

Fishing technical measures and landing obligation in northwest Spanish demersal fisheries



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Fishing technical measures

Technical measures are rules governing how and where fishermen may fish. They aim to control the catch that can be taken with a given amount of fishing effort and also to minimise the impacts of fishing on the ecosystem. They form an integral part of the regulatory framework of most fisheries management systems including the Common Fisheries Policy (CFP).

Technical measures can be grouped into:

- measures that regulate the operation of the gear;
- measures that regulate the design characteristics of the gears that are deployed;
- minimum sizes below which fish and shellfish must be returned to the sea;
- measures that set spatial and temporal controls (e.g. closed/limited entry areas and seasonal closures) to protect species aggregations of juvenile and/or spawning individuals;
- measures that mitigate the impacts of fishing gears on sensitive species (e.g. marine mammals, seabirds and turtles) and habitats (e.g. corals, Posidonia meadows).

Different types of technical measures are used in different ways. They have been mainly used to protect juveniles and improve the selectivity of fishing gears, reducing the amount of fish that is discarded. Historically the measures have focused on individual stocks but in recent years they have been used to reduce the impact of fishing on multiple aspects of the marine ecosystem, including habitats and non commercial species.

Choke species in multispecies fisheries

The issue of choke species has been highlighted as the biggest single problem in implementing the Landing Obligation. The identified choke species are hake, mackerel and horse mackerel that could be choke species due to lack of quota and the discarding of small fish. Boarfish are one of the most discarded among the non commercial.

Selectivity	Measures above regulatory requirements that may reduce the unwanted catch of a species:	Exemptions	Quota
Size selectivity	- Increasing codend mesh size	• High survival	• Swapping
	- Escape panels	• de minimis (based on single TAC)	• Interspecies Flexibility
	• Species Selectivity	• de minimis (based on combined TACs)	• Others Quota
	- Sorting devices	• Bycatch quota	• Remove TAC
	- Trawl modifications e.g. cutaway trawls, raised footrope"	• Merge TAC regions	• Behavioural responses
	- Behavioural responses	• Closed/Restricted Areas	
		• Real Time Closures (for juveniles and/or spawning aggregations)	
		• Voluntary avoidance actions	

Mitigation actions for choke species
(Choke Mitigation Tool, North Western Waters Advisory Council (NWWAC) and NWW Regional Group)

CASE STUDY: NORTH SPANISH BOTTOM TRAWL FISHERIES

The Spanish bottom trawl fleet in the N and W coastal waters (ICES Divisions 8c and 9a) is composed of otter trawlers and pair trawlers which operate on the continental shelf and upper slope all year around. An scientific program of discard analysis, selectivity trials, collaborative meetings and interviews is carried out from 2015

Otter bottom trawl targeting demersal species (OTB_DEF_>=55) in Iberian waters ('Baca') is a mixed bottom trawl fishery targeting several species: European hake (*Merluccius merluccius*) Anglerfish (*Lophius budegassa* and *L. piscatorius*), Megrim (*Lepidorhombus boscii* and *L. whiffiagonis*), Norway lobster (*Nephrops norvegicus*), Blue whiting (*Micromesistius poutassou*). Codend mesh size is mostly 70 mm

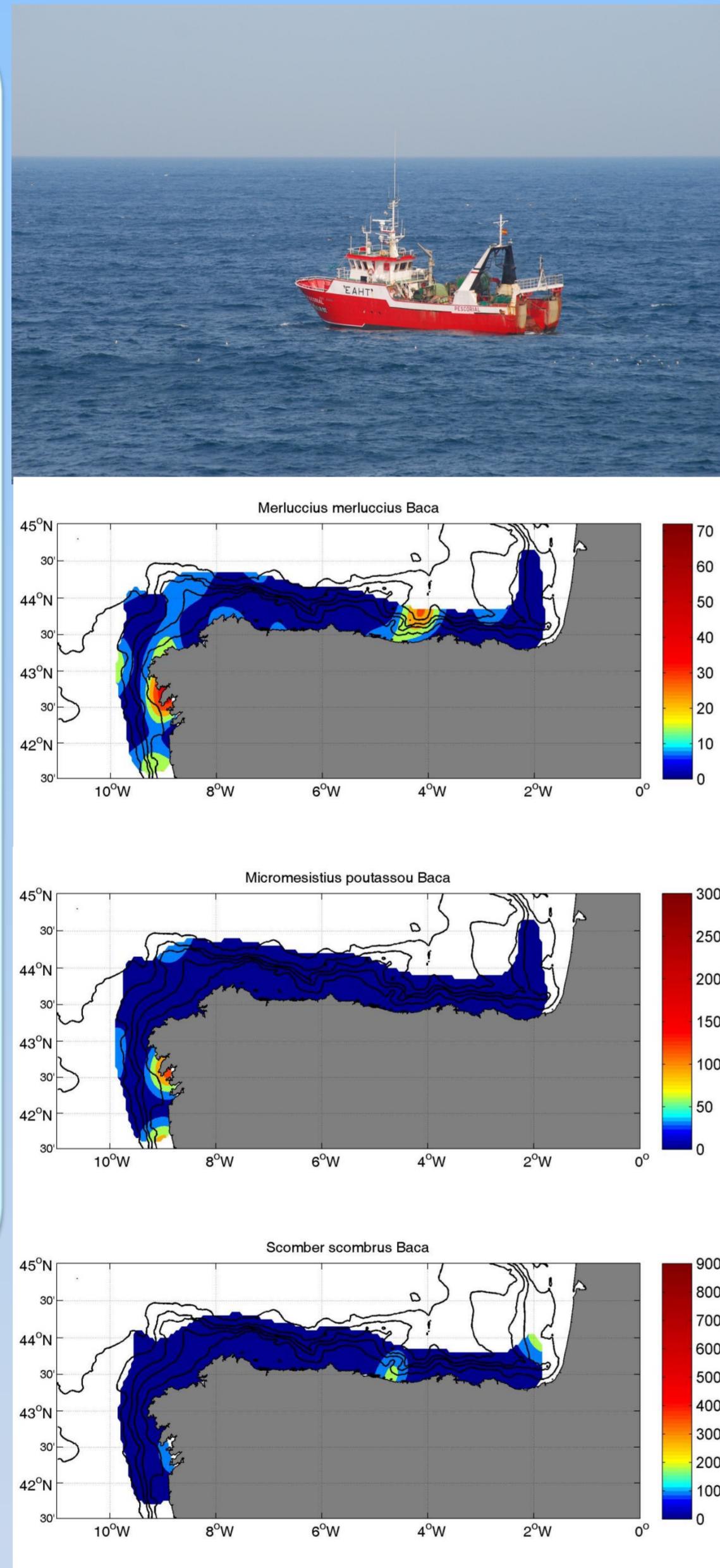


Figure 1. Spatial distribution of observed discards (kg/hour) by statistical ICES rectangle for the most discarded species by OTB_DEF_>=55 at ICES VIIIc y IXaN.

Otter bottom trawl targeting pelagic and demersal species (OTB_MPД_>=55) in Iberian waters ('Jurelera') is a mixed bottom trawl fishery targeting: Horse mackerel (*Trachurus trachurus*) and Atlantic mackerel (*Scomber scombrus*) Codend mesh size is mostly 55 mm

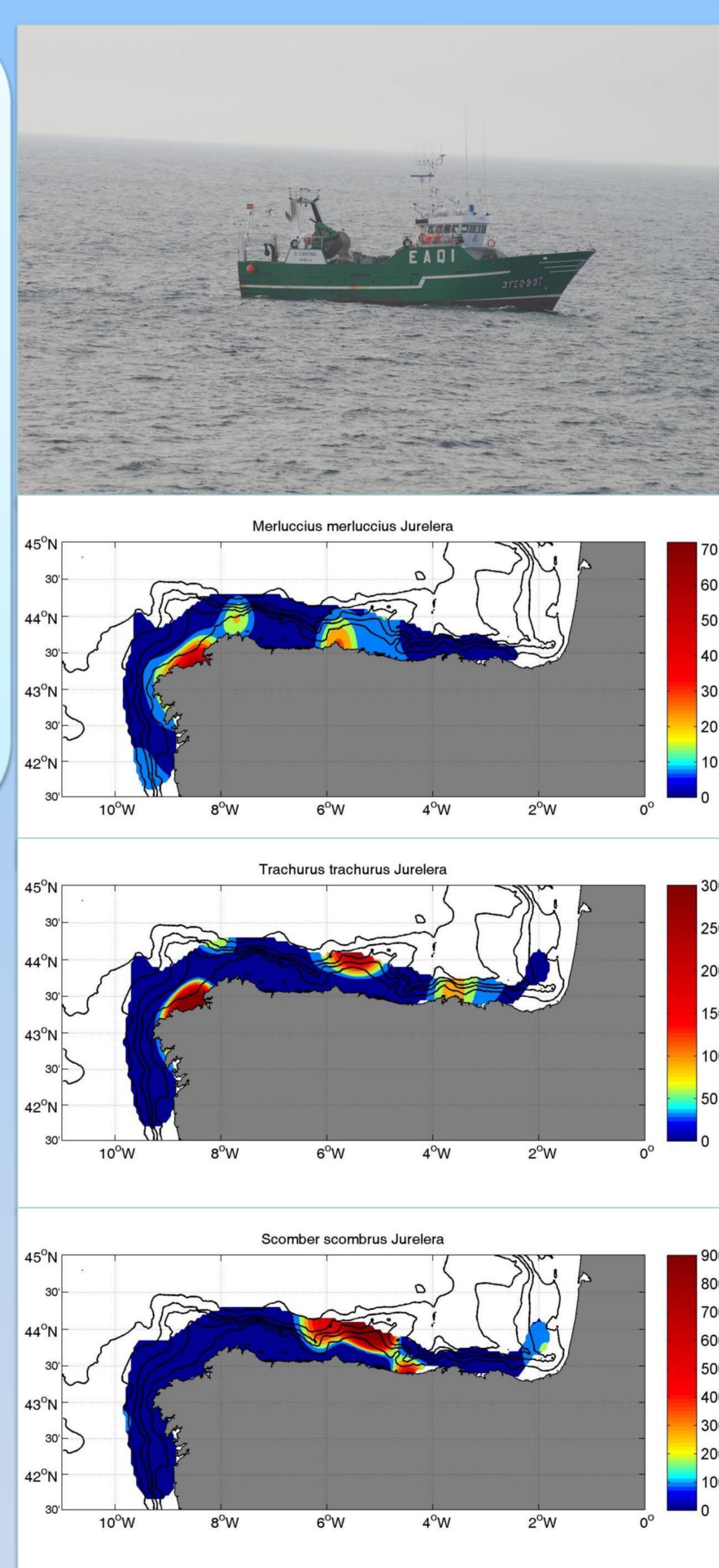


Figure 2. Spatial distribution of observed discards (kg/hour) by statistical ICES rectangle for the most discarded species by OTB_MPД_>=55 at ICES VIIIc y IXaN.

The pair bottom trawl targeting pelagic and demersal species (PTB_MPД_>=55) in Iberian waters ('Pareja') is a mixed bottom trawl fishery targeting: Blue whiting (*Micromesistius poutassou*) and European hake (*Merluccius merluccius*) This fishery seasonally (1st quarter) targets Atlantic mackerel (*Scomber scombrus*) Codend mesh size targeting blue whiting is 55 mm. Codend mesh size targeting hake is 70 mm

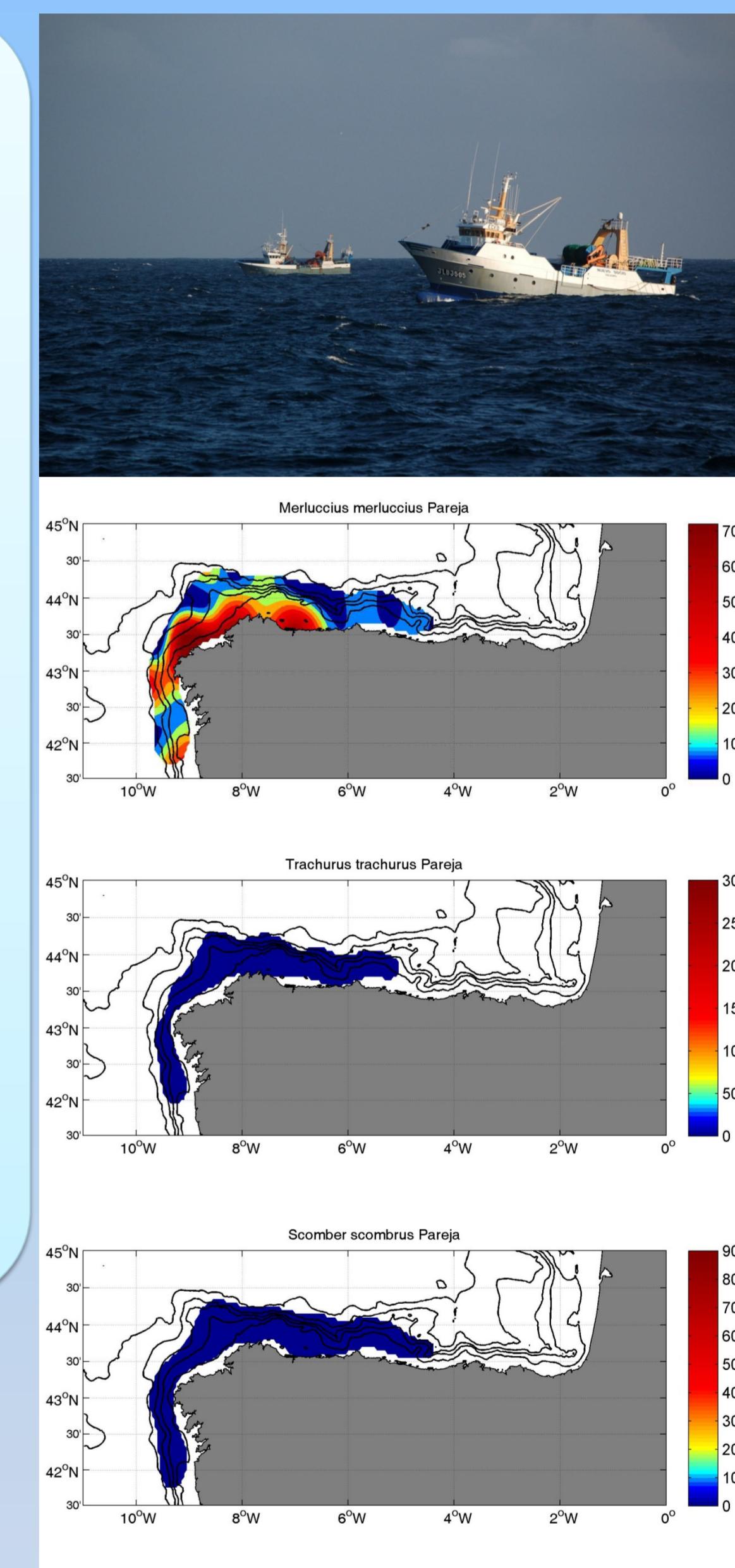


Figure 3. Spatial distribution of observed discards (kg/hour) by statistical ICES rectangle for the most discarded species by PTB_MPД_>=55 at ICES VIIIc y IXaN.

OTB_DEF Years (2017-2020) Species	Catch (tonnes)	Unwanted catches (tonnes)	Percent of unwanted catches
<i>Lepidorhombus boscii</i>	490	143.5	22.26
<i>Lepidorhombus whiffiagonis</i>	214	33.1	11.67
<i>Lophius budegassa</i>	149	1.1	0.56
<i>Lophius piscatorius</i>	162	0.8	0.34
<i>Merluccius merluccius</i>	793	199.0	17.56
<i>Micromesistius poutassou</i>	631	552.3	48.52
<i>Scomber scombrus</i>	235	51.0	36.50
<i>Trachurus trachurus</i>	521	40.3	9.00

Catch and estimated rate of unwanted catches in weight of the main quota species caught by meter. Mean values for years 2017-2020

OTB_MPД Years (2017-2020) Species	Catch (tonnes)	Unwanted catches (tonnes)	Percent of unwanted catches
<i>Lepidorhombus boscii</i>	12	5.5	17.43
<i>Lepidorhombus whiffiagonis</i>	3	0.9	
<i>Lophius budegassa</i>	3	0.0	
<i>Lophius piscatorius</i>	6	0.0	
<i>Merluccius merluccius</i>	165	54.0	31.99
<i>Micromesistius poutassou</i>	57	85.0	79.19
<i>Scomber scombrus</i>	518	593.6	9.61
<i>Trachurus trachurus</i>	4039	27.8	0.72

PTB_MPД Years (2017-2020) Species	Catch (tonnes)	Unwanted catches (tonnes)	Percent of unwanted catches
<i>Lepidorhombus boscii</i>	1	0.1	
<i>Lepidorhombus whiffiagonis</i>	5	0.1	
<i>Lophius budegassa</i>	28	0.0	
<i>Lophius piscatorius</i>	28	0.0	
<i>Merluccius merluccius</i>	2257	486.3	13.00
<i>Micromesistius poutassou</i>	24678	720.3	2.07
<i>Scomber scombrus</i>	1047	1.0	
<i>Trachurus trachurus</i>	288	19.4	

MCRS in ICES European waters	Scientific name	MCRS in ICES European waters
Hake	<i>Merluccius merluccius</i>	27 cm
Horse mackerel	<i>Trachurus spp.</i>	15 cm
Mackerel	<i>Scomber spp.</i>	Whole area, except North Sea: 20 cm. North Sea: 30 cm
Megrim	<i>Lepidorhombus spp.</i>	20 cm
Anglerfish	<i>Lophius budegassa</i>	No MCRS. But minimum commercialisation weight: 500 g.
	<i>Lophius piscatorius</i>	

FINDINGS

- ✓ Data indicate that the increased selectivity could help fishers to comply with landing obligation.
- ✓ It is necessary to establish the amount of reduction in the proportion of unwanted catches, at which 'better selectivity' may said to have been achieved
- ✓ The improvement of fishing gear selectivity is not enough. A set of technical measures, and legal and management solutions are also necessary.
- ✓ It is very important to include and to encourage fishermen to propose their own solutions and validate them through scientific trials.
- ✓ Fishermen agree to reduce discards. Fishermen do not agree that landing obligation is adequate to reduce discards.
- ✓ Scientists are making a renewed effort to find solutions with the collaboration and support of the fishing sector.
- ✓ Fishers do not accept the Landing Obligation regulation and are reluctant to collaborate with scientists. Cooperation is fundamental for success in the European framework



Read the QR and watch the movie!