

Recreational shore fishing in the south of Portugal: an integrative study



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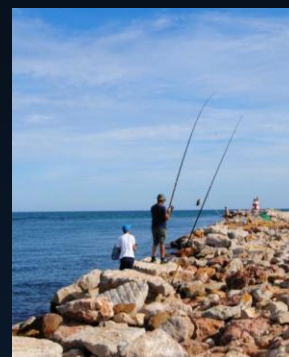
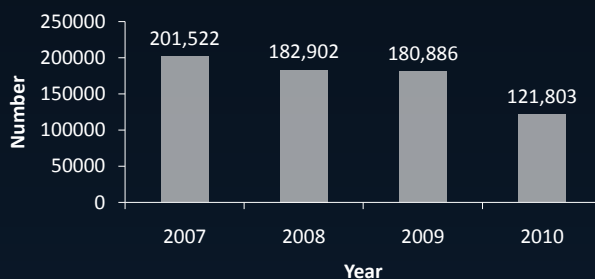
Background: Recreational Fishing in Portugal



•One of the most important pastimes in Portugal:

- 300,000 anglers (Marta *et al.*, 2001); 270,000 (EAA, 2003);
- 600,000 (6%) (Hurkens & Tisdell, 2006)

Number of Fishing licenses per year



Background: Recreational Fishing in Portugal

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- **“Ignored” by both scientists and managers for a long time**
 “Given the abundance of fisheries resources and the little effort needed to obtain good catches, for a long time the impact of recreational fishing was considered negligible compared with commercial fishing”.
 (first Decree on recreational fishing: No. 246/2000)
- **Decrease in most of the fisheries resources: increasing tension between recreational and commercial sectors**



An impossible catch, nowadays!
(Tavira - Algarve, back in the 50s)

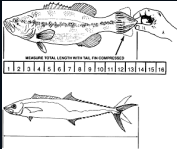


A very rare catch!
18.5 Kg dentex caught off Algarve coast (2008)

emerging need to regulate marine recreational fishing

Portuguese RF Regulations: key points

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Minimum landing sizes



10 kg



Prohibition on selling the fish

CONTROVERSIAL

More restrictive regulations for the PNORV

us marginatus



Aims of the study



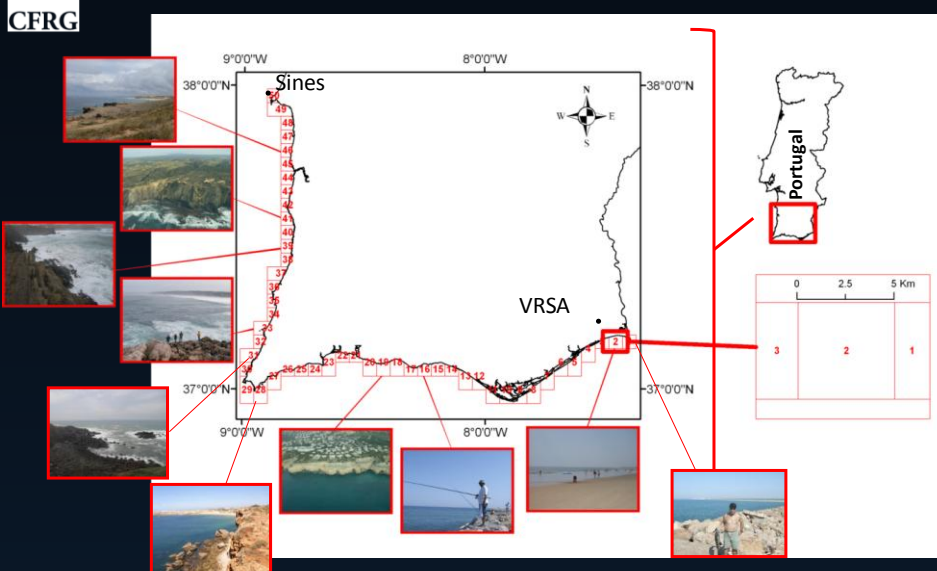
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... evaluate the recreational shore fishing relative impact (vs commercial fishing)

... evaluate the socioeconomic importance of the activity in the region.



Study area





Study area: south coast



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- Highly urbanized, due to intense tourism;
- Calmer sea conditions;
- Several estuaries and lagoons
- Fishing hotspots: jetties, piers, beaches.



Study area: SW coast



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- Natural Park: low anthropogenic impact;
- rougher sea conditions
- Mostly rocky shoreline with high cliffs.
- fishing is mainly from the cliffs, with no specific access points.





Sampling Methods: Complemented survey



August 2006 – July 2007
(stratified random sampling)

... Roving creel surveys
Catch and socioeconomic information

... Aerial Surveys
Fishing Effort information

... Fishing Logbooks
Long term Catch and CPUE information (night catches)











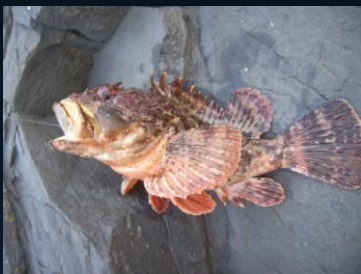



What has been done...



-12 month sampling period-

- ... 192 roving creel surveys (96 in each sub area- south and SW)
- ... 1321 interviews (fishing trip data)- Response rate of 95%
- ... 24 aerial surveys- 6872 anglers counted (South coast: 2976; West coast: 4076).
- ... 256 logbooks distributed to volunteer anglers: return rate of 7%.






Catch composition...



- 48 species recorded (5110 fishes): 23% discarded
- 16 species from the Sparidae family
- Catches dominated by *Diplodus sargus*
- *D.sargus* was also the most targeted species



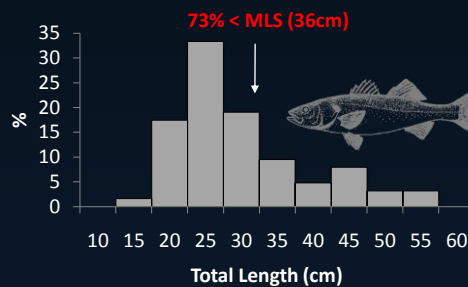
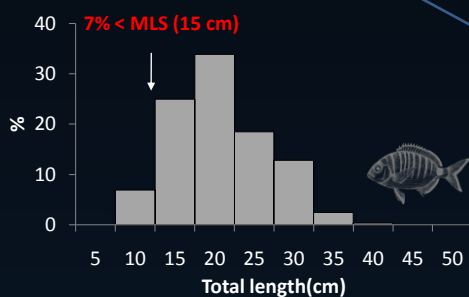
Species	Common name	Number		Weight		Discards (%)	Discard motive
		N	%	W (Kg)	%		
<i>Diplodus sargus</i>	White seabream	2235	43.7	522.66	48.4	18.0	Length*
<i>Diplodus vulgaris</i>	Two-banded seabream	733	14.3	87.53	8.1	29.2	Length
<i>Boops boops</i>	Bogue	415	8.1	36.36	3.4	52.0	Species
<i>Scomber japonicus</i>	Chub mackerel	333	6.5	48.83	4.5	6.0	Species
<i>Sarpa salpa</i>	Salema	188	3.7	76.25	7.1	23.9	Species
<i>Chelon labrosus</i>	Mullet	137	2.7	88.35	8.2	17.5	Species
<i>Dicentrarchus labrax</i>	Sea bass	113	2.2	46.37	4.3	18.6	Length
<i>Symphodus</i> spp.	Wrasses	101	2.0	4.09	0.4	59.4	Species
<i>Spondyliosoma cantharus</i>	Black seabream	92	1.8	12.73	1.2	10.9	Length
<i>Balistes capricus</i>	Grey triggerfish	83	1.6	37.81	3.5	0	-

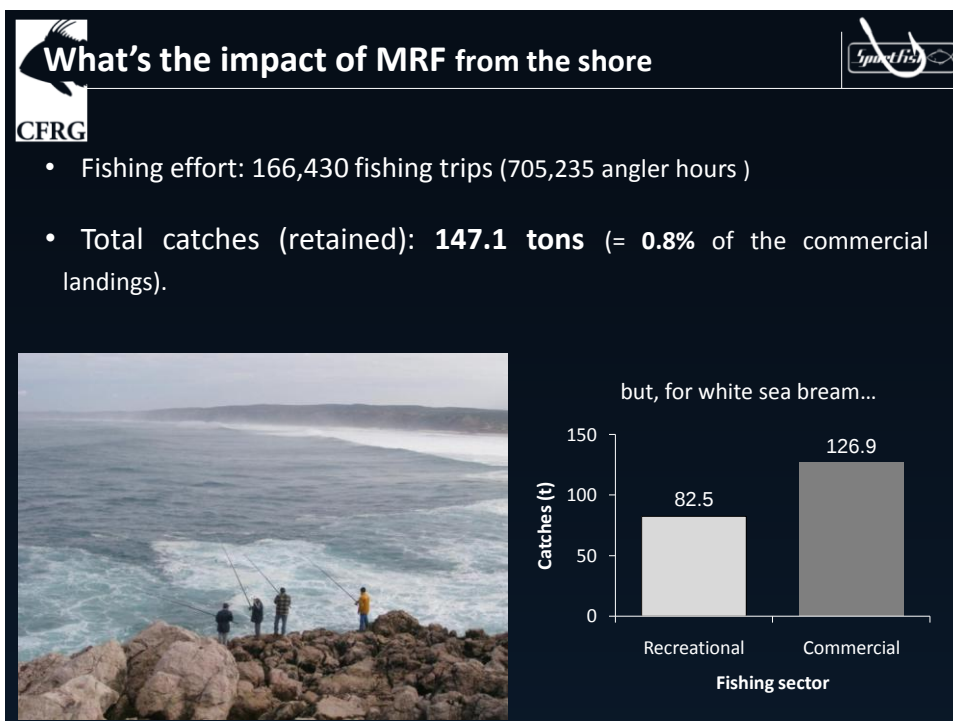
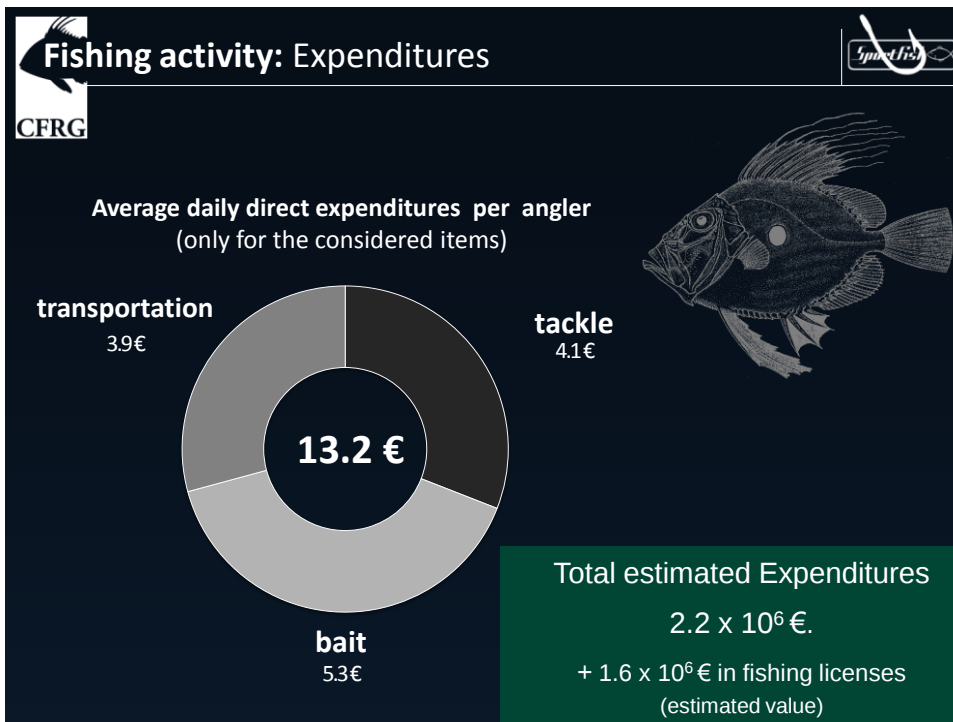


Size composition...



- 23% retained undersized fish







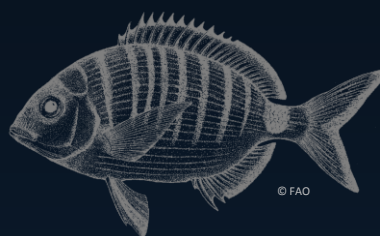
Conclusions



- Economically important activity
- Multispecies fishery: clearly dominated by *Diplodus sargus* (most targeted species)
- Recreational vs Commercial fishing
 - Overall: recreational catches are **low**
 - **White sea bream**: Impact of recreational fishing is **considerable**



peak of catches is during the spawning season of the species



Final remarks: future...



- **periodic studies**, at a National scale, of all recreational fishing activities: shore fishing, spear fishing and boat fishing.
- on-site methods: *catch and effort data* (e.g. roving-aerial design)
- off-site methods: *socioeconomic information* (e.g. telephone surveys)
- **dissemination of MRF regulations** (e.g. recreational fishing guides, MLS tables)



e.g. RF regulations brochure from PNSACV is only available online (pdf).



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Final remarks: survey methods used



	Aerial surveys	Roving creel surveys	Fishing logbooks
			
↑	• Covers large areas • Instantaneous counts	• appropriate when anglers are dispersed • reliability of catch and fishing trip data	• low cost • covers large areas and periods
↓	• availability/weather conditions • very expensive • visibility bias	• incomplete trip data • length of stay bias • Progressive counts	• low return rates • angler reported data (avidity and memory recall bias) • highly dependent on anglers' motivation



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Thank you!