



Fishery management alternatives along the GSA6 and related socioeconomic aspects

Joan B. Company, Laura Recasens, José A. García del Arco, Joan Sala, Antoni Lombarte, John G. Ramírez, Mariona Garriga, Marta Coll and Joan Navarro

Institut de Ciències del Mar (ICM-CSIC)

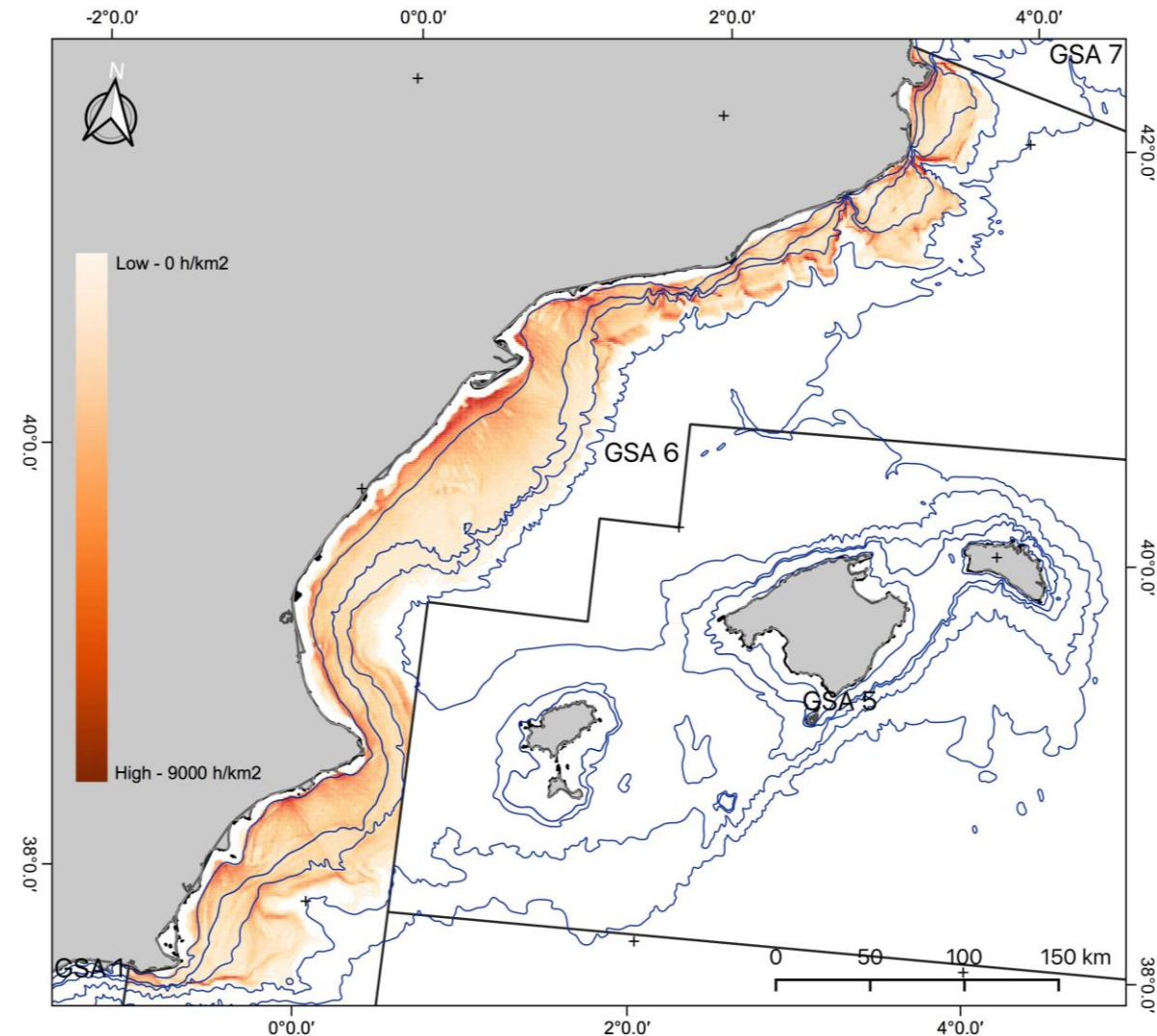
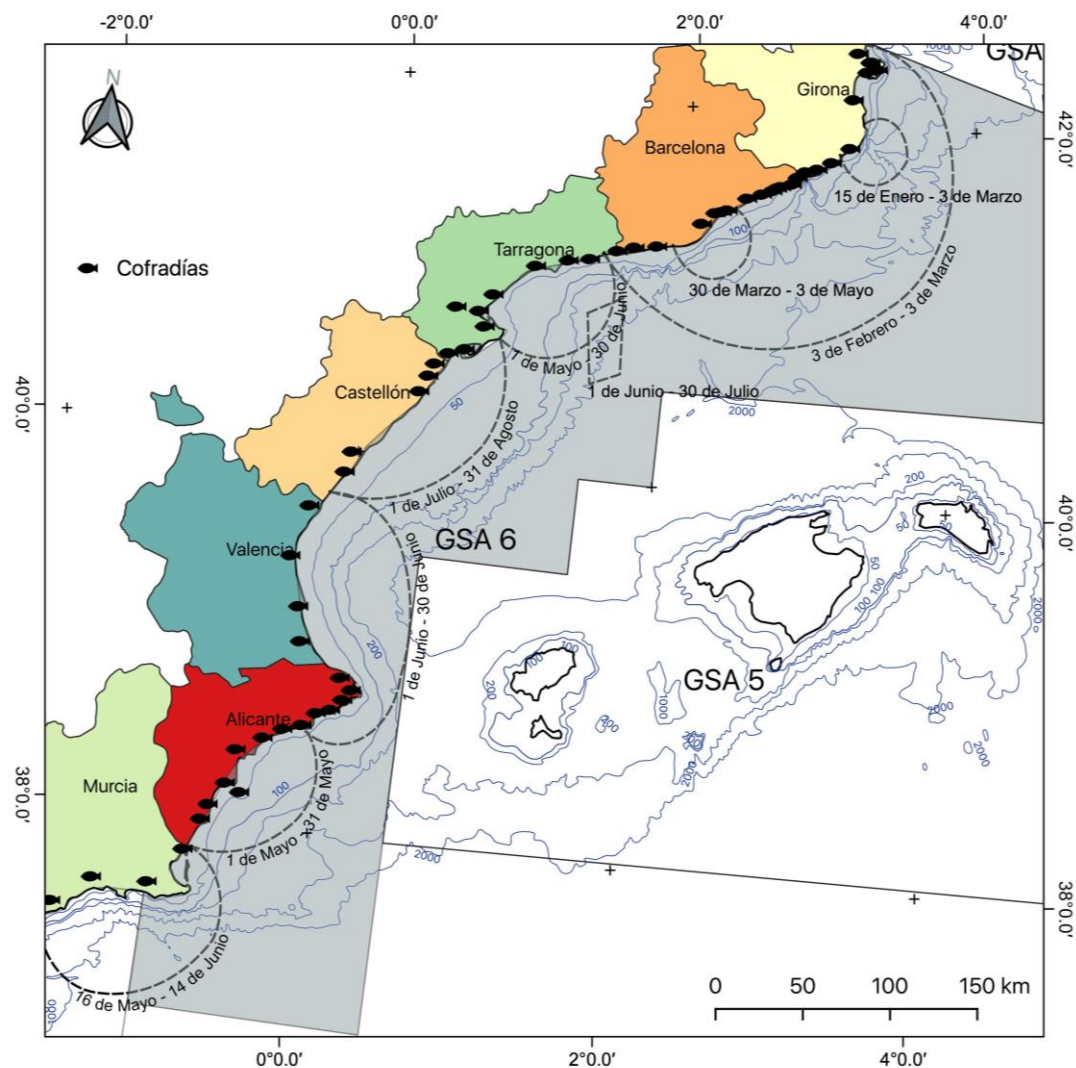
Institut Català de Recerca per a la Governança del Mar (ICATMAR)



Unió Europea
Fons europeu
marítim i de la pesca



Territorial socioeconomic structure along the GSA 6 and its fishing footprint





Socioeconomic Organization and main Management measures along GSA6

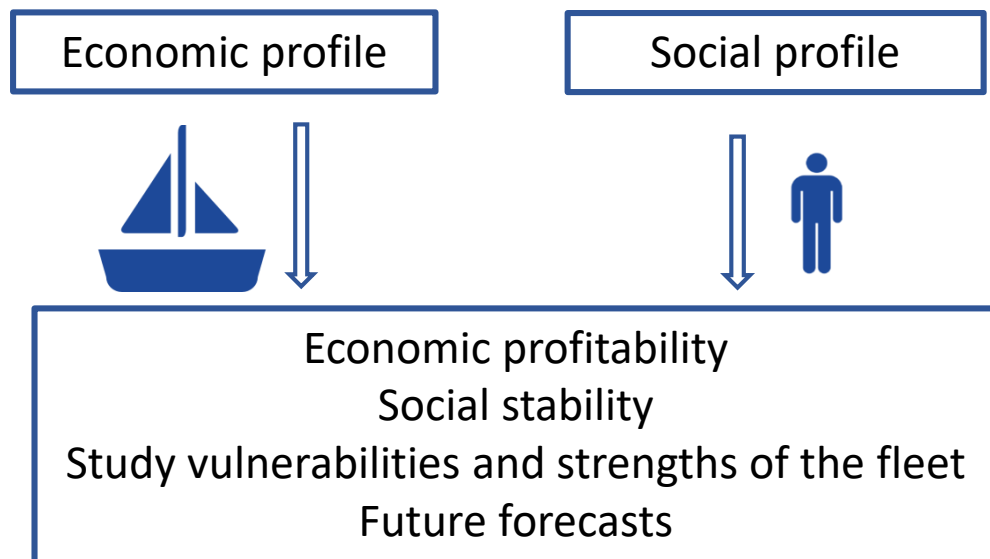
1. *Castello Management Plan applied from the 60s*: Five days per week at sea with a maximum of 12 hours per day. This daily fishery capability implies that fishing vessels only can fish in fishery grounds nearby their fishery harbour (maximum of 25 miles navigation).
2. Mesh size: 40 mm square (fully implemented in GSA 6 and 5 since 2010).
3. Minimum Conservation Reference Sizes (MCRS): not fully applied and many of the official MCRS are not according Size-at-First-Maturity.
4. Maximum Engine capacity of 500 HP: Spanish regulation applied since the 80s but with non-compliance.



Socioeconomic importance of fishery activity in local economies



Socioeconomic study Northern GSA 6: Social and economic characterization of professional fishing activity



Pilot study: Analysis of one fishing port (Vilanova i la Geltrú).
Method: Personal interview to all fishermen (Ship owners, Skippers, Crew).

55 active fishing vessels.
96% of Vessel owners and Skippers interviewed (53 vessels).
180 surveys delivered to the crew.
96% of the crew surveyed (173 fishermen).

Expected RESULTS

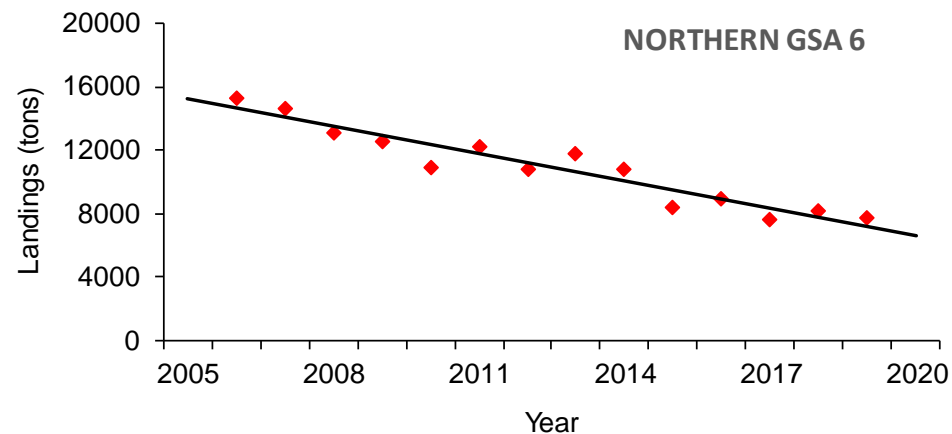
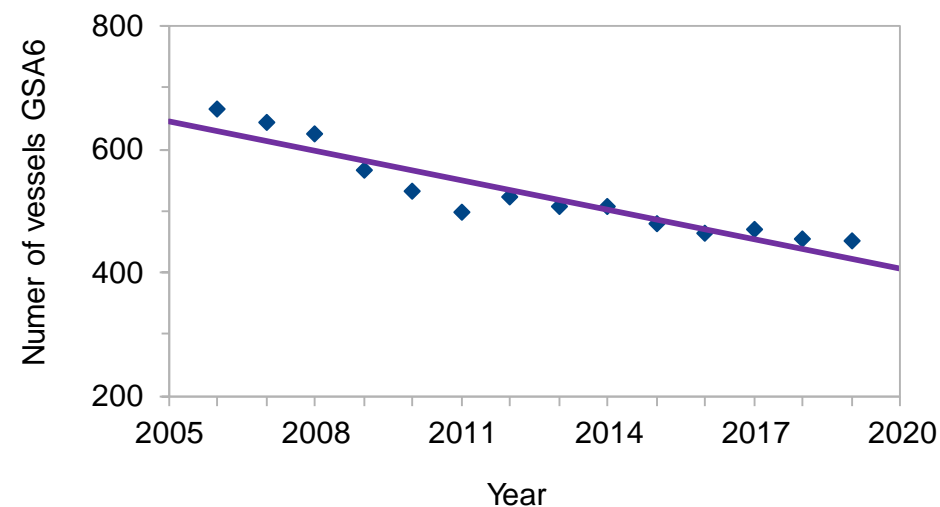
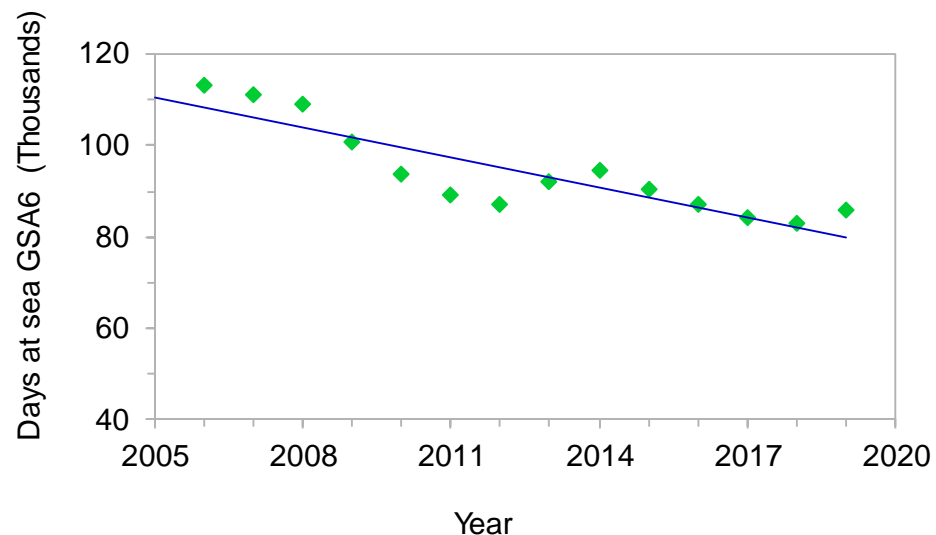
Social: Fishermen by boat, Studies level, Nationalities, Experience, ...

Fishing characterization: Seasonality of fishing, Job time distribution, ...

Economic: Indebtedness level, Main expenses, Revenues distribution



Fishery indicators of the last 15 years in northern GSA6: diminution of number of days and number vessels

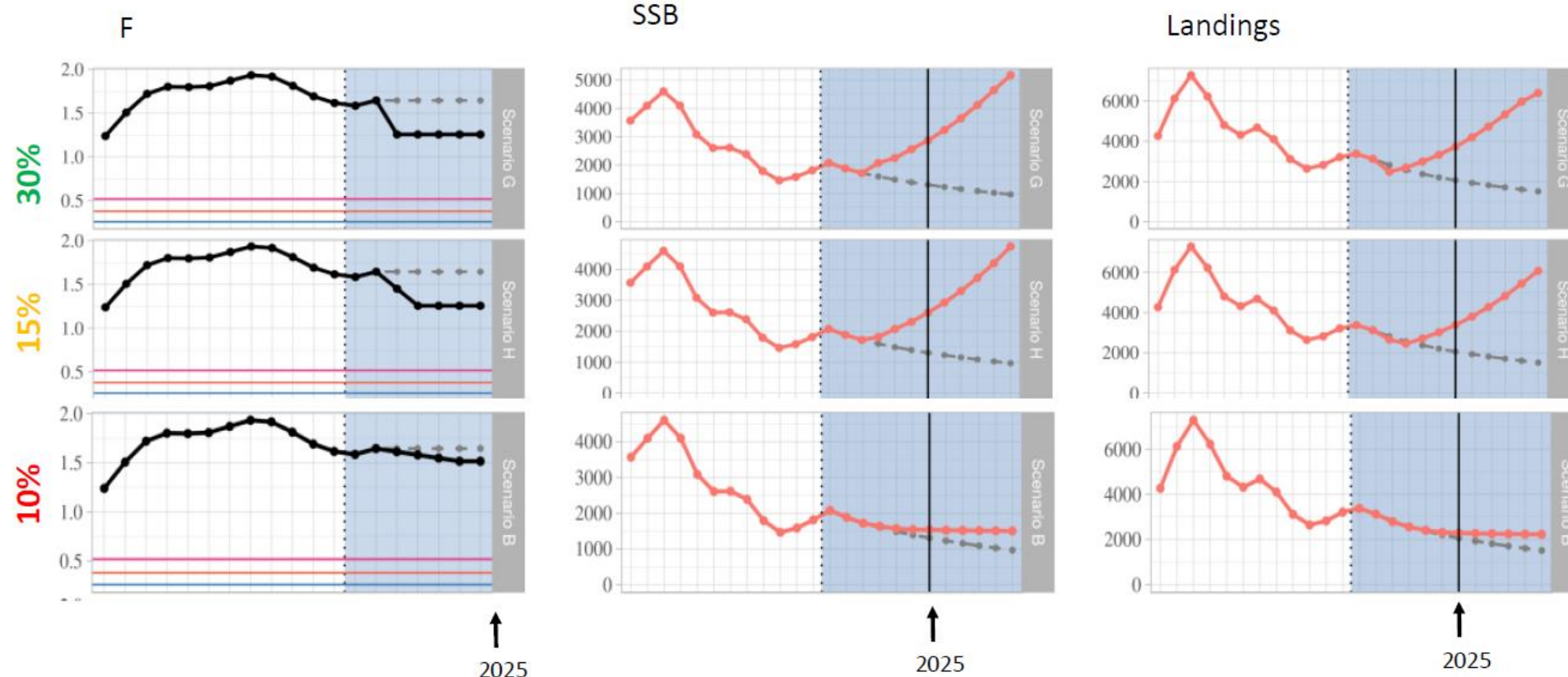




Last simulations of WMED Working Group: to be validated in next STECF meeting

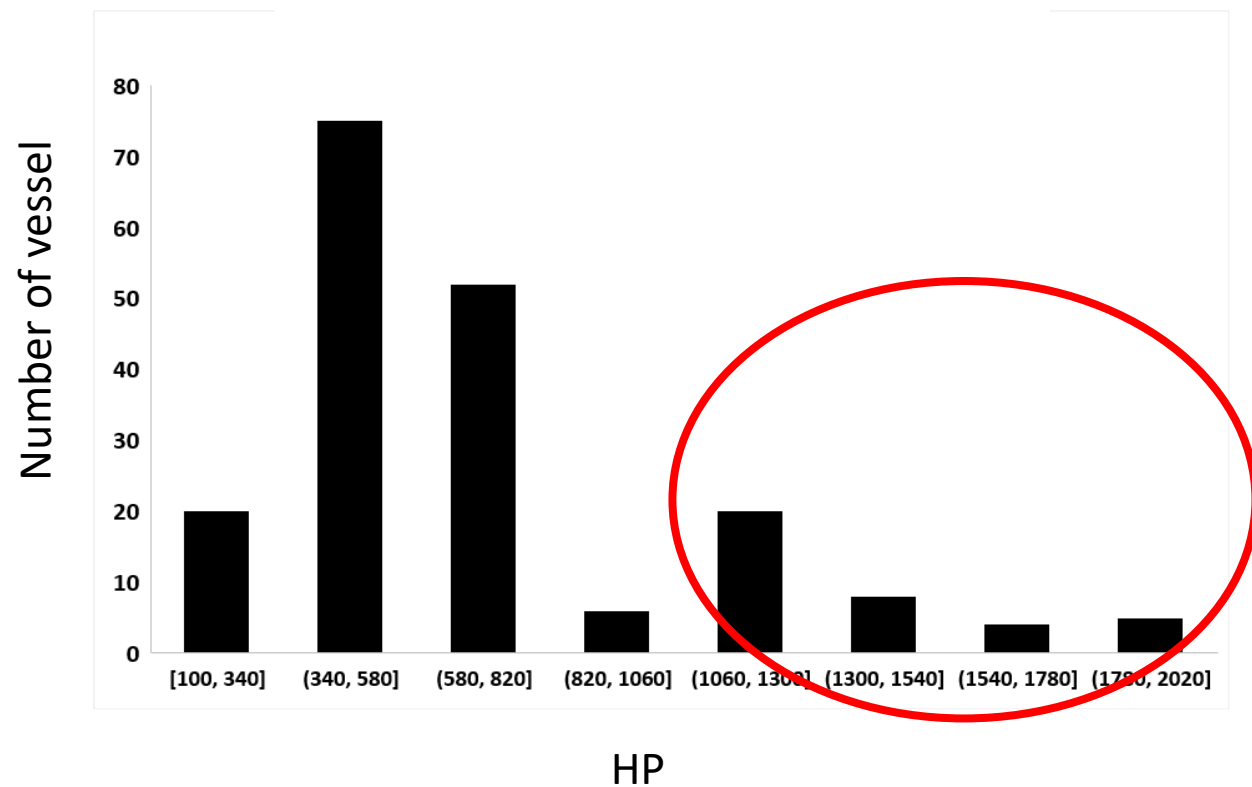
Validation in Nov.
2020

Simulations 2020-2030 HAKE Fishing Mortality, Biomass and Landings

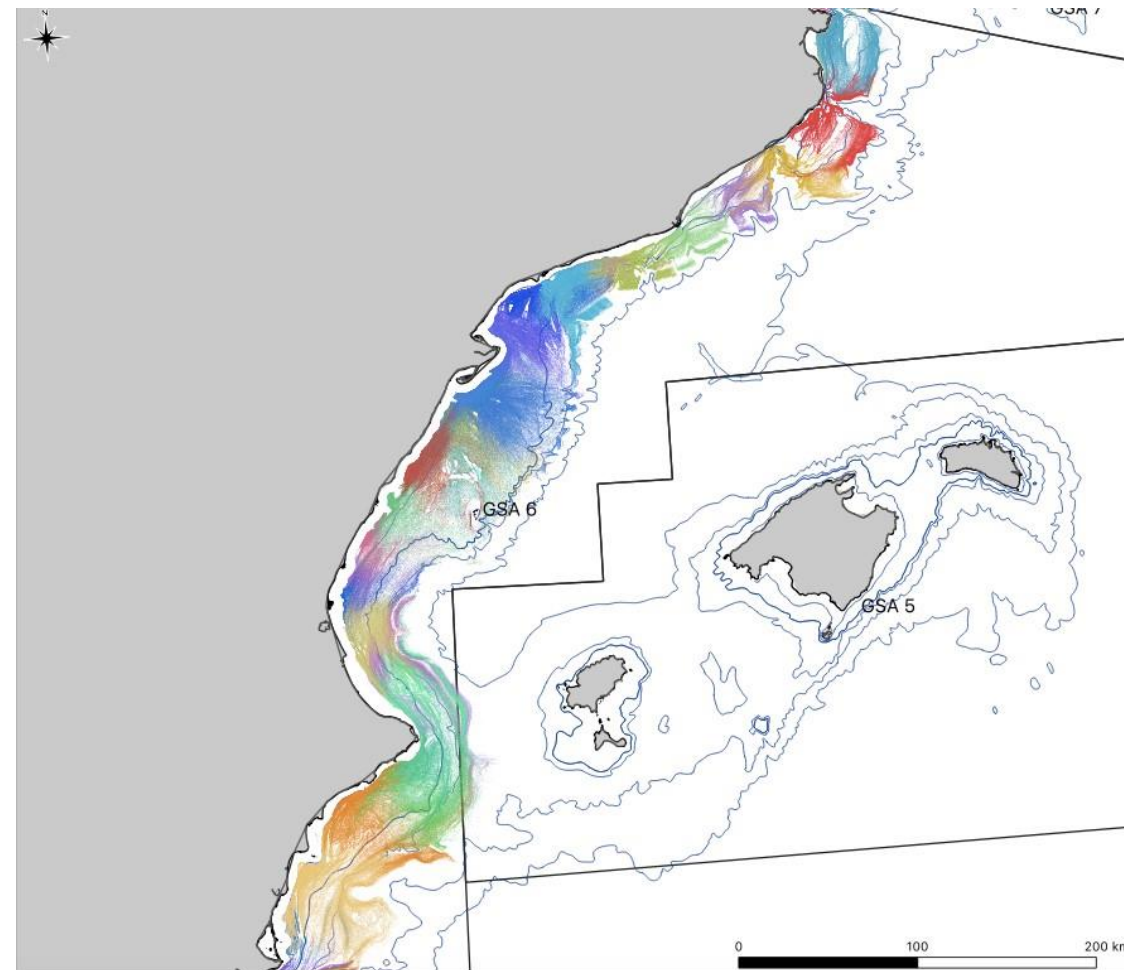




Horsepower of northern GSA 6 (Catalonia region)



Spatial fishing footprint by each local fleet





How the U.E. Multiannual Plan is approaching this overexploitation situation?

Fishery management criteria mentioned in the new EU-MAP with the objective to obtain a MSY of demersal exploited stocks

1. Article 7 “*Fishing Effort Regime*”: fishery management by 10 % annual reduction of fishing effort up to a 30% (mainly by reducing days at sea).
2. Article 11 “*Closure areas*”: spatial fishery management.



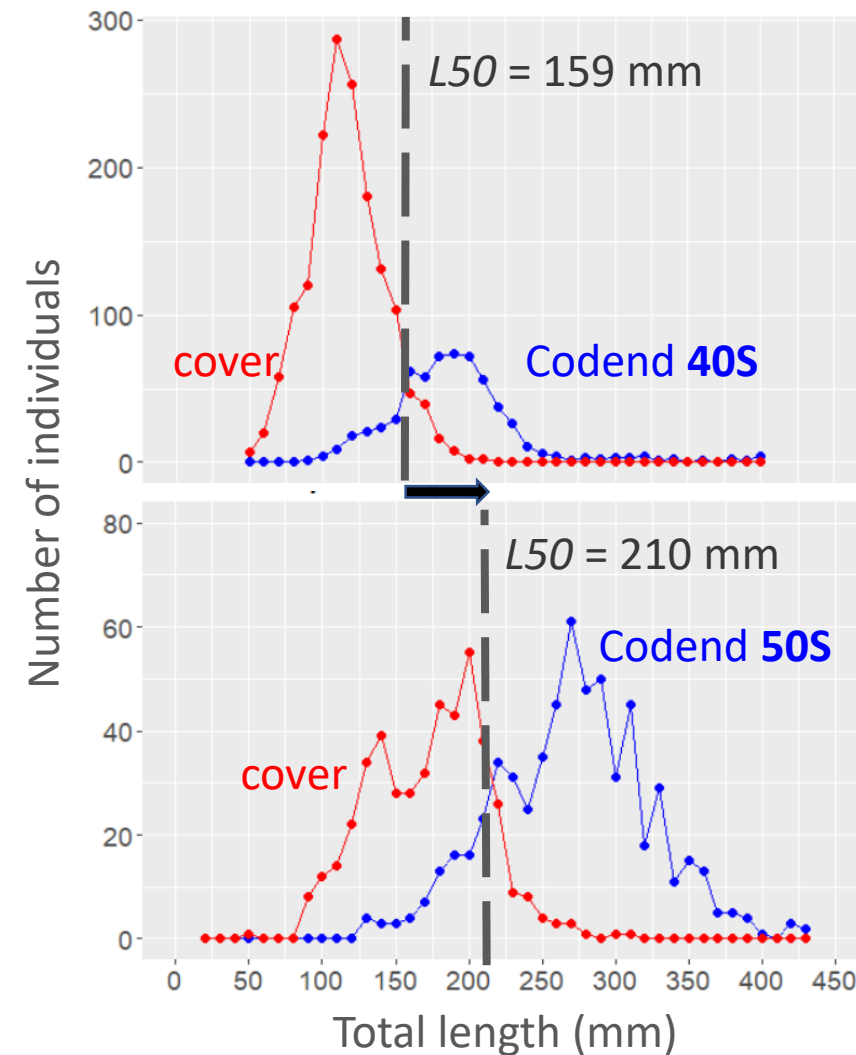
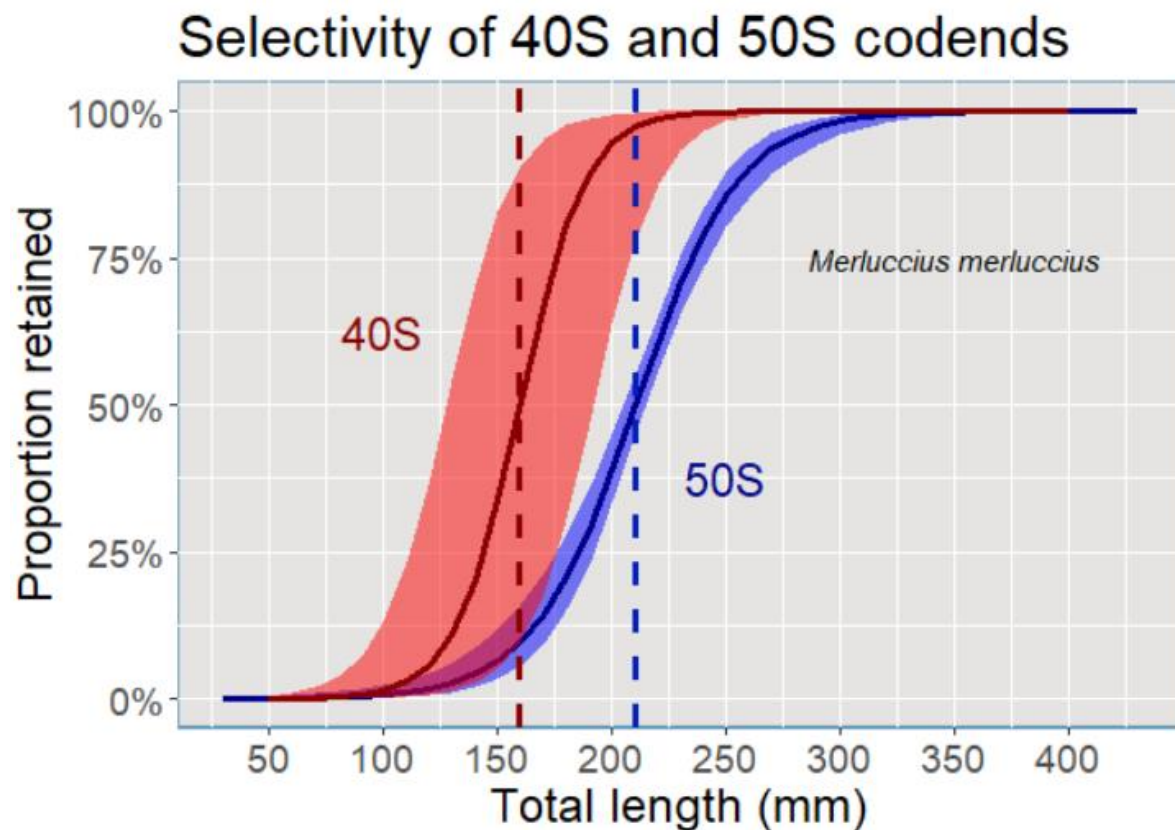
Management measures as complementary to the ones proposed on Articles 7 and 11

- a) *Codend mesh selectivity.*
- b) *Habitat recovery and restoration:* Small No-Take fishing areas distributed along the entire coastline in the northern part of the fishing grounds of each of the fisherman's association.
- c) Fishing capacity by engine limitations or technical gear measures.



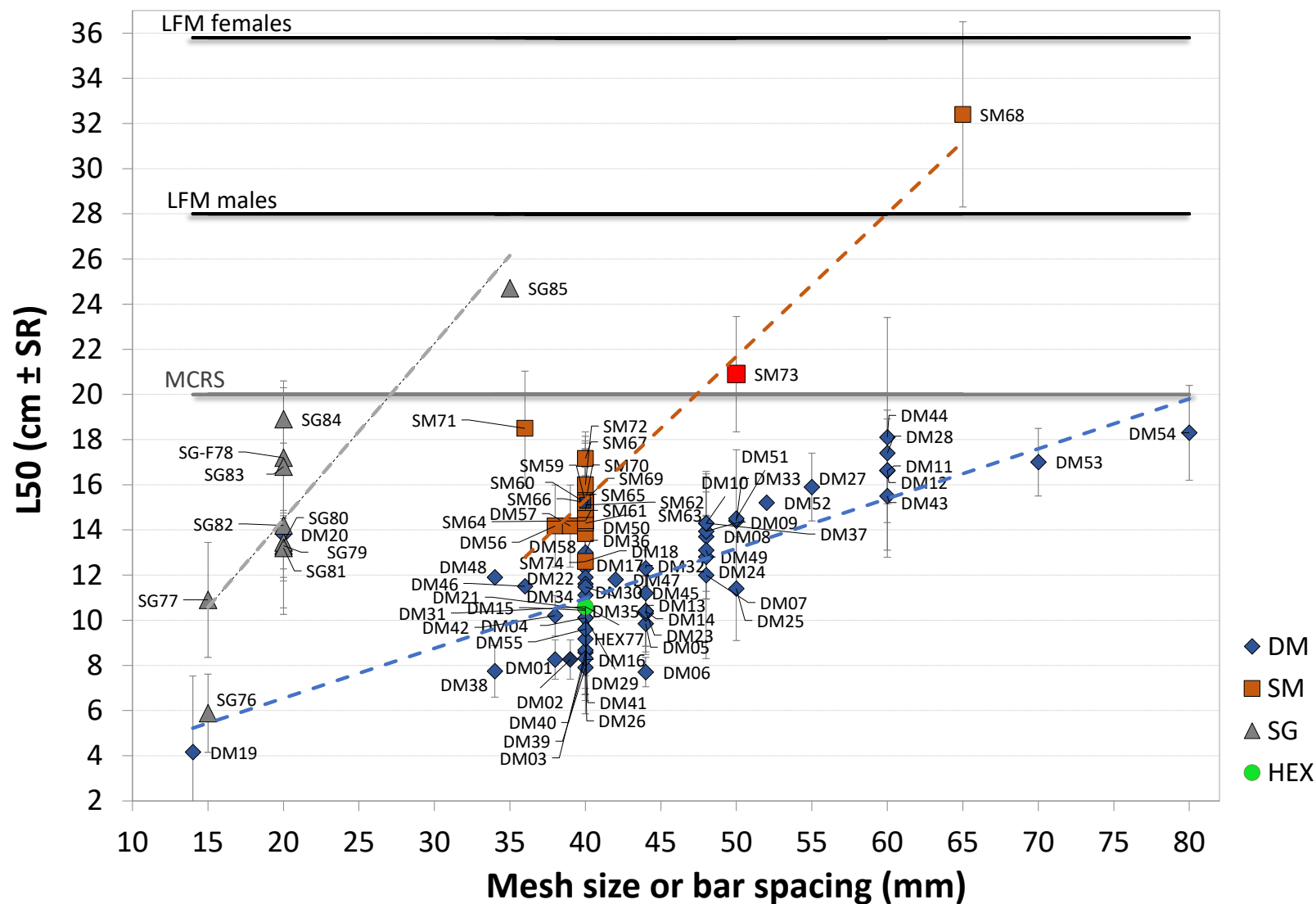
Hake gear selectivity: 50 mm vs 40 mm square mesh size

Merluccius merluccius



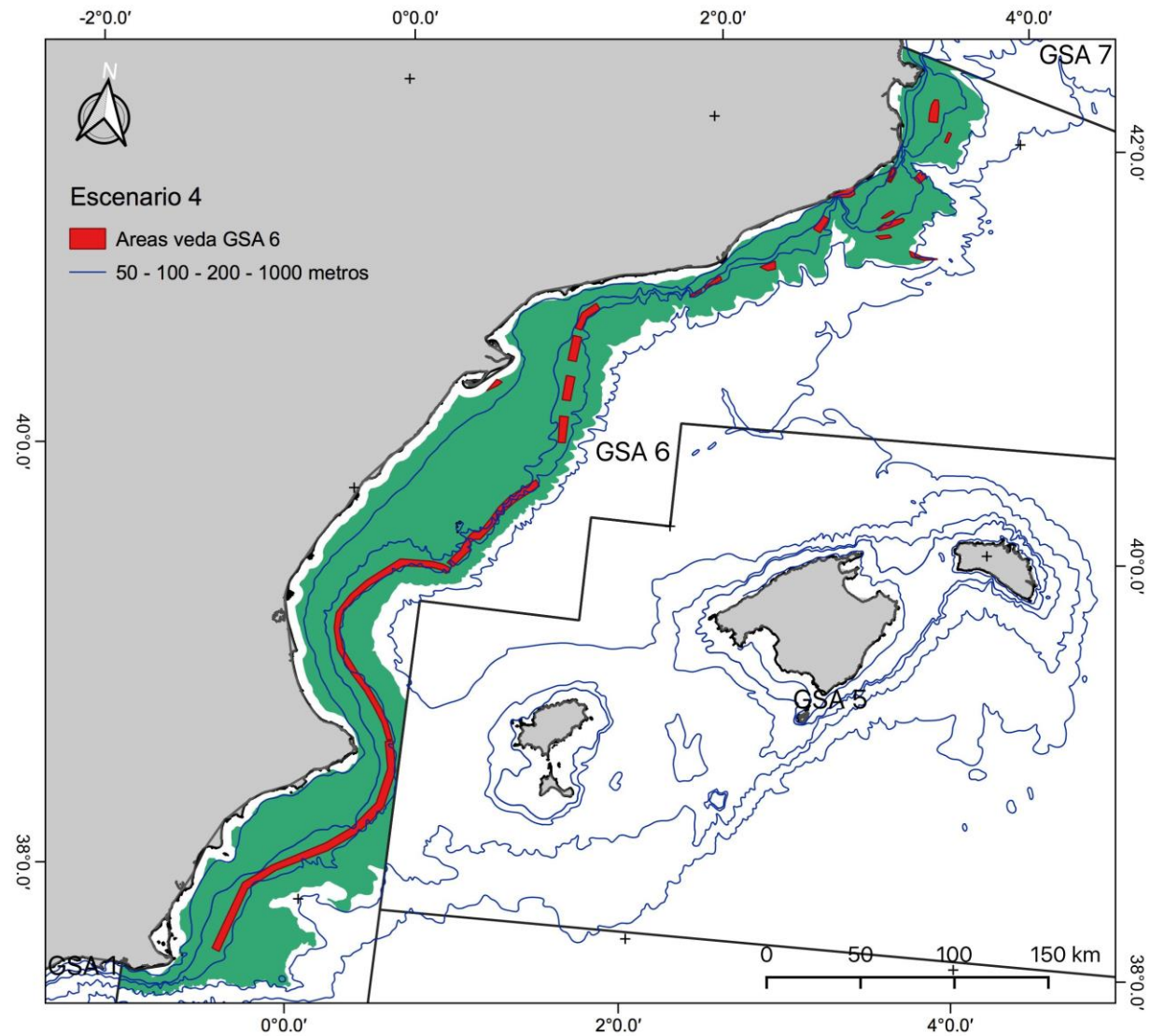


Hake gear selectivity: diamond mesh vs square mesh





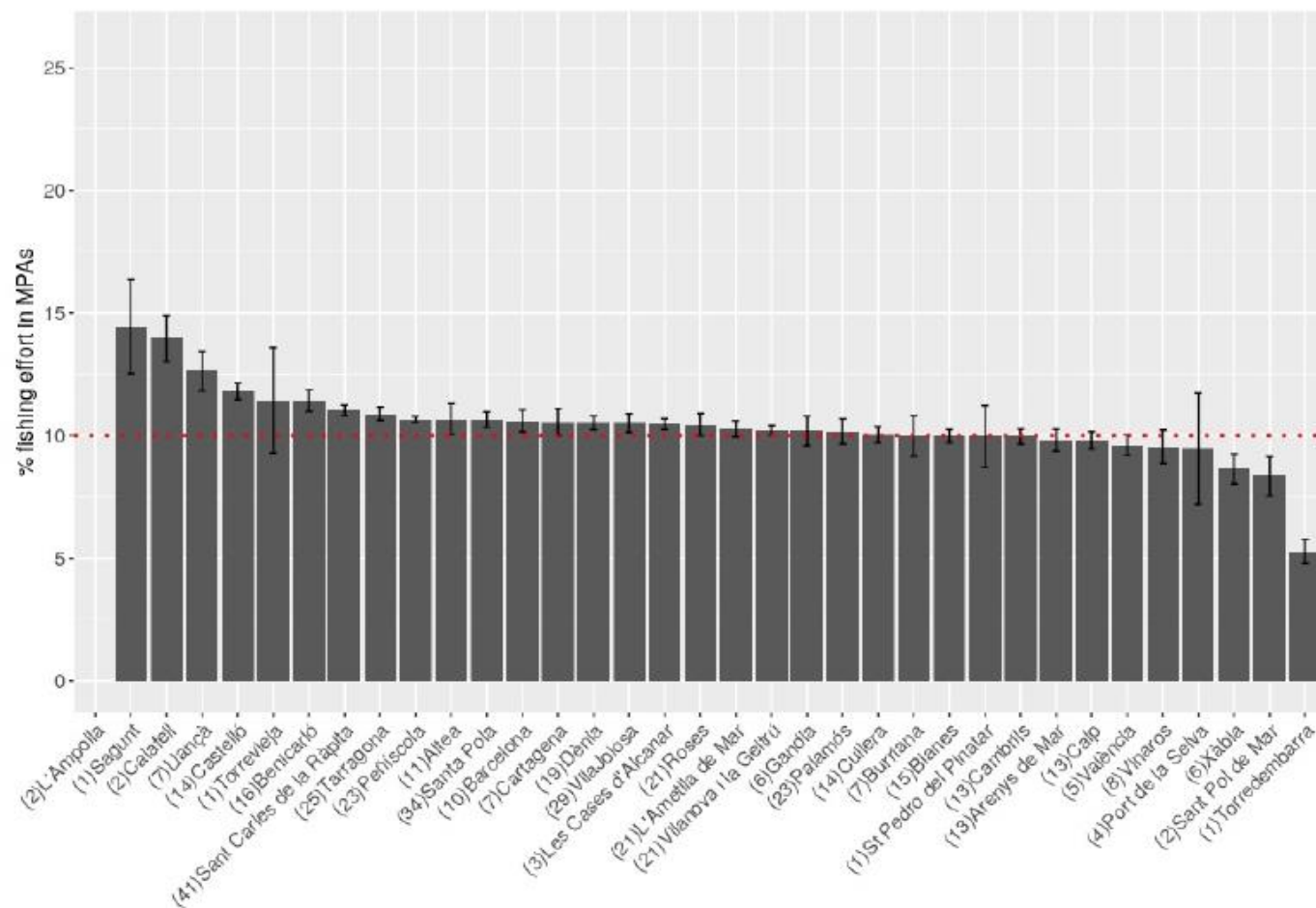
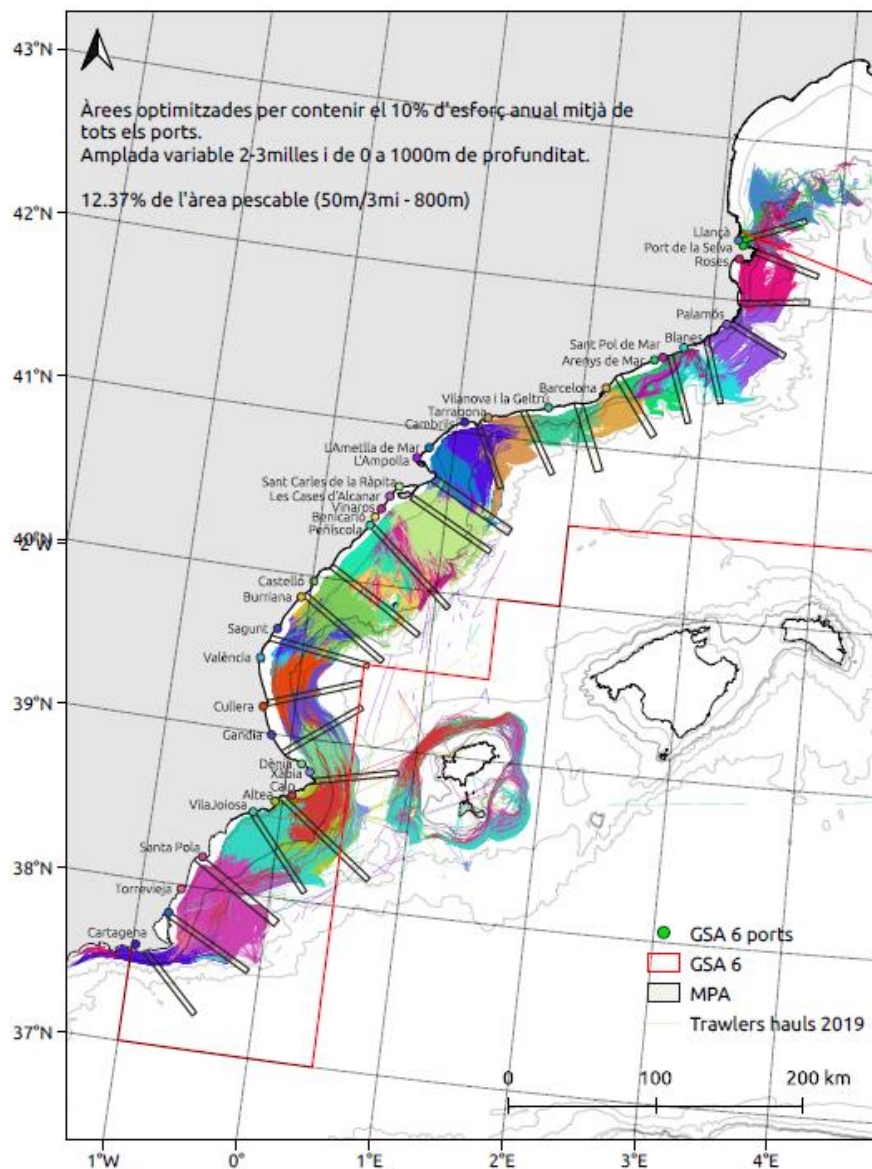
Article 11.2 and 11.3: Habitat recovery and restoration



ID	No-take zone	Área (km²)	Subregion	Total fishing, Km²	% Protected area
1	Área de interés pesquero para la merluza de Roses	51,35	Girona	4848,67	4,69
2	Área de repoblación Blanes-Palamós	37,89	Girona		
3	Área de interés pesquero para la cigala de Roses-Palamós	9,15	Girona		
4	Núcleo Mars d'Anterra	10,37	Girona		
5	Núcleo Amortiguación Mars d'Anterra	14,12	Girona		
6	Drapaire	22,92	Girona		
7	Vol de Tossa	37,88	Girona		
8	Flubiana	9,46	Girona		
9	Melica	11,52	Girona		
10	Gamba	22,92	Girona		
11	Área de interés pesquero para la merluza de Arenys	35,06	Barcelona	3827,74	2,24
12	Área de interés pesquero para la cigala de Barcelona	23,83	Barcelona		
13	Reserva demersal Vng&Bcn	18,22	Barcelona		
14	Reserva demersal Vng&Bcn	8,78	Barcelona		
15	Sant Carles de la Ràpita	15,44	Tarragona	7211,66	3,56
16	Golf de Sant Jordi – Tarragona	60,57	Tarragona		
17	Golf de Sant Jordi – Cambrils	60,50	Tarragona		
18	Golf de Sant Jordi – L'Ametlla	60,29	Tarragona		
19	Golf de Sant Jordi – S.C. de la Ràpita	60,23	Tarragona		
20	Castellón	236,34	Castellón	7464,58	3,17
21	Valencia	443,81	Valencia	4928,58	9,00
22	Alicante	627,83	Alicante	10136,11	6,19



ESCENARI 3





Fishing capacity by engine limitations or technical gear measures

