

Review of the available data on four Elasmobranches species caught by the French fleets on the Mediterranean coast (Gulf of Lions and Corsica)



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Workshop on Stock Assessment of Selected Species of
Elasmobranchs in the GFCM area
Brussels (Belgium), 12 -16 December 2011



Objectives

provide a picture of the temporal evolution of
the state of the population of :

- the thornback ray (*Raja clavata*),
- the Mediterranean starry ray (*Raja asterias*),
- the Brown ray (*Raja miraletus*),
- the small-spotted catshark (*Scyliorhinus canicula*)
 - *Squallus* spp.

Data sources

three key documents published in the 90s'

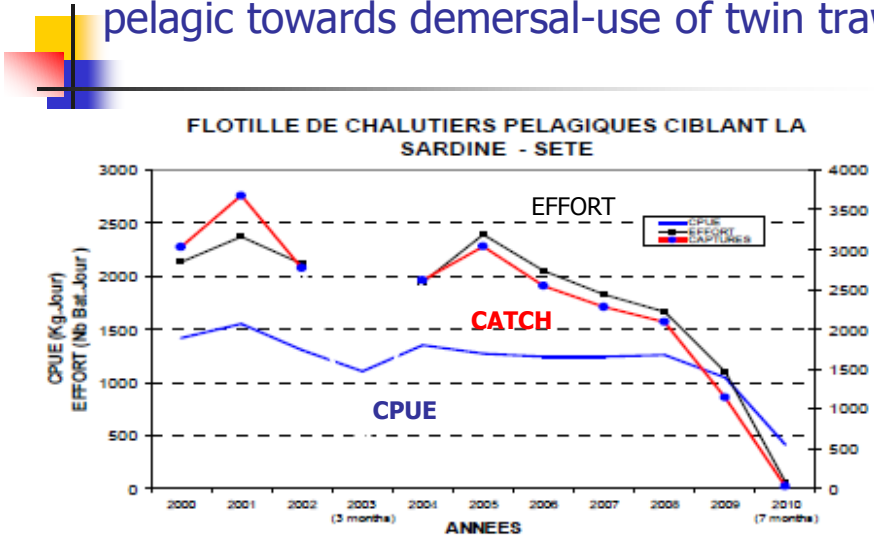
- Campillo A., 1992. Les pêcheries françaises de Méditerranée **1970-1992**
- Aldebert Y., 1997. Demersal resources of the Gulf of Lions (NW Mediterranean). Impact of exploitation on fish diversity. **1969-1997**
- Bertrand J. A., Aldebert Y. And Souplet. A. , 1998. Temporal variability of demersal species in the Gulf of Lions from trawl surveys (**1983-1997**).
- National fisheries statistics
- **MEDITS 1994-2009**

Spatial distribution of the activity : French trawler fleet



- Increase of fishing effort 1957 -1999
- In 1998 : 140 Trawlers
 - Bottom trawling Demersal fish
 - Pelagic trawling
 - Mixed activity
- Recently, major changes occurred

Displacement of fishing effort pelagic towards demersal-use of twin trawl



Spatial distribution of the activity : vessel using nets (trammel nets)

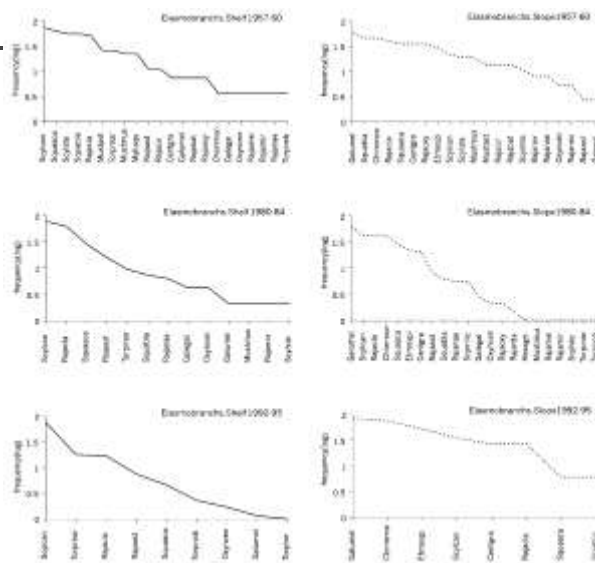


16 years ago modification in occurrence

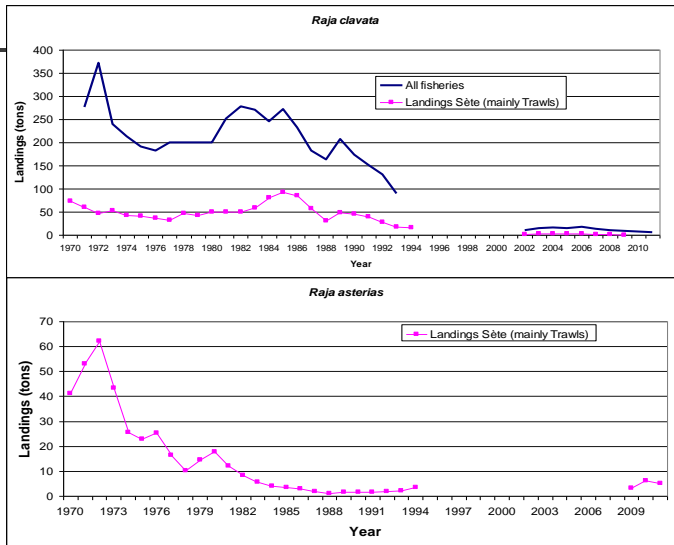


Species	13-68	68-71	71-76	80-84	85-87	88-89	91	84-99	habitat	Ethniccode
<i>Scyliorhinus reticulatus</i>	_____	_____	_____	_____	_____	_____	_____	_____	shelf+slope	Sykan
<i>Squalus acanthias</i>	_____	_____	_____	_____	_____	_____	_____	_____	shelf+slope	Sqazca
<i>Torpedomarmorus</i>	_____	_____	_____	_____	_____	_____	_____	_____	shelf	Torpear
<i>Rajadonata</i>	_____	_____	_____	_____	_____	_____	_____	_____	shelf+slope	Rajach
<i>Torpedonobellina</i>	_____	_____	_____	_____	_____	_____	_____	_____	shelf	Torproh
<i>Rajazerias</i>	_____	_____	_____	_____	_____	_____	_____	_____	shelf	Rajazar
<i>Chimaeromacrotrocha</i>	_____	_____	_____	_____	_____	_____	_____	_____	slope	Chimmac
<i>Cetorhinus maximus</i>	_____	_____	_____	_____	_____	_____	_____	_____	slope	Cetmax
<i>Galeorhinus galeus</i>	_____	_____	_____	_____	_____	_____	_____	_____	slope	Gahatel
<i>Elmegobius aspinotus</i>	_____	_____	_____	_____	_____	_____	_____	_____	slope	Elmego
<i>Scymnodon taylori</i>	_____	_____	_____	_____	_____	_____	_____	_____	slope+shelf	Scymtd
<i>Oxymonacanthus</i>	_____	_____	_____	_____	_____	_____	_____	_____	shelf+slope	Oxymon
<i>Torpedoterpes</i>	_____	_____	_____	_____	_____	_____	_____	_____	shelf	Torprot
<i>Mustelus manabus</i>	_____	_____	_____	_____	_____	_____	_____	_____	shelf	Manma
<i>Rajastriata</i>	_____	_____	_____	_____	_____	_____	_____	_____	shelf+slope	Rajastri
<i>Rajamiraleus</i>	_____	_____	_____	_____	_____	_____	_____	_____	shelf+slope	Rajamir
<i>Scyliorhinus stellatus</i>	_____	_____	_____	_____	_____	_____	_____	_____	shelf	Syblte
<i>Squalus blainvilliei</i>	_____	_____	_____	_____	_____	_____	_____	_____	shelf+slope	Sqabla
<i>Galeorhinus galeus</i>	_____	_____	_____	_____	_____	_____	_____	_____	slope	Gahgat
<i>Myliobatis aquila</i>	_____	_____	_____	_____	_____	_____	_____	_____	shelf	Myliag
<i>Mustelus manabus</i>	_____	_____	_____	_____	_____	_____	_____	_____	shelf+slope	Manma
<i>Rajamellensis</i>	_____	_____	_____	_____	_____	_____	_____	_____	shelf+slope	Rajamel
<i>Rajaxyrichthys</i>	_____	_____	_____	_____	_____	_____	_____	_____	slope	Rajaxy
<i>Rajamastigias</i>	_____	_____	_____	_____	_____	_____	_____	_____	shelf+slope	Rajamast
<i>Hexanchus griseus</i>	_____	_____	_____	_____	_____	_____	_____	_____	slope+shelf	Hexagr
<i>Rajapolyistigma</i>	_____	_____	_____	_____	_____	_____	_____	_____	slope+shelf	Rajapol
<i>Rajaradula</i>	_____	_____	_____	_____	_____	_____	_____	_____	shelf+slope	Rajarad
<i>Rajabotis</i>	_____	_____	_____	_____	_____	_____	_____	_____	shelf+slope	Rajabot
<i>Rajastriata</i>	_____	_____	_____	_____	_____	_____	_____	_____	shelf	Rajastri
<i>Rajamicrocellata</i>	_____	_____	_____	_____	_____	_____	_____	_____	shelf+slope	Rajamicro

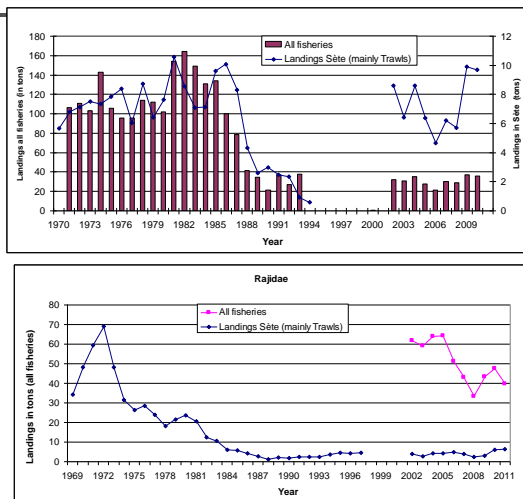
Trend Rank-frequency diagrams



Landings time series (1)

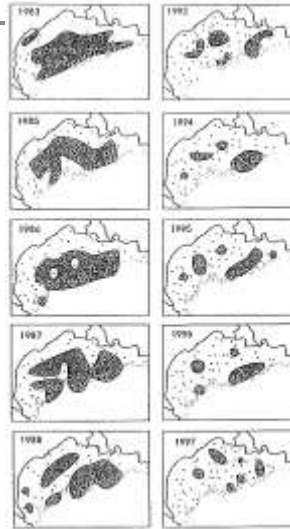


Landings time series (2)



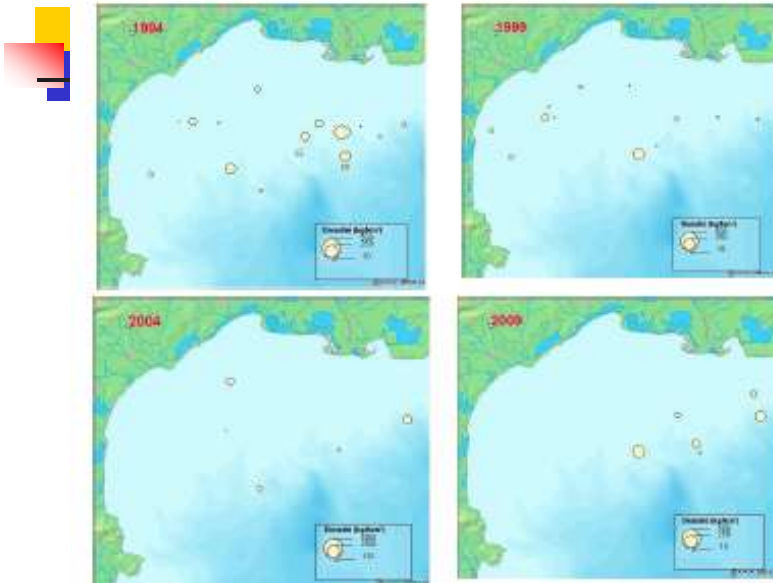
Spatial distribution: A constant decrease 1983-1997

R. clavata

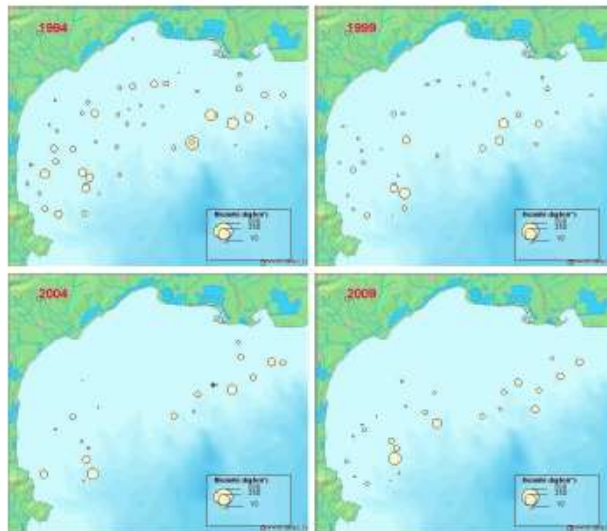
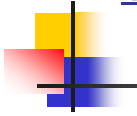


Raja clavata

R. clavata



Scyliorhinus canicula



Recurent surveys

- Bathymetric distribution charts
 - The CPUEs (weight/fishing hour)
- Spatial distribution maps
- Index of biomass
 - The trends of the biomass index on the continental shelf (10-200 m) and for the slope (200-800 m) weight per area unit (km²).
- Size frequency
- Descriptive analyses
 - the presence/absence of fish species, : continuous occurrence, stable, increasing or decreasing frequency.
 - Rank-frequency diagrams were used to point out modifications both in absolute frequency and in relative rank of species for sharks and rays.

Conclusion



- Good historical data in Sete
 - close cooperation with the stakeholders is essential, valuable and rewarding.
- A decline took place since the middle eighties,
 - firstly on the continental shelf and later on the slope.
 - Since the fishing effort has been increased steadily by the entry in the fleet of more powerful vessels
- The surveys' data confirmed that negative changes
- Concerns about the sustainability of Rajidae populations
 - in the Gulf of Lions were addressed by scientists several years ago
 - Situation is much better in Corsica