

# Maps and Apps

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## WP 4: Adaptation of fishing strategies: minimising unwanted catches

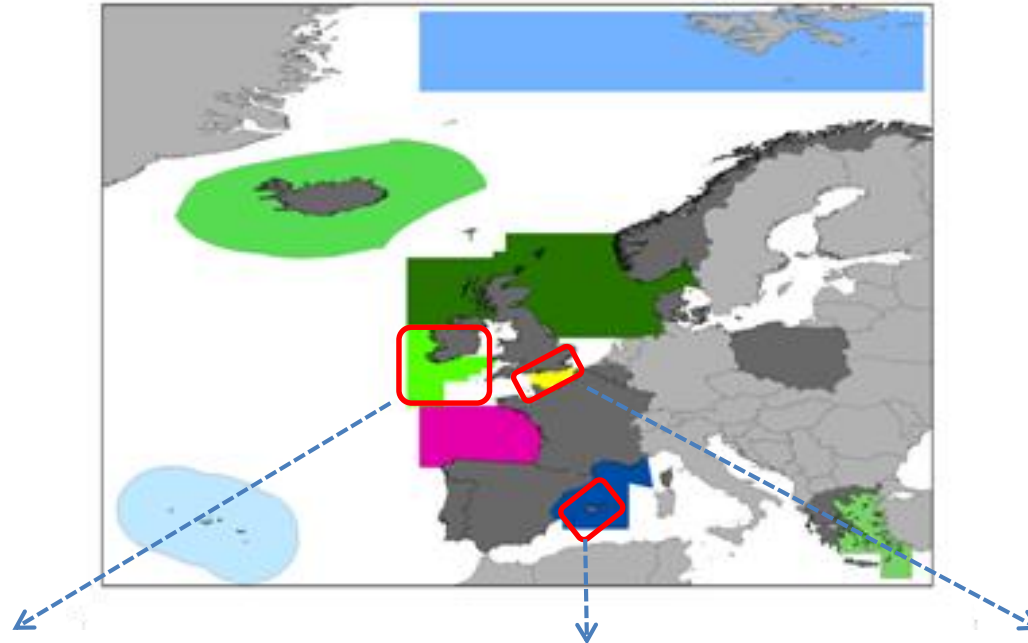
### Main aim:

To identify the best locations, times and practices to fish to avoid unwanted catch using the knowledge from fisheries scientists in collaboration with fishers.

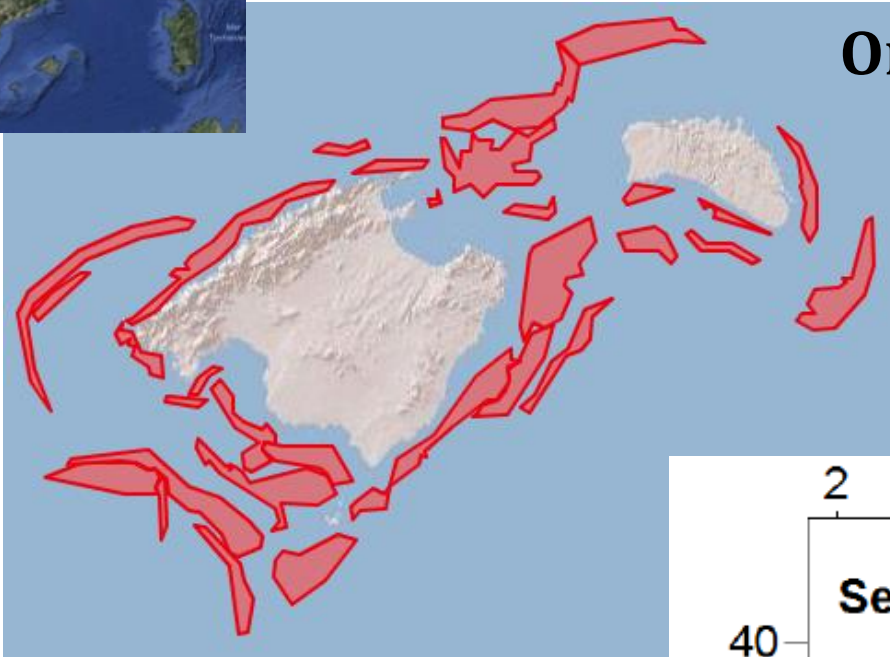
Maps showing the main areas with unwanted catches will be produced using information from commercial fishing activity and scientific surveys.



# WP 4: Adaptation of fishing strategies: minimising unwanted catches

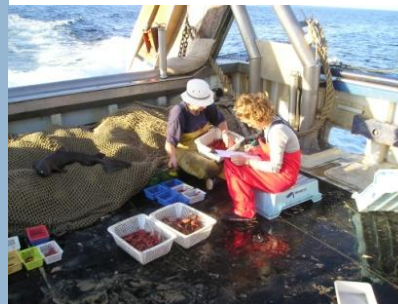


# Information sources



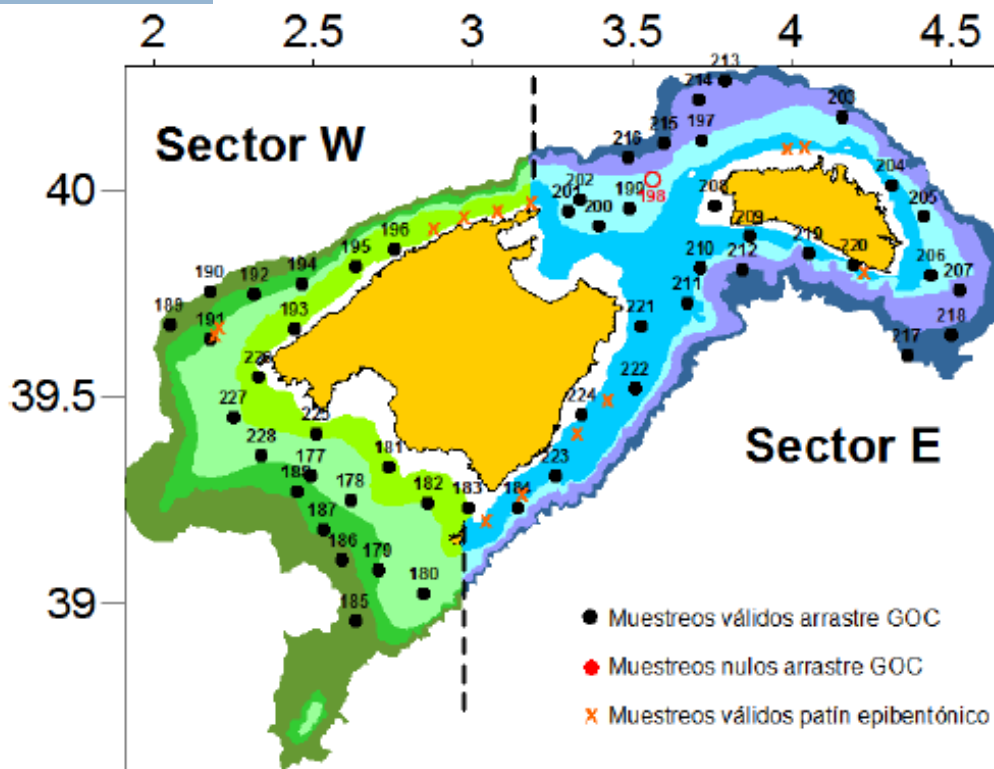
## Onboard commercial sampling

All year round  
2003-2016



## Scientific surveys

Early summer  
2001-2016





## Study species



Taxonomical group	N	Species	MLS (mm)	L50 (mm)	L50 source
Fish	1	<i>Merluccius merluccius</i>	200	327	(Oliver 1993)
	2	<i>Mullus surmuletus</i>	110	142	SNDCF
	3	<i>Mullus barbatus</i>	110	128	SNDCF
	4	<i>Pagellus acarne</i>	17	177	(Velasco et al. 2011)
	5	<i>Pagellus erythrinus</i>	15	164	SNDCF
	6	<i>Trachurus mediterraneus</i>	150	129	SNDCF
	7	<i>Trachurus trachurus</i>	150	175	SNDCF
	8	<i>Helicolenus dactylopterus</i>		162	(Peirano and Tunesi 1986)
	9	<i>Phycis blennoides</i>		320	(Glavic et al. 2014)
	10	<i>Lepidorhombus boscii</i>		170	(Mannini et al. 1990)
	11	<i>Scyliorhinus canicula</i>		399	(Ramirez-Amaro et al. 2016)
	12	<i>Galeus melastomus</i>		510	(Ramirez-Amaro et al. 2016)
	Crustaceans	13	<i>Raja clavata</i>		686F-781M
14		<i>Aristeus antennatus</i>		25F-19M	(Guijarro et al. 2008)
15		<i>Nephrops norvegicus</i>	20	37	(Guijarro et al. 2013)
	16	<i>Parapenaeus longirostris</i>	20	28	(Guijarro et al. 2009)
Cephalopods	17	<i>Octopus vulgaris</i>		120	SNDCF
	18	<i>Eledone cirrhosa</i>		86	SNDCF
	19	<i>Illex coindetii</i>		151	SNDCF



Species regulated by MLS in the Mediterranean and/or the most important commercial species for the bottom trawl fishery from the Balearic Islands



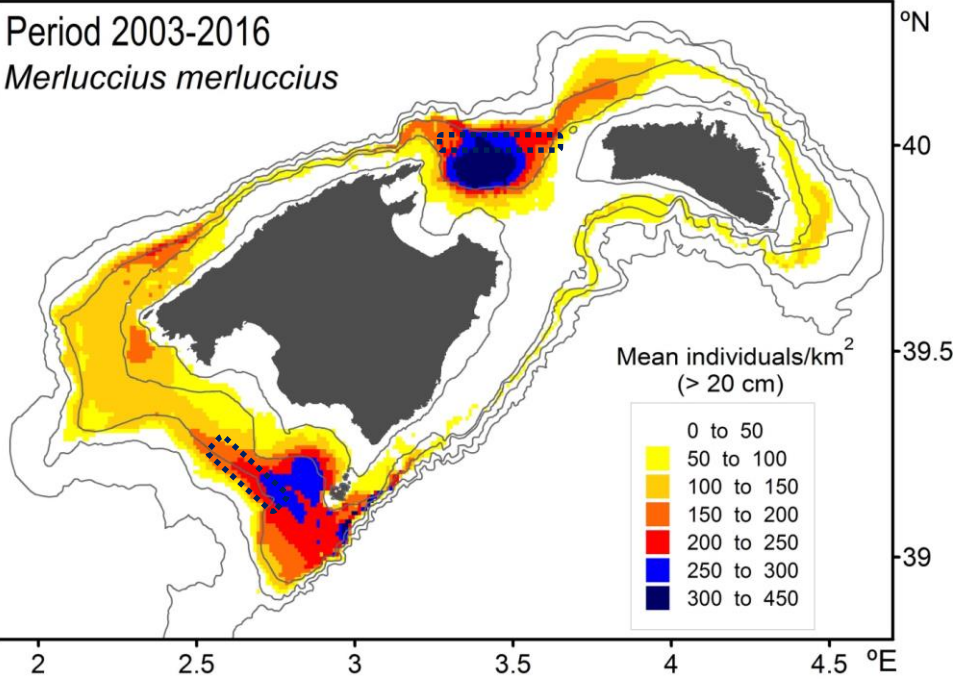
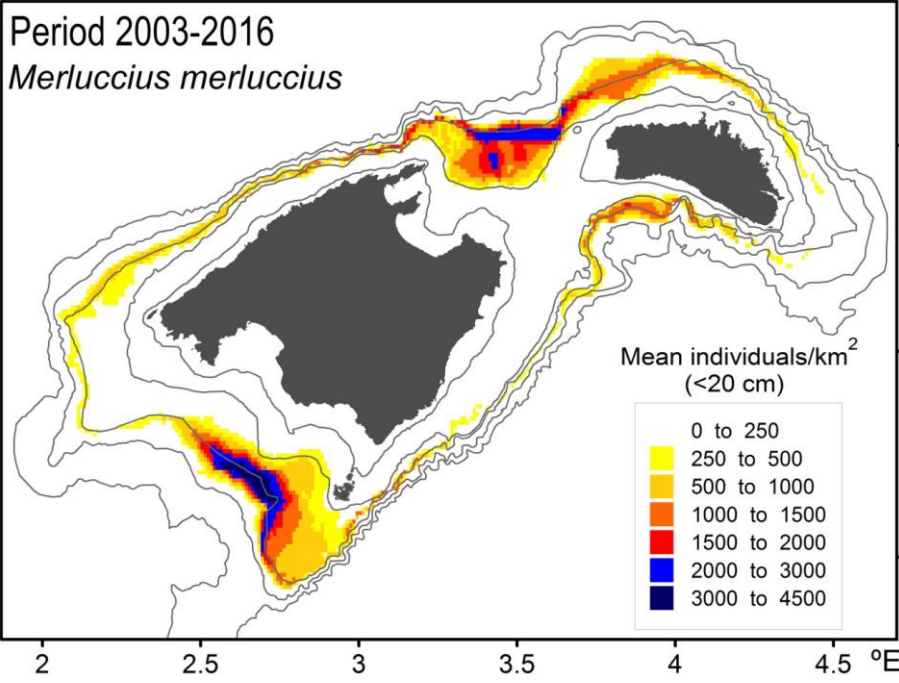
# Distribution maps



Small fish-Illegal  
( $<20$  cm)

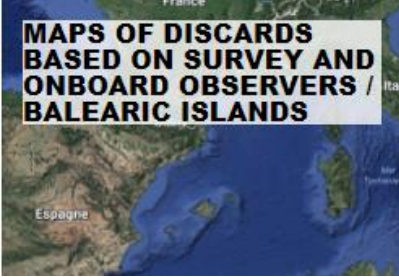
Minimum  
Landing Size

Large fish-Legal  
( $>20$  cm)



Support tools to assist

- Fishers: make choices of fishing locations
- Managers: identify hotspots of recruitment



# Dissemination

Presented to fishers and managers from the Balearic Islands



## [DiscardLess WP4](#)

Support tools to assist

- Fishers: make choices of fishing locations
- Managers: identify hotspots of recruitment



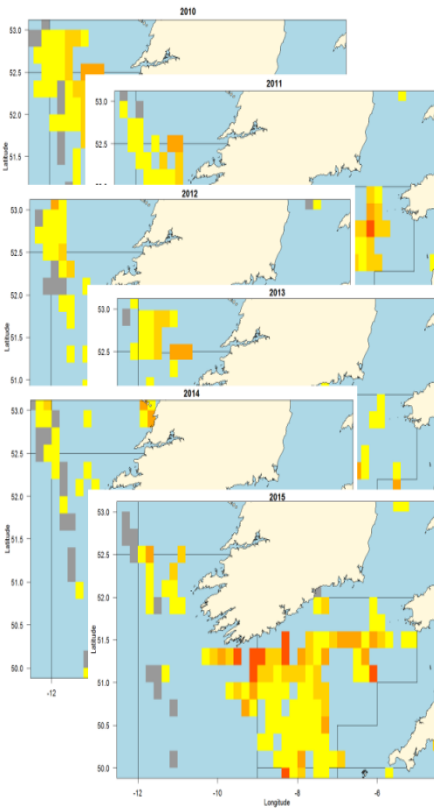
# Hotspot mapping in the Celtic Sea



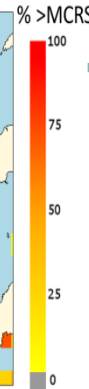
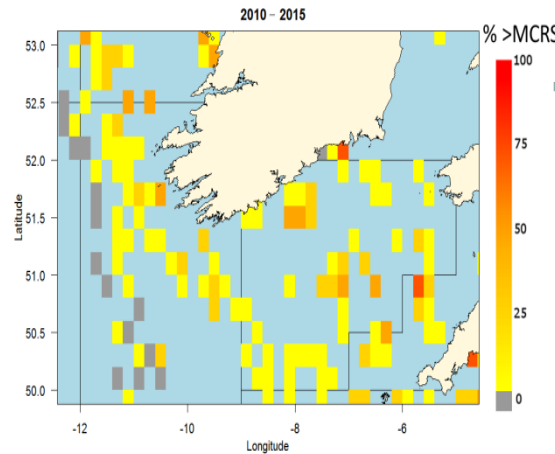


# Hotspot mapping in the Celtic Sea

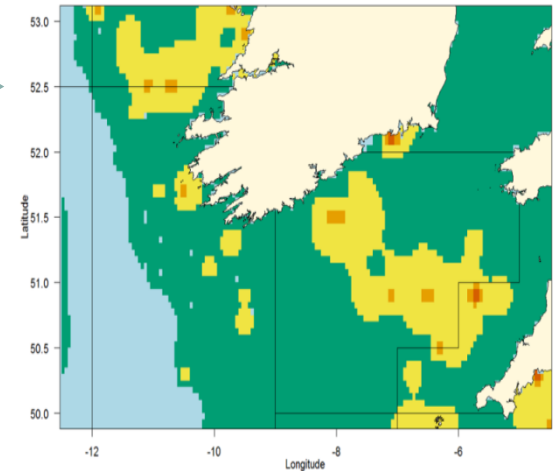
2010 – 2015



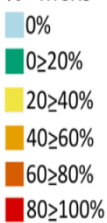
% >MCRS



2010 – 2015



% >MCRS





# MAPPING APP

Select the species of interest, the size component of the catch, season and catch metric below to display the desired hotspot map;

Vessel type

TR1

Species

Cod

Size

Below MCRS

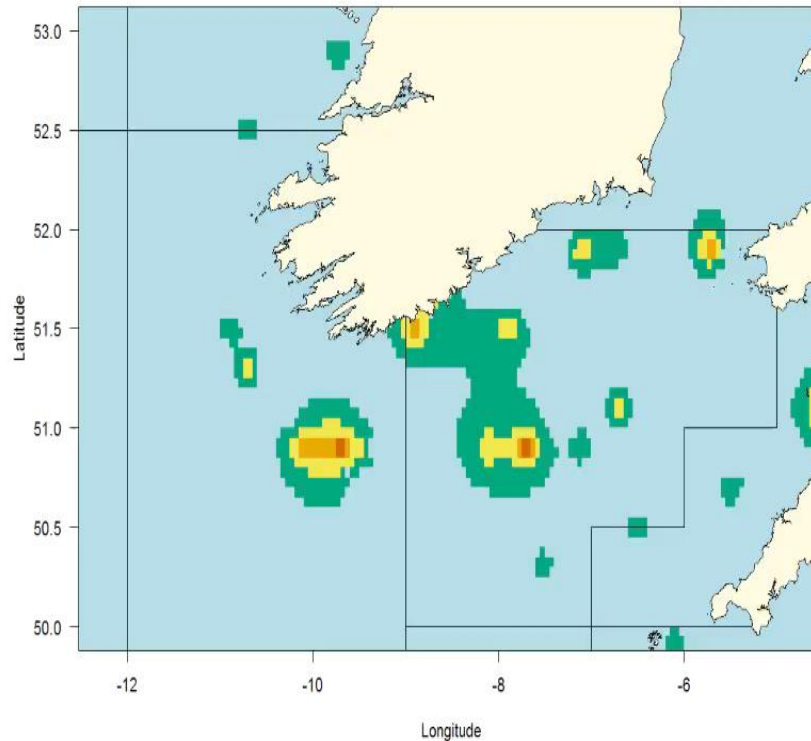
Season

Annual

Map Type

CPUE  
CPUE  
Proportion

Levels of <MCRS cod CPUE (TR1)



Thanks a lot for your attention!



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