

El voraz del estrecho de Gibraltar: trasfondo de una pesquería de profundidad



The red seabream of the Strait of Gibraltar: Deep water fishery background

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Pagellus bogaraveo (Brünnich, 1768)



Inshore waters above various types of bottom (rocks, sand, mud) to 400 m (Mediterranean) and 700 m (Atlantic); young near the coast, adults on the continental slope specially over muddy bottoms. Omnivorous, but feed mainly on crustaceans, mollusks, worms and small fish. Protandric hermaphrodites. Adults move towards the coast up to the edge of the continental shelf to spawn from January to June. Important foodfish: marketed mainly fresh.

Distribution: Eastern Atlantic (Norway, Strait of Gibraltar to Cape Blanc in Mauritania, Madeira, Canary Islands) and western Mediterranean (rare beyond the Sicilian Strait).

Taxonomy

Superclass GNATHOSTOMATA

Class ACTINOPTERYGII

Subclass NEOPTTERYGII

Division TELEOSTEI

Subdivision EUTELOSTEI

Superorder ACANTHOPTERYGII

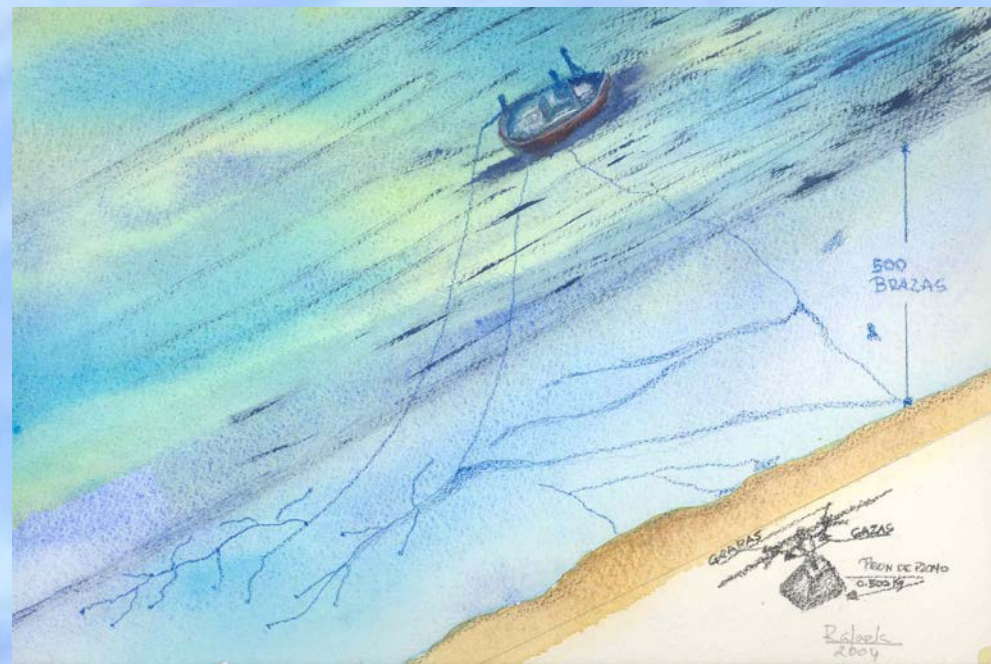
Order PERCIFORMES

Family SPARIDAE

Genus *Pagellus* (Valenciennes, 1830)

THE SPECIES

STRAIT OF GIBRALTAR FISHERY



Main ports

- ❑ Tarifa
- ❑ Algeciras
- ❑ Conil
- ❑ Tangier



Market cat. (SP)

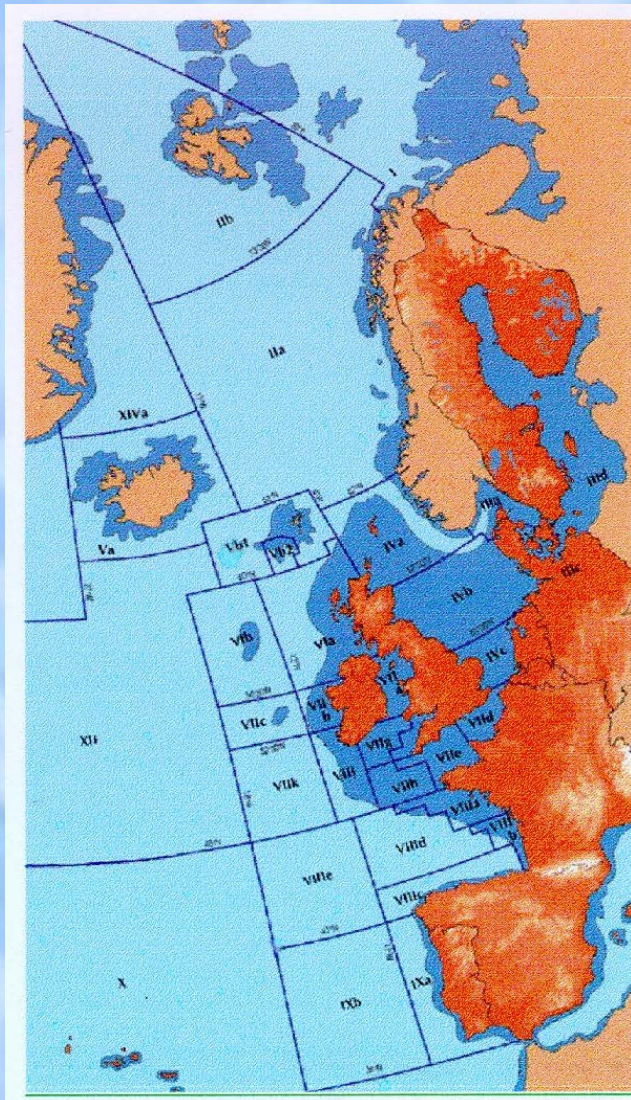
- ❑ Burro
- ❑ Tamaño
- ❑ Mediano
- ❑ Pequeño

> 1.300 grs.

850 a 1.300 grs.

550 a 850 grs.

350 a 550 grs.



ICES WGDEEP

Not benchmarked yet

EU Regulation

Fishing effort [Reg. EC since 2002]

Biannual TACs [Reg. EC since 2002]

Spanish and Andalusian Regulations for the Strait of Gibraltar fishery (Fishing plans since 1999)

Fishing boat list

Close season

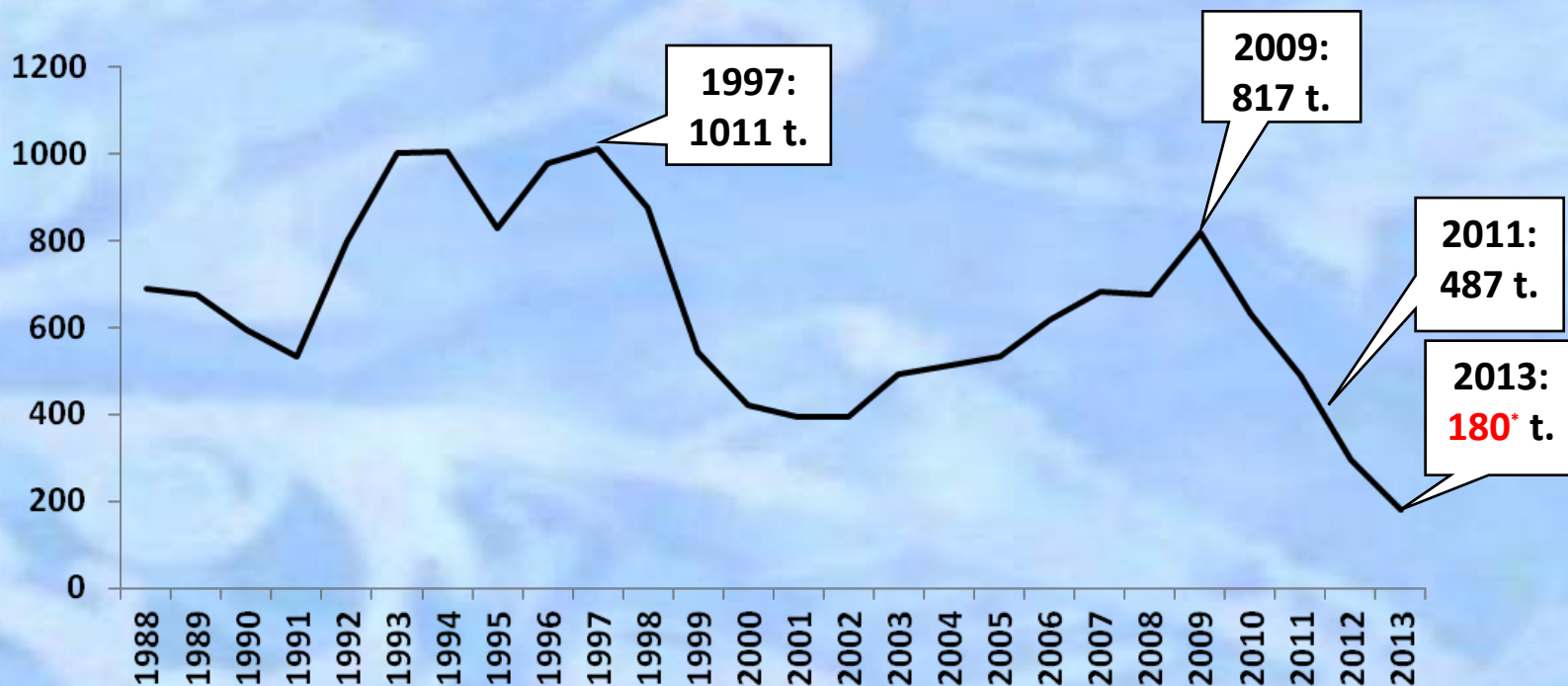
Minimum landing size (ATL vs. MED)

Hook size and hooks number limitation

Morocco

Agriculture and Marine Fisheries
Department Order No. 3083-09DU 12
Muharram 1431 (2009): 25 cm **FL** Red
seabream minimum market size.

RED SEABREAM LANDINGS IN IX

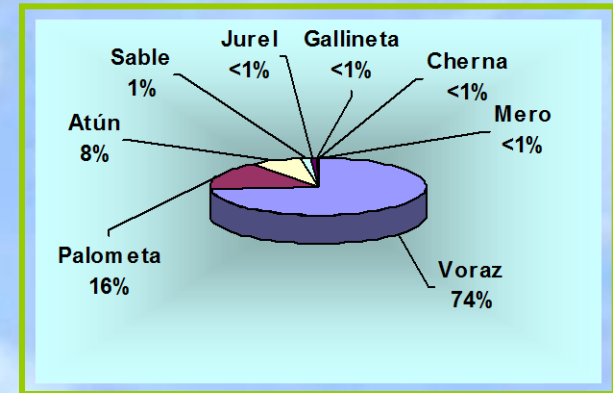


Pagellus bogaraveo is caught by Spanish and Portuguese fleets in Subarea IX. Spanish landing data from this area are available from 1983, Portuguese data from 1988 and Morocco information from 2001 till 2011.

Spanish Red seabream fishery in the Strait of Gibraltar is almost a monospecific fishery with one clear target species: *Pagellus bogaraveo* make up more than 70% of the catch

Landings since the start of the fishery

Main ports landings length distribution

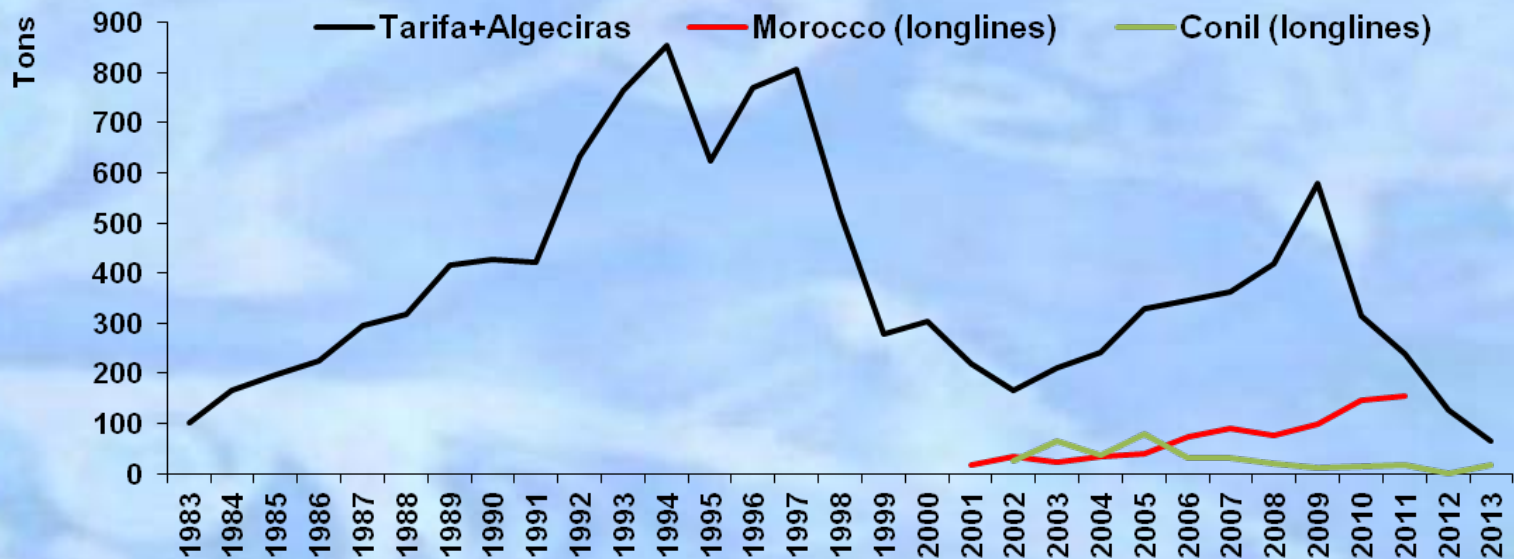


Fishing effort: The effort unit chosen (number of sales) cannot be too appropriate as do not consider the missing effort. Thus, in the recent years this missing effort increases substantially (fishing vessels with no catches and precisely why with no sale sheet to be recorded). VMS information (“Junta de Andalucía green boxes”)

Biological samplings (reproduction and growth)

Tag – recapture experiences

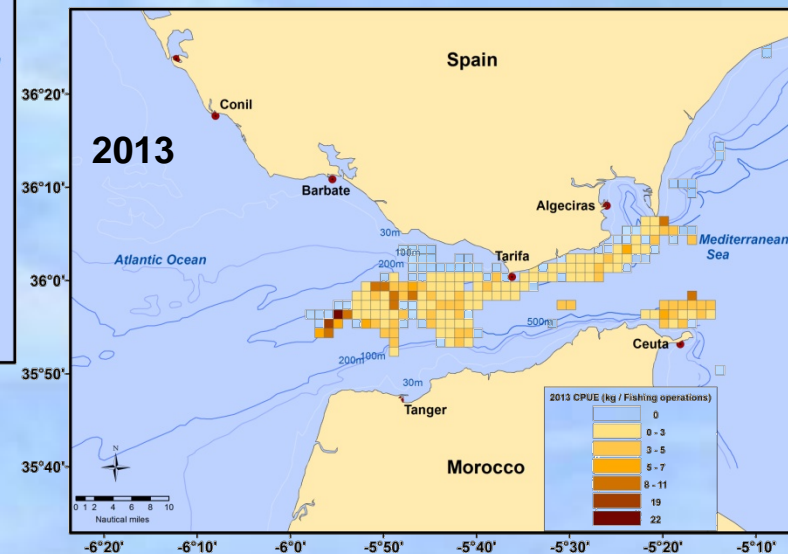
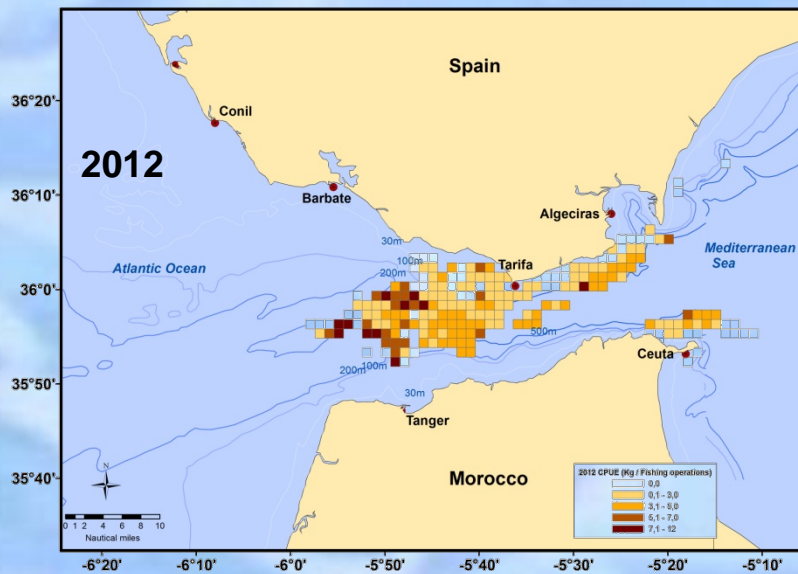
SoG RED SEABREAM LANDINGS



Unfortunately last years Morocco landings are not available, but....might be decreasing as well

Devices installed by the Junta de Andalucía to transmit to the control center information about the boat position, course and speed every three minutes. Data transmission uses the GPRS/GSM technology of cellular networks instead of satellite system (on line fishing effort monitoring). Filtering process and CPUE and missing effort estimates are described in Burgos *et al.* (2013)

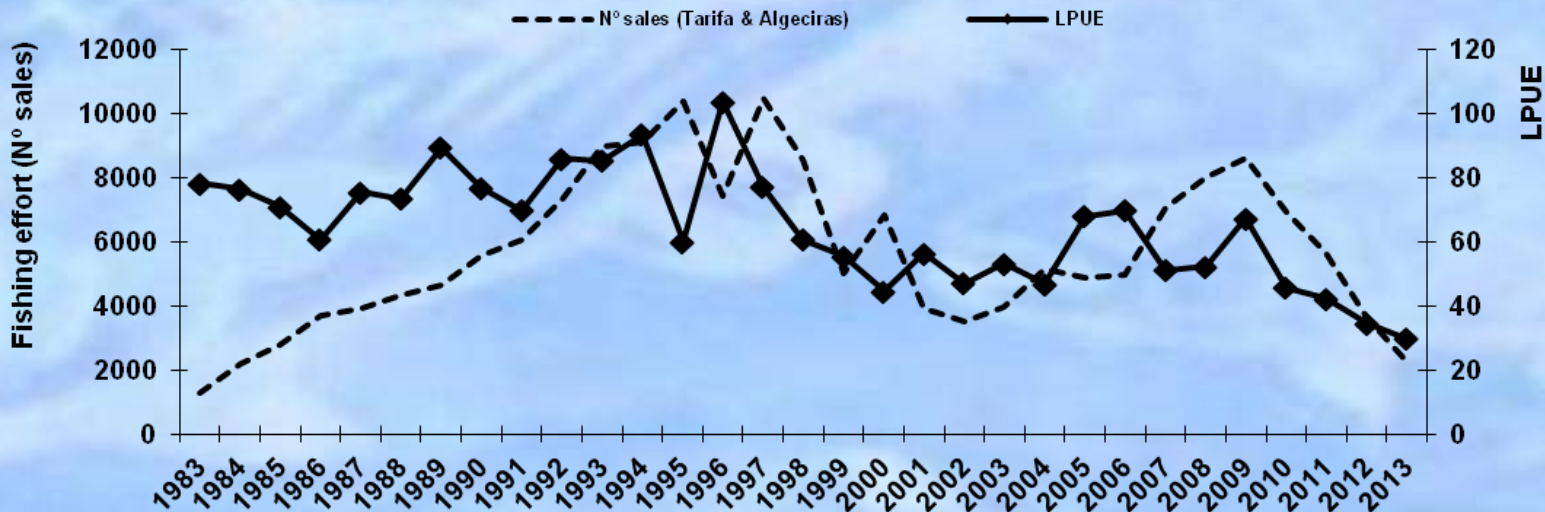
A SORT OF VMS (GREEN BOXES)



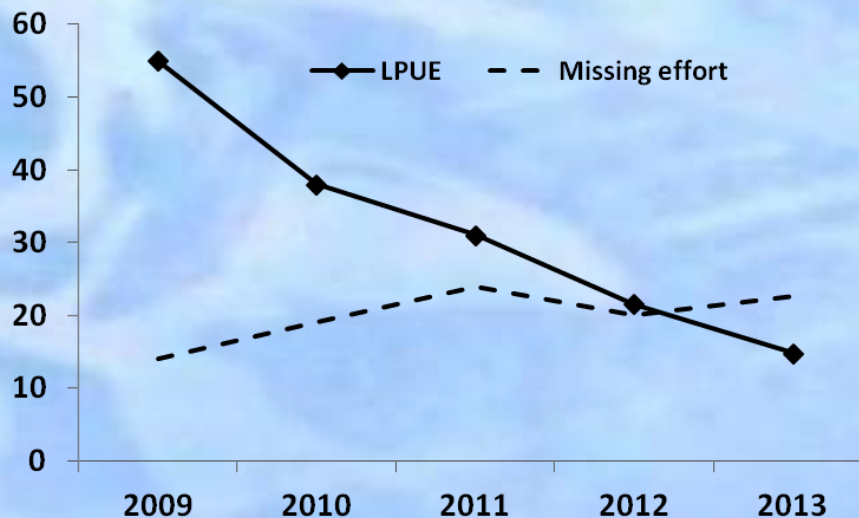
LPUE (SoG)

Missing effort trouble

ABUNDANCE INDEXES

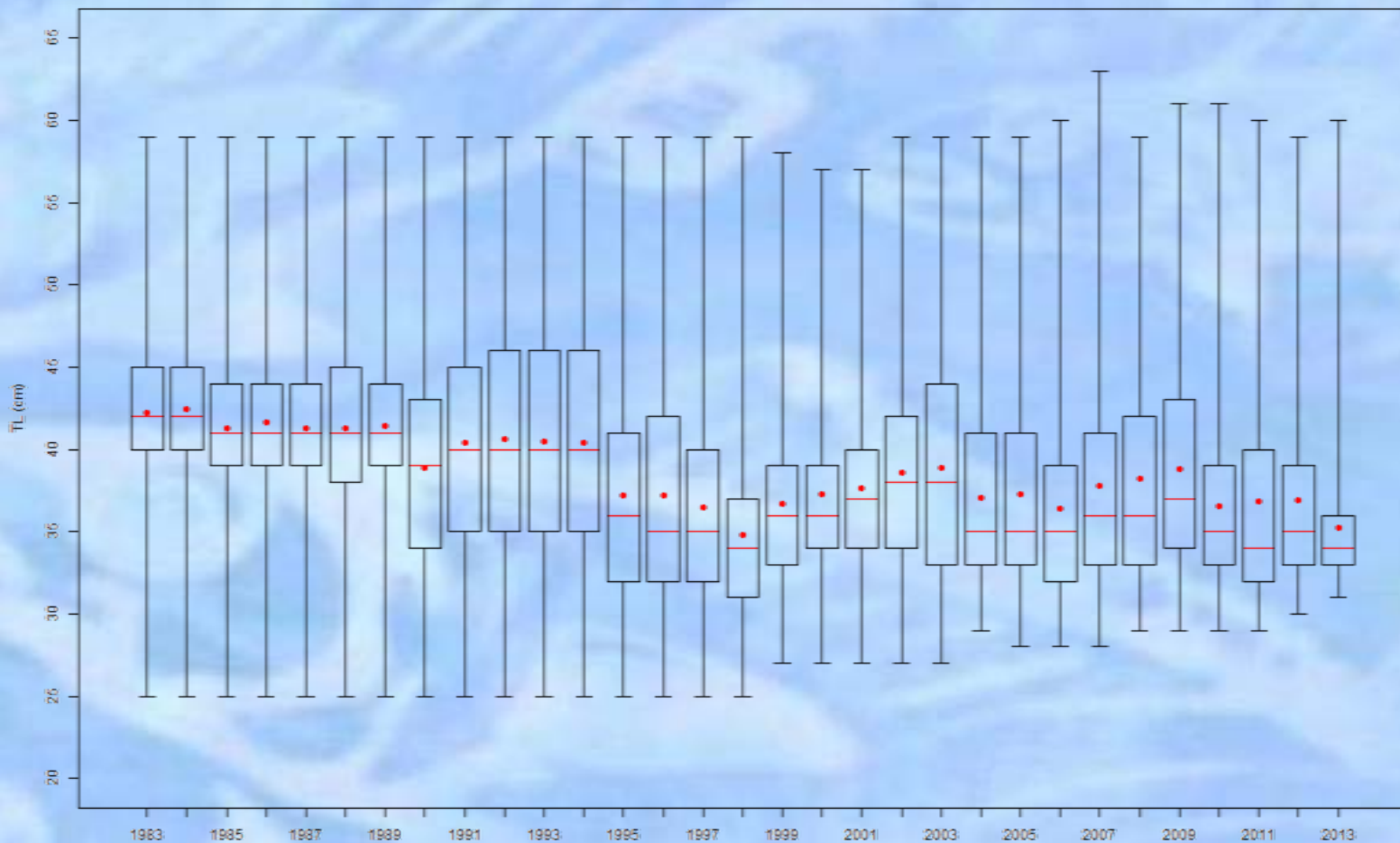


A MORE ACCURATE LPUE (GREEN BOXES)

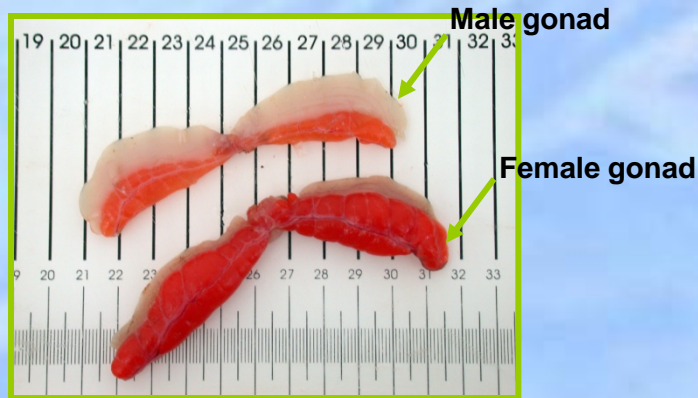


LENGTH DISTRIBUTIONS

Spanish “voracera” fishery landings length distribution (1983–2013)

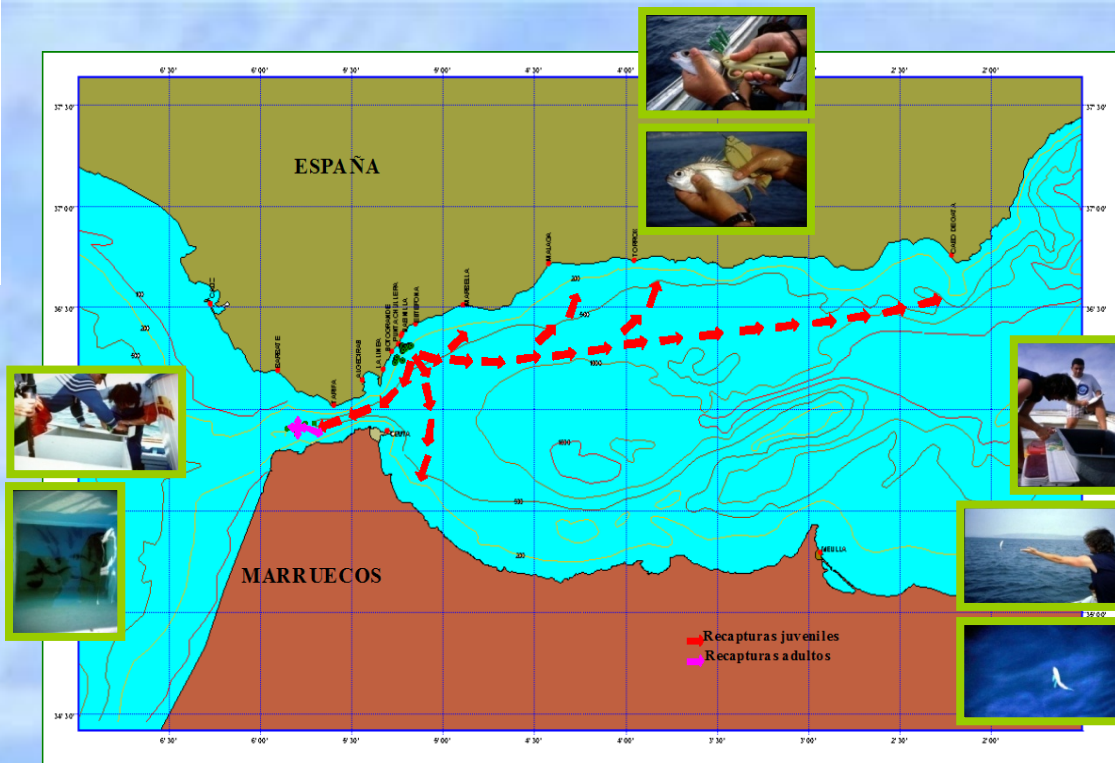


SOME BIOLOGICAL FEATURES



A slow growing, deep sea species, red seabream are sequential hermaphrodites, changing sex from male to female as they age

Spawning season seems to take place in the Strait of Gibraltar during the first quarter of the year. The overall diet is not very diverse, mainly composed by a small crustacean as main prey while the order fishes can be considered as a secondary prey. Main predators are unknown in the Strait of Gibraltar waters but maybe predation from dolphins and blue fin tuna should be taken into account

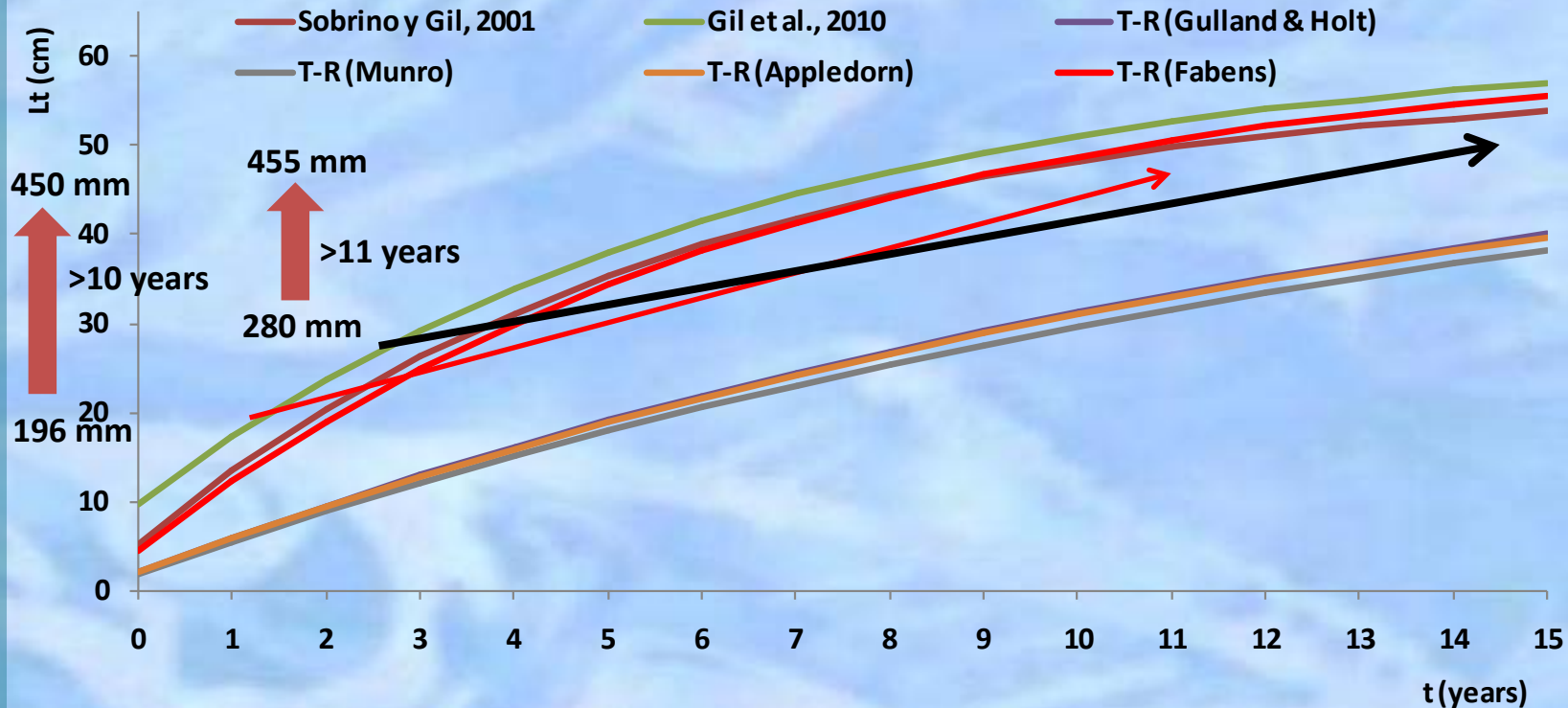


Juveniles: traps (MED)
Adults: hooks (SoG)

2 different experiences and areas

Survey	Days	Tags	Recaptures	Recapture rate (%)	Mean length (cm)	Mean weight (gr)
Estepona 97	9	1596	117	7.33	20	121
Barbate 98	8	351	2	0.57	15	51
Sotogrande 98	8	1432	18	1.26	19	100
Tarifa 01	13	979	180	18.39	34	585
Tarifa 02	15	624	33	5.28	35	681
Tarifa 04	9	942	37	3.93	30	411
Tarifa 06	10	1225	109	8.90	32	505
Conil 06	4	279	30	10.75	33	594
Conil 08	5	450	15	3.33	30	428
Total	81	7878	541	6.64	32	516

TAG - RECAPTURE EXPERIENCES

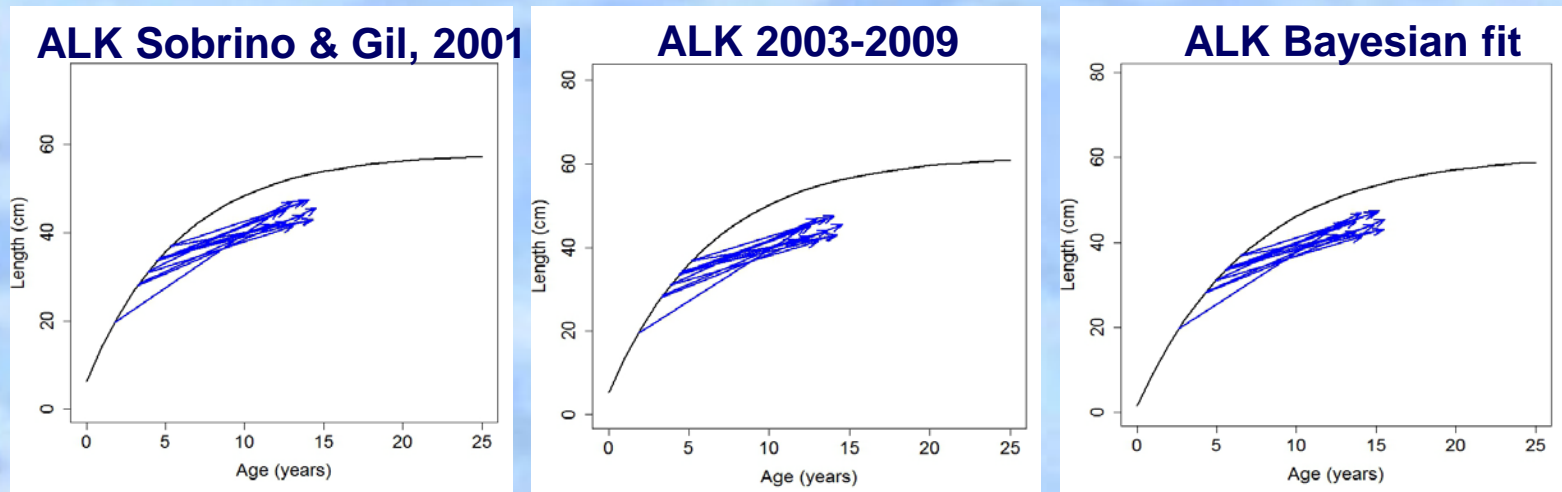


Growth estimates comparison : VBGF shapes and longest recaptures (more than 10 years at sea)

Ageing over estimation!



Red seabream of the Strait of Gibraltar: von Bertalanfy growth curves estimated from otolith readings. Straight lines correspond to the 12 long time at sea recaptures.



Draws of the size increment between tag and recapture dates from the 12 longest lived samples are below from the expected in the VBGF estimates from otoliths readings. So, it seems that readings may be **overestimated** and some hyaline rings are uncounted and/or missing (ICES WKAMDEEP, 2013).

ICES advises on the basis of the data-limited approach that annual catches should be no more than 115 t (EU catches). All catches are assumed to be landed. Additionally, ICES recommends the establishment of a recovery plan for red seabream. This plan should include all fisheries that takes this stock.

Year	ICES Advice	Predicted catch corresp. to advice	TAC EU Subarea IX	ICES catches Subarea IX
2003	¹	-	1.271	0.49
2004	¹	-	1.271	0.51
2005	¹	-	1.271	0.53
2006	¹	-	1.271	0.62
2007	¹	-	1.080	0.68
2008	¹	-	1.080	0.68
2009	Constrain catches to average catches 2003-2007		0.5	0.918
2010	Biennial		0.5	0.780
2011	Same advice as previously		0.5	0.780
2012	No new advice, same as 2011		0.5	0.780
2013	No increase in effort and catches reduced 20% (average of 2009 to 2011)		0.5	0.780
2014	No new advice, same as 2013		0.5	0.780
2015	Reduce catches by 36 %		0.115 ^a	-
2016	No new advice, same as 2015		-	-

Weights in thousand tonnes.

<http://www.ices.dk/sites/pub/Publication%20Reports/Advice/2014/2014/sbr-ix.pdf>

¹Advice prior to 2008 included for all areas

^aAdvice on EU catches.

Last year's advice was based on ICES approach to data limited stocks method 5.2. This year's advice is based on ICES approach to data-limited stocks method 3.2.

MAIN CONSIDERATIONS

SoG location....middle of nowhere (ICES, GFCM, CECAF...?)

Stock identity

Morocco lack info trouble remains

Assessment method not benchmarked (gadget)

Recovery plan needs

ICES Subarea IX

Strait of Gibraltar fishery 

Management considerations: Since 2013, minimum landing size for this species in Spain for the Atlantic back to 25 cm while in the Mediterranean is 33 cm. Common minimum landing size is desirable in both sides of the Strait of Gibraltar



Snip, snap snout, this tale's told out, so they all lived happily ever after and ate.... red seabream!!
Thanks you for listening any questions?