

PRELIMINARY CRUISE REPORT

Cruise name/number:	EVHOE 2021
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Authorizations:

Coastal State	Authorization Document Number	National Participant(s)
Spain	NV 152/18.2	None

Scientist in charge of reporting:

Name:	Pascal Laffargue
Country/Nationality:	France
Affiliation:	IFREMER
Address:	IFREMER Centre Atlantique / Rue de l'Ile d'Yeu - BP 21105 / 44311 Nantes Cedex 03 / FRANCE
Telephone:	+33 240 374 212
Email:	Pascal.Laffargue@ifremer.fr, evhoe@ifremer.fr
Website (for CV and photo):	https://annuaire.ifremer.fr/cv/17134/

Brief description of scientific objective:

The EVHOE groundfish survey (<https://doi.org/10.18142/8>) is part of the European program monitoring fish resources, which gather data relative to the exploited stocks (abundance, spatial distribution, maturity, age/size structure, recruitment index).

Realized on the R/V Thalassa each year in autumn, EVHOE Groundfish survey aims at collecting data on the distribution, relative abundance and biological parameters of all fish and selected commercial invertebrates in ICES subareas 8a,b (d) and 7f,g,h,j. The primary species are hake, monkfishes, megrim, cod, haddock and whiting. Data are also collected for all other demersal, pelagic fish and cephalopods as well as for the whole invertebrate megafauna. From 2016 onward, sampling design is fixed, based on a previously randomly selected set of 155 points based on bathymetric and sedimentary strata. Stations are sampled with a standard high vertical opening trawl (GOV 36/47). The time series initiated in 1987 is used every year by European stock assessment working groups to derive the exploitation state of the main commercial fish species.

Initially mainly dedicated to the study of fish component, EVHOE survey offers now the possibility to sample the entire ecosystem in order to better understand it, answering both the MSFD requirements and the need for an ecosystem approach to fisheries at the European scale. Thus, using punctual sampling and en-route recording devices, the EVHOE survey allows measurement and analysis of the physical and chemical properties of the water and phytoplankton (probe and water sampling from Niskin bottle), the zooplankton communities (WP2 plankton nets), the fish eggs abundance (CUFES egg pump) and the species composition of the whole demersal community (GOV trawls). Additionally during

the night, video transect (bottom sledge "PAGURE"), sediment dredge and acoustic records to get more insight on benthic community and habitat characteristics (sediment, bathymetry) were performed in some of the trawling stations. As part of the MSFD, micro-plastics are also quantified using the MANTA net. En-route visual observations were also conducted to record encounters of marine birds and mammals. A few mesopelagic trawl hauls and water sampling for eDNA analysis were carried out in the southern Bay of Biscay with the objective of studying the bathy and meso-pelagic communities at the edge of the continental shelf. All sampling points of the mentioned operations are provided in figure 1 (see below).

For EVHOE 2021, **all operations planned in Spanish waters have been cancelled** because we were unable to comply the environmental conditions stated in document **18_CO_THALASSA_EVHOE_Francia_sept21** (Sound level of vessel EK80 and ME70 higher than threshold value 160 dB re 1μPa @ 1m, but no possibility to implement passive acoustic monitoring on this cruise)

Update on anticipated dates for delivery of final results:

Metadata:	(locations of stations, variables measured, types of samples)
Raw Data:	15/01/2022
Processed Data:	15/01/2022
Data Analysis:	Ongoing process
WODC Data Registration	Accession number

Append image or URL illustrating the route of the platform, locations where measurements were taken, and actual cruise track:

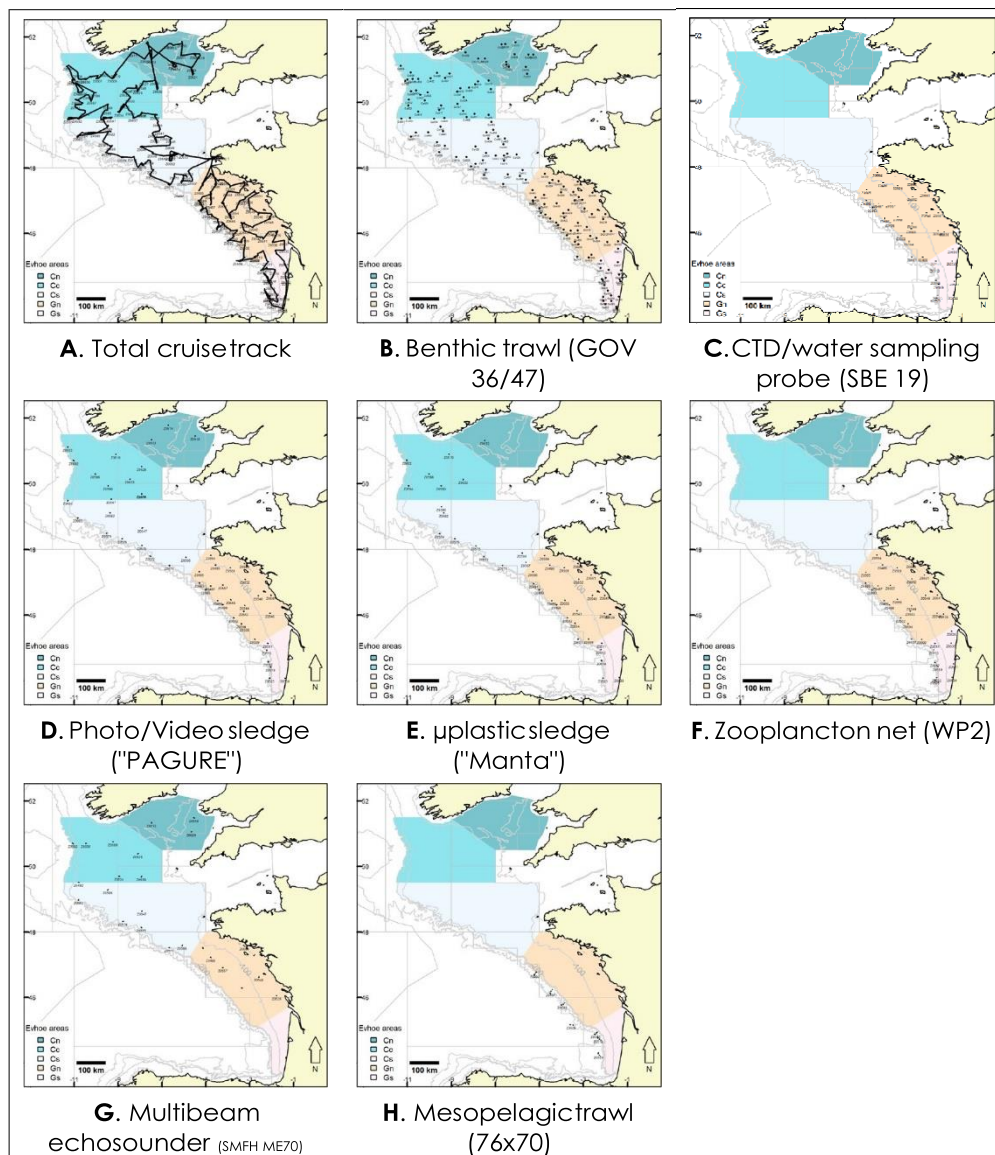


Figure 1 - Sampled stations with the various observations tools deployed during the EVHOE 2021 survey: total track for the whole survey (A), benthic trawling stations with GOV 36/47 gear (B), CTD and water sampling with SBE19 probe (C), photos and video records with "PAGURE" sledge (D), µplastic sampling with the "MANTA" net (E), zooplankton sampling with WP2 net (F), bathymetry and reflectivity profiles with ME70 multibeam echosounder (G), Mesopelagic trawl 76x70 (H). Geographic strata are indicated (Cn: northern Celtic sea, Cs: central Celtic sea, Gn: northern bay of Biscay, Gs: southern bay of Biscay)

Réf : DRAFT STANDARD FORM C
Art 249 from UN Covention of law of the sea