Statistical Species characterization of Gurnard Landings in North of Portugal

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Work Proposal

- Study of Gurnards landings in Portugal
- Knowledge of Gurnards species composition
- Obtain accurate Statistical Landings (in Matosinhos, Portugal)

Introduction

- Available ICES statistics concerning gurnards are not accurate.
- Gurnards are often not sorted by species when they are landed, usually ending up classified under one generic category of “gurnards”.
- Gurnards are considered by-catch in bottom trawl and in Artisanal gears, like beam trawl and trammel nets, although due to decrease of traditionally targeted species their interest and value has increased.

Introduction

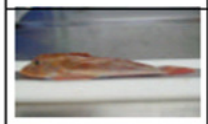
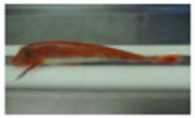
- For example, France has only reported "tub gurnard" since 1983 and Denmark, the Netherlands and Portugal since 2000.

- In portuguese official data (DGPA), all gurnards are classified under these designations: Tub gurnard (*Trigla lucerna* or *C. lucernus*), Gurnard nep. (*Trigla* spp.) and Large-scaled gurnard (*Lepidotrigla cavillone*).

- In Portugal, and especially in Matosinhos, landings are a mix of the 6 gurnard species found in Portuguese waters.

Commercial Gurnards in Portugal

Table 1: Taxonomic distinction of Gurnards

	Scientific Name	Common names	Depths (m)	Max. Length (cm)	Description
	*Chelidonichthys lucernus*	Tub gurnard (En), Cabra-Cabaço (Pt), Ruivo (Pt)	20-300 (FISHBASE, 2007)	75 (Bauchot, 1987)	It's the main target of gurnard fisheries in Portugal; blue or green pectoral fins
	*Aspitrigla cuculus*	Red gurnard (En), Cabra-vermelha (Pt), Ruivo (Pt)	up to 400 (FISHBASE, 2007)	50 (Bauchot, 1987)	Red colour, vertically-enlarged scales in the lateral line and curved snout
	*Chelidonichthys obscurus*	Longfin gurnard (En), Cabra-da-Bandeira (Pt), Ruivo (Pt)	up to 150 (Fischer, 1981)	50 (Bauchot, 1987)	Straight snout and enlarged second ray on the first dorsal fin
	*Eutrigla gurnardus*	Grey gurnard (En), Cabra-Morena (Pt), Cabra (Pt), Ruivo (Pt)	up to 150 (Fischer, 1981)	36 (Bauchot, 1987)	Brown colour and the spiny scales in lateral line
	*Trigla lyra*	Piper gurnard (En), Cabra (Pt), Cabra-Lira (Pt)	100-700 (FISHBASE, 2007)	60 (Bauchot, 1987)	Presence of 2 spines in the upper jaw; elongated cleithral spine (more than 15% of Total Lenght)
	*Chelidonichthys lastoviza*	Streaked gurnard (En), Cabra-Riscada (Pt)	20-240 (Bauchot, 1987)	30 (Papaconstantinou, 1986)	Lateral-line scales large and keeled; distinct transversal ridges of skin

Discard Gurnard species

- There's two species which are too small to have any commercial value and are discarded in sea.

- Spiny gurnard (*Lepidotrigla dieuzeidei*) (on the top of photo)
- Large-scaled gurnard (*Lepidotrigla cavillone*) (below on the photo)

Material and Methods

Trawl Fleet landing analysis:

- IPIMAR Fisheries Lab
- 2 samples/month
- Sampling period: 2007
- 1 gurnard box
- Weight and length of each fish

Material and Methods

Artisanal Fleet landing analysis :

- Fish Auction Market
- Day capture/vessel
- 3 samples/ week
- Weight and length each of fish
- Sampling period: March – July 2007

Results: Trawl Fleet

- 24 samples
- 10 vessels
- 1965 individuals were sampled
- Total weight of 223,991 kg

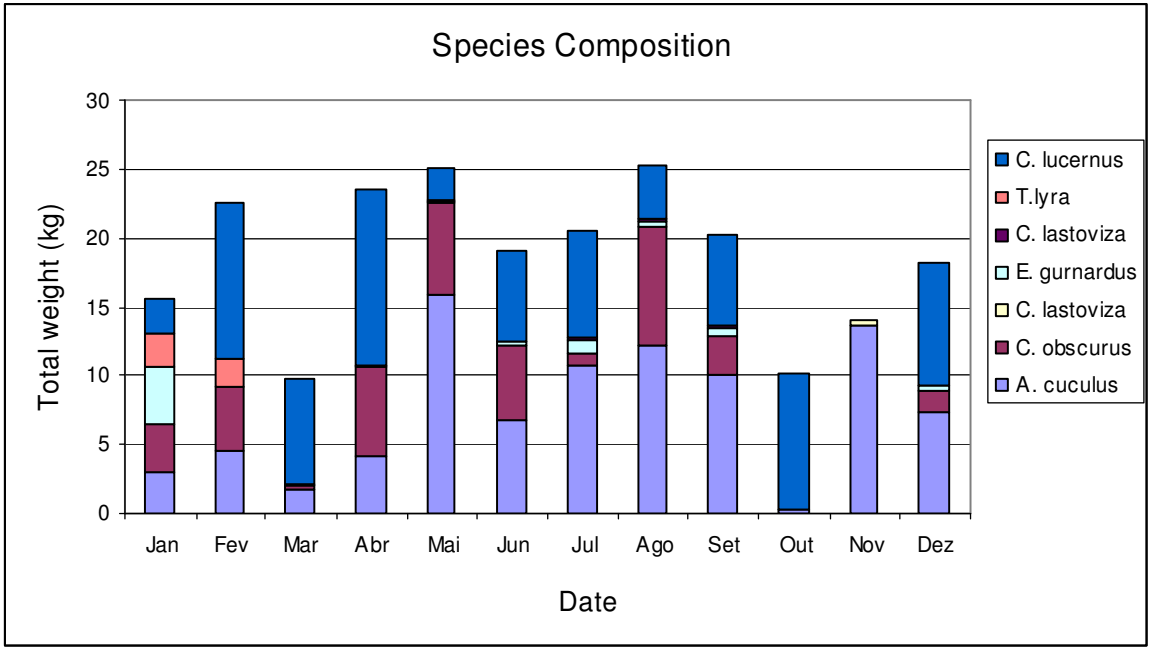


Figure 1. Gurnard species composition observed in bottow trawl fleet, in Matosinhos, Portugal, during the sampling period (2007).

Results: Trawl Fleet

- Most abundant species:
  - *Aspitrigla cuculus* (43%)
  - *Chelidonichthys lucernus* (35%)
  - *Chelidonichthys obscurus* (18%)
- *E. gurnardus, C. lastoviza* and *T. lyra* were also present, in residual quantities
- No *Lepidotriglas* spp. were observed

Results : Artisanal Fleet

- 51 samples
- 27 vessels
- 1962 individuals were sampled
- Total weight of 441,2 kg

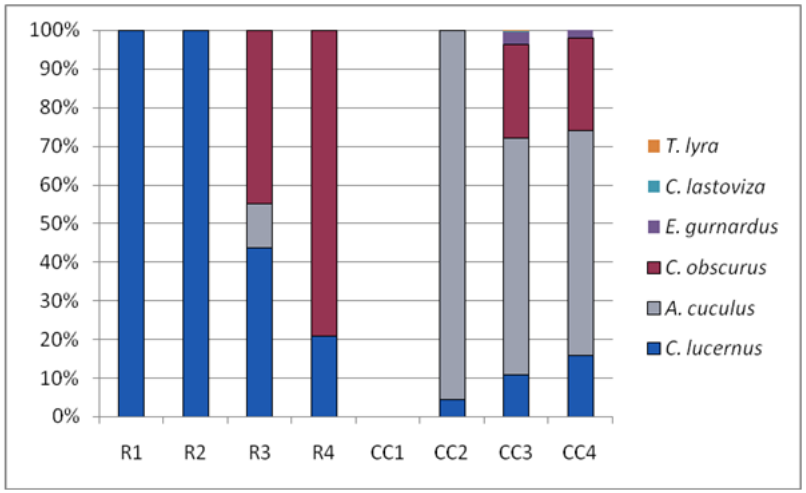


Figure 2. Composition of the Artisanal boxes of each designation, "Ruivo" - R and "Cabra-Cabaço" – CC, according to the size (T1 for bigger fish to T4 for smaller fish).

Results: Artisanal Fleet

- Most abundant species:
  - *Chelidonichthys lucernus* (39%)
  - *Aspitrigla cuculus* (29%)
  - *Chelidonichthys obscurus* (30%)
- *E. gurnardus, C. lastoviza* and *T. lyra* were also present, in residual quantities
- No *Lepidotrigla* spp. were observed

Conclusions

- This study proves that gurnard landings in Portugal are multi-species.
- In both Fleets, the most abundant gurnards were Tub Gurnard - *Chelidonichthys lucernus*, Red Gurnard - *Aspitrigla cuculus* and Long Fine Gurnard - *Chelidonichthys obscurus*.
- In fact, there's a capture of a mix of 6 species officialy designated all like one gurnard species – "Ruivo".

Conclusions

- Other commercial gurnards only occurred in residual amounts.
- Species and length composition will depend where the sampling is done in Artisanal or Trawl Fleet. For example, Trammel nets catch have bigger individuals (81 cm Tub gurnard) or more gurnard species are observed in Trawl captures.
- No individual of *Lepidotrigla spp.* were observed, in spite of Portuguese official data mentioning them as the dominant gurnard landing.

Conclusions

- The official statistics for gurnard captures are based only on the former designation and, therefore, they do not represent the total captures of Gurnards.

- Therefore, data based on the official classification does not seem to be of any scientific or statistic use for fishery assessment of these species and further studies are required for gurnards.

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Thank you for your attention!