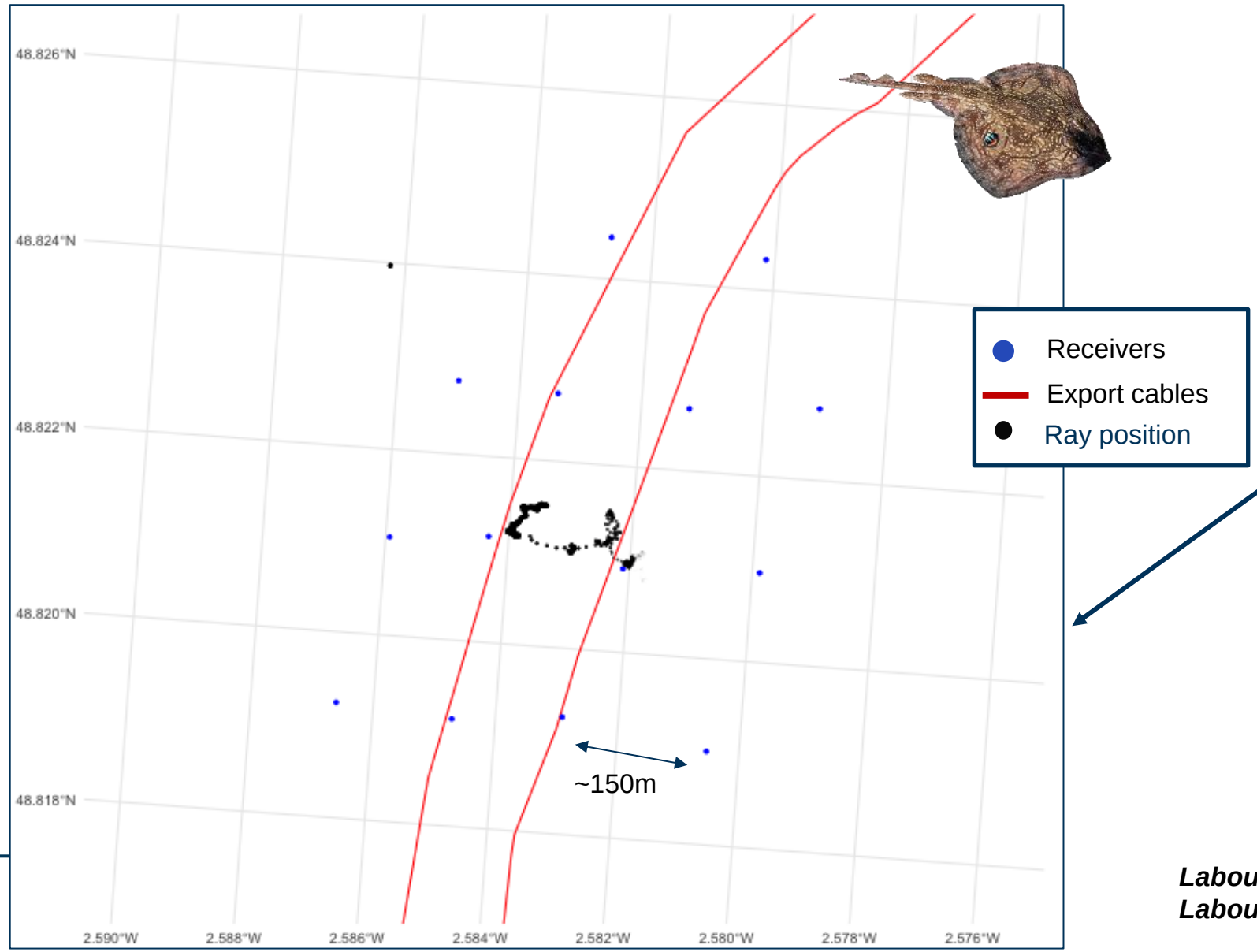
- *Undulate ray*

40 tagged indiv

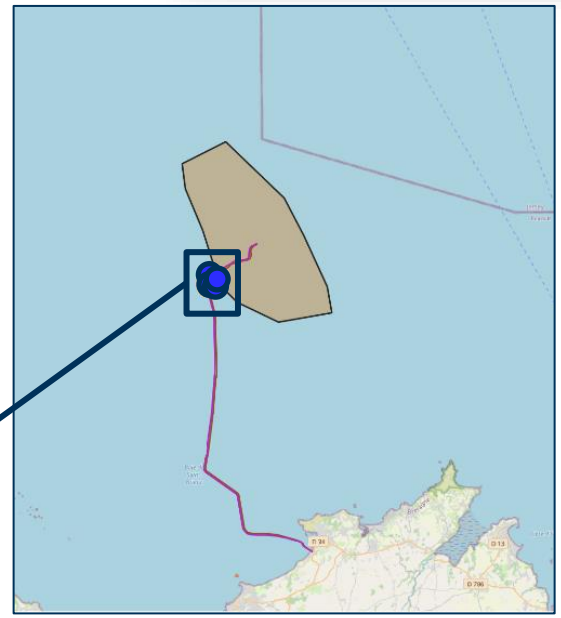
FINE SCALE

3D movements around an OWF export power cable





Receivers
Export cables
Ray position

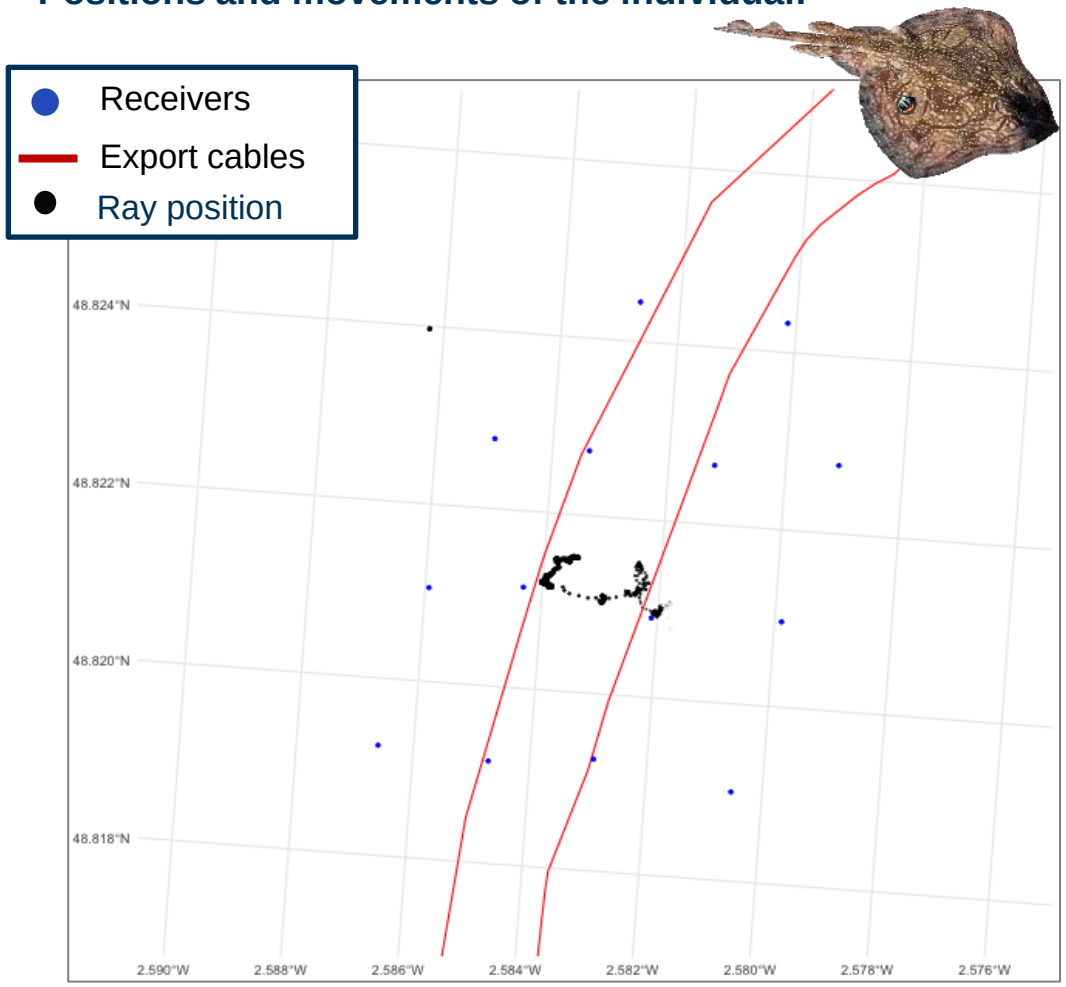


Labourgade, (2025) PhD Thesis
Labourgade et al. in prep

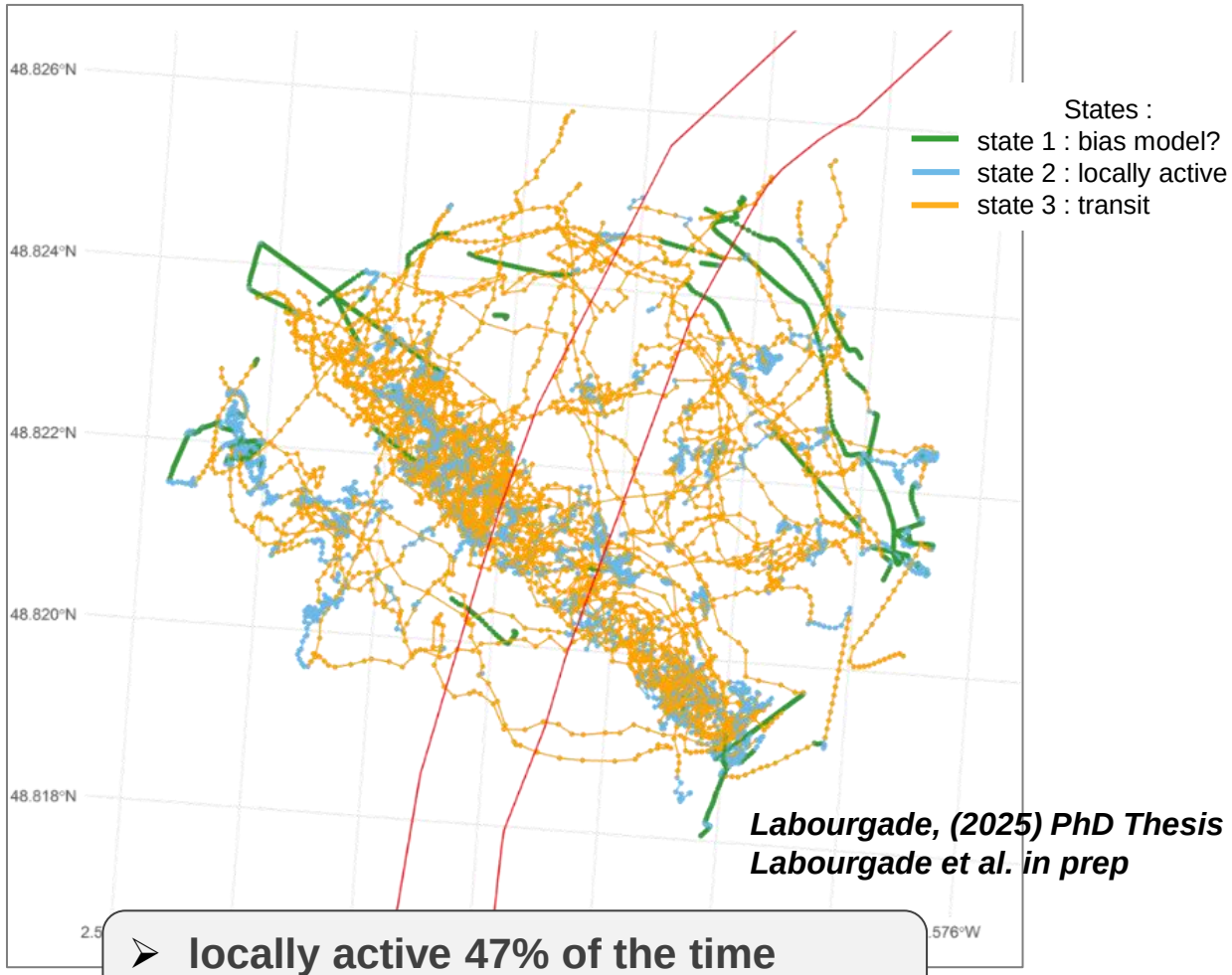
FINE SCALE

3D movements around an OWF export power cables

Positions and movements of the individual:



Characterisation of the individual's behavior using modelling:



Labourgade, (2025) PhD Thesis
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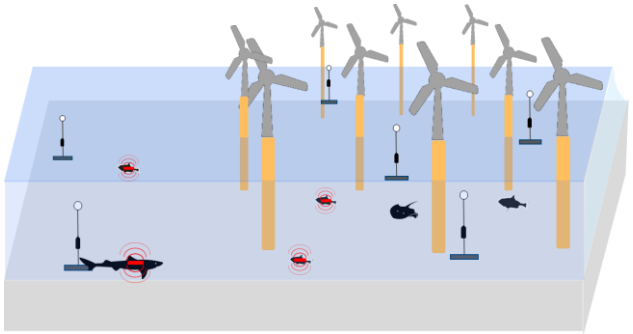
➢ **locally active 47% of the time detected in the study area**

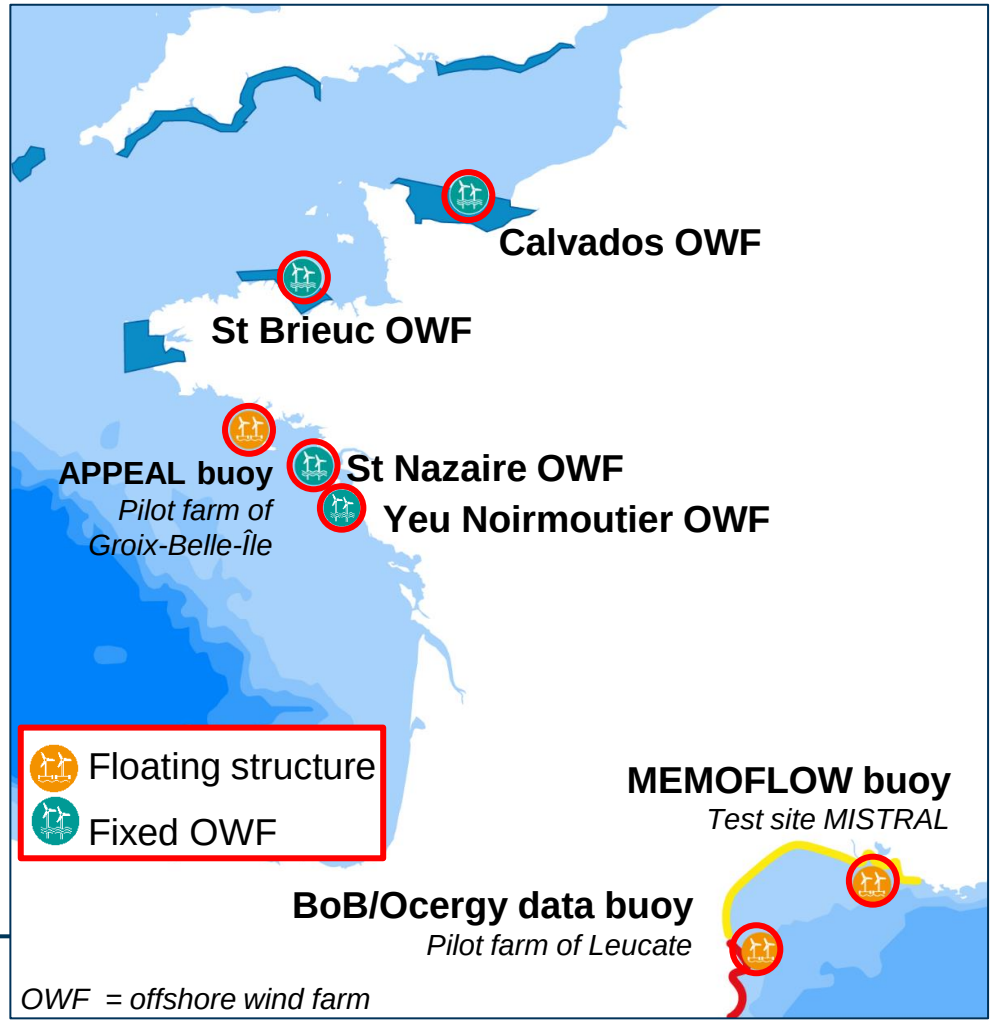
LOCAL SCALE
Occupancy patterns and movements of fish within OWF

Method

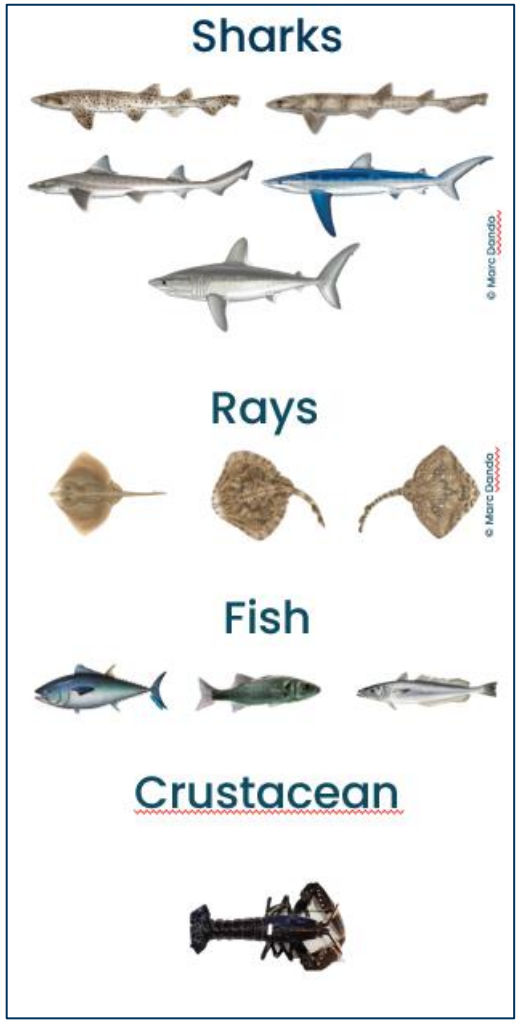
Passive acoustic telemetry array within OWF



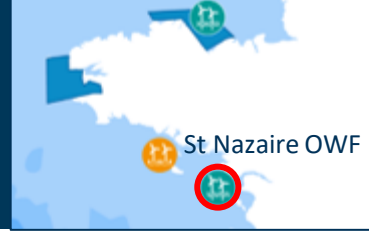
Study sites



Target species



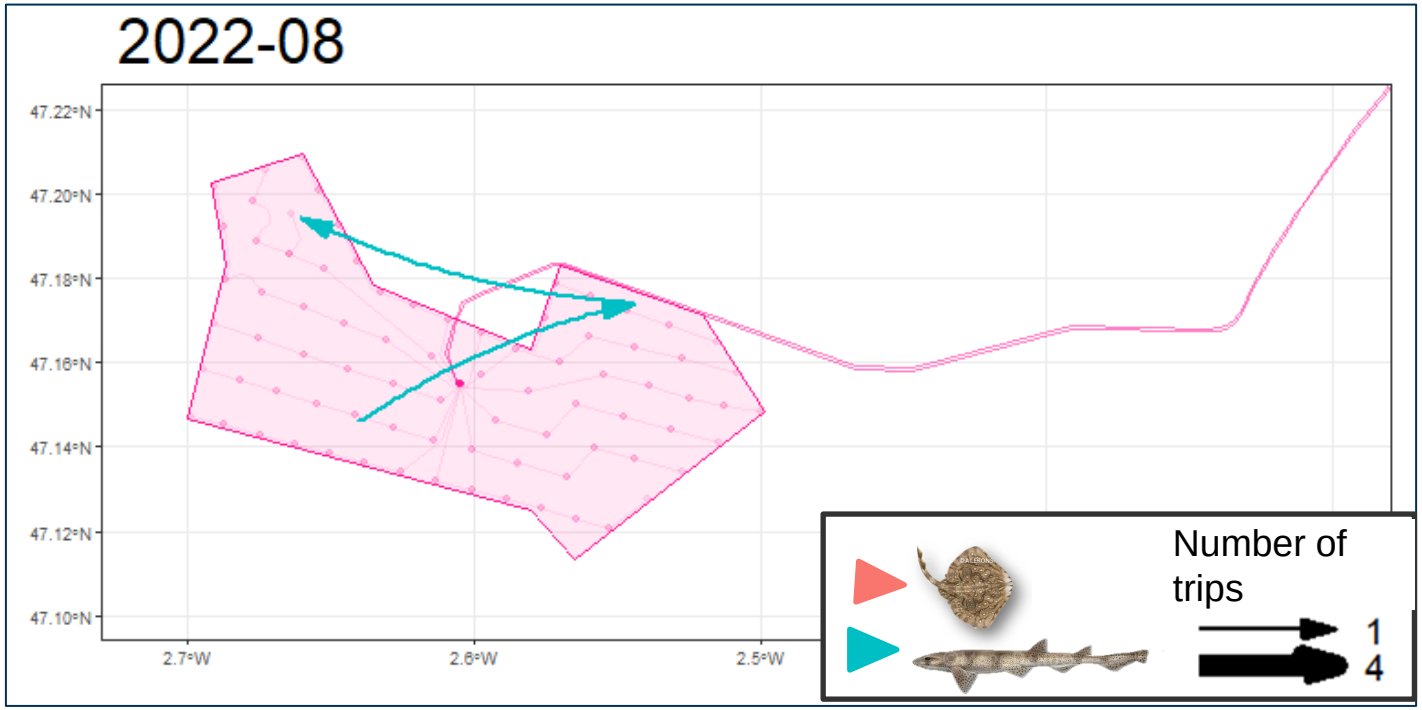
LOCAL SCALE
Fish occupancy patterns and movements within OWF

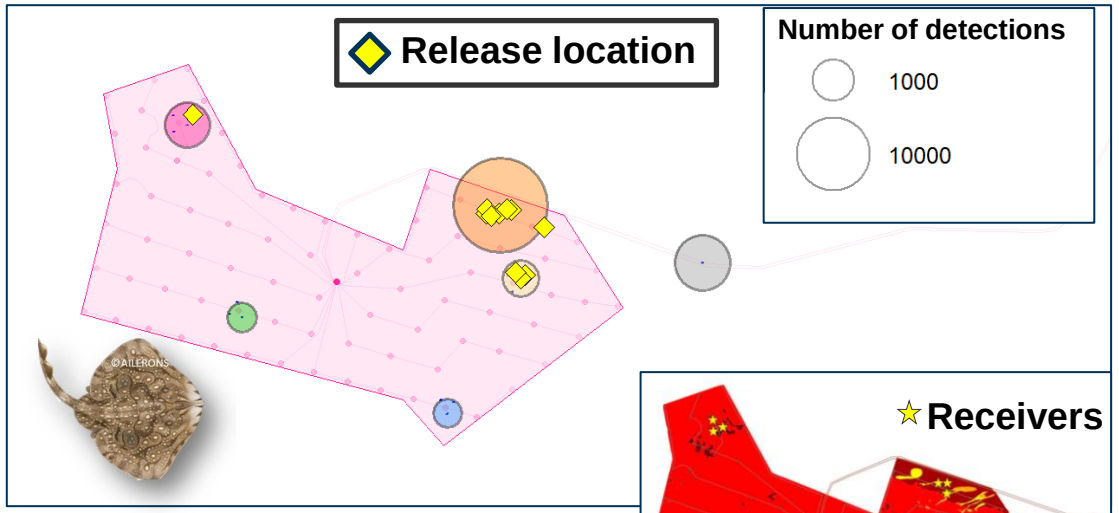


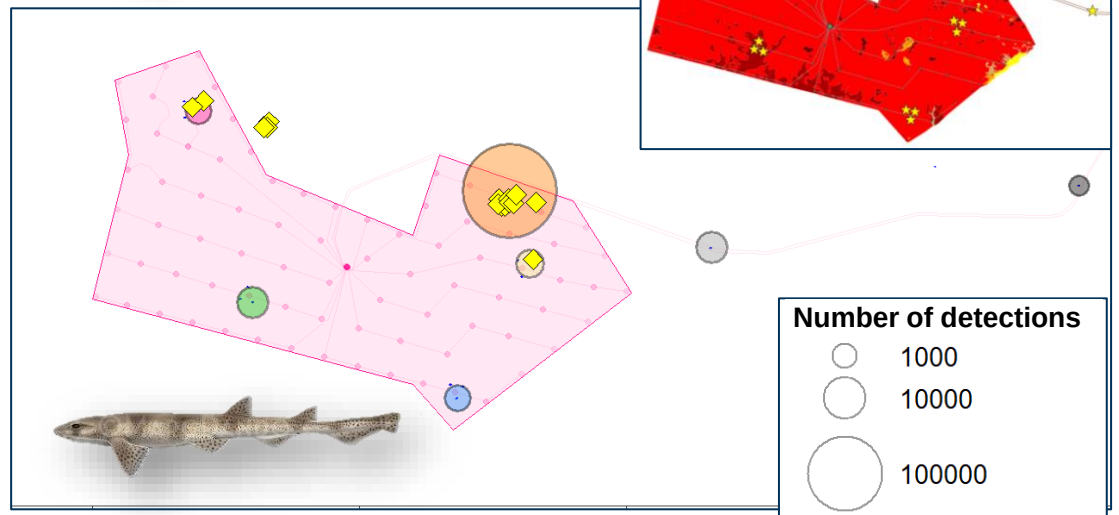
Key results– St Nazaire

Undulate rays and small spotted dogfish use the OWF

- High occupancy around a monopile placed on a sandy/gravel substrate with scour protection
- The 2 species move around the OWF
- Lower presence in winter





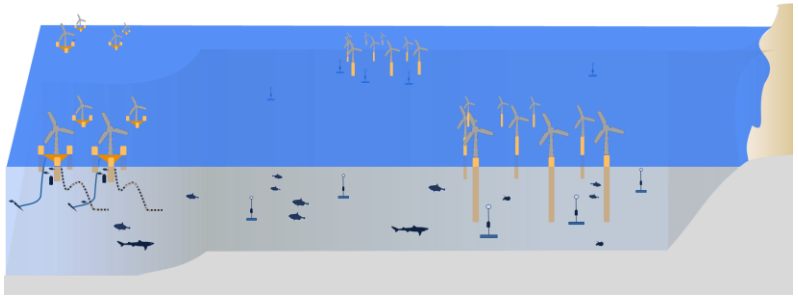


OWF = offshore wind farm

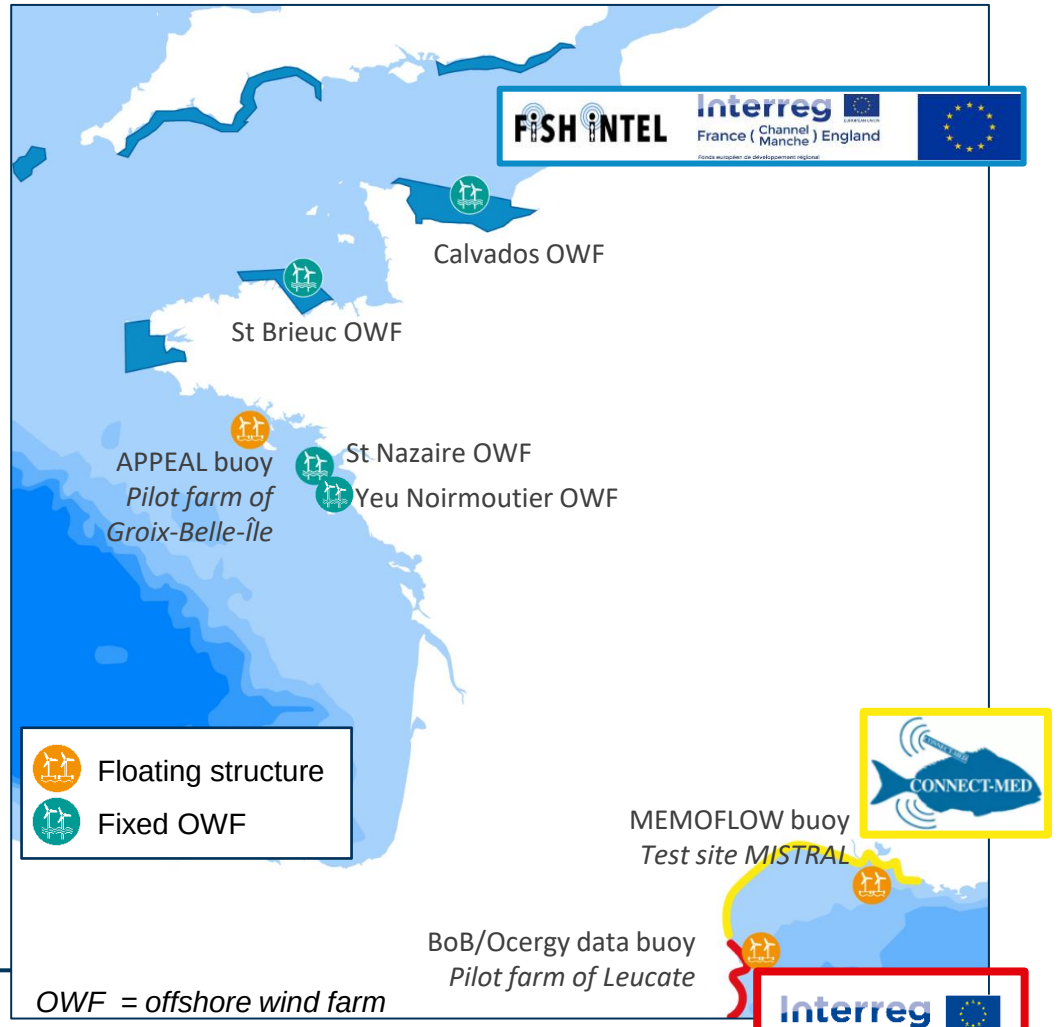
Movements and habitat connectivity

Method

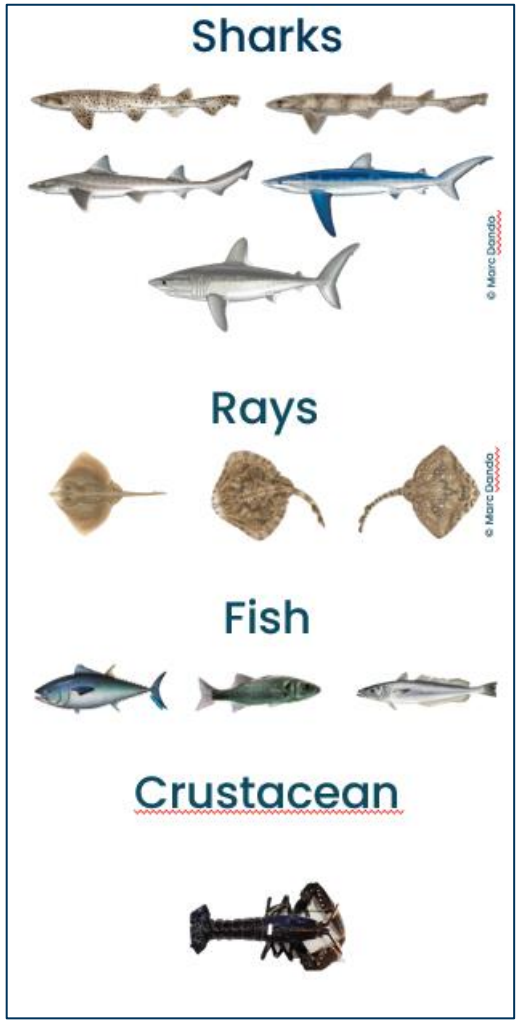
Integration into regional acoustic telemetry networks



Study sites



Target species



REGIONAL SCALE
Movements and habitat connectivity across OWF

FISHOWF

Porbeagle sharks tagged off Brittany travelled to the **St Brieuc OWF** and off the **UK coast**

A **starry smooth-hound** tagged in the **St Nazaire OWF** travelled to the **Yeu-Noirmoutier OWF**

A **lobster** tagged in the **Yeu-Noirmoutier OWF,** travelled to **the St Nazaire OWF**

FISH INTEL

Interreg France (Channel Manche) England

A **sea bass** tagged off Brittany detected at the **St Nazaire OWF**

Bluefin tuna tagged in the UK detected in the **St Brieuc OWF**