

EUROFLEETS+ Floating University

“State and sustainable use of the ocean biological resources:  
the case of the *Nephrops norvegicus* (Norway lobster)”

Onboard the R/V Mário Ruivo  
Portugal, June 15 – July 5



**Eurofleets+**

An alliance of European marine research infrastructure  
to meet the evolving needs of the research and industrial communities

# SURVEY OVERVIEW

The Portuguese Nephrops Survey (FU 28-29)

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- Estimate the relative abundance of *Nephrops*, as well as of other crustacean species (deepwater rose shrimp, red shrimp) and accompanying species;
- Study their geographical distribution in space and time;
- Collect data for the determination of biological parameters (sex-ratio, length-weight relationships, maturity, growth);
- Collect biodiversity data under the Marine Strategy Framework Directive (MSFD);
- Collect marine litter data to MSFD;
- Characterize habitats through sediment analyses.



➤ Crustacean fishing grounds based on VMS trawl data.:

▪ Southwest - Alentejo region – FU 28

▪ South – Algarve region – FU29

➤ 78 rectangles to be sampled, 1 haul by rectangle

➤ Depth from 200 to 750m.

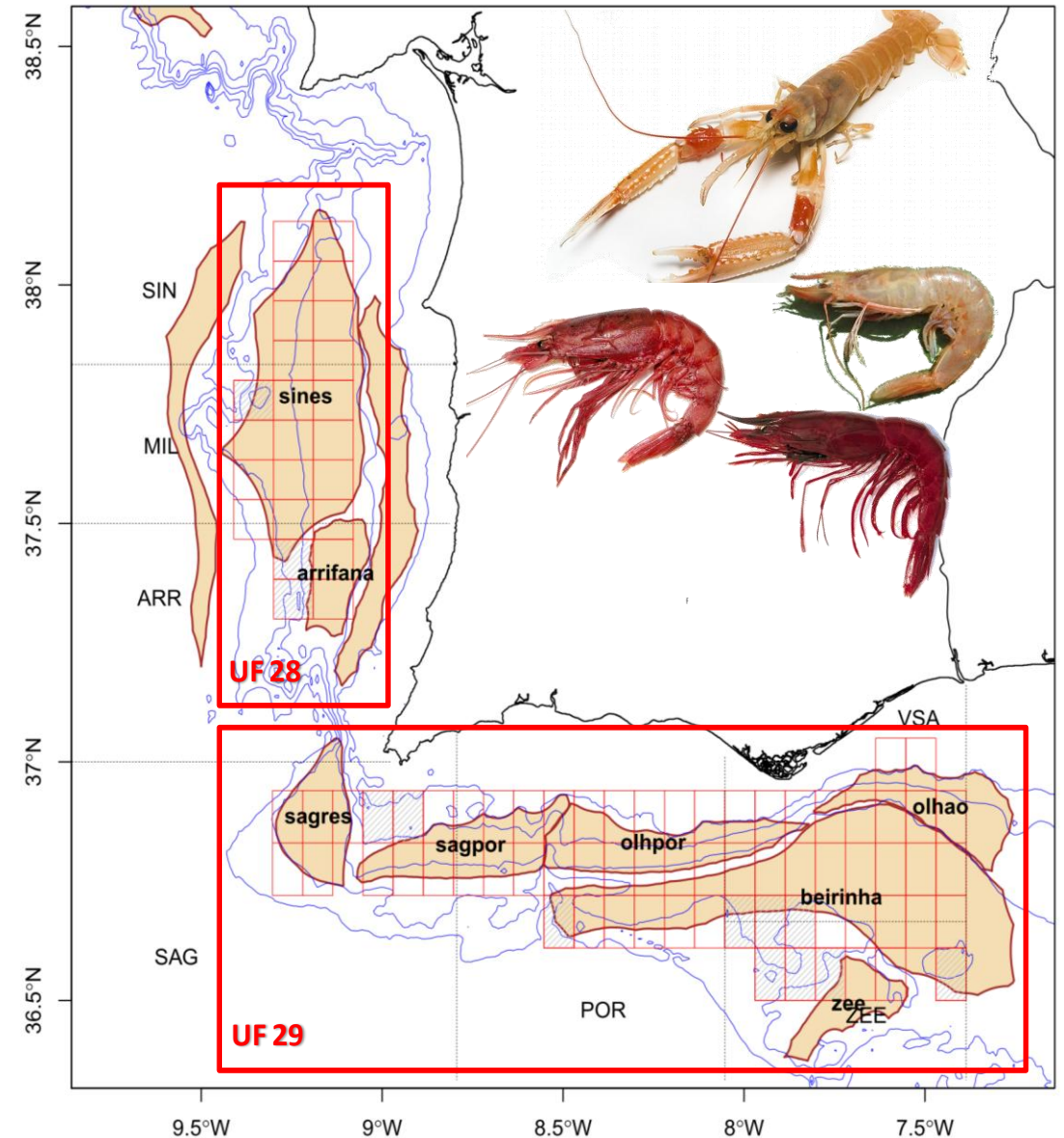
➤ 30 minutes hauls with otter trawl. 20mm codend

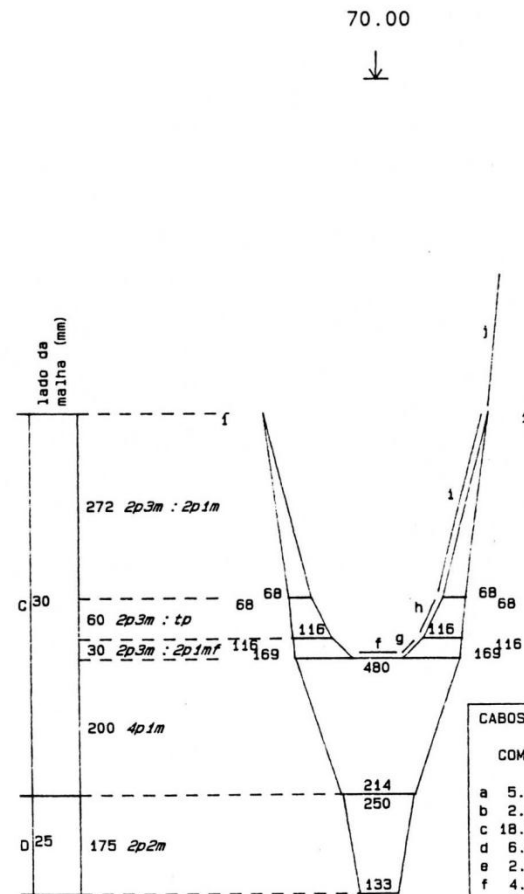
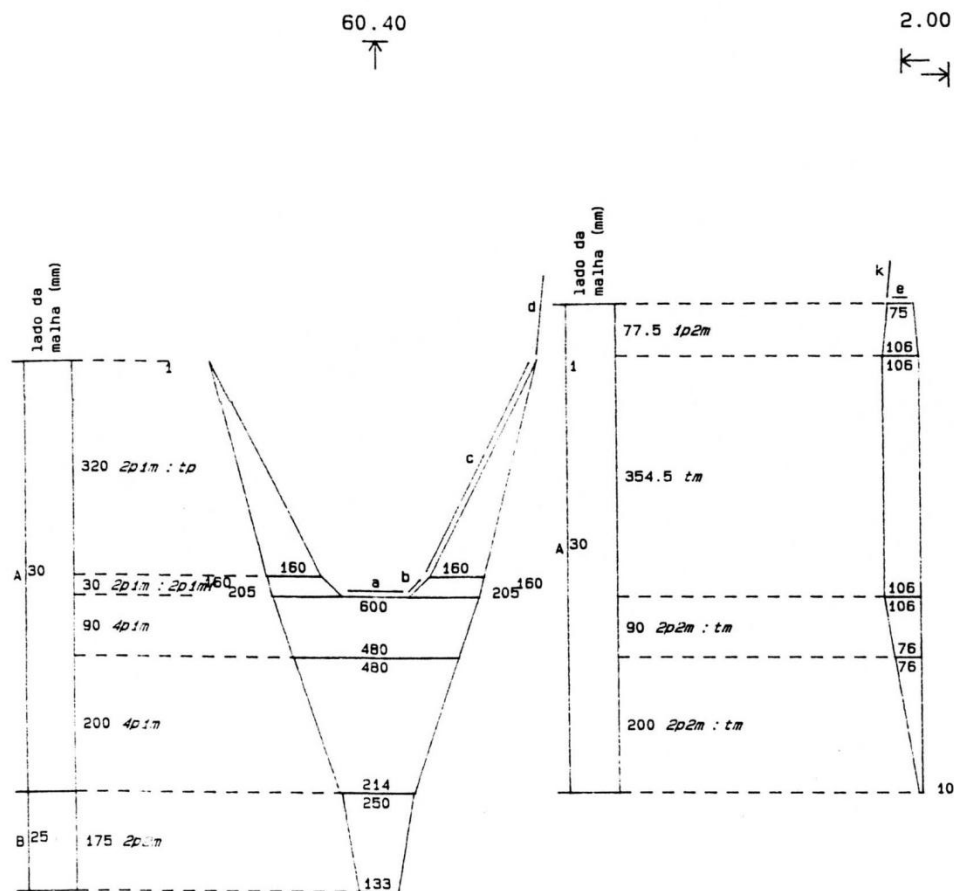
➤ Trawling performed between sunrise and sunset.

➤ No Night-hauls

➤ Net geometry monitorized by Scanmar sensors

➤ Stratified Sampling & Geostatistical analysis





## CABOS :

COMP.	MAT./DIAM. (mm)
a 5.40 m	ACO 14.00
b 2.00 m	ACO 14.00
c 18.60 m	ACO 14.00
d 6.90 m	ACO 14.00
e 2.00 m	PE 16.00
f 4.00 m	MISTO 16.00
g 2.00 m	MISTO 16.00
h 3.50 m	MISTO 16.00
i 15.98 m	MISTO 16.00
j 11.52 m	MISTO 16.00
k 3.15 m	MISTO 16.00

## 1/2 MALHA TITULACAO MATERIAL

A	30mm	1.8 mm.	PE tr
B	25mm	1.8 mm.	PE tr
C	30mm	2.5 mm.	PE tr
D	25mm	2.5 mm.	PE tr

I.N.I.P.  
Instituto Nacional de Investigação das Pescas

Copyright du logiciel: CENTRE NATIONAL DE LA MER / IFREMER

Ref : F6AV020

DATA : ABR89

REDE DE ARRASTO 60.40m. / 70.00m.

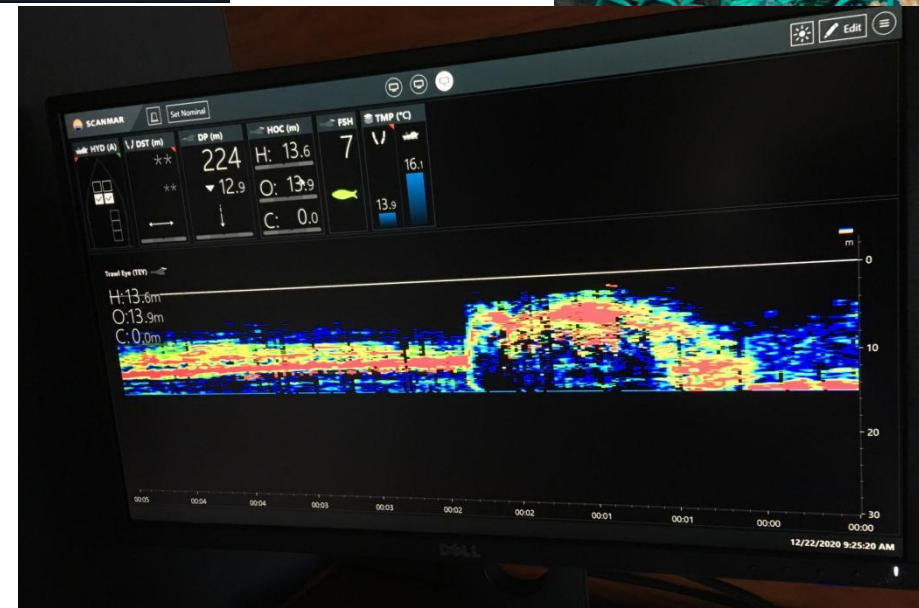
Tipo : DE FUNDO DE 4 FACES  
Especies: CRUSTACEOS  
Origem : EUROREDES, Lda (Cardomar)

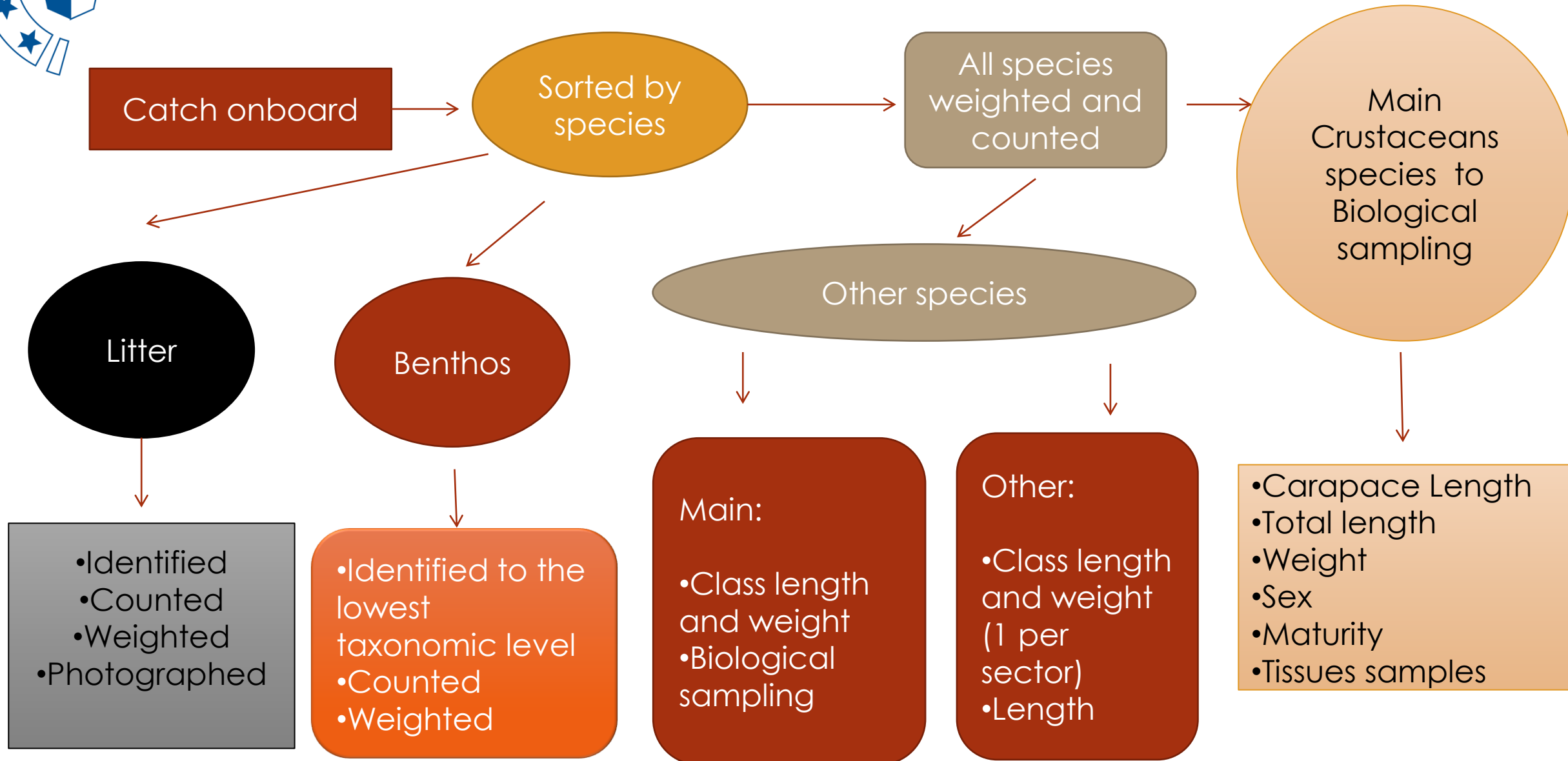
1 BARCO  
600 Cv. a 650 Cv.  
Superf. fio : 112.24 m2

Arracal for. PE 16mm (Molheira)  
9 Flut. 125mm \*1+(4x2)S  
N/E "NORUEGA" - Portas 650Kg  
Modificação da EURO017  
ABR89



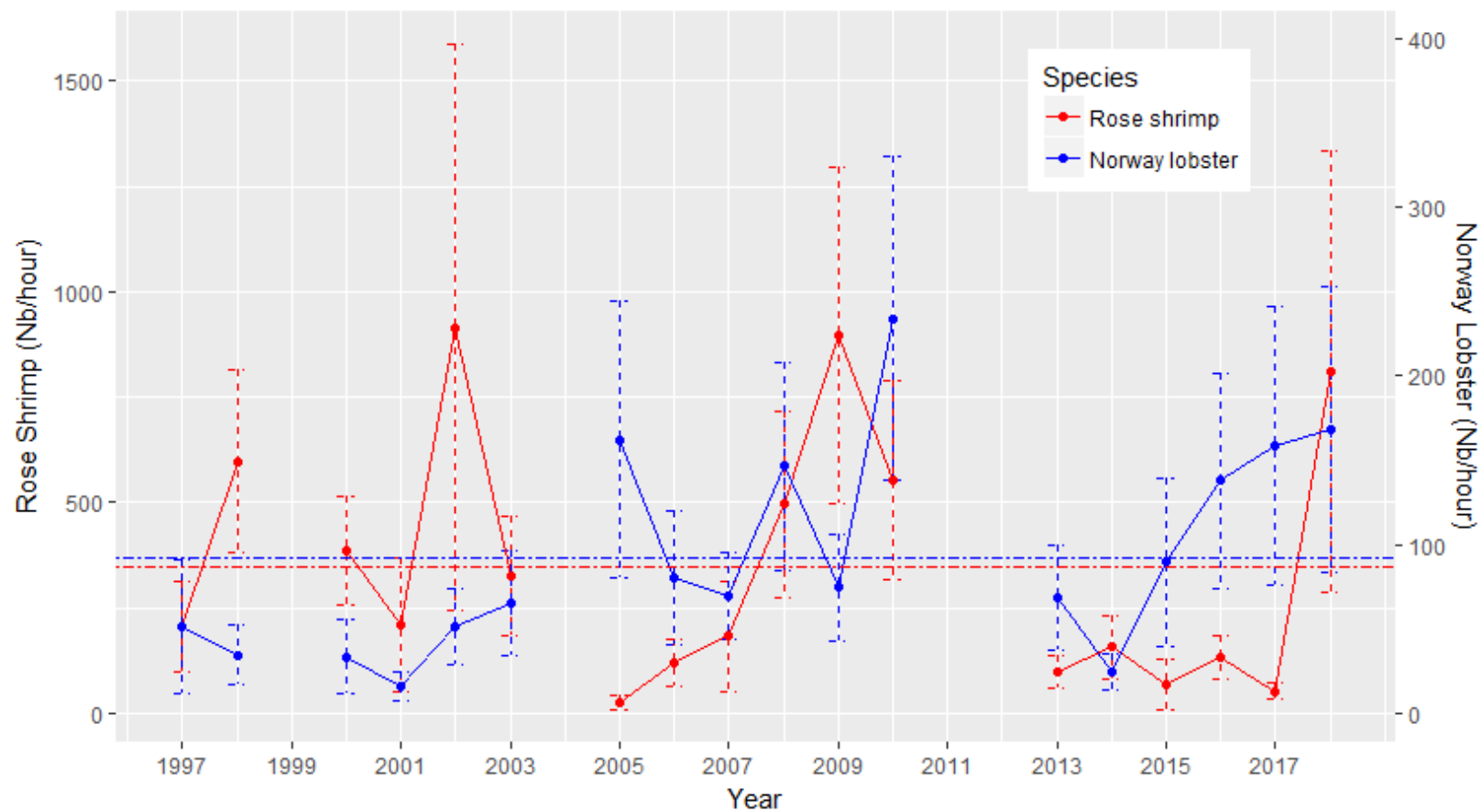
# GEAR MONITORING







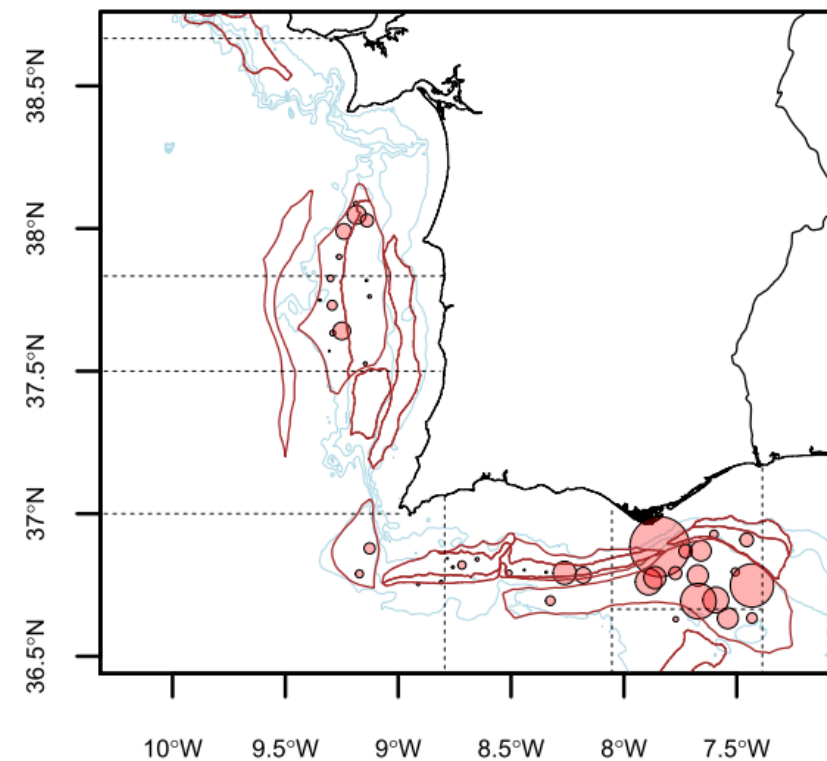
# RESULTS – abundance time series



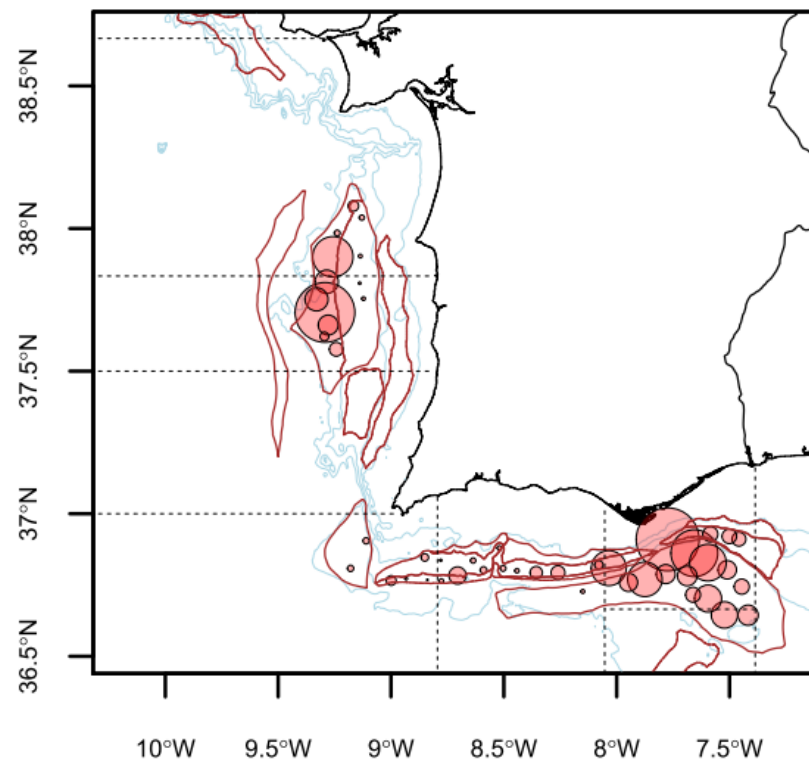


# RESULTS – geographical distribution and abundance

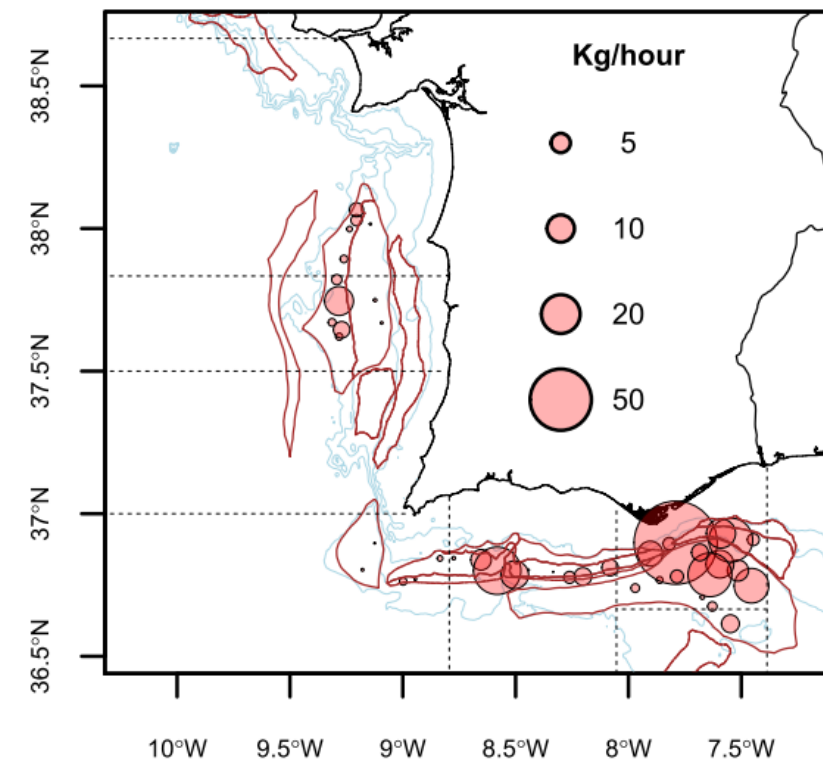
2015



2016



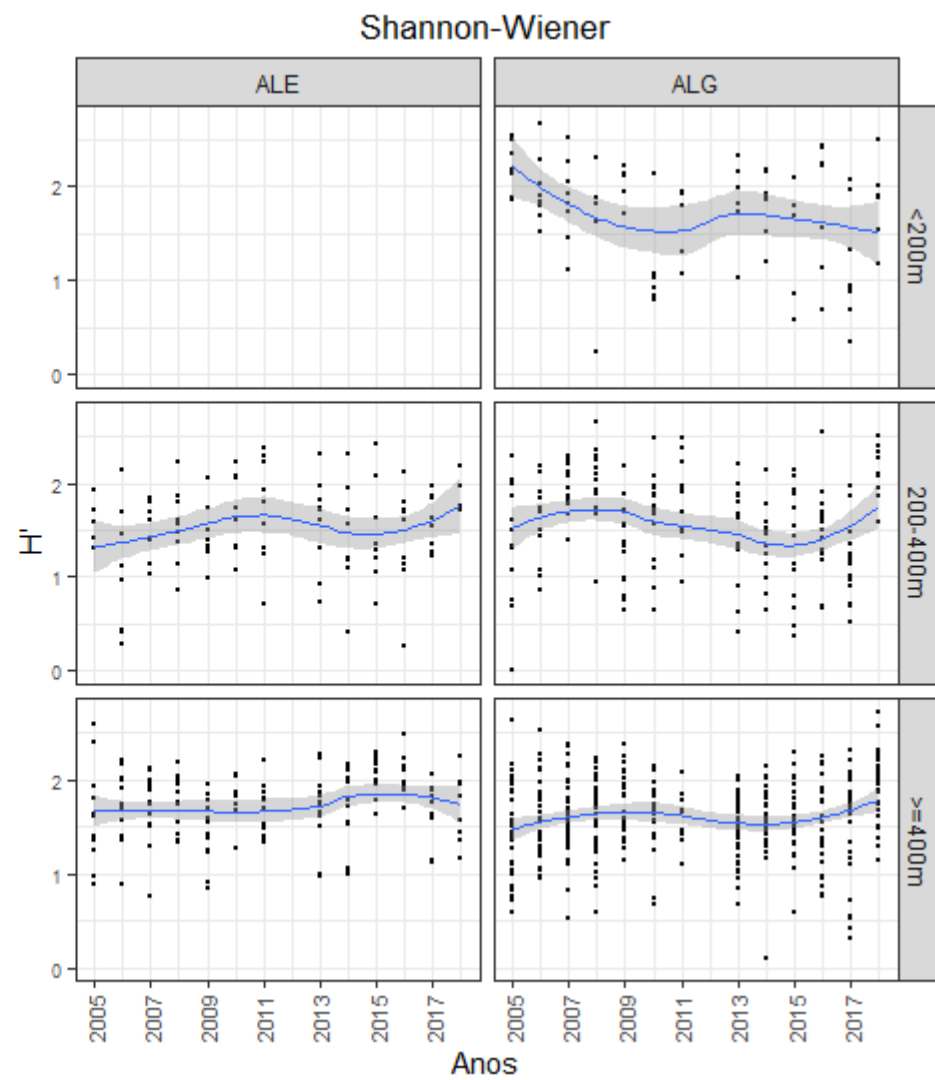
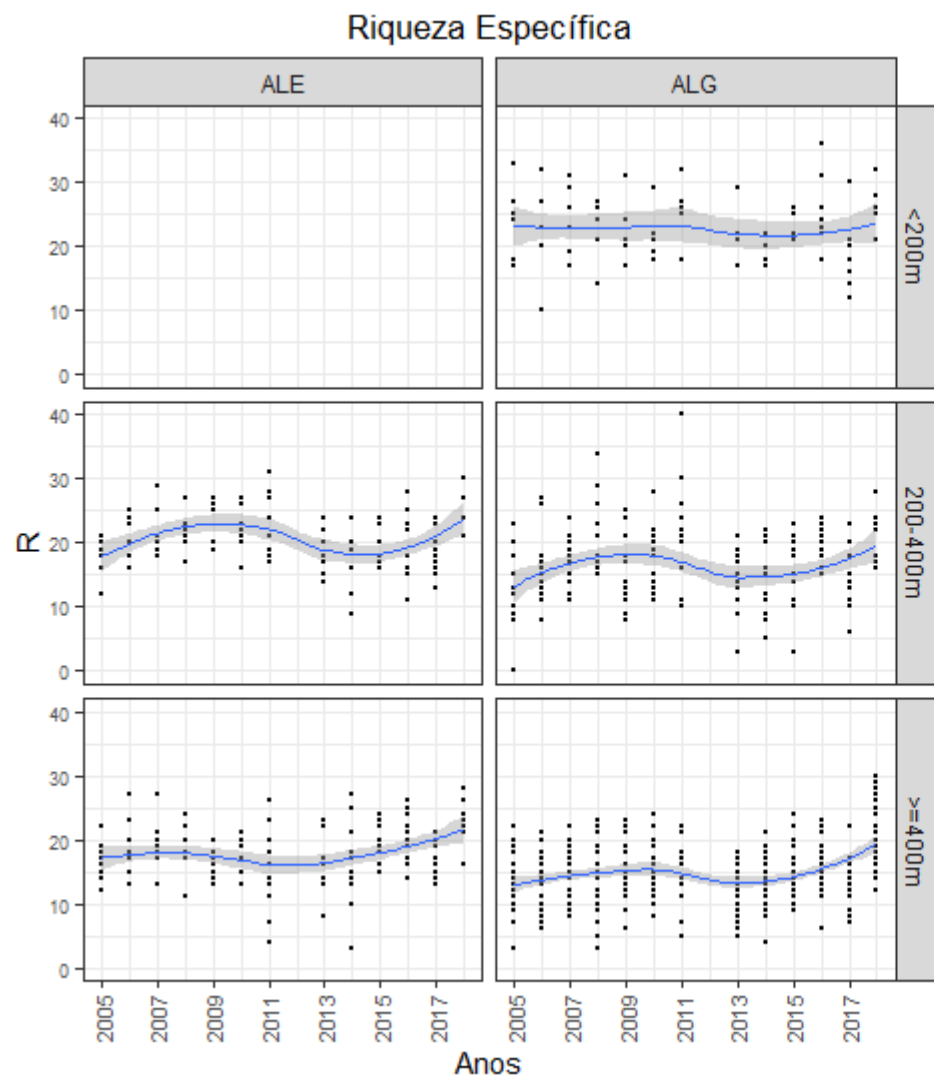
2017







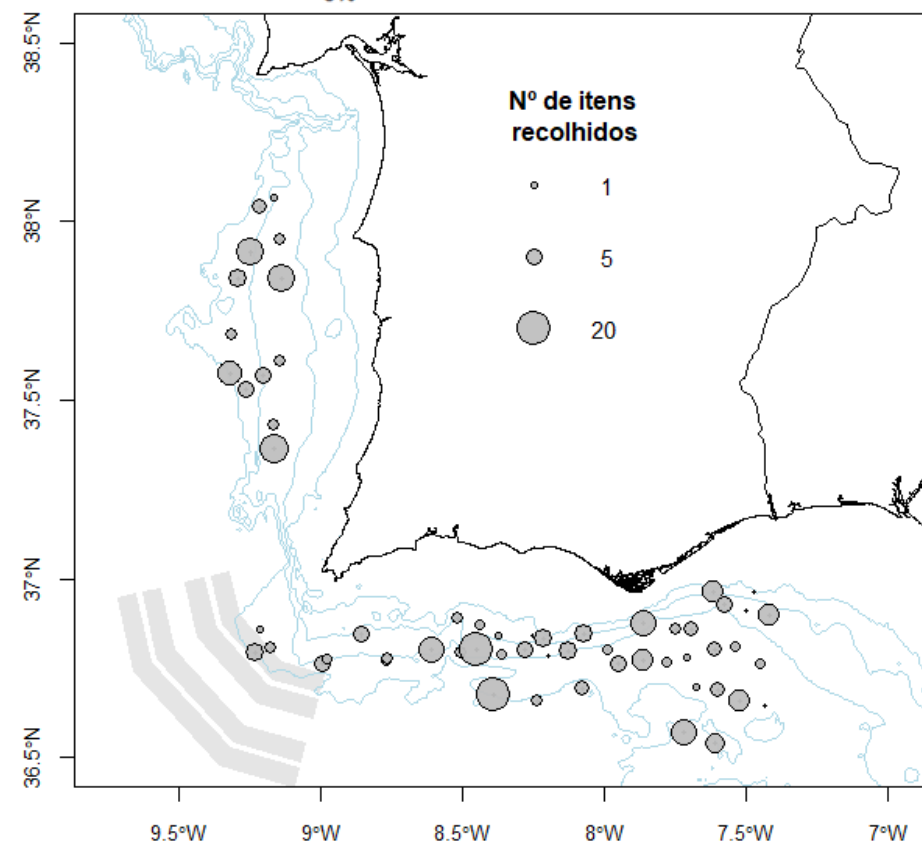
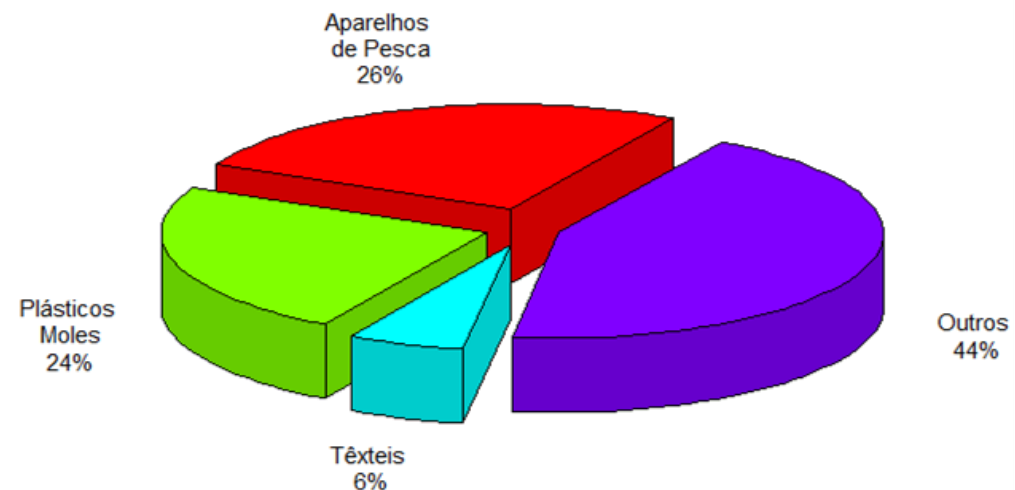
# RESULTS - biodiversity





# MARINE LITTER

- Until 2018 only collected in trawl
- From 2021 onwards, Floating litter assessment.





Silva C, Chaves C, Costa AMC, 2019. Relatório da Campanha “Crustáceos-2018”. **Relatórios de Campanha, 28p. (<http://ipma.pt>)**.

ICES.2017. Manual of the IBTS North Eastern Atlantic Surveys. Series of ICES Survey Protocols SISP 15. 92 pp. <http://doi.org/10.17895/ices.pub.3519>

ICES. 2018. Interim Report of the Working Group on Nephrops Surveys (WGNEPS). WGNEPS 2017 Report 28 November - 1 December 2017. Heraklion, Greece. ICES CM 2017/SSGIEOM:19. 78 pp.