

Fishing Activity, Distribution of Commercial Fish Species and Interaction with VMEs in the Bay of Biscay

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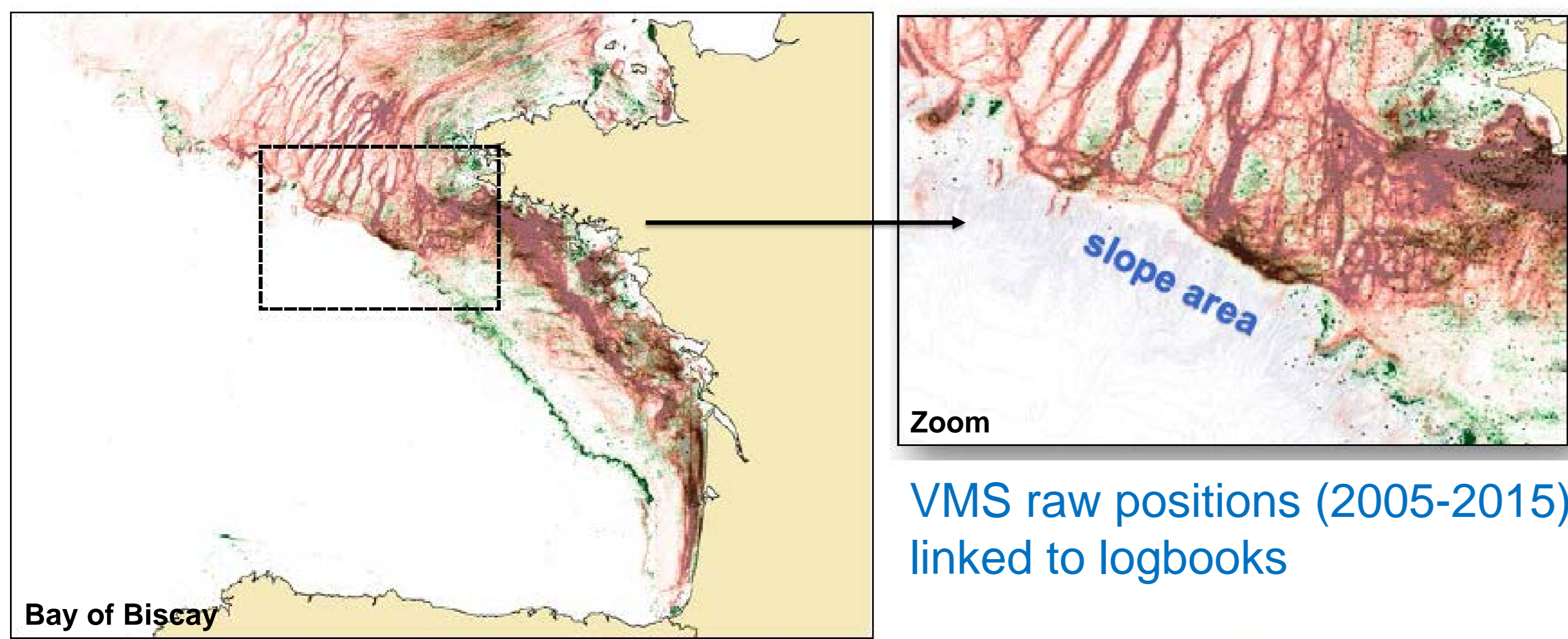
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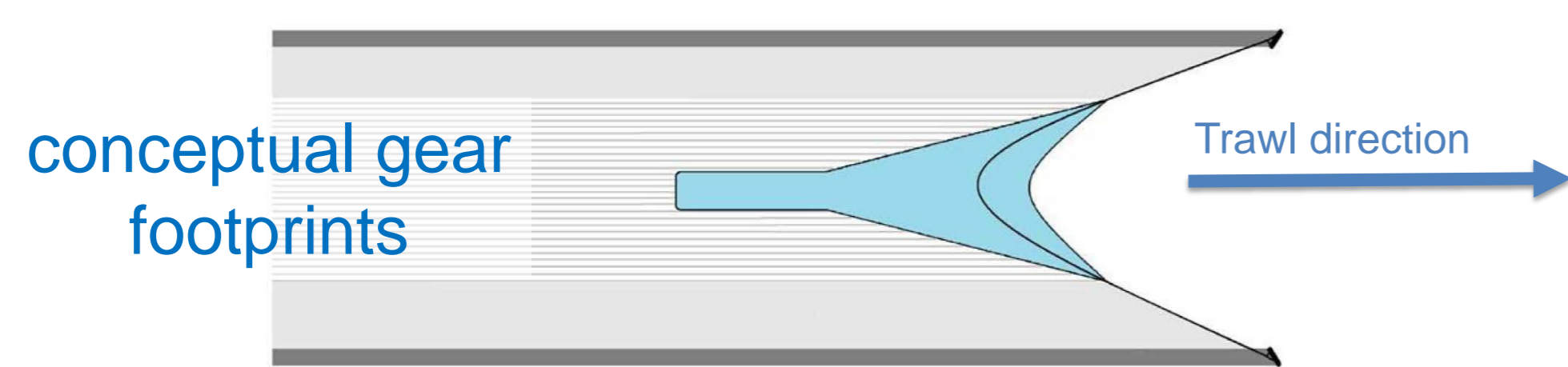
- Deep-water coral reefs or sponge aggregations are unique ecosystems extremely vulnerable to anthropogenic disturbance.
- Ensuring the conservation of those VMEs is a challenge that requires an accurate knowledge of fisheries spatial footprint.

Aim:
Quantify the interactions between fisheries and VMEs in the Bay of Biscay and their potential dependencies over those vulnerable ecosystems.

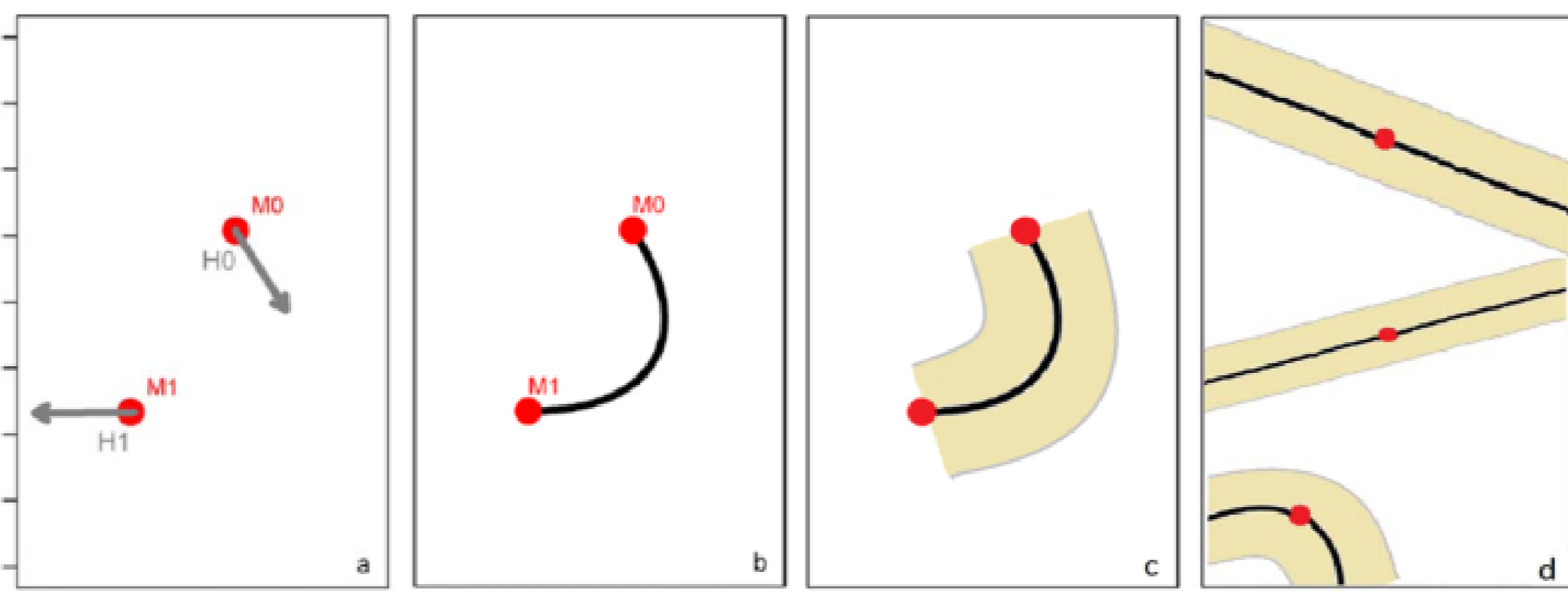
Fishing activity



High-resolution mapping of fishing pressure and fish landings distribution

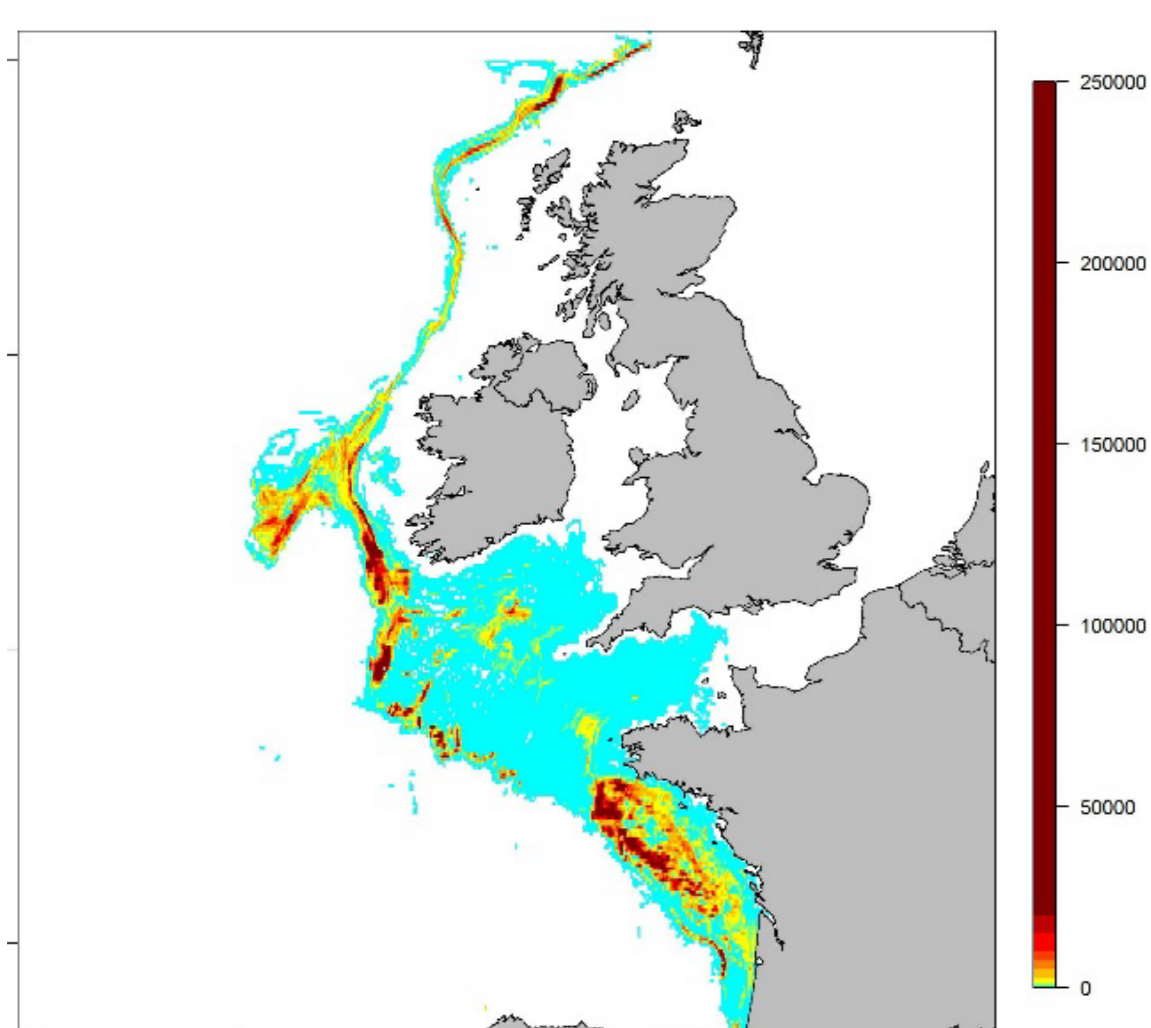


- Extract trawling positions in VMS data based on speed profiles
- Interpolate vessel tracks from vessel speed and course
- Merge with modelled gear footprint size in logbook data to provide swept area
- Aggregate swept areas by year in gridcells of 1x1 km (longitude and latitude)



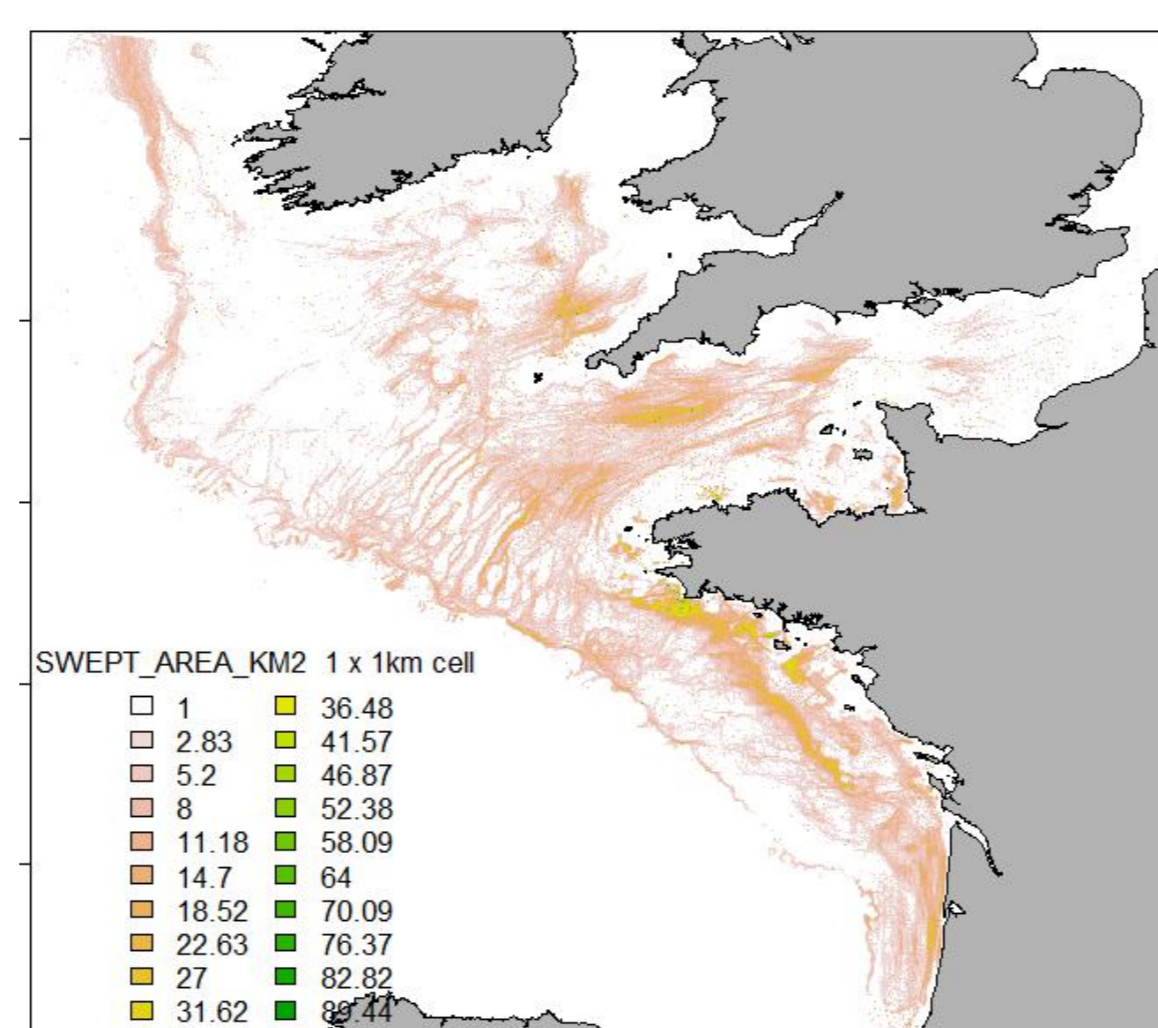
- Identify fishing sequences based on speed thresholding
- Allocate fish landings to sequences per vessel, per day and fishing area (here 1x1 km grid cells)

2015 landings (in kg) distribution for the European hake



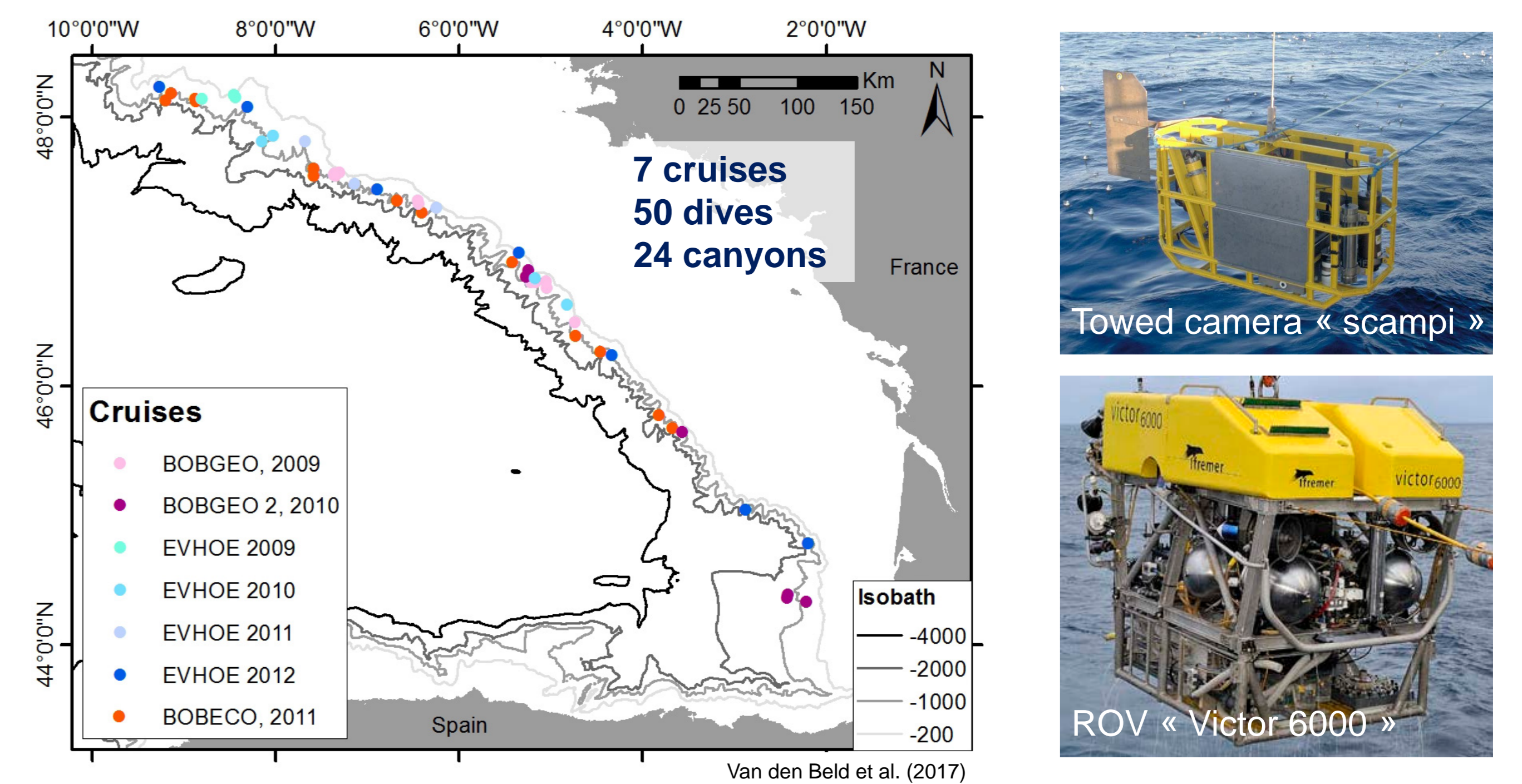
Maps produced for ubiquitous and deepwater species of interest

Trawling abrasion for year 2005



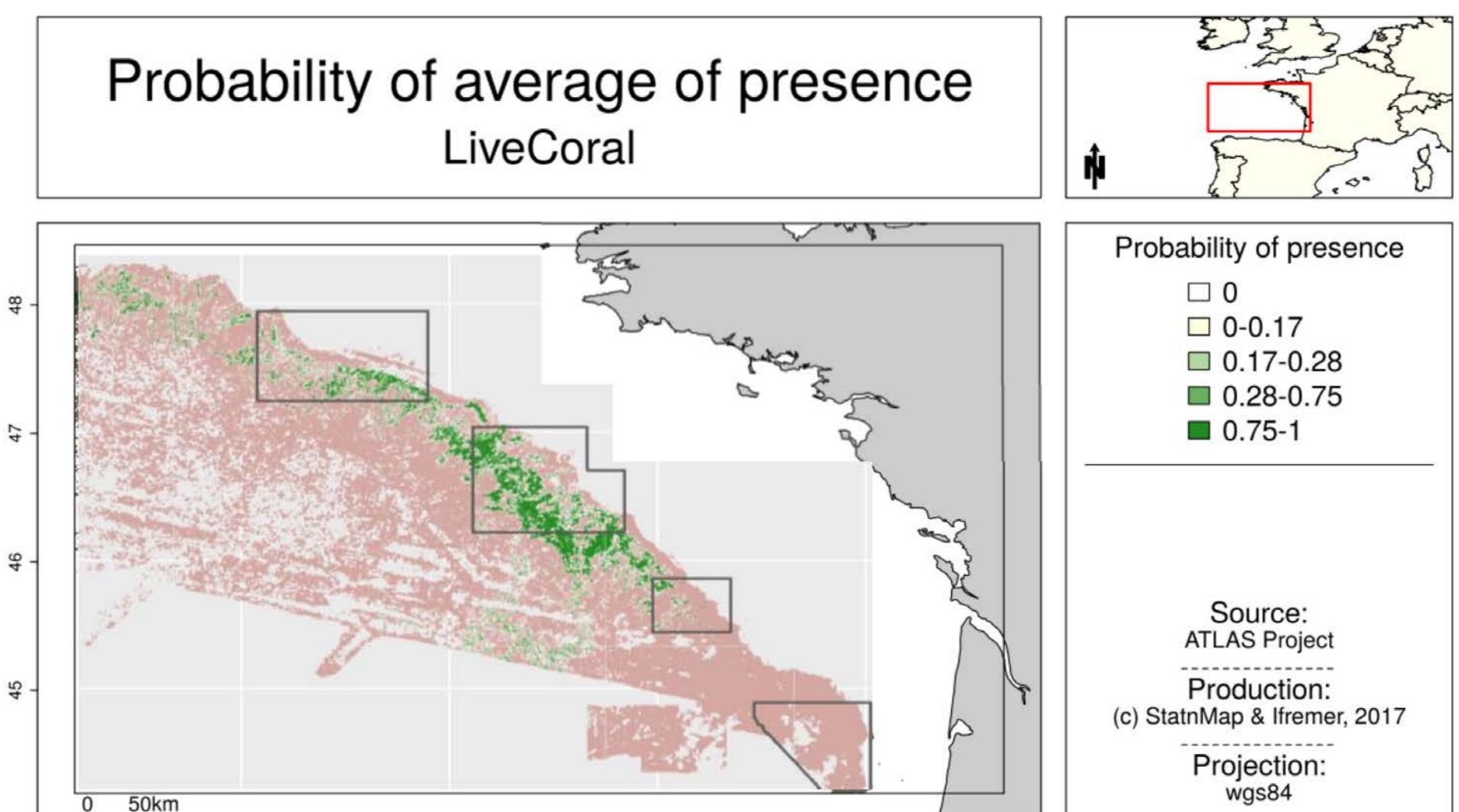
Maps produced for towed and static gears

Recent observations of VMEs



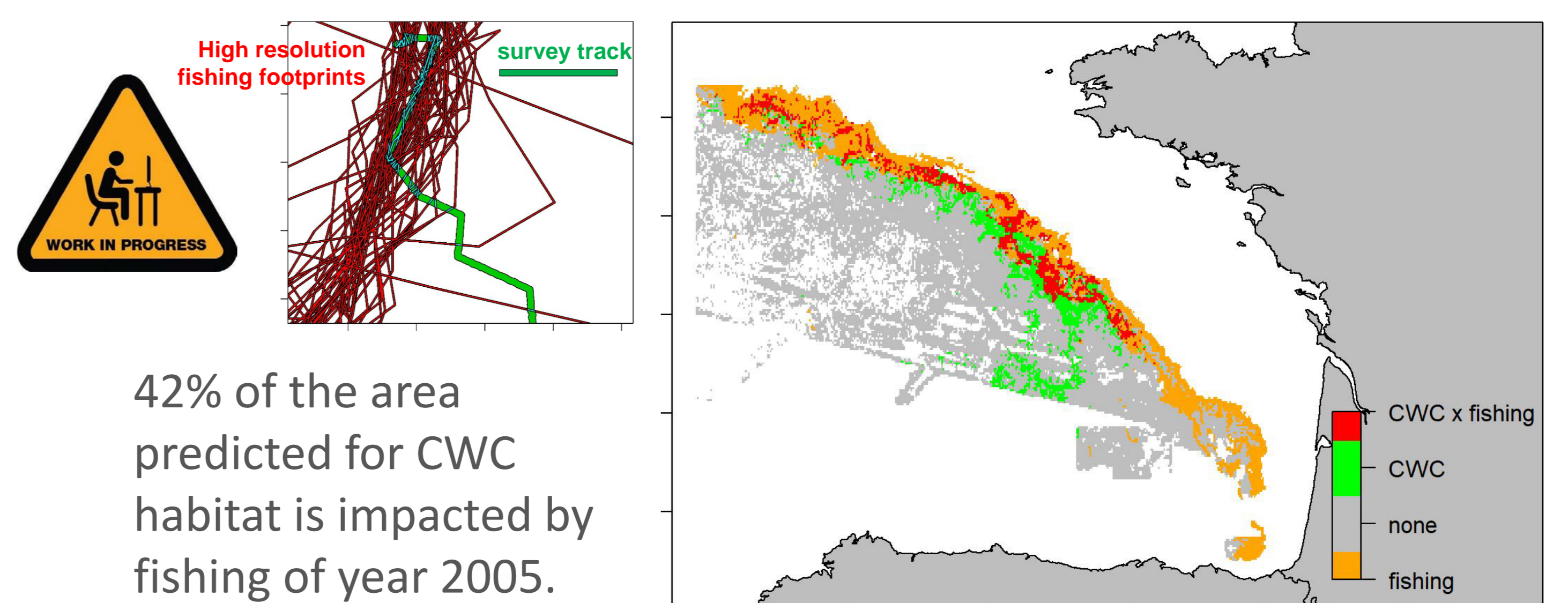
60% of coral reefs and coral rubbles. Presence/absence for 2 coral species (*Madrepora o.* & *Lophelia p.*).

Modelling distribution of CWC species



Best model (selected based on its predictive ability) was a nsGLM with 4 predictors (summer surface chloro-a concentration, rugosity, summer and yearly surface suspended matter).

Realized and potential interactions



42% of the area predicted for CWC habitat is impacted by fishing of year 2005.

Conclusions

- Results could be used as inputs for the spatial conservation prioritization (e.g. protect locations with high CWC potential, low fishing pressure and low fishing revenue or landings).
- Results could drive the future effort allocation of scientific surveys.

Acknowledgements

Support was provided by Ifremer, StatnMap (courses and consulting) and the FP7 EU project CoralFISH (grant agreement no. 213144), FP7 EU project Benthis (grant agreement no. 312088). We are grateful to the captains, crew and scientific teams of the BobGeo, BobGeo 2, BobEco and EVHOE 2009-2012 cruises. The BobGeo, BobGeo 2 and BobEco cruises were part of the FP7 EU project CoralFISH (grant agreement no. 213144). French fisheries data were provided by the Fisheries Information System (FIS) from Ifremer. Findings and conclusions using FIS data are those of the authors.

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This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 678760 (ATLAS). This output reflects only the author's view and the European Union cannot be held responsible for any use that may be made of the information contained therein.