

## Current knowledge status on myctophids' diversity in the Southwest Atlantic Ocean

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### INTRODUCTION & AIM

- ❖ Myctophids are among the most abundant and diverse marine fishes in the world ocean.
- ❖ Many species perform diel vertical migrations.
- ❖ They feed mainly on zooplankton.
- ❖ They play an important role in carbon transport through the deep-sea water column.
- ❖ In the Southwest Atlantic Ocean (SWAO; 33° - 56° S), myctophids remain understudied.



The aim of this study was to provide a comprehensive review on the diversity of the family Myctophidae in the SWAO.

### METHODS

We analyzed myctophids' diversity and distribution patterns in the SWAO based on:

**Literature review:** Hulley (1981), Konstantinova et al. (1994), Figueroa et al. (1998), Cousseau et al. (2020), Ehrlich et al. (1999), Acha et al. (2018).

Records from 10 research cruises (1,248 fishing trawls) performed between 1978-2023, along the Argentine continental shelf, the shelf break and part of the oceanic domain (43° - 61° W; 33° - 56° S)

### RESULTS & DISCUSSION

There were a total of 79 myctophid species grouped in 24 genera in the region. These species were characterized by 7 distribution patterns, according to Hulley (1981).

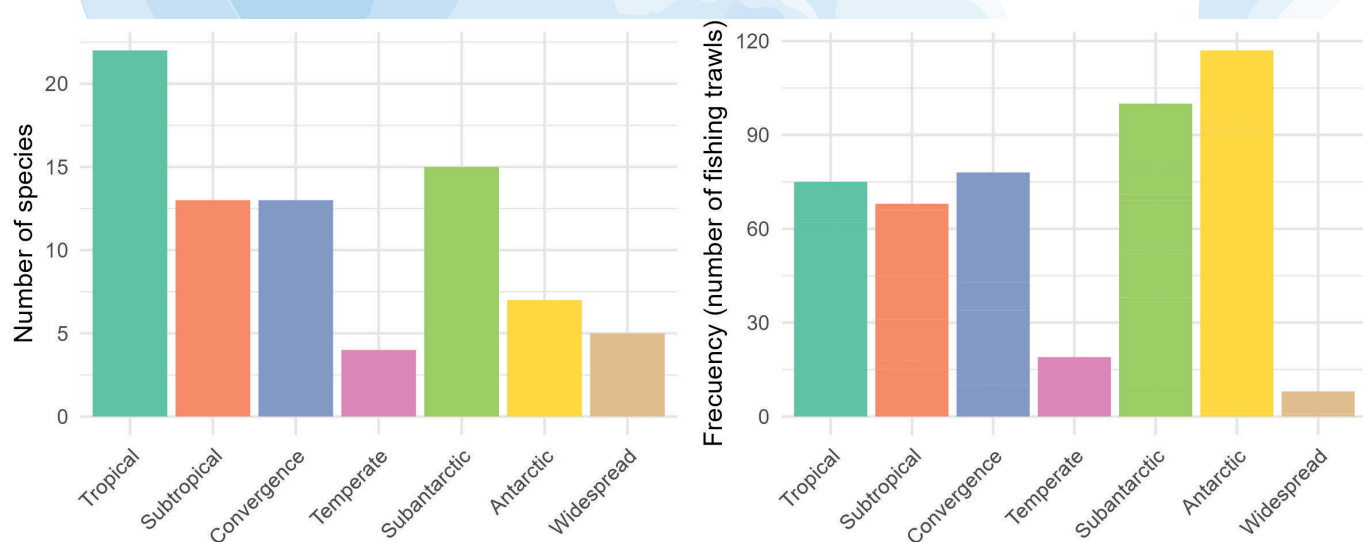


Fig. 1. Number of species (left, whole data) and number of trawls (right, research cruises data) grouped by distribution patterns (Hulley, 1981). There are more species related to tropical waters (27.8 %), but from the fishing trawls analyzed, antarctic and subantarctic species were more frequent.

- ❖ Lanternfishes were found in 207 trawls (16.6 %), mainly in the oceanic zone (> 200 m).
- ❖ The species richness was higher in the oceanic zone northwards 40° S, and lower at the shelf break.
- ❖ The most frequent species was *Gymnoscopelus nicholsi*, found in 93 trawls (44.9 %), followed by *Ceratoscopelus warmingii* (30 trawls, 14.5 %), *Electrona subaspera* and *Lampichthys procerus* (29 trawls, 14 %)

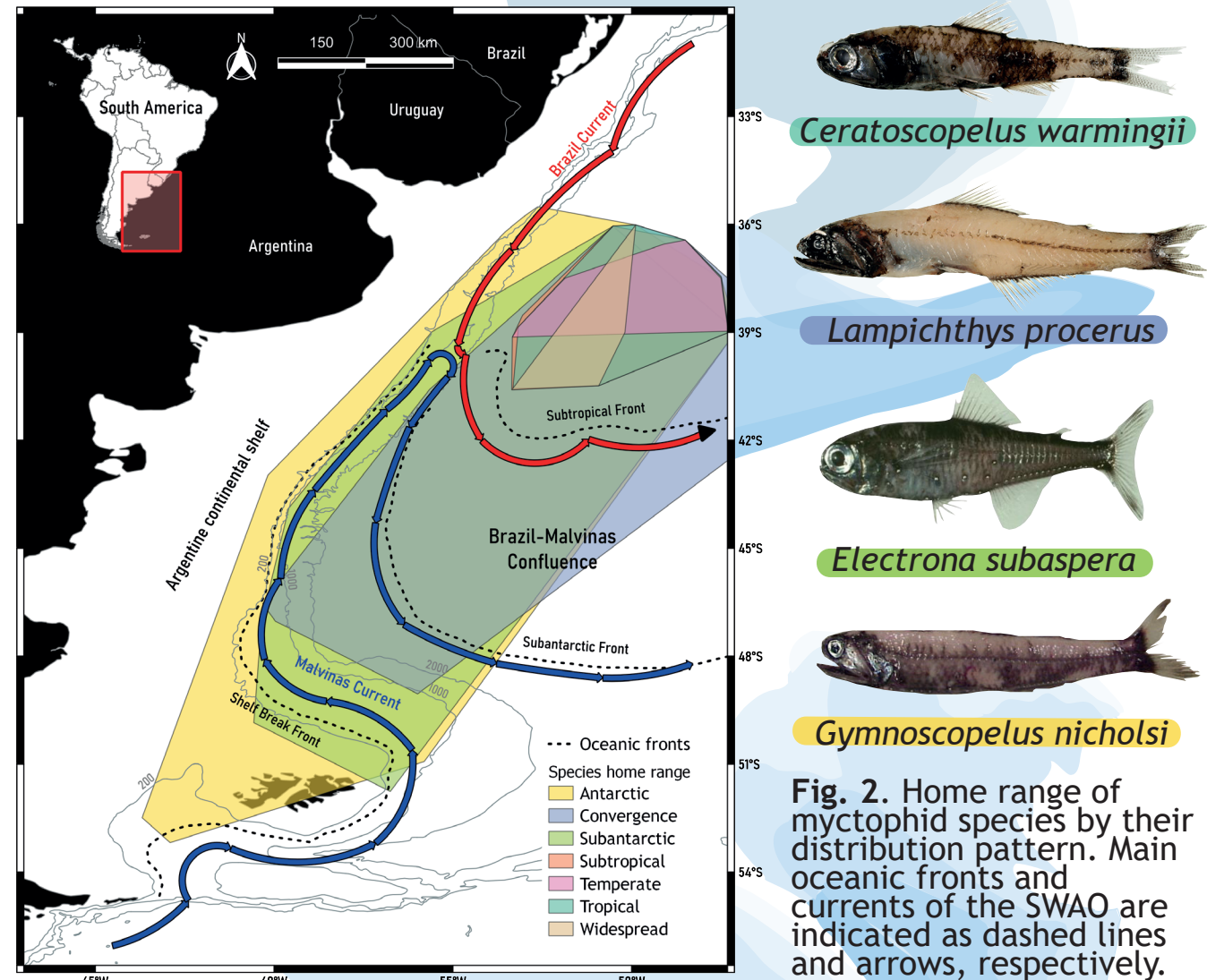


Fig. 2. Home range of myctophid species by their distribution pattern. Main oceanic fronts and currents of the SWAO are indicated as dashed lines and arrows, respectively.

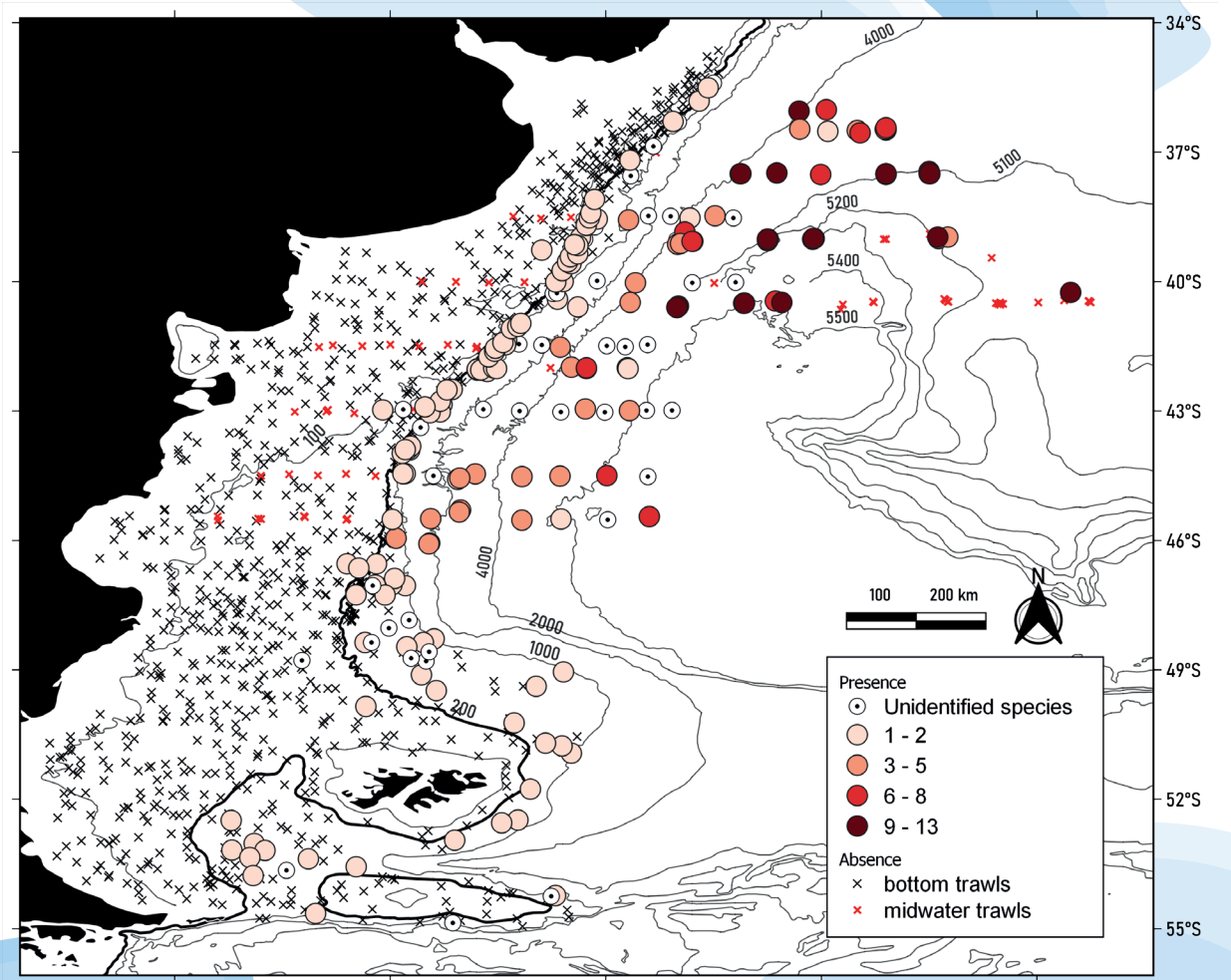


Fig. 3. Spatial distribution of fishing trawls analyzed (n = 1,248), indicating presence or absence of myctophids, and number of species identified. The 200 m isobath is indicated by a thicker line.

### CONCLUSIONS

- There is a wide diversity of myctophid species inhabiting the SWAO.
- The distribution of myctophids is essentially oceanic.
- Their distributional patterns are strongly associated to the oceanography of the region.
- Targeted studies in the SWAO are needed to provide further assessments on their ecological aspects.

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