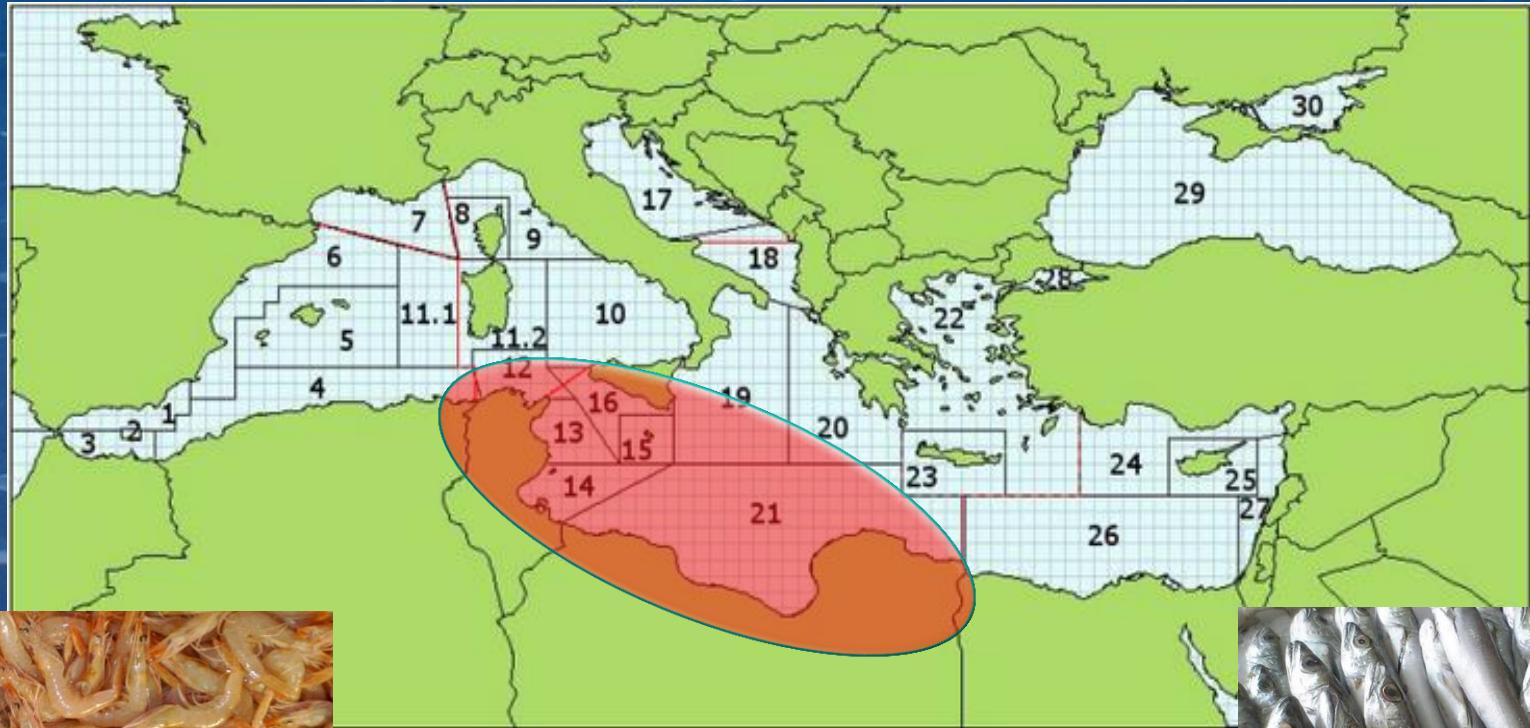


MEDAC
Working Group on GFCM related issues
Marseille 22 April 2015

**Scientific recommendations for the
management of demersal fisheries in the
Strait of Sicily**

Fabio Fiorentino
IAMC – Mazara del Vallo

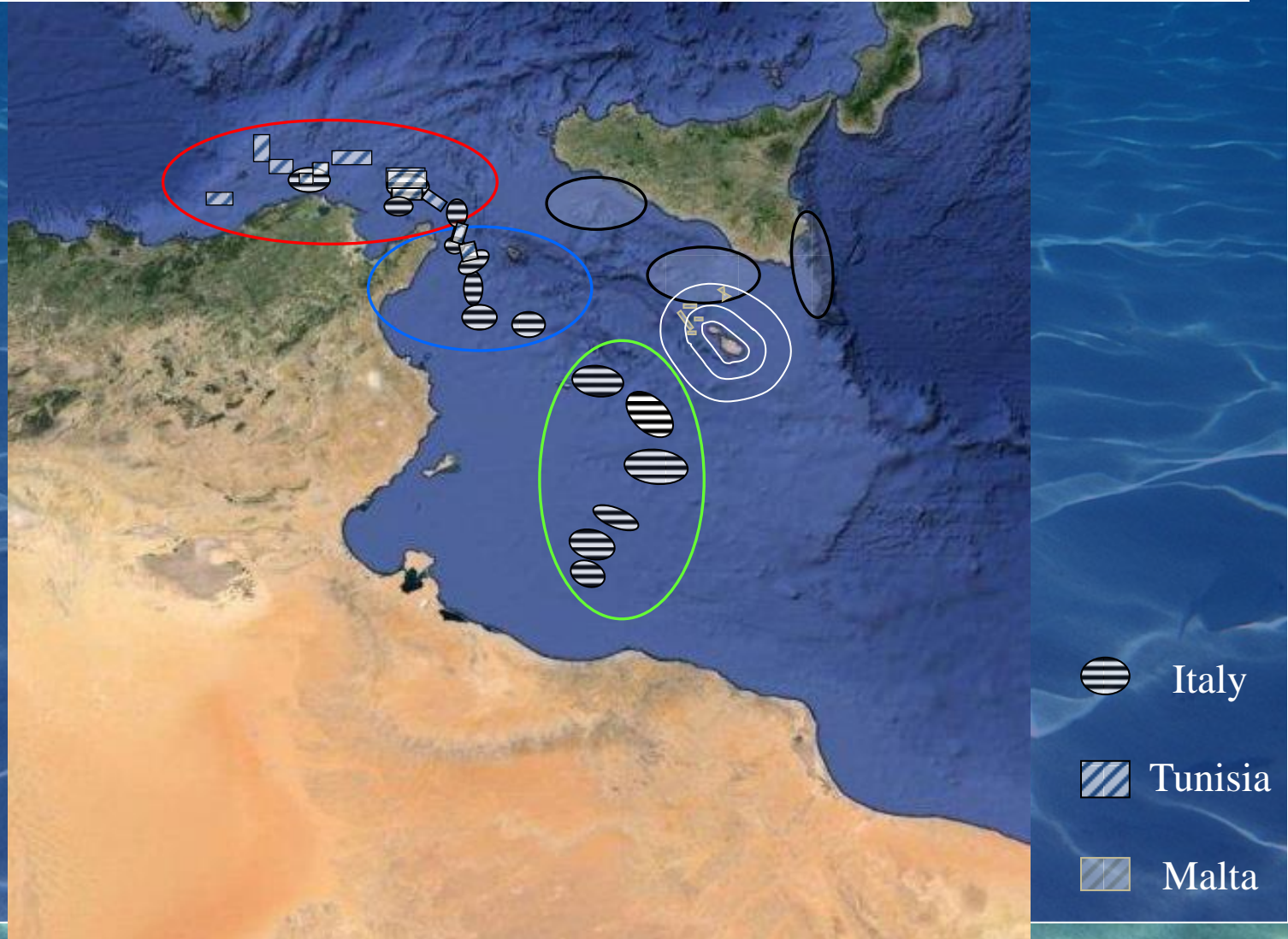
The Strait of Sicily and adjacent areas are one of the main fishing grounds for demersal resources in the Mediterranean...it was proposed for a GFCM Fishery Management Plan...Deep water rose shrimp and hake are the main target and by catch species



Central Mediterranean
Parapenaeus longirostris
Merluccius merluccius



*...the main fishing grounds for *P. longirostris* and *M. merluccius* in the south-central Mediterranean sea...stocks are mainly shared among Italian, Maltese, Tunisian fishermen*



ASSESSMENT AND MONITORING OF THE FISHERY RESOURCES AND THE ECOSYSTEMS IN THE STRAITS OF SICILY

MedSudMed "Assessment and Monitoring of the Fishery Resources and the Ecosystems in the Straits of Sicily" is a regional project with four participating countries (Italy, Libya, Malta and Tunisia), executed by the Food and Agriculture Organization of the United Nations (FAO) and funded by the Italian Ministry of Agriculture, Food and Forestry Policies (MiPAAF). In 2011 the Regione Siciliana (Italia has provided *ad hoc* assistance for specific activities on crustaceans in the project area. The Project aims to support scientific communities and countries in the development of a monitoring system for the studies of fisheries resources and ecosystems. The main objectives of the Project are to increase the scientific knowledge on the ecosystems of the project area, strengthen national and regional expertise, develop scientific cooperation in order to promote the standardization of the methodologies used in fisheries research. ... [+MORE](#)



FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS



ITALIAN MINISTRY OF AGRICULTURE FOOD AND FORESTRY POLICIES



REGIONE SICILIANA



Credits



>>> ARCHIVE OF EVENTS

- * **16-17 April 2015. Rome - Italy**
Thirteenth Coordination Committee Meeting of MedSudMed
- * **17-19 March 2015. Tunis, Tunisia**
Training course on the use of ATrIS, AdriaMed Trawl Information System
- * **17-18 March 2015. Tunis, Tunisia**
Technical meeting in support of Deep-water rose shrimp and European hake fisheries management in the south-central Mediterranean Sea

Publications. You can search by 'full text' (text edited search in 'TITLE' and in 'ABSTRACT'), by author or by issue.

Informative Note Short summary of the guidelines of the FAO project MedSudMed.

GFCM Statistical bulletin 2012. Operational Units in the MedSudMed area, GSAs 12-16, 21.

FAO Projects in the Mediterranean have been influential in developing a regional attitude toward sustainable fisheries.

FAO Code of Conduct for Responsible Fisheries as adopted on 31 October 1995. Arabic version.

Maps resulting from oceanographic modelling at sub-regional scale were generated for salinity, temperature and currents.

COUNTRY FISHERY INFORMATION

Click on the MAP or on the Nation name to see: "COUNTRY FISHERY INFORMATION"

ITALY: Institute for coastal marine environment (**IAMC-sez Mazara del Vallo**)

LIBYA: Marine Biology Research Centre (**MBRC**)

MALTA: Ministry for the Sustainable Development, the Environment and climate changes (**MSDEC**)

TUNISIA: Institut National des Sciences et Technologies de la Mer (**INSTM**)

Coordination Committee

Technical Meetings

Training Activities

Surveys at Sea

12. Tunis, Tunisia, 14-16/04/2014
11. Sliema, Malta, 23-24/04/2013
10. Djerba, Tunisia, 13-14/03/2012
9. Capo Granitola (TP)-Italy 16-18/05/2011
8. Tajura, Libya 18-19/05/2010
7. Sliema, Malta 18-19/02/2009

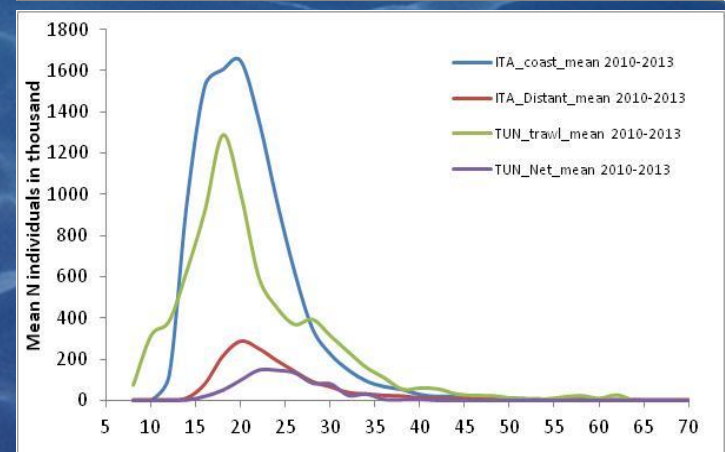
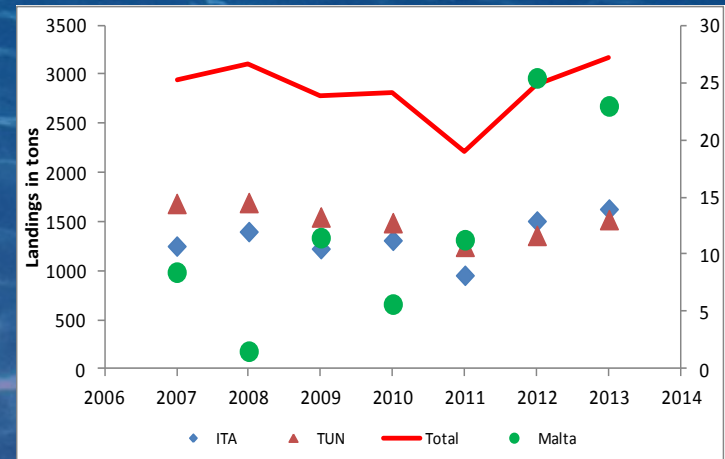
6. Salammbô, Tunisia 4-5/02/2008
5. Rome, Italy 9-10/11/2006
4. St. Julians, Malta 15-16/02/2006
3. Tajura, Libya 01-03/02/2005
2. Salammbô, Tunisia 11-13/02/2004
1. Rome, Italy 19-20/09/2002

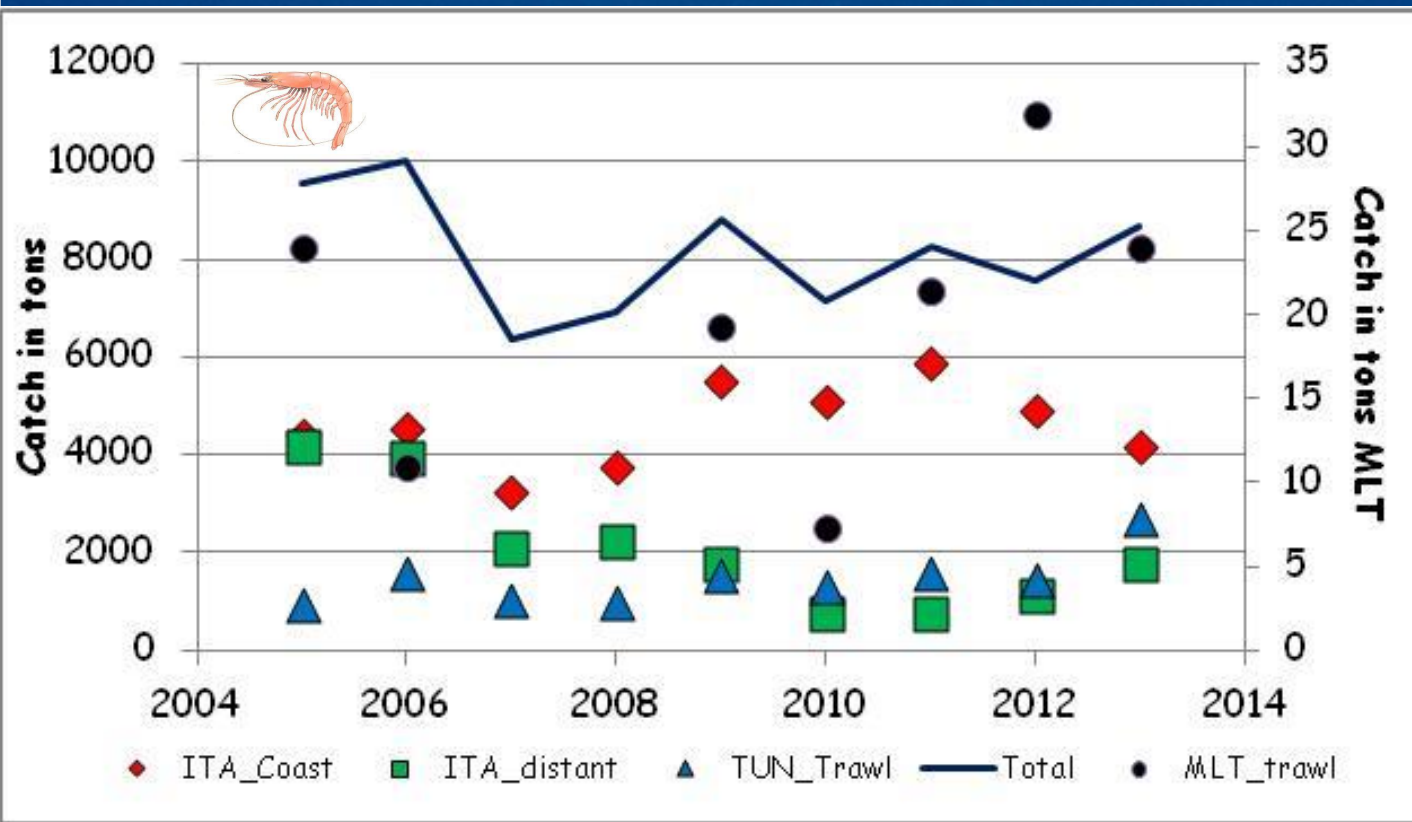
CGFCM and other mediterranean projects

	GFCM		AdriaMed
	ArtFiMed		CopeMed II
	EastMed		MedFis

What is the available information for stock assessment in the MedsudMed area?

- Annual catch per fleet
- Fleet capacity and effort
- Size composition of the catch
- Maturity and growth data
- Trawl survey data
- Standing stock distribution

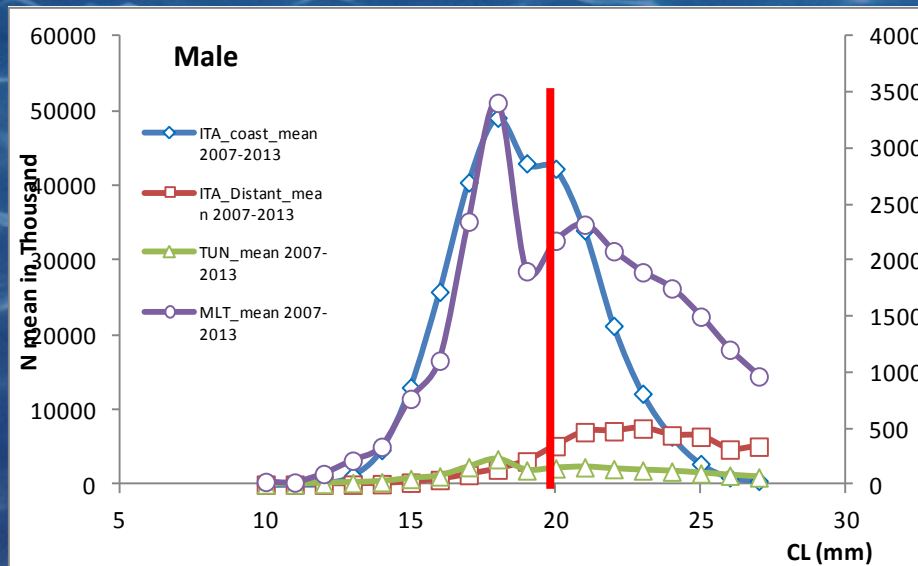
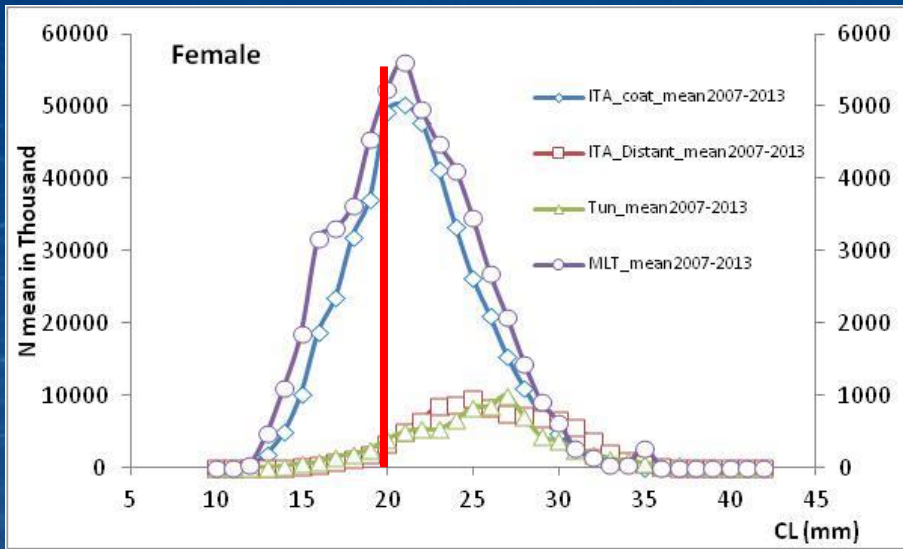




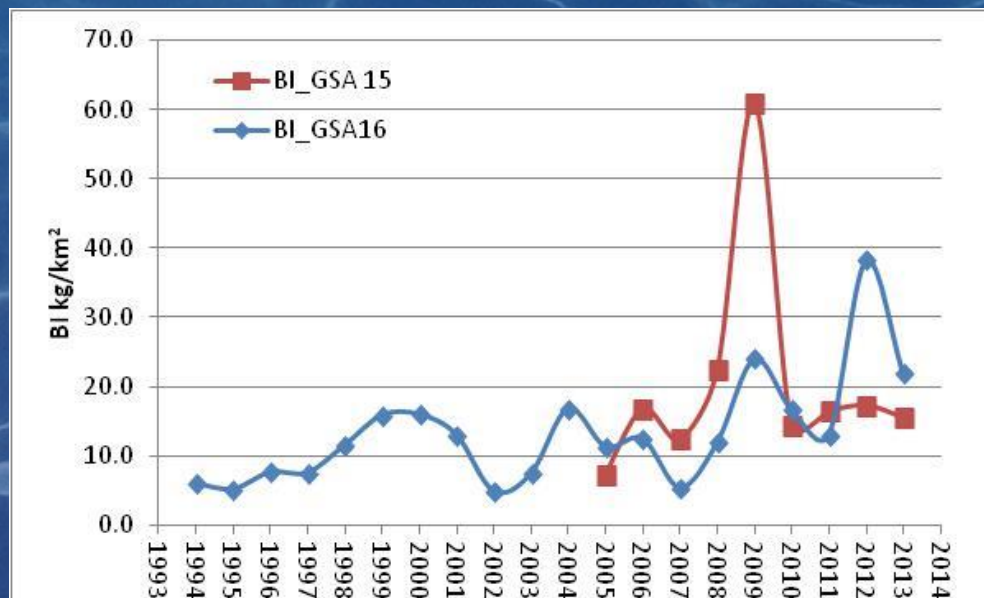
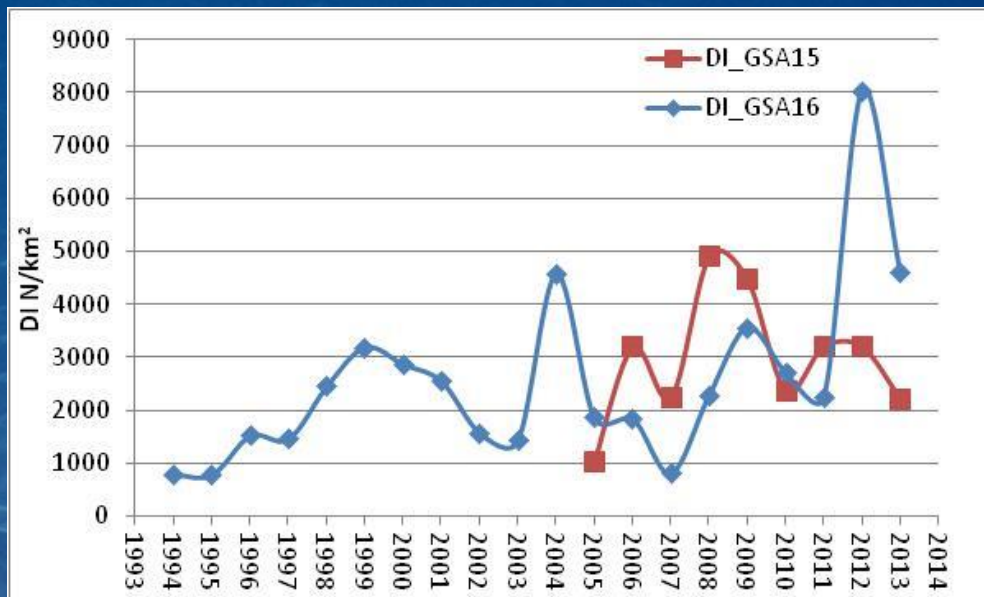
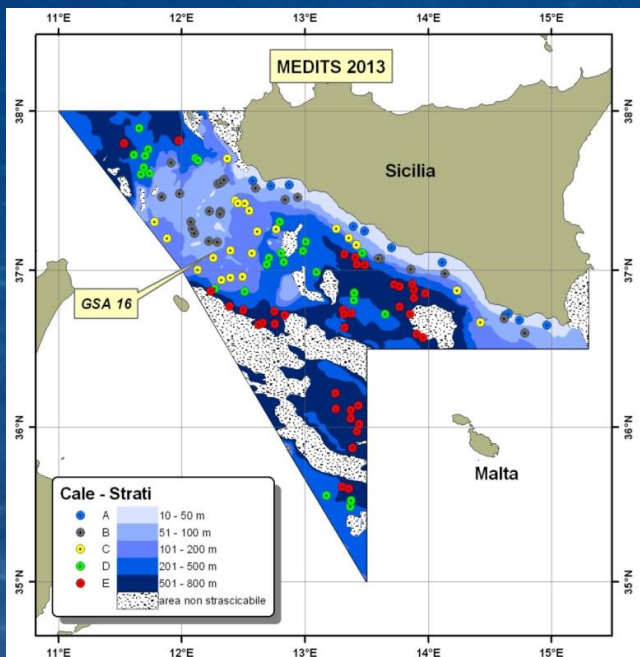
Total landings by fleet from 2005 to 2013 in GSA 12-16

Deep water rose shrimp

Mean LFD 2007-2013 by sex and fleet



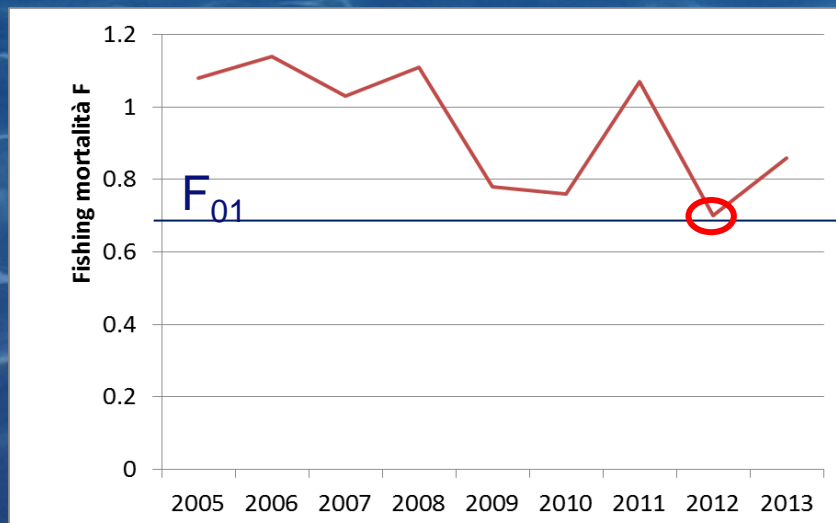
Medit Data



Fishing mortality trend Crevette rose / Gambero rosa

F	2005	2006	2007	2008	2009	2010	2011	2012	2013
	1.08	1.14	1.03	1.11	0.78	0.76	1.07	0.70	0.86

Current F was estimated as average
three previous years (2011-2013)



$$F_{cur} = 0.88$$

$$F_{0.1} = 0.7$$

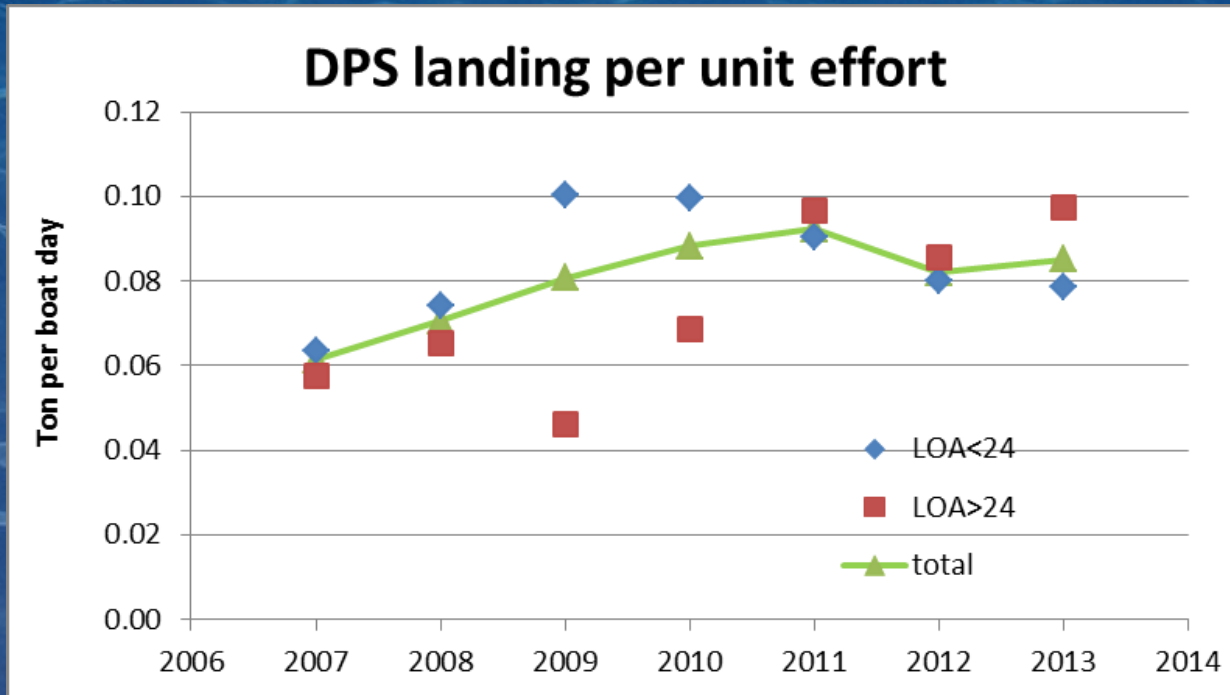


About 20% reduction in fishing mortality to achieve a
sustainable exploitation

Effect on the Italian fleet



Total catch per vessel/day

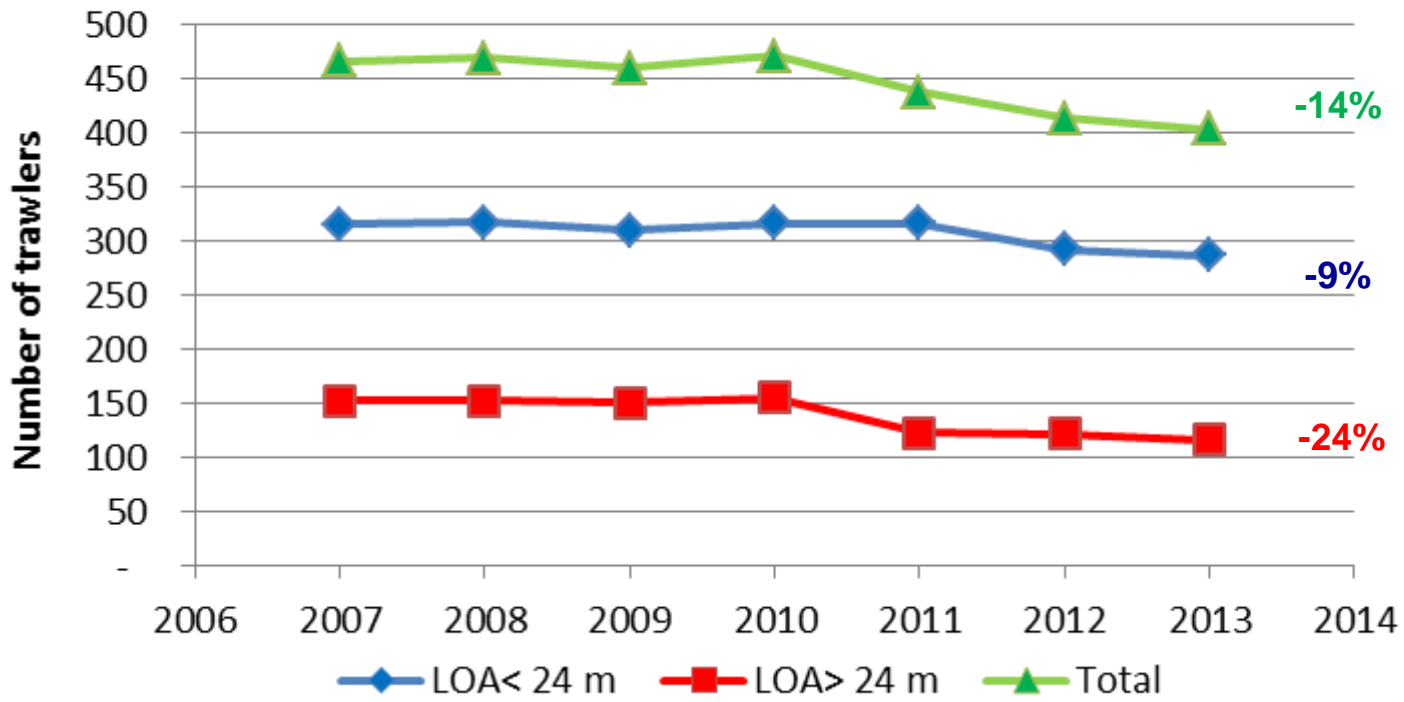


CPUE: +40% since 2007

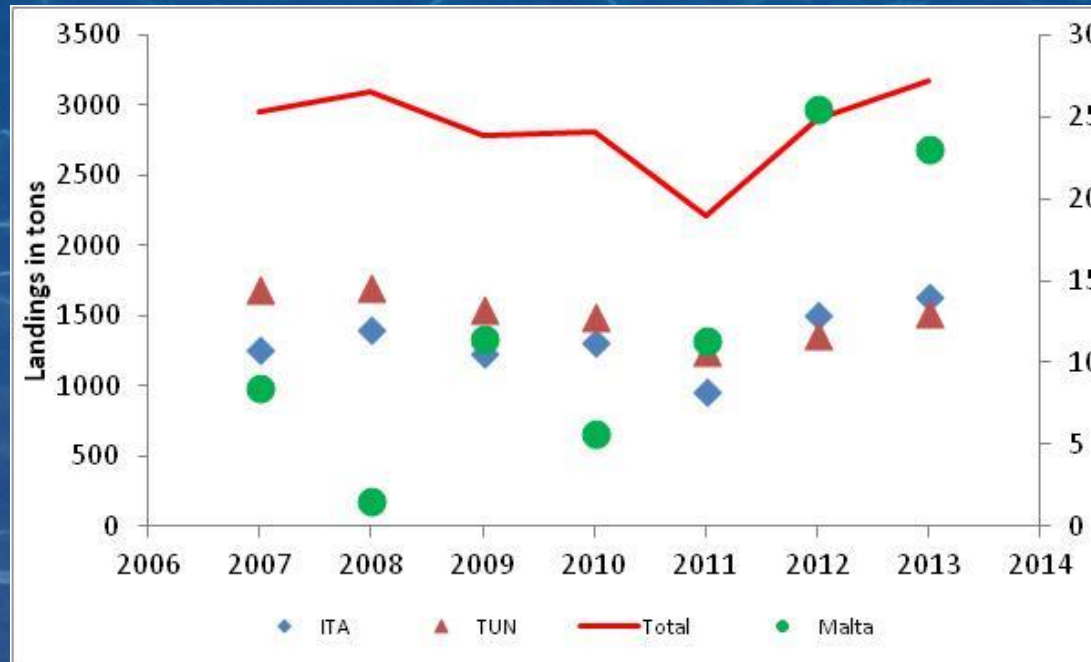
ITALIAN FLEET AND EFFORT In the Strait of Sicily



Italian trawlers registered in the GSA 16

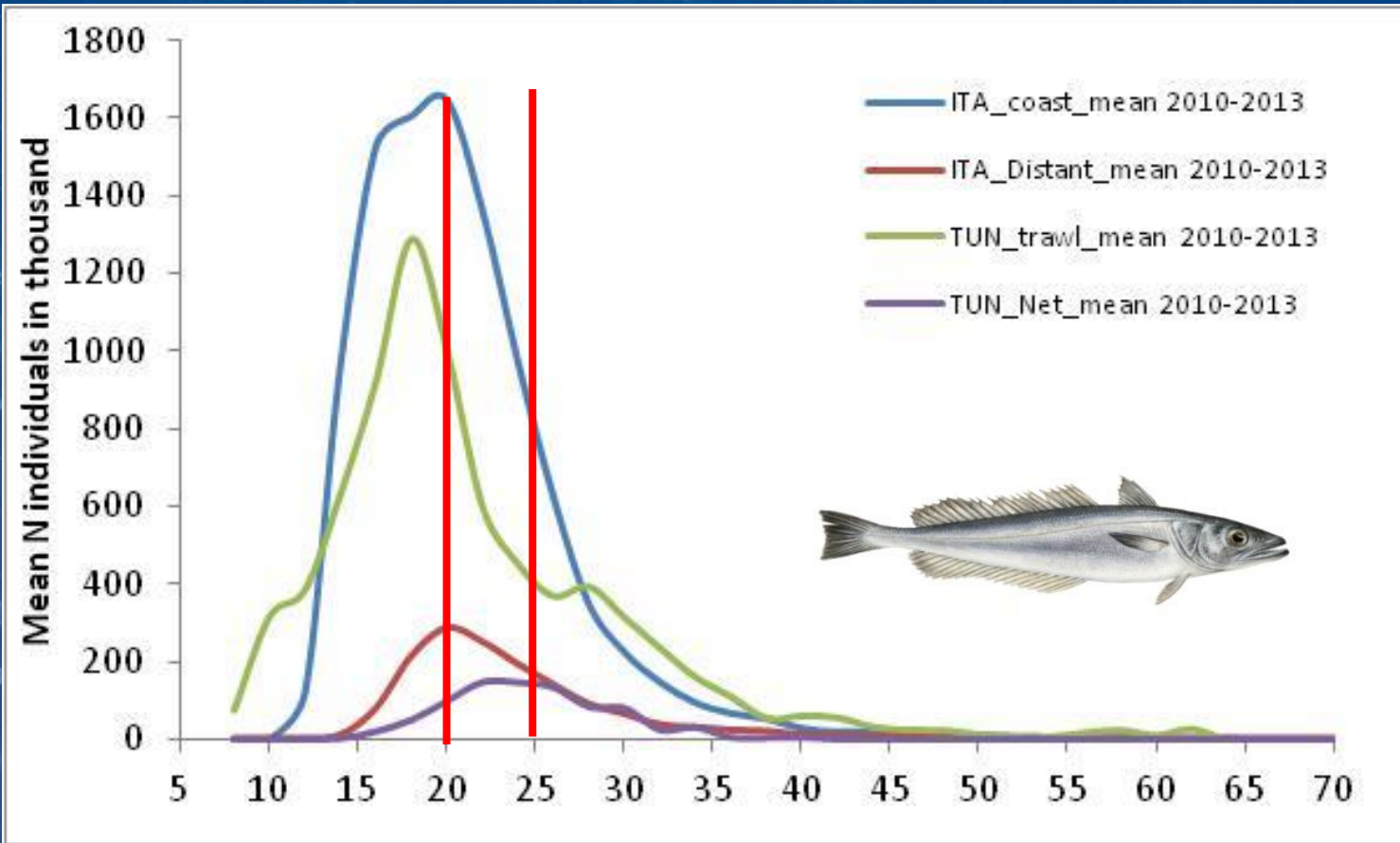


HAKE



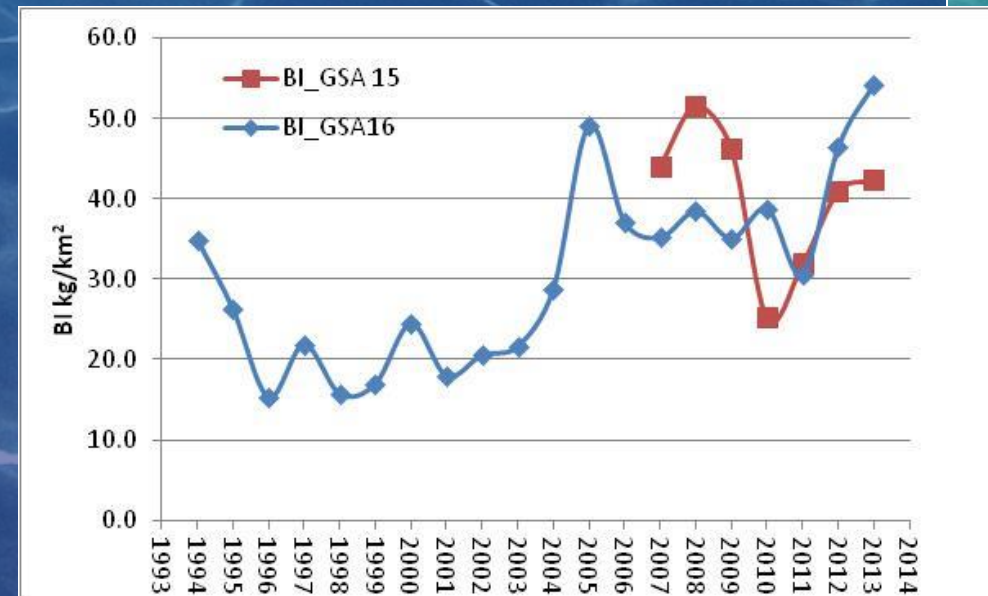
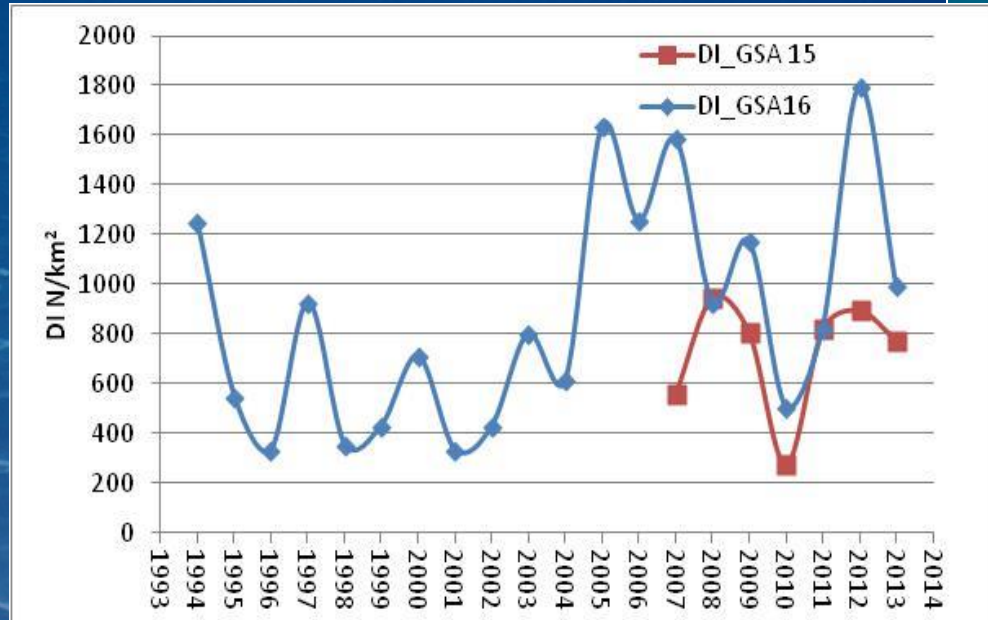
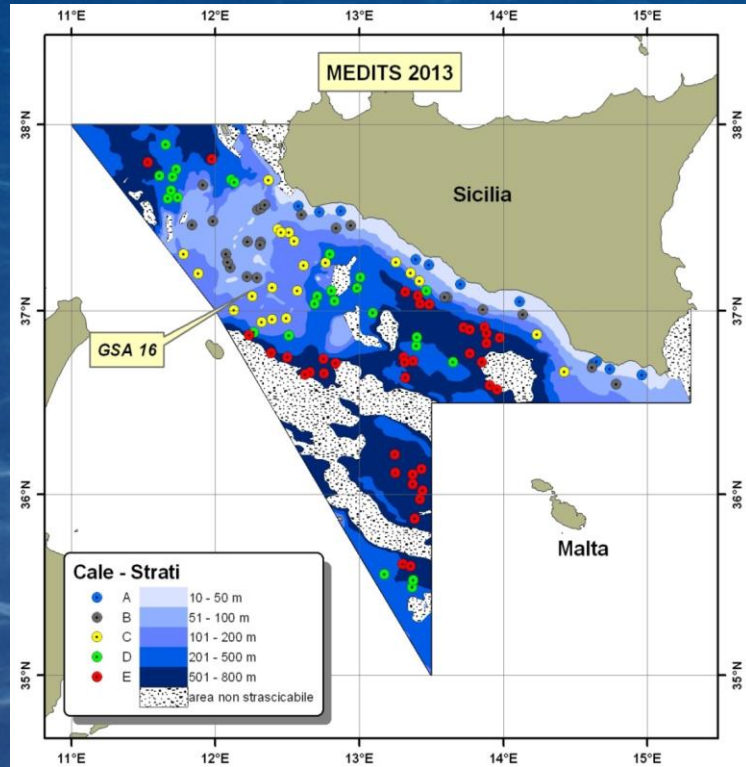
Total landings from 2007 to 2013
in combined GSA 12-16

HAKE



Mean LFD 2010-2013 by fleet in
GSA 12-16

Medit Data



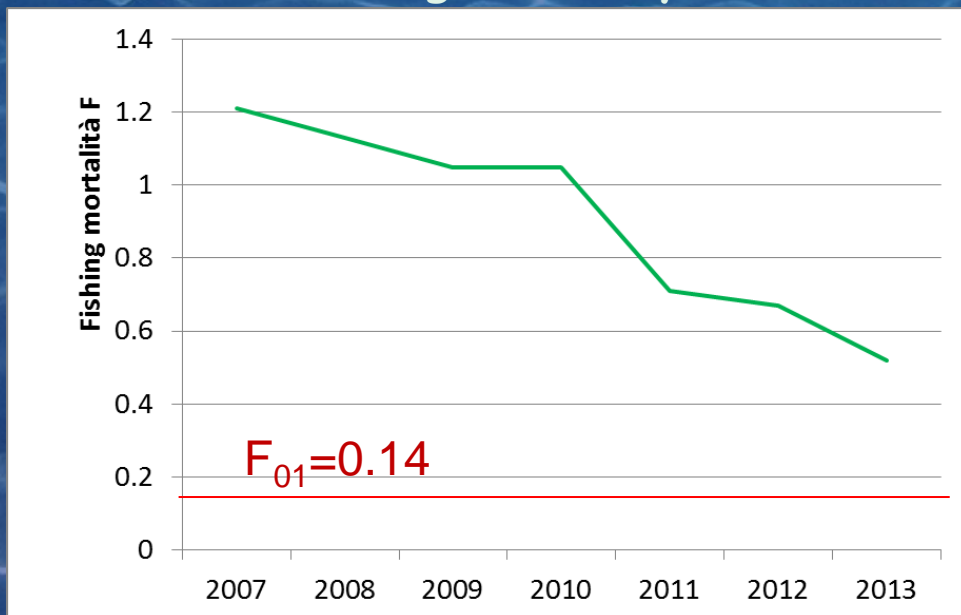
DI&BI 2007-2013 from
Medit GSA 15-16

Fishing mortality trend Merlu / Merluzzo / hake



F	2007	2008	2009	2010	2011	2012	2013
	1.21	1.13	1.05	1.05	0.71	0.67	0.52

Fishing mortality



Current F was estimated as average three previous years (2011-2013)

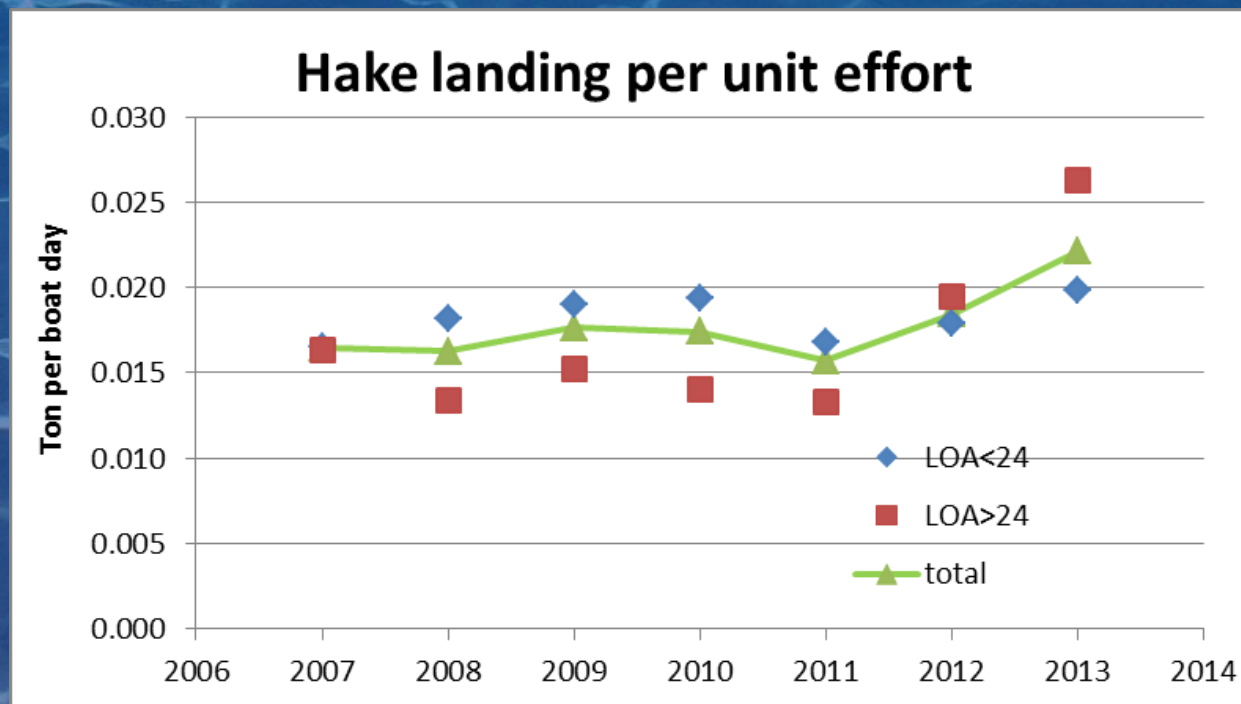
$$F_{cur} = 0.63$$

$F_{0.1}$ was estimated by FLR with XSA data and results considering M and F at age

$$F_{0.1} = 0.14$$

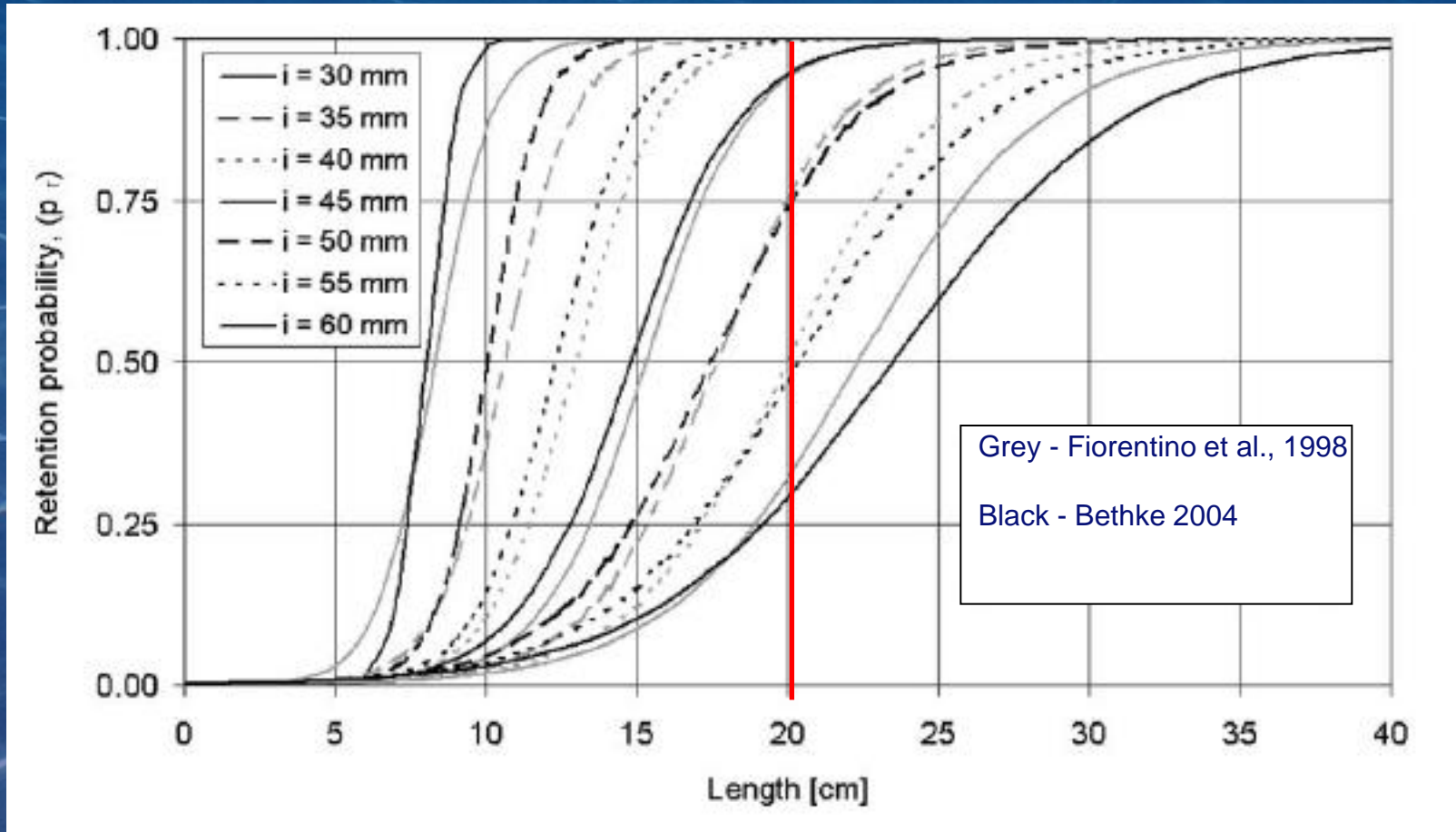
Effect on the Italian fleet: CPUE

Total catch per vessel/day



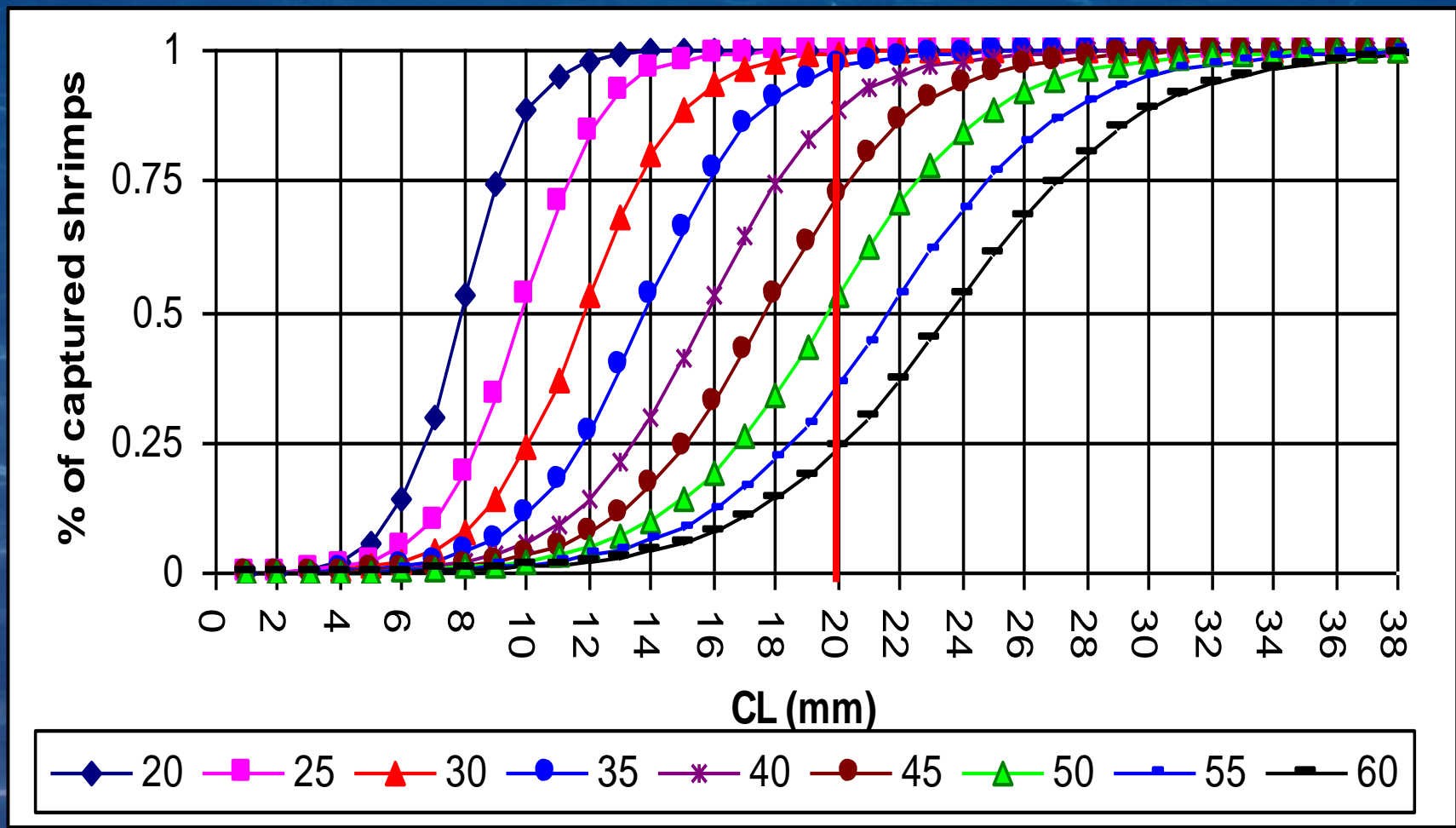
CPUE: +34% since 2007

...the selectivity of Mediterranean trawl net for hake...



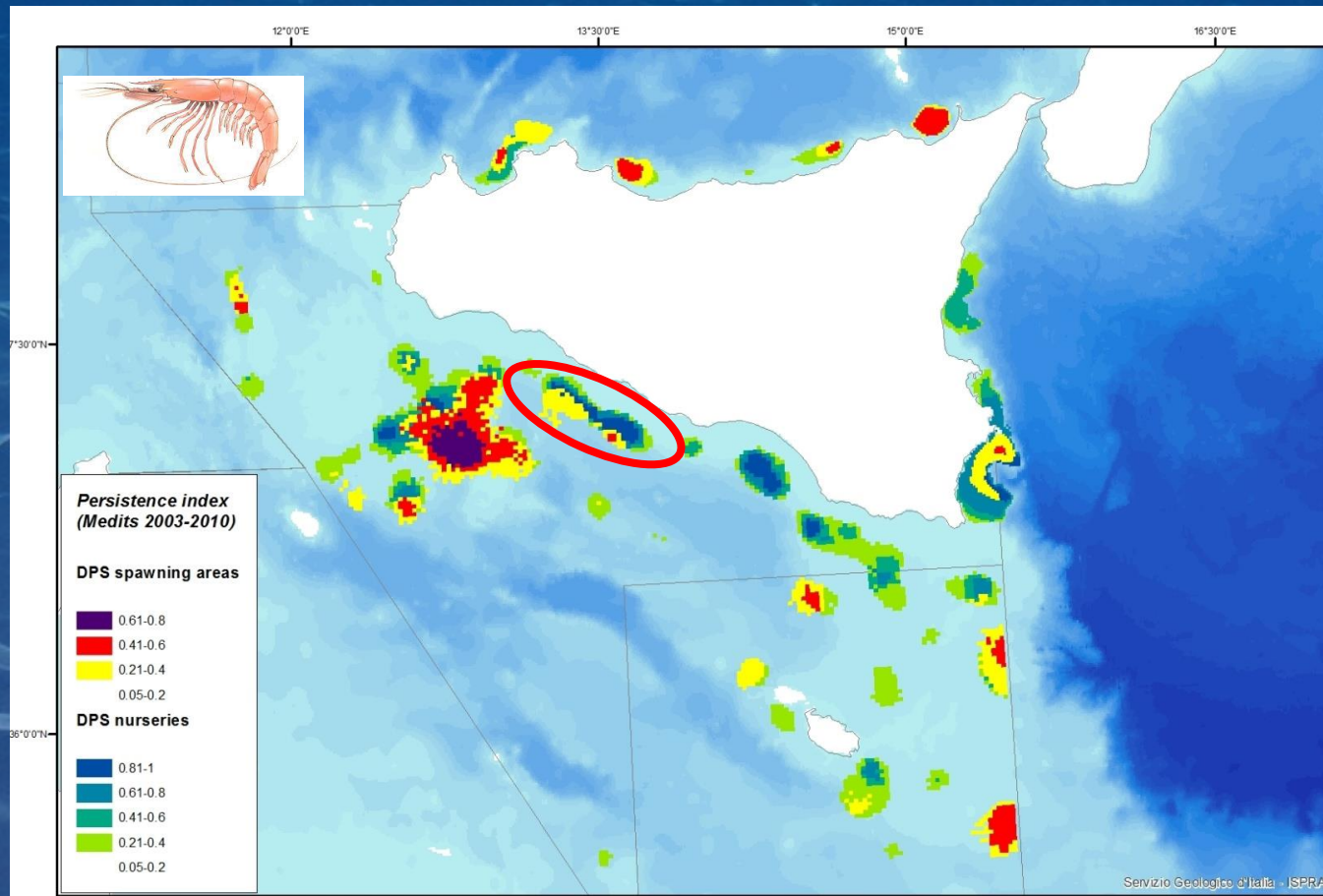
(From Bethke, 2004)

...the selectivity of Mediterranean trawl net for deep water rose shrimp...



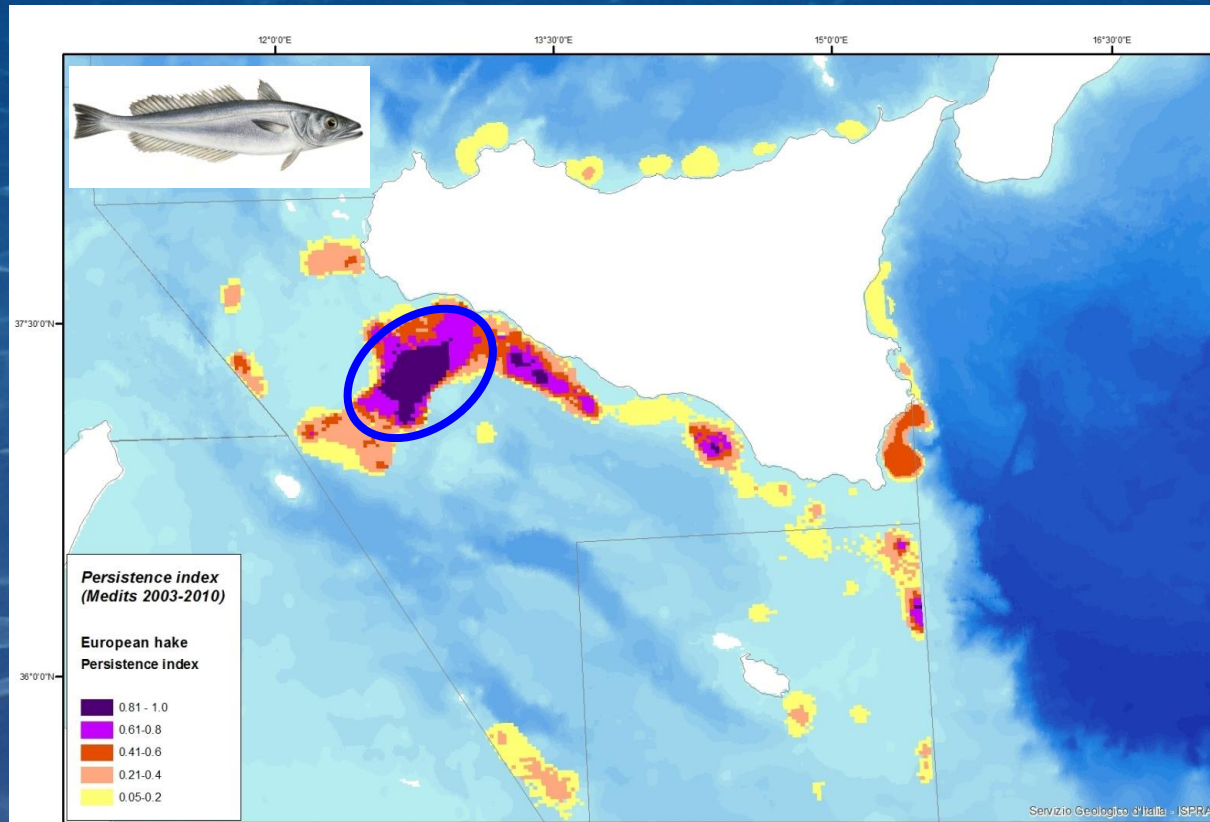
from Fiorentino et al., in prep

Stock distribution of DPS - Main Essential Fish Habitats in GSA 15 and 16 (Colloca et al., 2013)



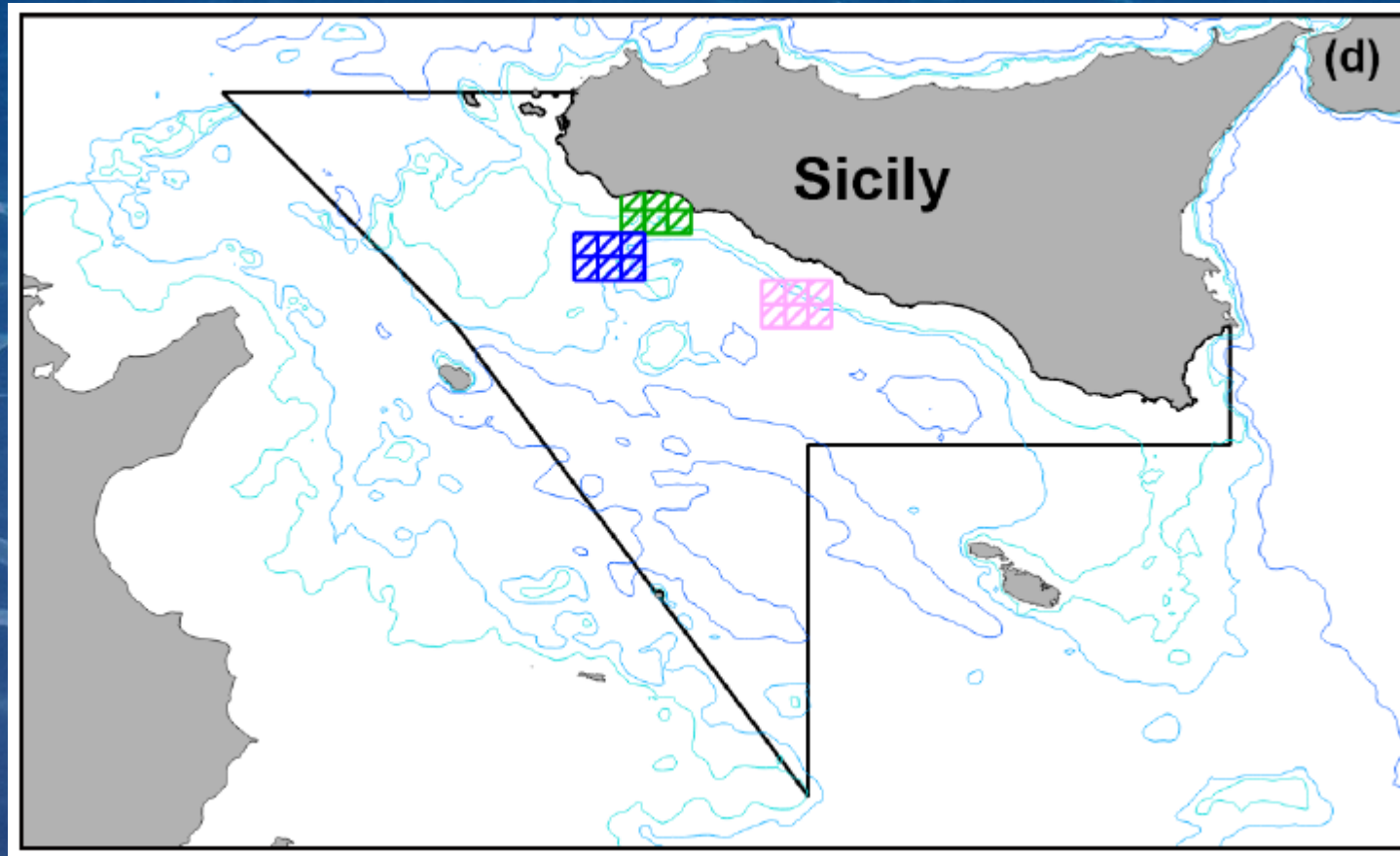
Spawning and nursery area of *rose shrimp* from MEDISEH - MAREA project

Stock distribution of HKE - Main Essential Fish Habitats in GSA 15 and 16 (Colloca et al., 2013)

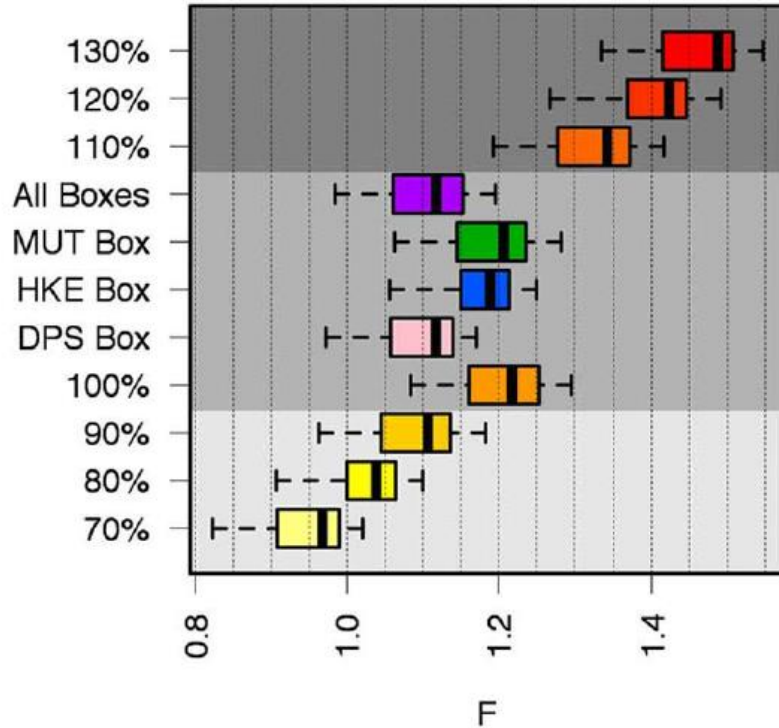
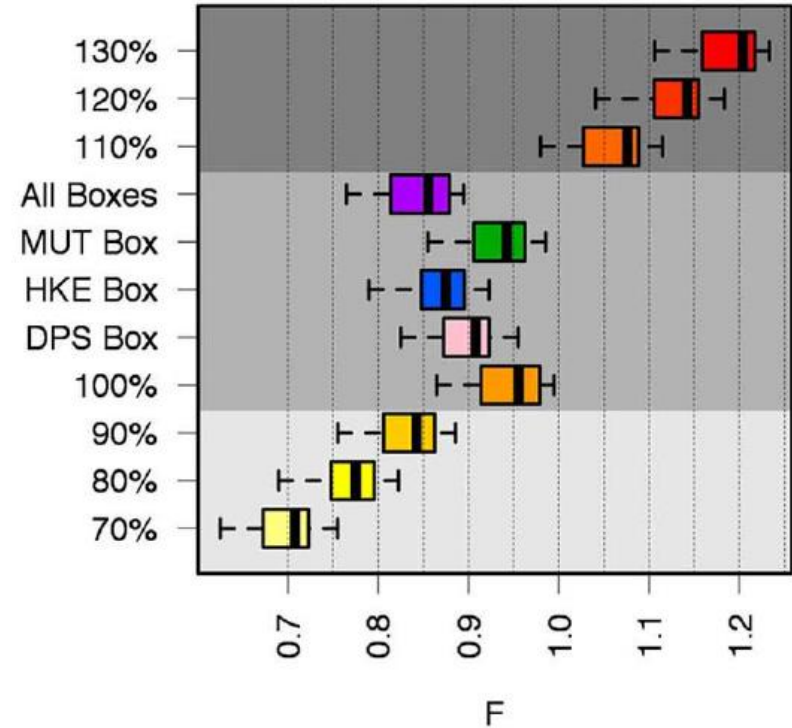


Nursery area of hke from MEDISEH - MAREA project

A proposal to improve the exploitation pattern of DPS and HKE catches...close to trawling the main stable nurseries in the area.

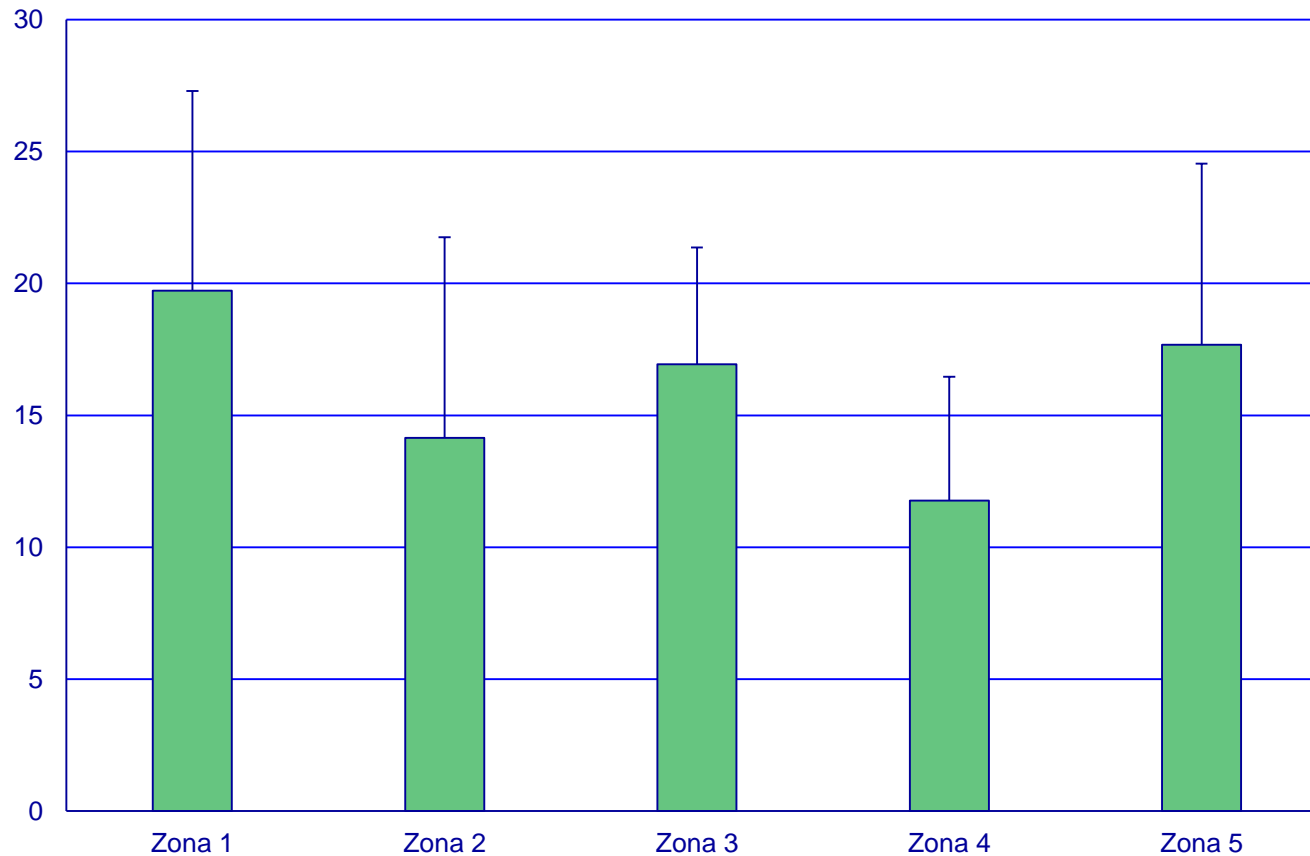


3 rectangles of 216 nms over an area of 14184 nms (about 1.5% of the GSA area.
Red mullet (green), Hake (blue), and Deep Water Rose Shrimps (pink))

a)**Fishing mortality DPS****Fishing mortality HKE**

Simulated values of F (2010 fishing effort) by species according to different management scenarios (variation of fishing effort with no spatial constraints or closures of nurseries with no fishing effort variation).

**% of discard on the catch of DPS targeted
Sicilian trawlers (all the species combined) –
(2009-2013)**



Discard of trawling in the Strait of Sicily
The main discarded species are *Trachurus trachurus*,
Phycis blennoides and *Merluccius merluccius*

Main scientific advice

Reduce Fishing mortality.

The current F values should be reduced by 20% and 80% to reach the F 0.1 for DPS and Hke respectively.

The reduction of fishing mortality should take into account the impact of each fleet.

In the case of DPS the contribution to the catch in %
by GSA

ITA_coast _(GSA16)	57
ITA_distant _(GSA16)	25.4
TUN _(GSA12)	18
MALTA _(GSA15)	0.2

Main outcomes of the ad hoc technical MedSudMed meetings involving stakeholders of MedSudmed project on Deep-water rose shrimps, European hake and related fisheries

Technical issue	Outcome of the discussion
Scope	To ensure sustainability and profitability to bottom trawl fisheries in the south-central Mediterranean Sea targeting Deep water rose shrimps and European hake by mitigating the impact on environment and on associated species
General objectives	To maintain stock biomass above a reference level, reduce the impact of fishing on juveniles , and increase the economic value of the catch
Operational objectives	To improve the exploitation pattern of fisheries To protect the juvenile fraction of the population during the recruitment phase and reduce the discard To provide opportunities for increase economic value of the catch
Overall strategy	To reduce exploitation of juveniles
Proposed approach	To improve the gear selectivity To protect nursery areas from bottom trawling To promote traceability and ecolabelling