

# living planet symposium

BONN  
23–27 May  
2022

TAKING THE PULSE  
OF OUR PLANET FROM SPACE



## EO-based services for monitoring fishing activity

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23/05/2022

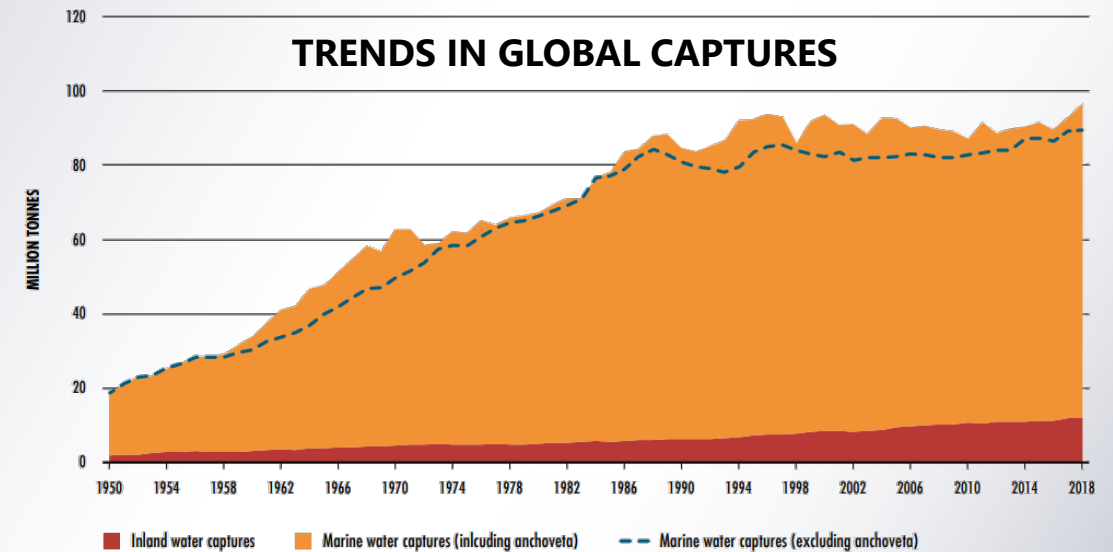


# Why?

**Fisheries:** Major activity exploiting marine resources



All time record in **2018**  
**96.4 million tones**



FAO. 2020. The State of World Fisheries and Aquaculture 2020. Sustainability in action. Rome

# Sea food supply chain



# E-shape project



## e-shape

[e-shape.eu/](http://e-shape.eu/)

[helpdesk.e-shape.eu/](http://helpdesk.e-shape.eu/)

EU contribution ≈ 15 million

Project Start  
01/05/2019



MVP release  
01/07/2022



Project End  
01/05/2023



### 7 Showcases, 37 pilots



agriculture



health



renewable energy



ecosystem



water



climate



disasters

### Pilot 5.5



water

### Monitoring fishing activity

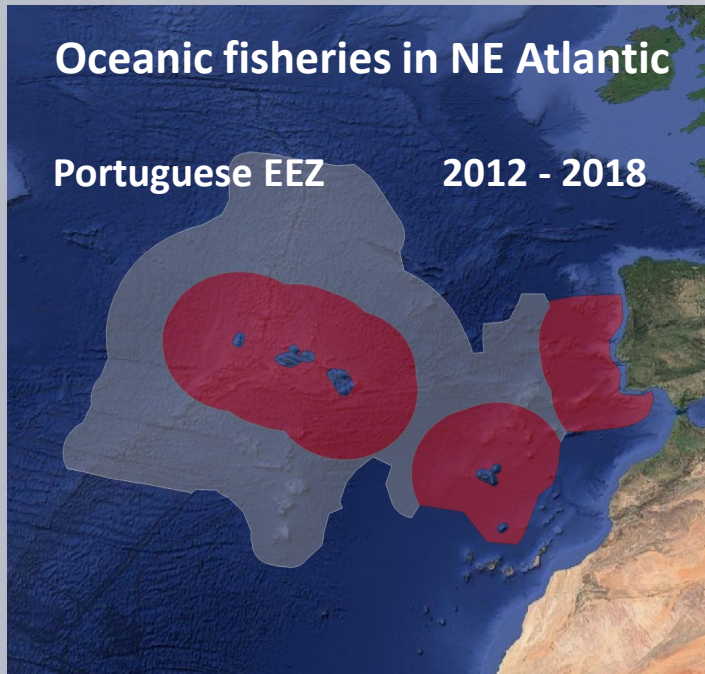


The e-shape project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement 820852



# Pilot 5.5 - Monitoring fishing activity

**Aim** → *To develop a web-based tool for exploration and visualisation of spatial fishing information*



## Drifting longline fleet

**Target species:** Swordfish

**By-catch :** Tuna fish, pelagic sharks



## Pole and Line fleet

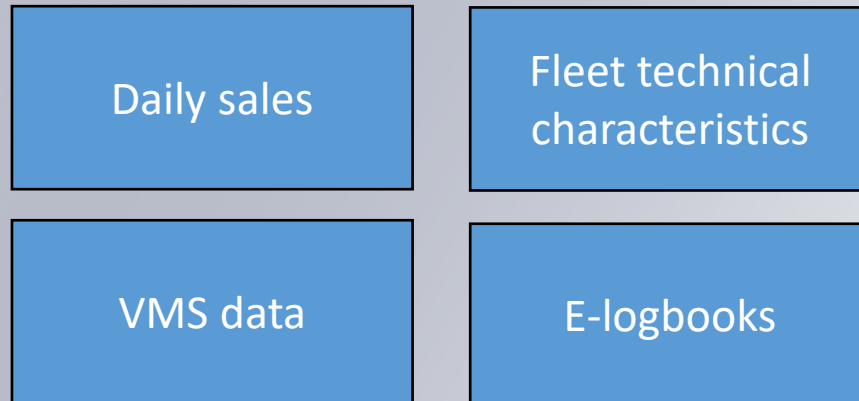
**Target species:** Tuna fish

**By-catch :** None



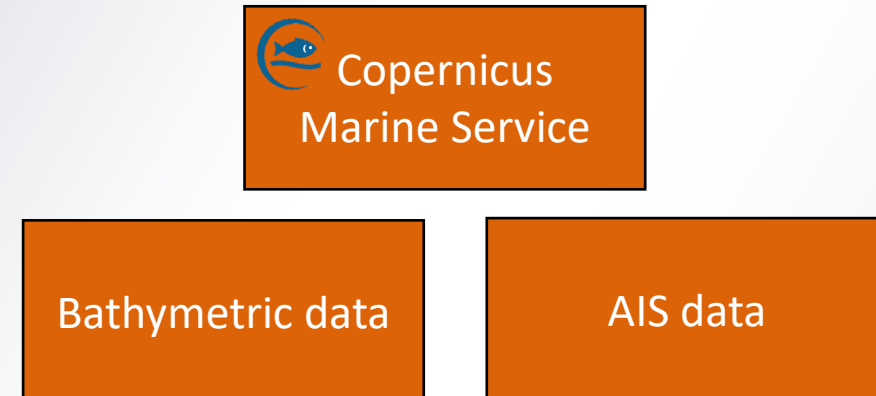
# Data for monitoring fishing activity

## Fisheries Dependent Data



- + Detailed info
- Difficult to obtain
- Not always reliable

## Earth Observation Data



- + Open data
- + Global coverage
- No info about fishing activity or captures



# Data for seafood supply chain

## Elogbooks VS AIS

VMS data



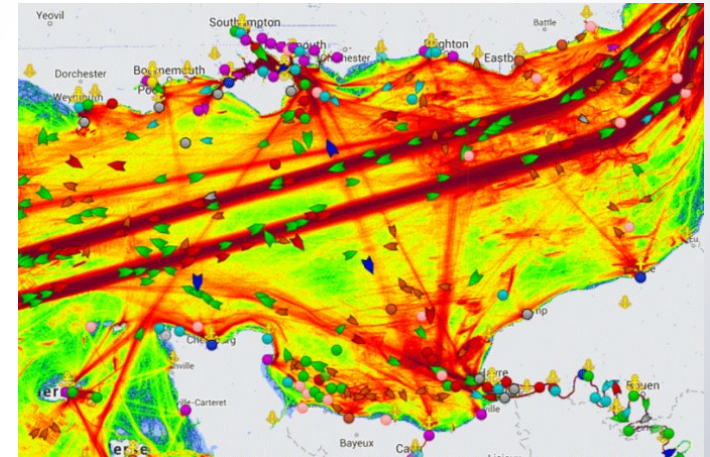
E-logbooks



AIS data

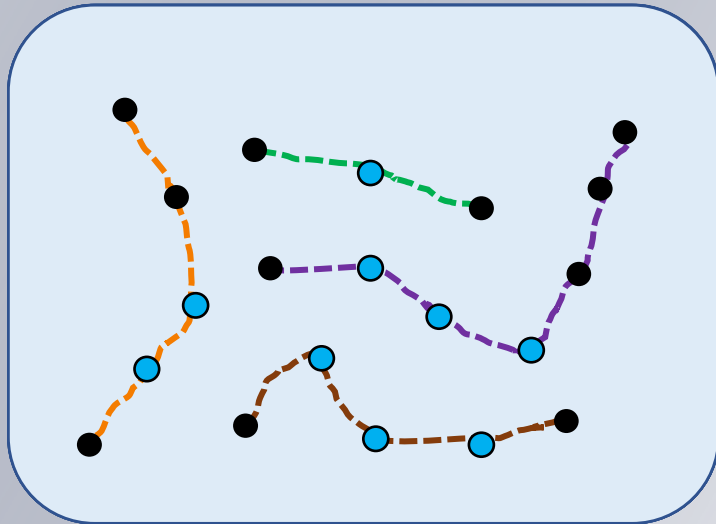


[www.fisheries.noaa.gov/insight/electronic-monitoring-explained](http://www.fisheries.noaa.gov/insight/electronic-monitoring-explained)

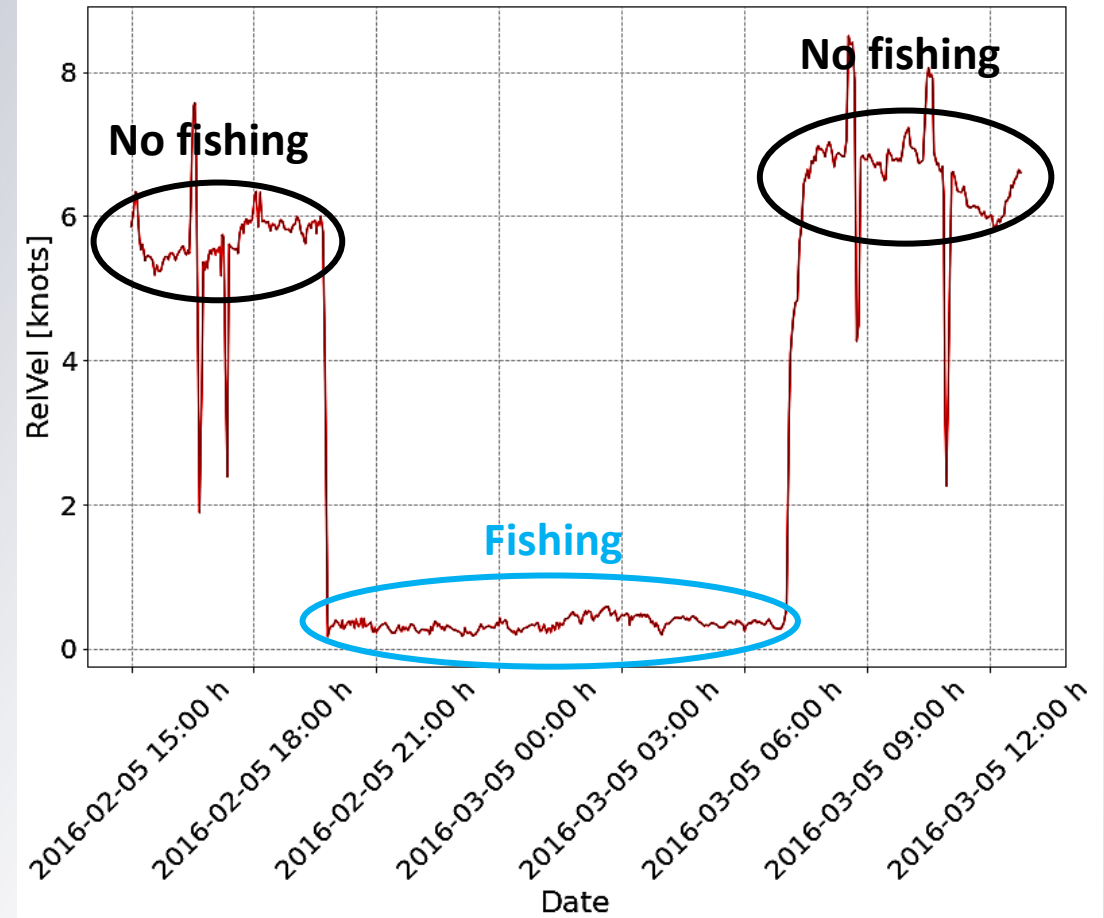


[www.marinetraffic.com/blog/investigating-with-ais-data/](http://www.marinetraffic.com/blog/investigating-with-ais-data/)

# Fishing trips

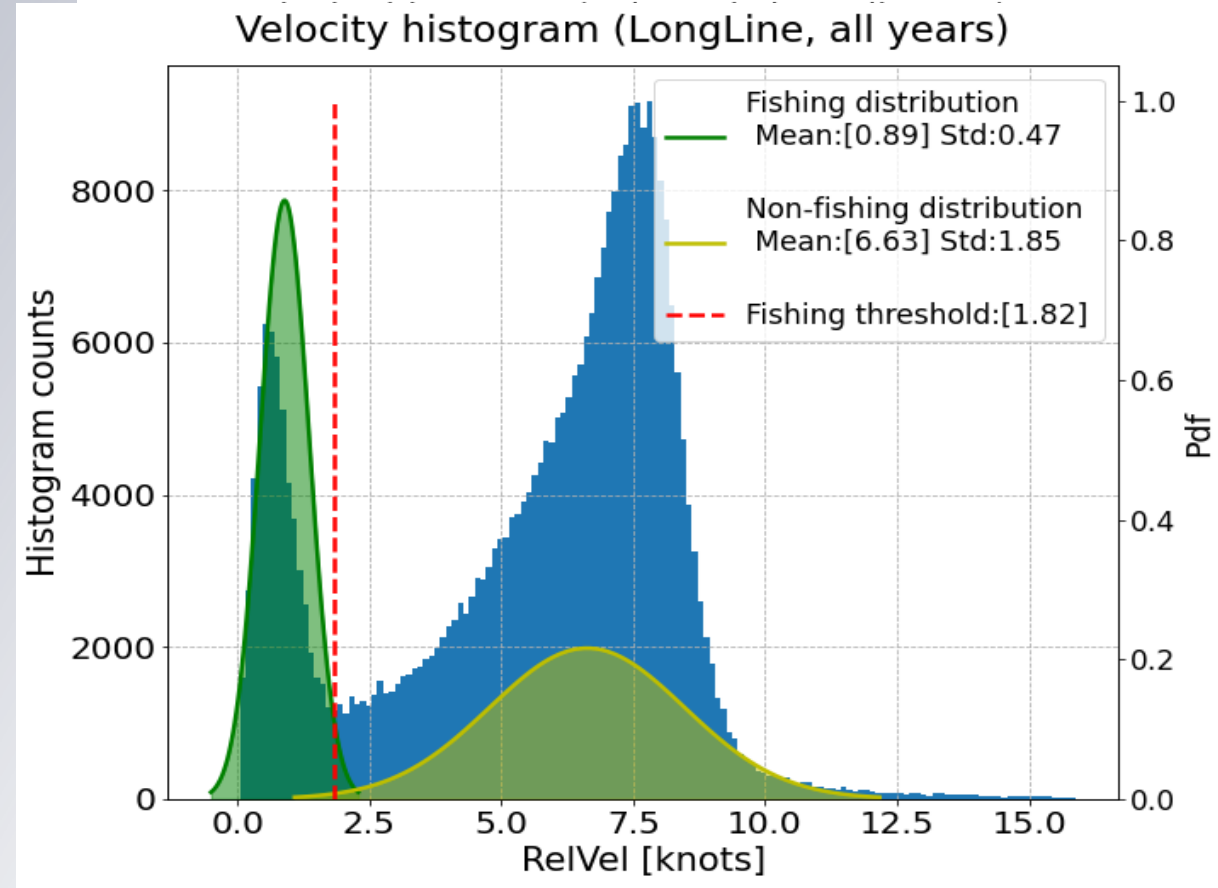
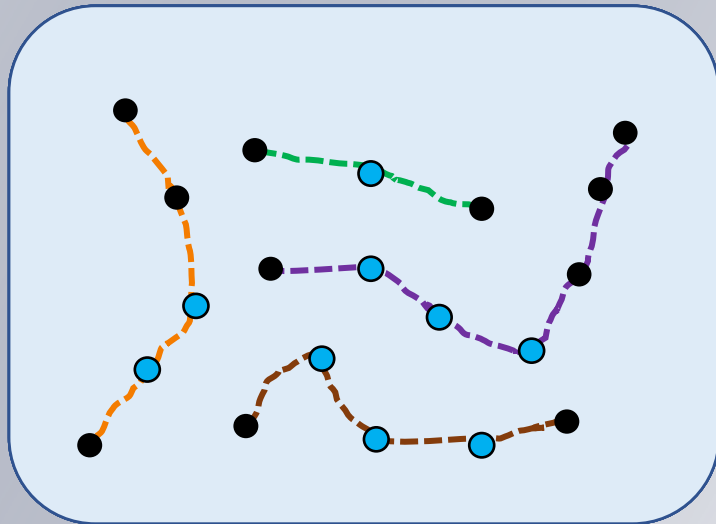


Velocity over time example

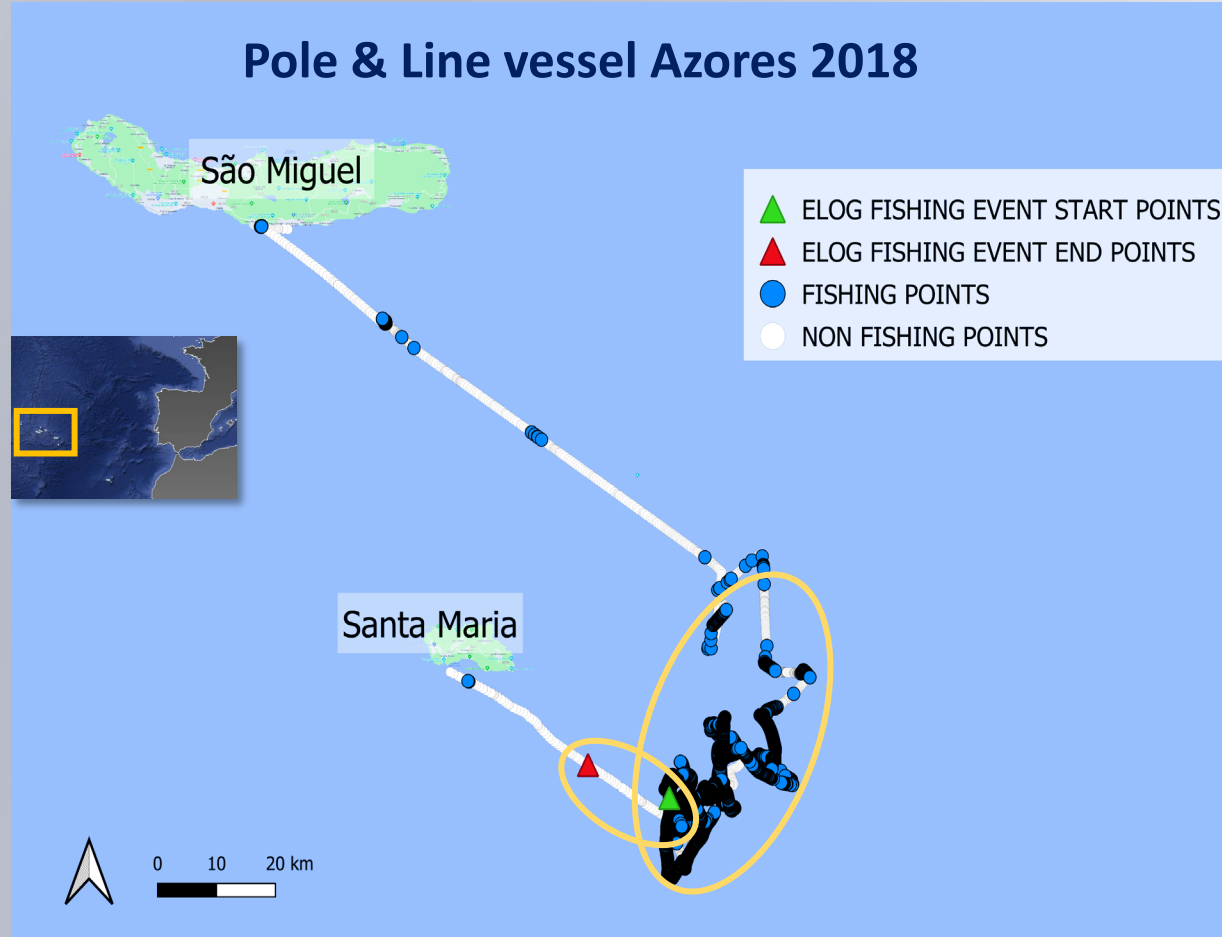




# Fishing trips



# Fishing trips use case example



## AIS DATA

### Trip dates->

26/06/2018 at 16:39:06 to 02/07/2018 at 10:19:35

### Majority of fishing points->

27/06/2018 20:48:34 to 02/07/2018 05:14:04

## ELOGBOOKS

### Fishing events registered ->

02/07/2018 05:01:00 to 02/07/2018 08:27:00

**Capture->** 7000 Kg of BET(Bigeye Tuna)

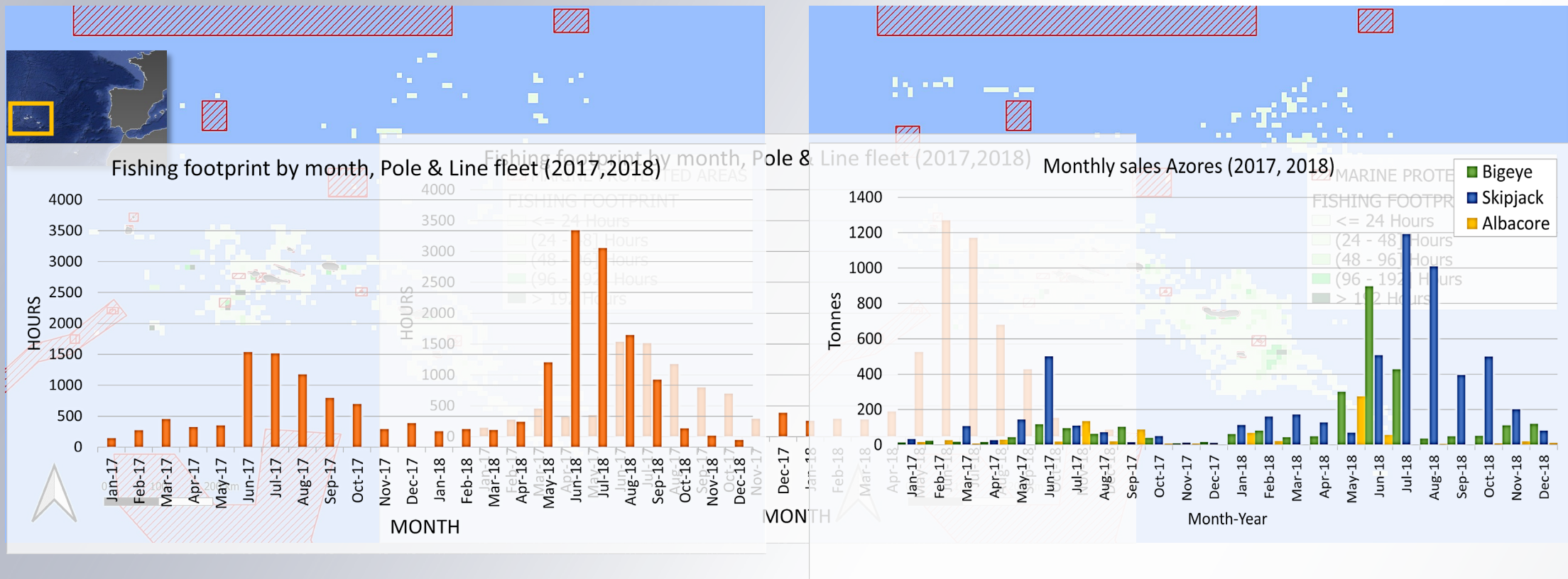




# Fishing footprint use case

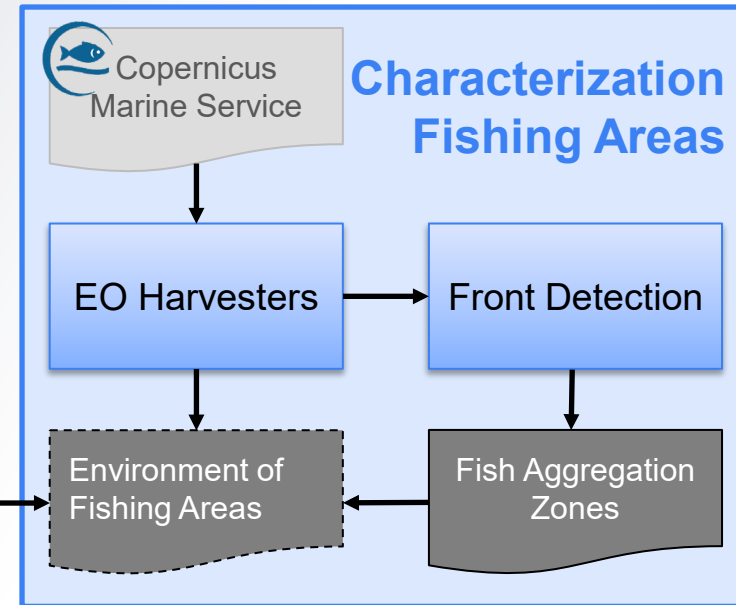
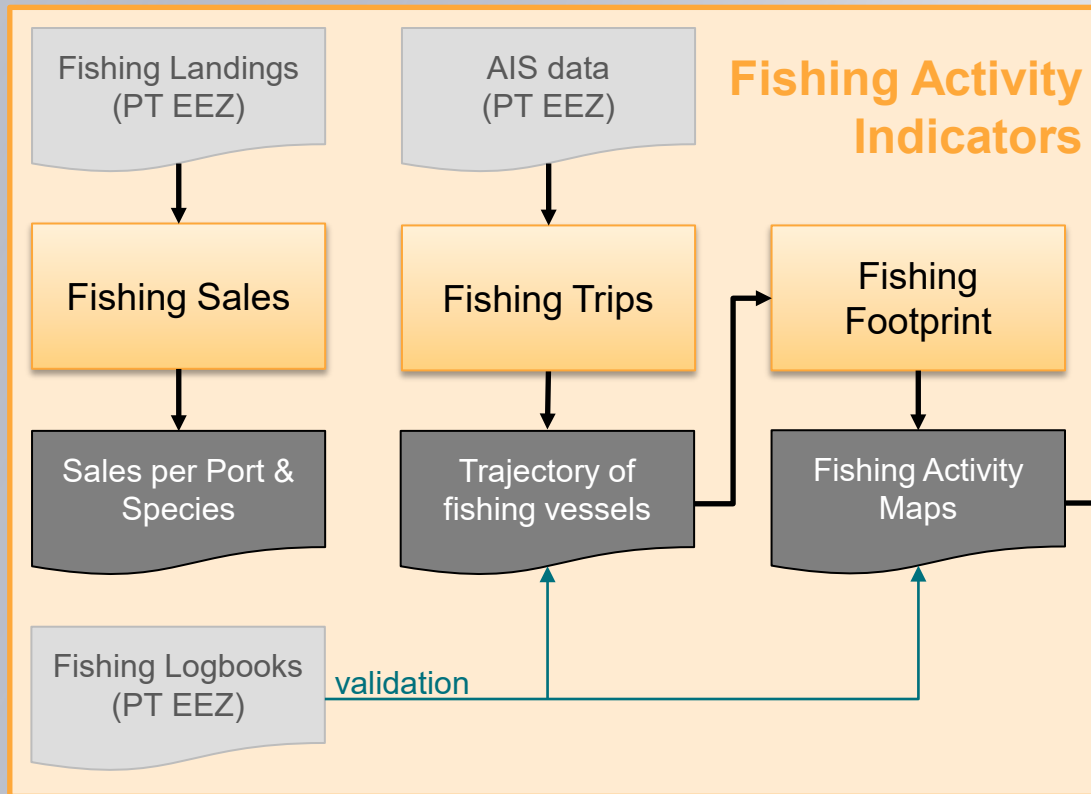
## 2017 Pole & Line fleet Azores

## 2018 Pole & Line fleet Azores





# Service Portfolio



[www.NextOcean.eu](http://www.NextOcean.eu)
 @NextOcean\_EO
 NextOcean-EO

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No.101004362

# Conclusions

1. AIS supply more detailed and reliable tracking of fishing vessels that can complement eelogbooks.
2. AIS data can support the enforcement of correct reporting in eelogbooks
3. Further research to identify fishing activity based on reliable validation datasets is needed.



# Future work

## 1. Technical development

- Integrate new version of the applications in operational environment.
- Refine algorithms for fishing activity characterization.

## 2. Product development

- Perform more prototype demonstrations and integrate additional user requirements
- Further development of service value-proposition.

# Thank you!

