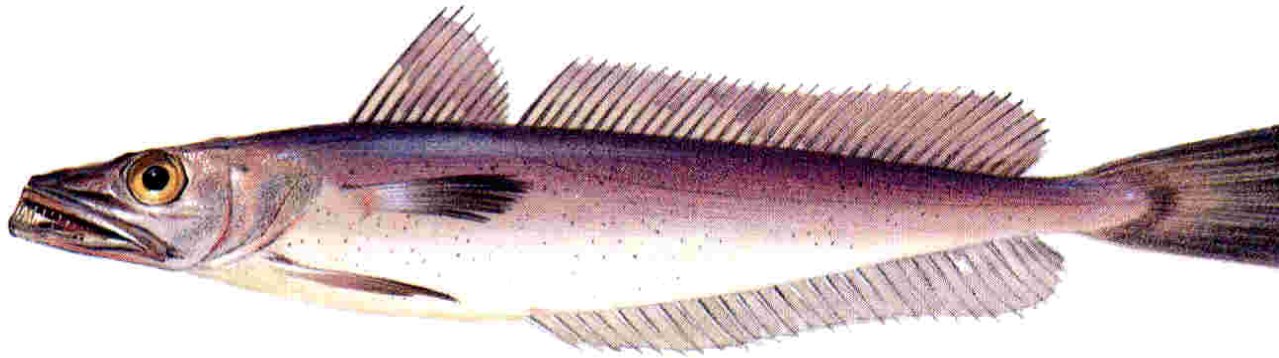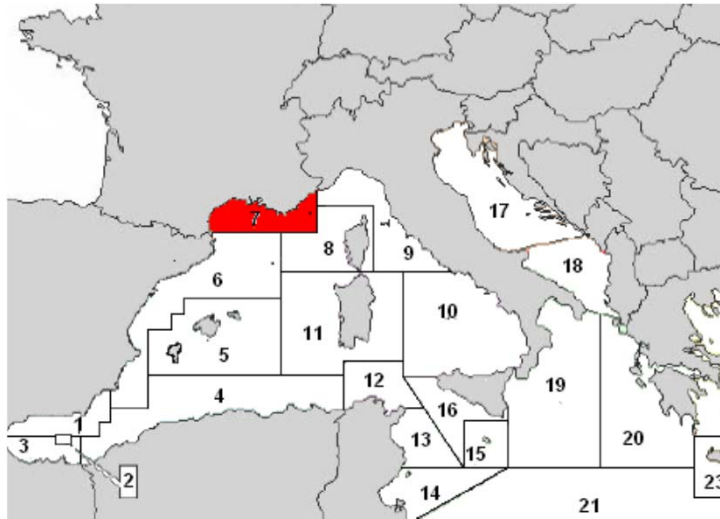# Hake (*Merluccius merluccius*) in GSA07 – Gulf of Lions

Laura Recasens, Joan B. Company, Jordi Lleonart, Paloma Martín, ICM-CSIC
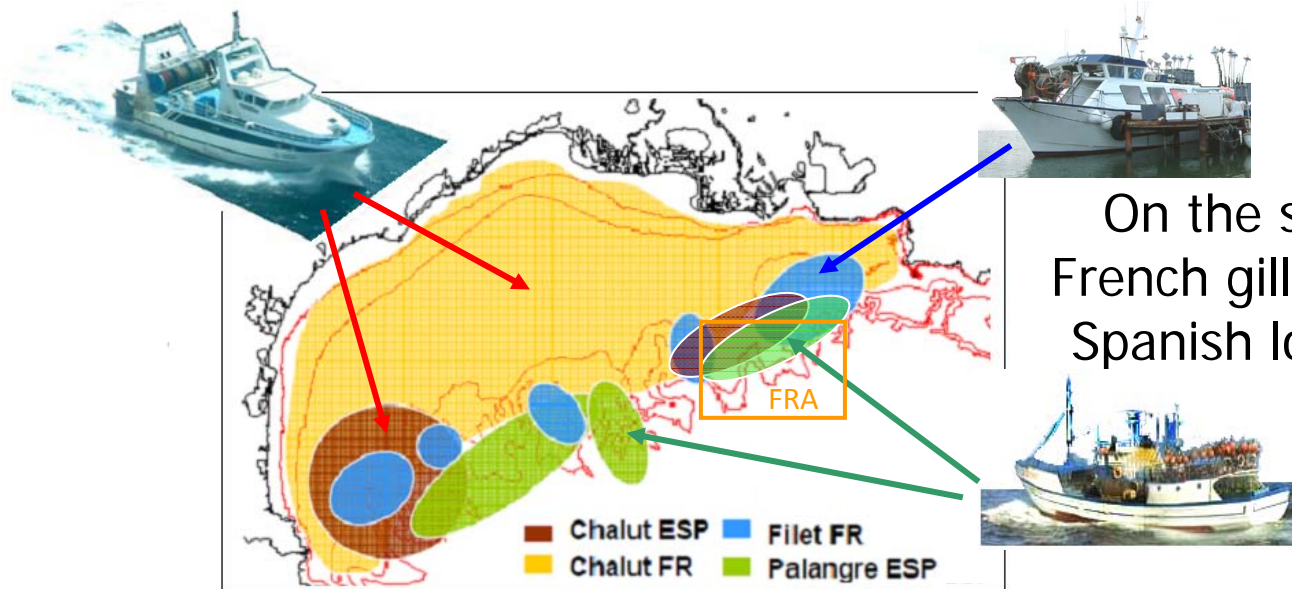
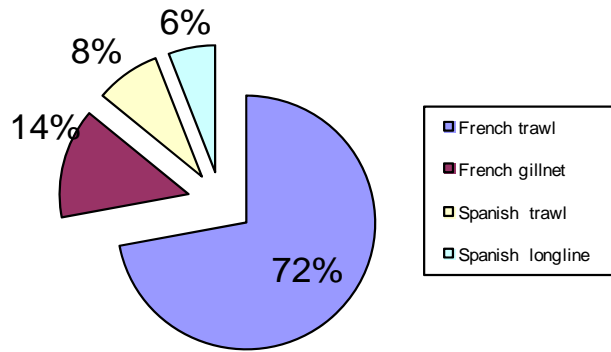**Beatriz Guijarro, IEO-COB**

Shared stock:

- 2 countries:
  - ➤ France
  - ➤ Spain (Catalan coast)

- 4 gears:

  - ➤ French trawl
  - ➤ Spanish trawl
  - ➤ French gillnet
  - ➤ Spanish longline
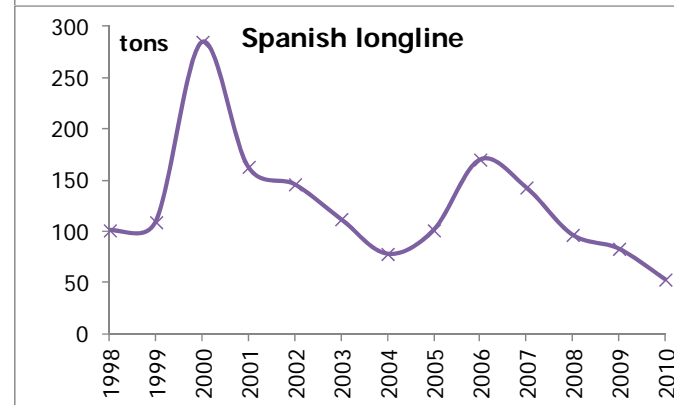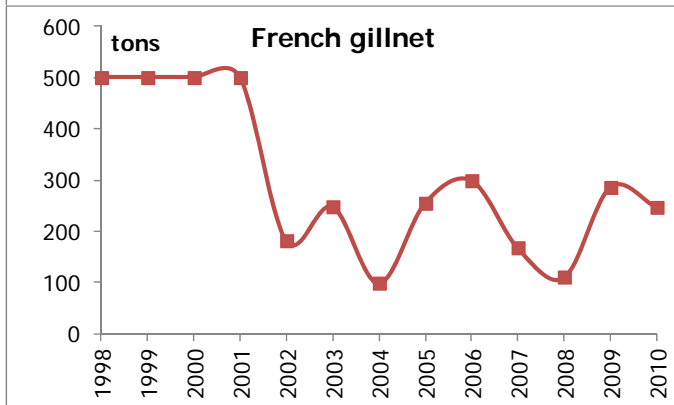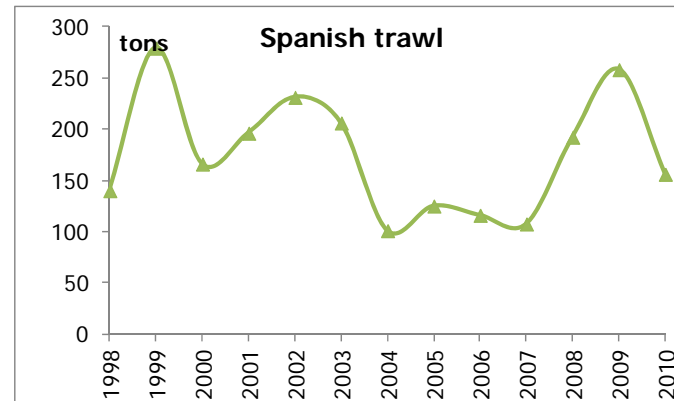
On the shelf:
French and
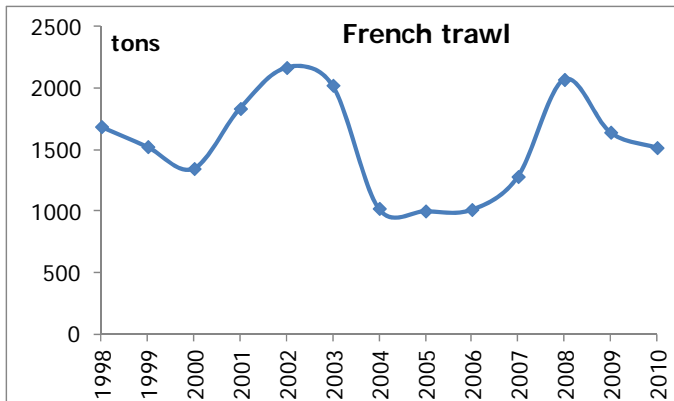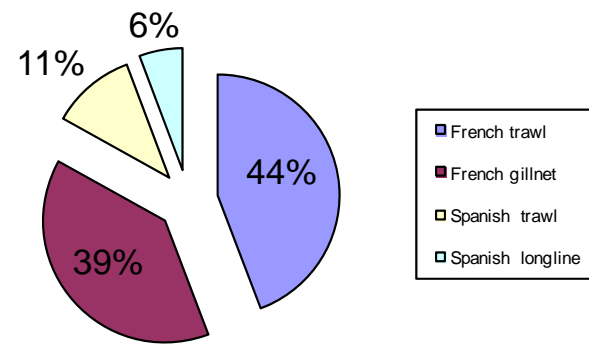Spanish trawl

On the slope:
French gillnet and
Spanish longline

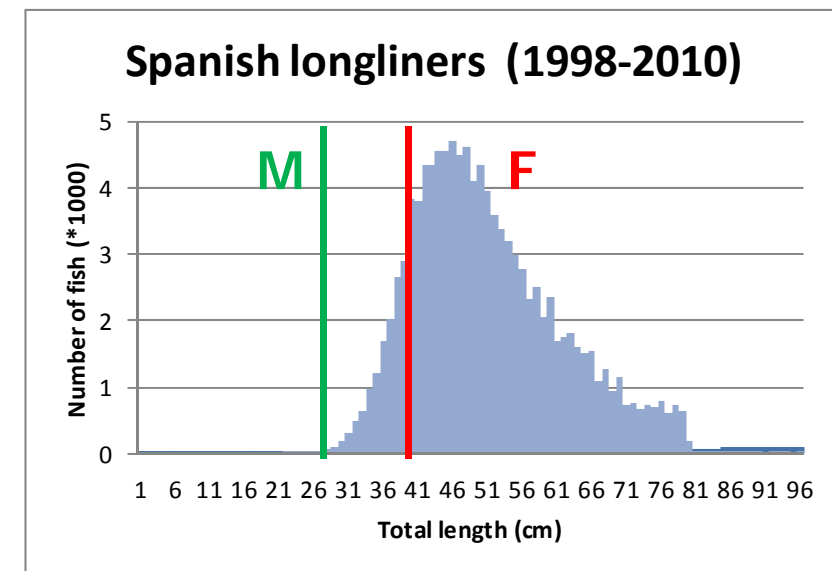
Chalut ESP   Filet FR
Chalut FR   Palangre ESP

FRA

LANDINGS (tons)

FLEET (number of boats)

French trawl
French gillnet
Spanish trawl
Spanish longline

Since frequency of hake catches

French trawlers (1998-2010)

French gillnetters (1998-2010)

Spanish trawlers (1998-2010)

Spanish longliners (1998-2010)
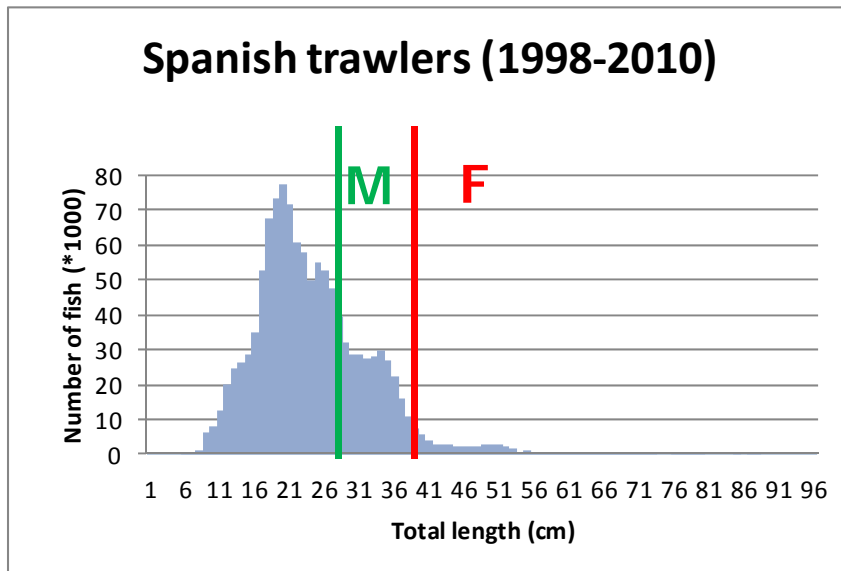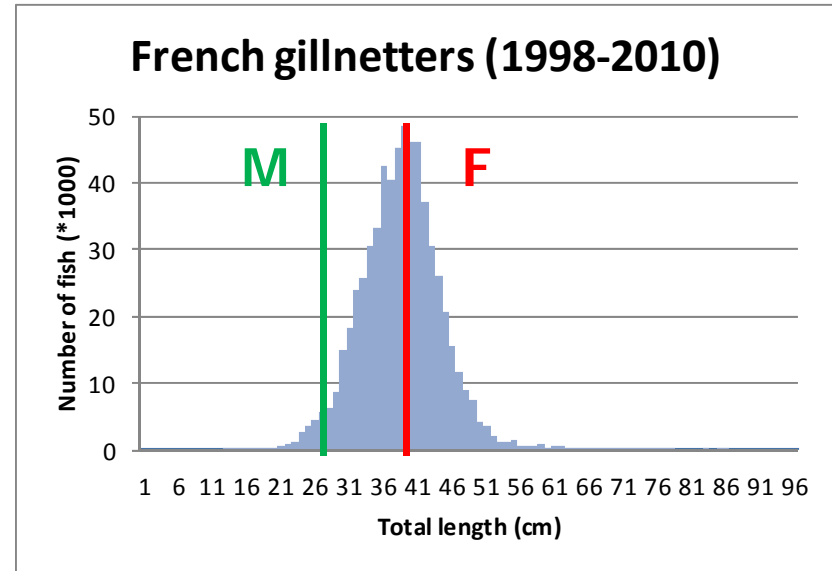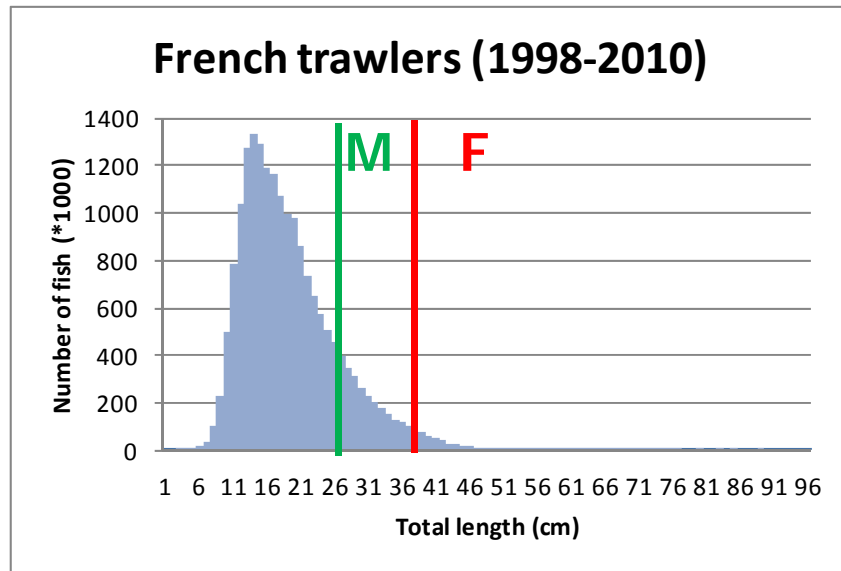
Yield per recruit
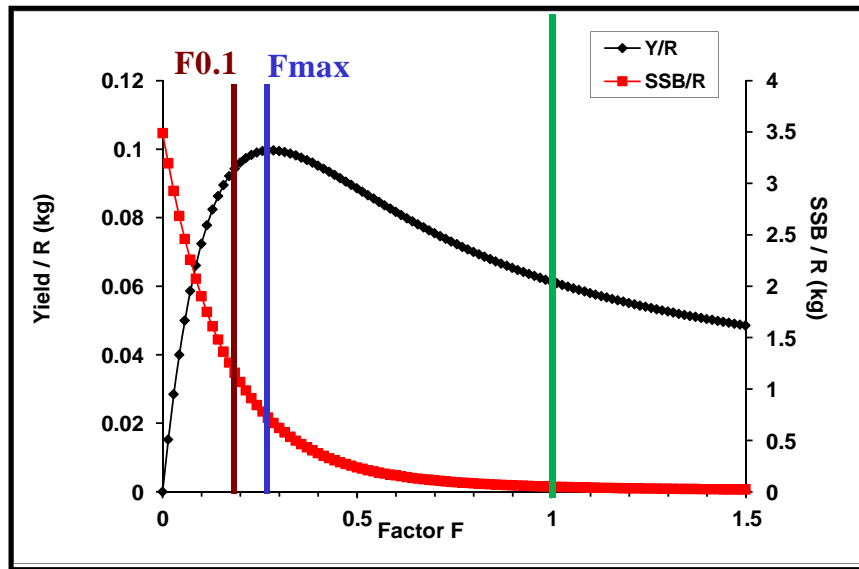
Stock status

The stock is in overfishing status and low abundance. It is characterized by **growth overexploitation** with periodical higher recruitment (1998, 2002, 2008) with ensure the sustainability of the stock at a low level of abundance

Número individuos total

Reclutamiento

Biomasa total
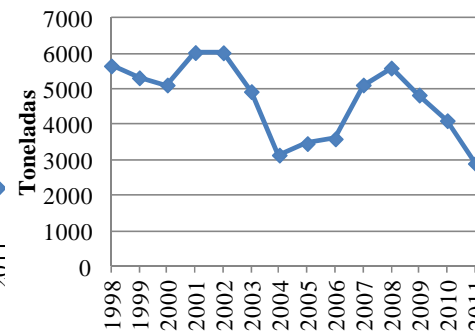
Biomasa reproductora
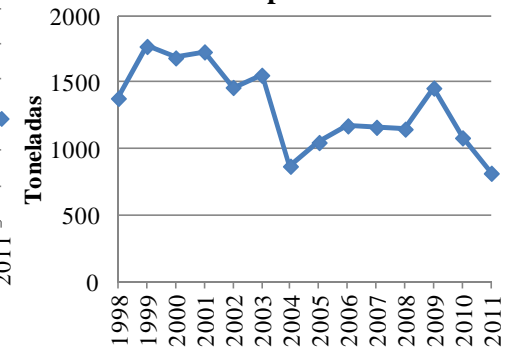
Management advice and recommendations

To reduce growth overfishing (recruits protection):

-Improve the fishing pattern of the trawl to increase the minimum length of catches equally to the minimum legal landing size
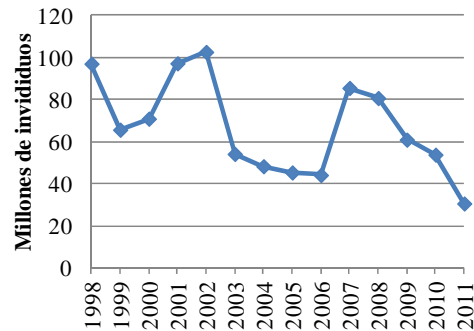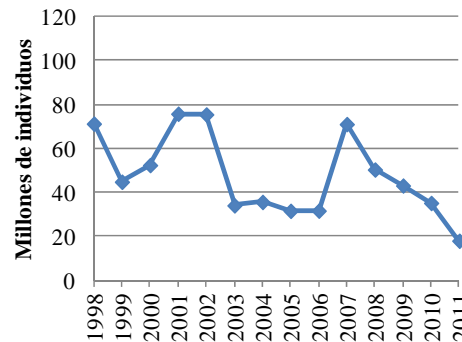
- Close nursery areas, at least temporaly

- Reduce trawling effort, by reducing time at sea, number of fishing boats, engine power, Bollar pull and/or trawl size

To avoid recruitment overfishing (adults protection):

-To reduce longline effort and gillnets in order to increase (or at least maintain the spawning stock biomass)

- Establish temporal closures for longline and gillnet during the period of maximum spawning (end autumn-beginning winter)

Adults protection: FRA in the Gulf of Lions
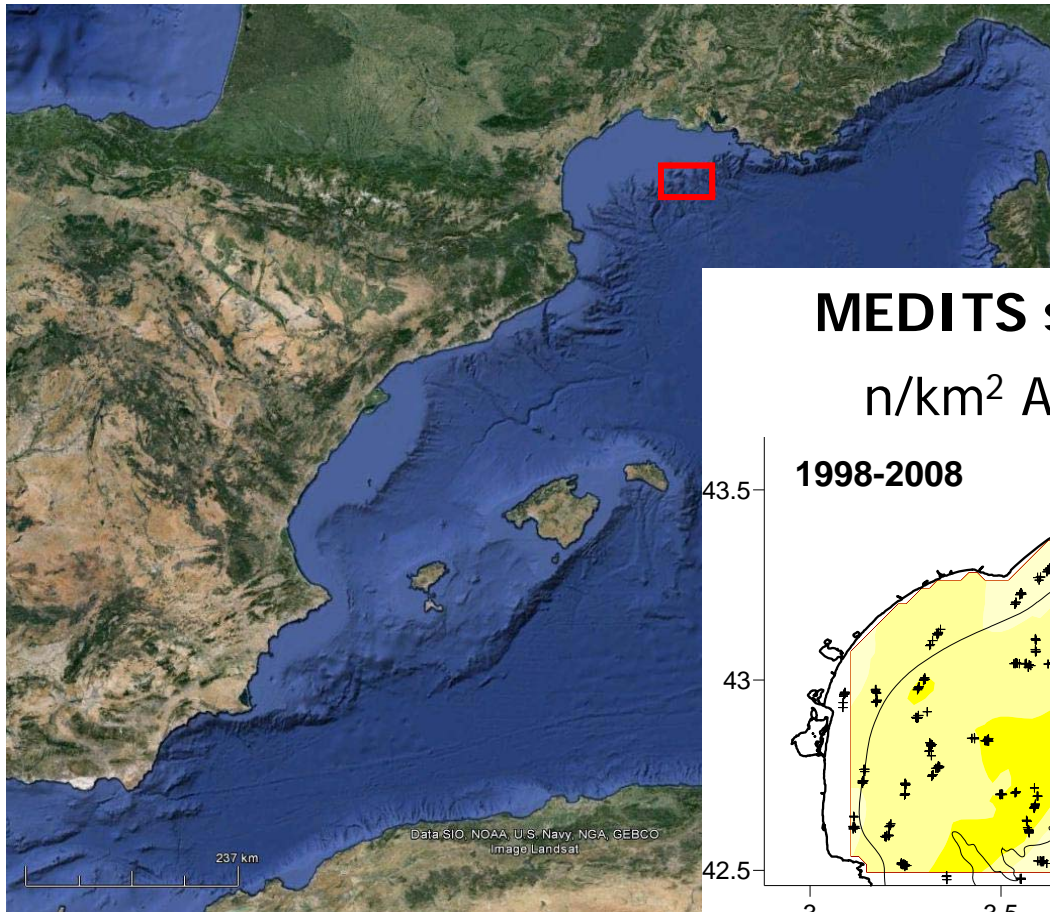
Management measures proposed to the GFCM

Prohibit any kind of demersal fishing, towed or not, including trawl gears, bottom and midwater longlines, bottom nets (gillnets, trammelnets), traps, etc.

MEDITS surveys (1998-2008)

n/km^2 Age 0 (recruitment)
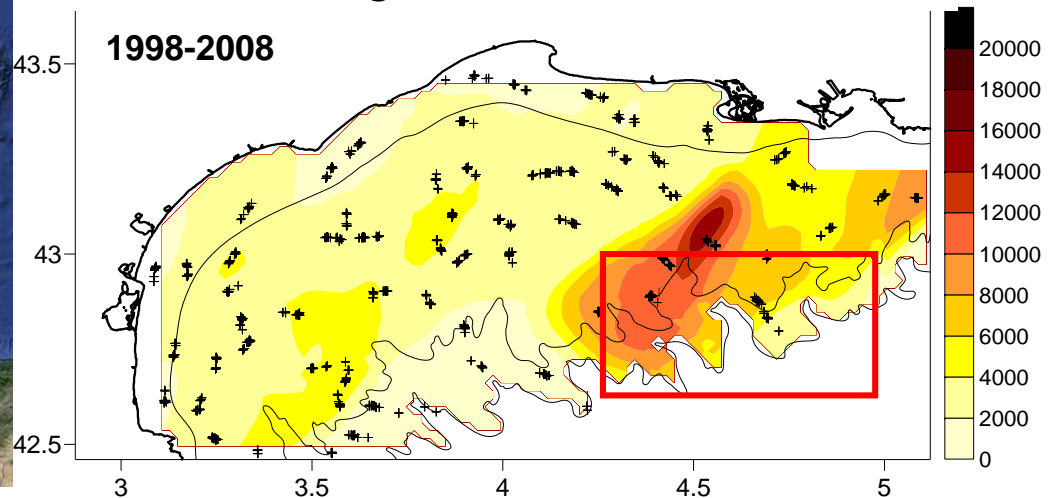
Management measures adopted by the GFCM

The fishing effort for demersal stocks of vessels using towed nets, bottom and mid-water longlines, bottom-set nets shall not exceed the level of fishing effort applied in 2008 in the fisheries restricted area of the eastern Gulf of Lions

6 years later no information on the fishing effort applied in 2008 is available.
Monitoring and control are non-existent

Hake in the Catalan ports of Gulf of Lions: Llançà, Port de la Selva, Roses
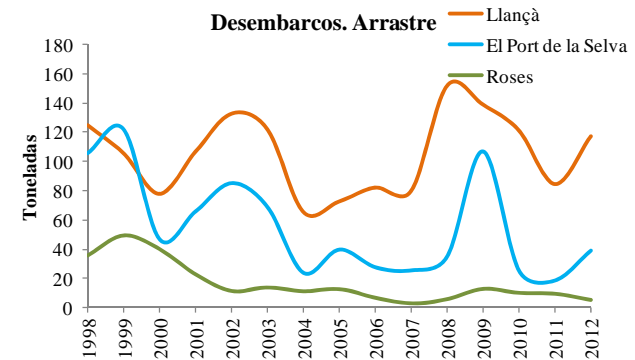

Catalonia demersal fishing grounds

Desembarcos de merluza (Golfo de León)

Desembarcos. Palangre
Llançà
El Port de la Selva
Roses

Desembarcos. Arrastre
Llançà
El Port de la Selva
Roses

Catalan Coast

— Merluccius merluccius

$y = -37.175x + 2649.7$
$R^2 = 0.48$
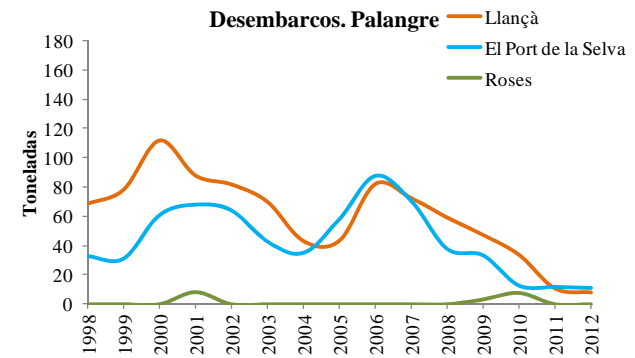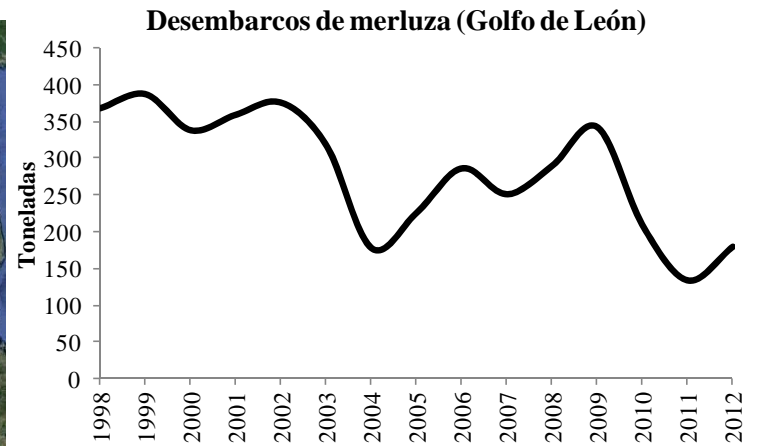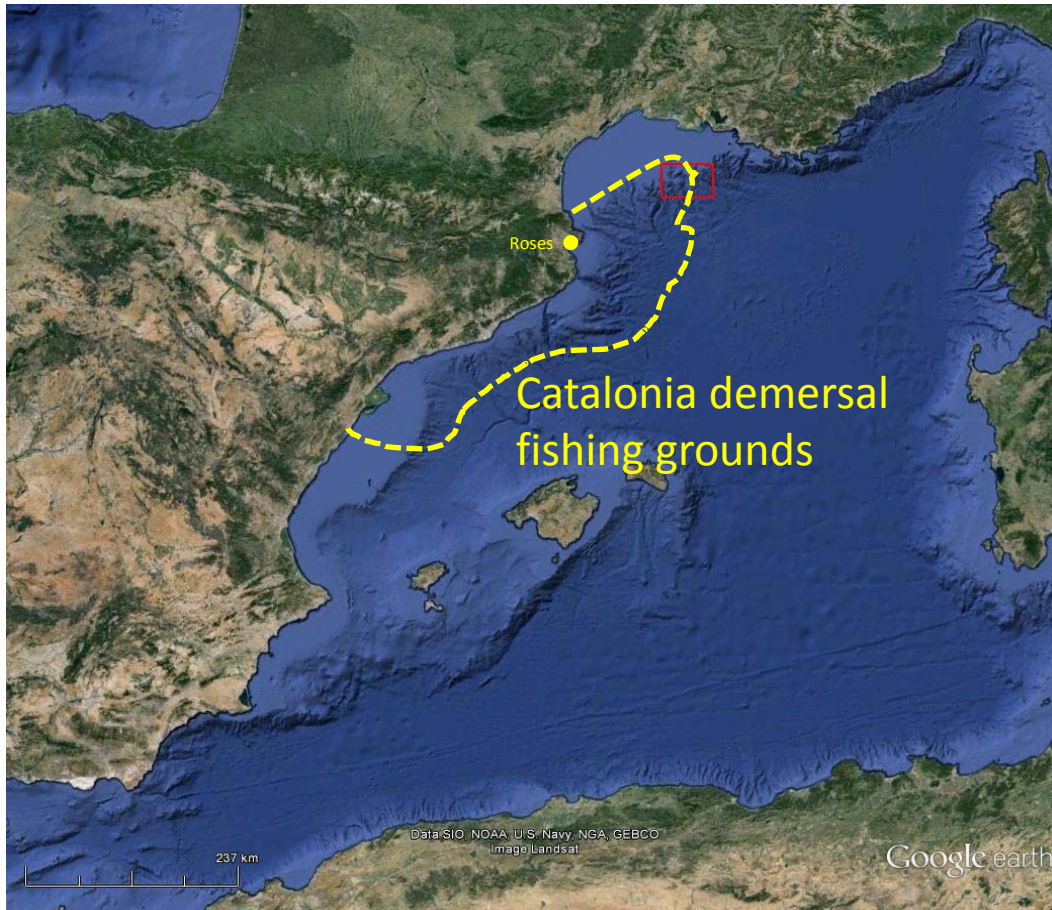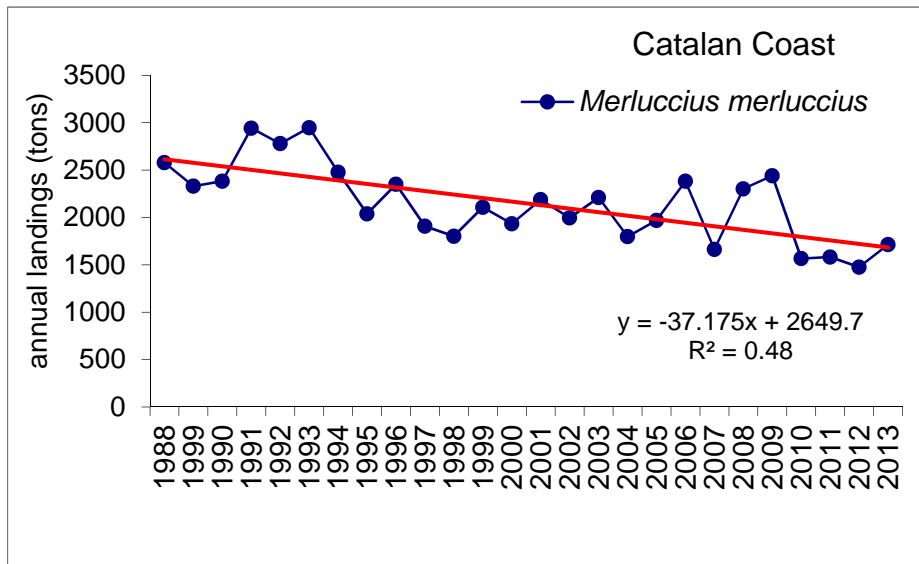
- Hake catches are declining in Catalan coast since 1988
- Roses hake catches are composed mainly by bottom trawlers

Captures lluç (kg) Roses

ARROSSEGAMENT — ARTS MENORS — PALANGRE

Roses hake catches by size

ADULTS — JUVENILS
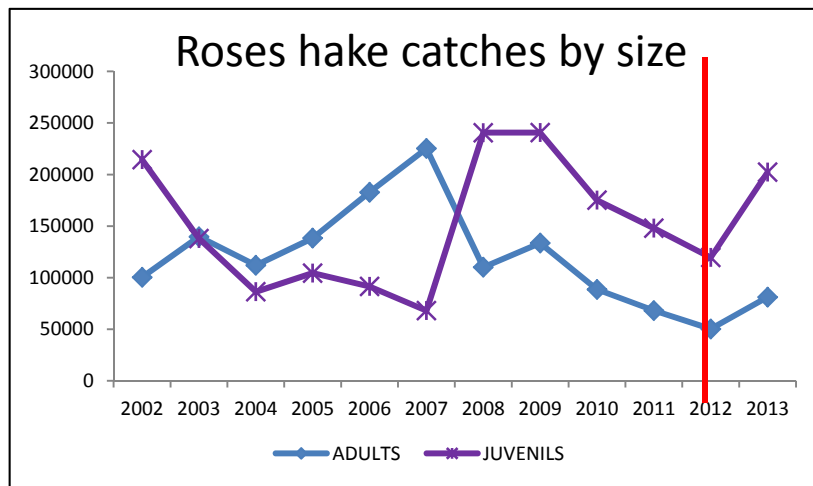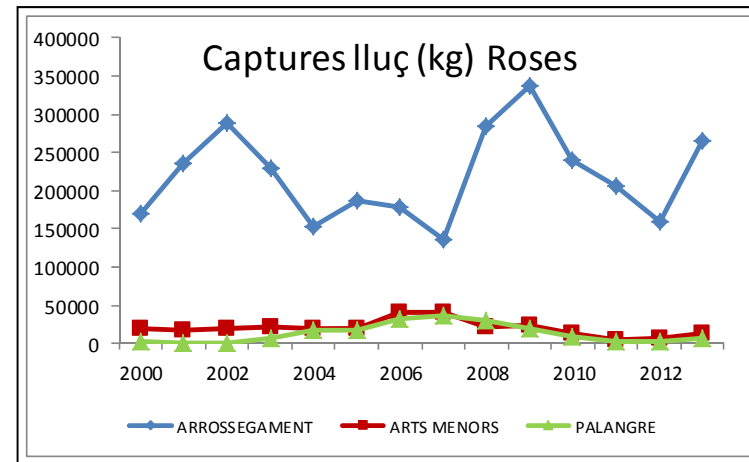
- Roses hake adult catches were at the lowest point in 2012
- Roses hake recruits were also declining since 2010

Recruits protection: A close nursery area during recruitment period

Roses Fishermen proposal: To close for all bottom trawlers a significant hake nursery area during 7-10 months to protect recruits. This measure has been applied in 2013 and 2014.

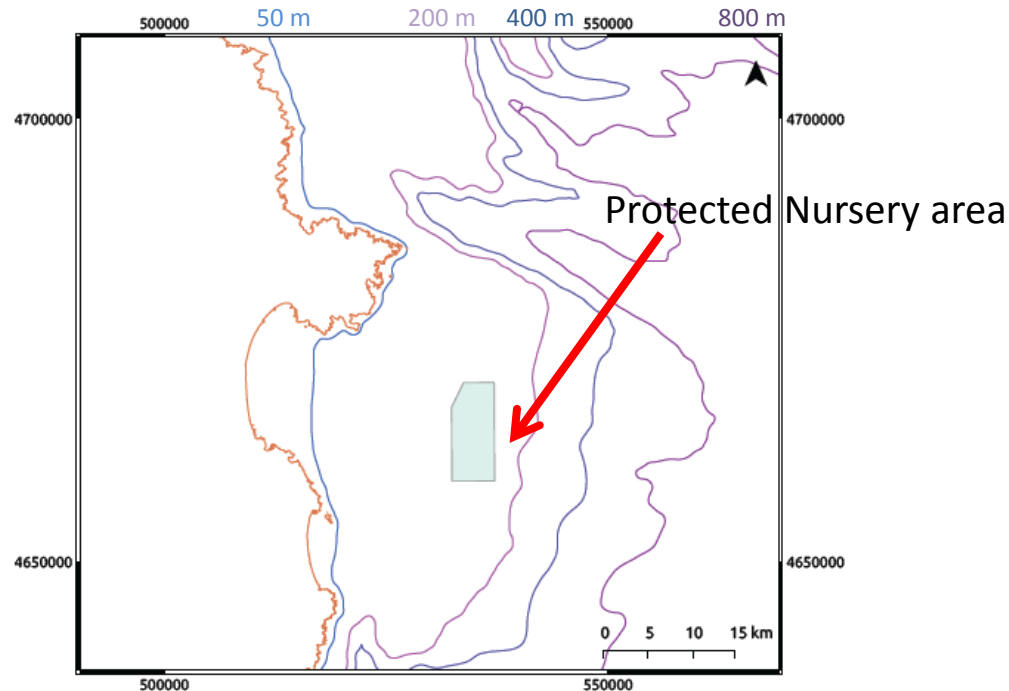- This protection measure does not represent an effort reduction but a temporal habitat protection.
- Stop the activity not only for bottom trawlers in the protected nursery area but also for long liners and gillnetters.
- It would be necessary a monitoring study during several years to evaluate the effectiveness of this measure.

SUMMARY

Gulf of Lions

- Growth and Recruitment overfishing diagnosed since early 90´s

- Population parameters (numbers, biomass, recruits, SSB) decreasing

1) Recruitment overfishing measure (Scientifics initiative)

FRA (Fisheries Restricted Area) endorsed by GFCM-SCMEE (Sub Committee-Marine Environment and Ecosystems) in 2008
Agreement for freezing the fishing effort to that in 2008, but no updated information on exerted fishing effort in the area since then

Roses

2) Growth overfishing measure (Fishing sector initiative)

Close nursery areas, at least temporarily, during recruitment period