

Filling biodiversity knowledge gaps: Sponges (Porifera: Demospongiae) recorded off San Jorge Gulf (Argentina), SW Atlantic Ocean

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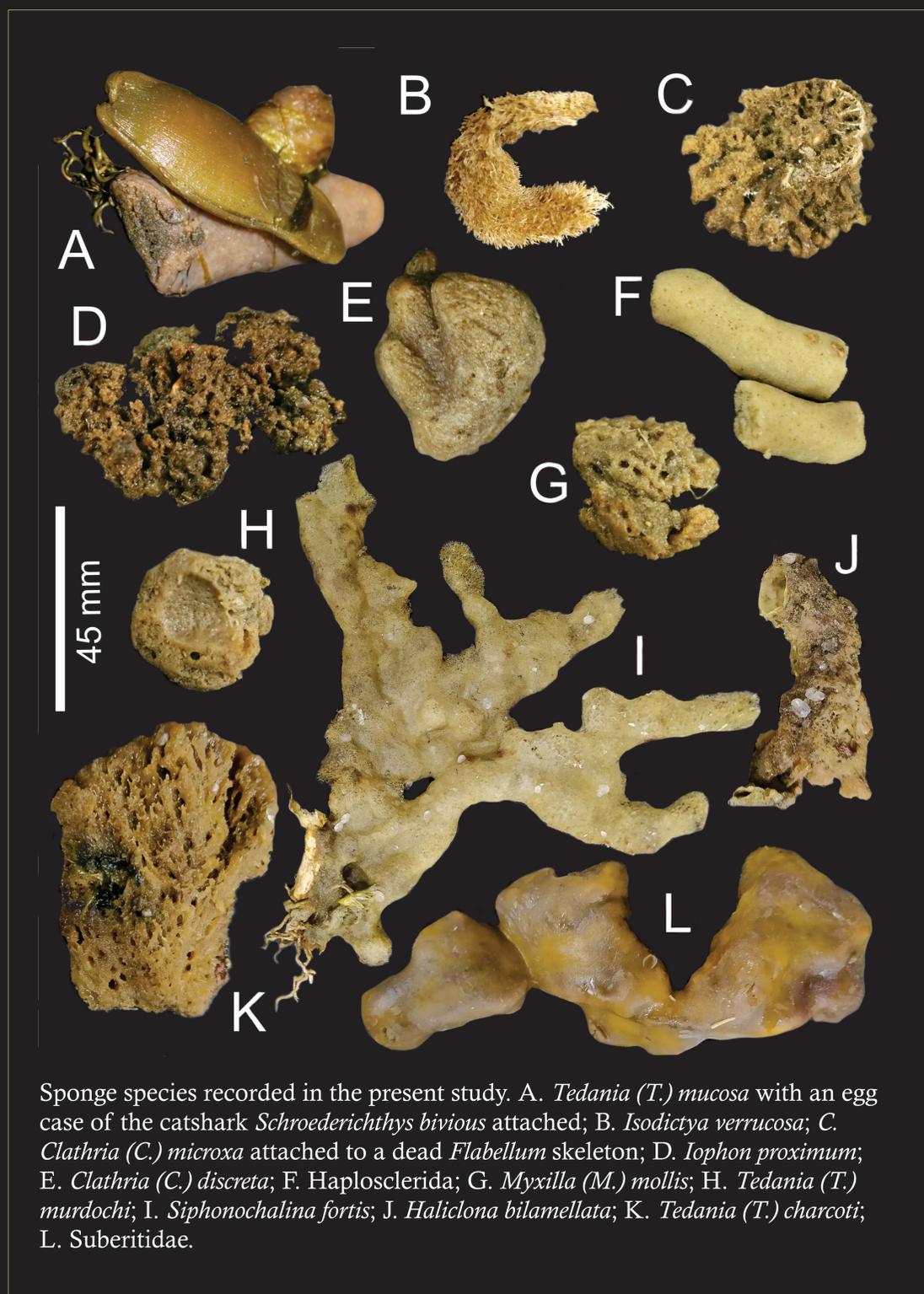
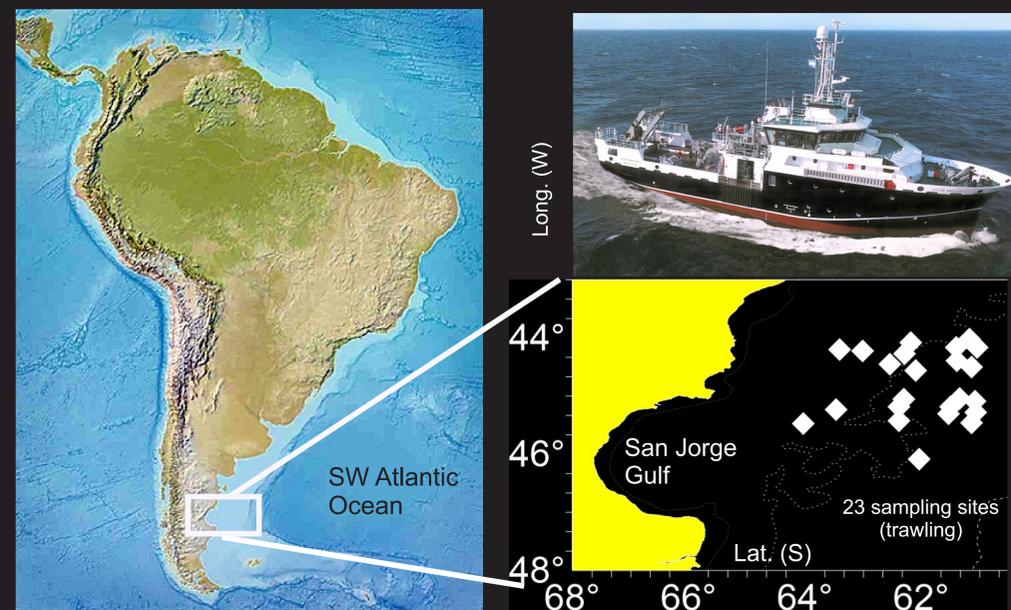
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In Argentina, knowledge on the biodiversity of marine Porifera is closely related to the concentration of the sampling effort. Coastal areas such as Buenos Aires and Tierra del Fuego have several records, while the majority of the continental shelf have few or no records at all (López Gappa and Landoni, 2005). According to our knowledge, there are no specific records of sponge species in the area located off San Jorge Gulf, Patagonia (see map), only sparse mentions as a general group in technical guides or reports.

For instance, the aim of the present study was to provide general information on the benthic assemblage in this area, with emphasis on sponge species, abundance and richness taking advantage of the bottom bycatch collected during a stock assessment expedition of the Argentinean squid *Illex argentinus* developed in 2020.

STUDY AREA



Sponge species recorded in the present study. A. *Tedania (T.) mucosa* with an egg case of the catshark *Schroederichthys bivius* attached; B. *Isodictya verrucosa*; C. *Clathria (C.) microxa* attached to a dead *Flabellum* skeleton; D. *Iophon proximum*; E. *Clathria (C.) discreta*; F. Haplosclerida; G. *Myxilla (M.) mollis*; H. *Tedania (T.) murdochi*; I. *Siphonochalina fortis*; J. *Haliclona bilamellata*; K. *Tedania (T.) charcoti*; L. Suberitidae.

MAIN RESULTS

- 42 taxa recorded; among them, 12 sponge taxa (see Figure).
- Tunicates represented 45% of the biomass of the benthic community (140.3 kg.nm⁻² in average), while sponges represented 40% (124.61 kg.nm⁻² in average; maximum value of 656.5 kg.nm⁻² at one site).
- *Tedania (Tedaniopsis) mucosa* was the most common and abundant sponge species, recorded in 22 sites (95% of the sites), reaching up 98 % of the total wet biomass at one site (652.7 kg.nm⁻²), with an average of 100.8 kg.nm⁻². Egg cases of the catshark *Schroederichthys bivius* were recorded attached to this sponge species at 3 sites.
- *Isodictya verrucosa* and *Clathria (C.) microxa* are here recorded for the 2nd. and 3rd. time, respectively, in the SW Atlantic Ocean, after Schejter et al. (2006, 2011). The other sponge species are commonly recorded in other sectors of the Argentinean shelf.

GENERAL CONCLUSIONS

Although all the sponges recorded were previously known from other sectors of the Argentinean waters, the results of this study provide valuable information to complete the distribution pattern of sponges in Argentina. The studied area presented an unusually high biomass of sponges and tunicates in the benthic communities that may reach up to 40% and 45% in wet weight, respectively, of the total benthic community. This is probably an indication that this area was relatively preserved from intense bottom fishing and may constitute a potential refuge for juveniles of species of commercial and non-commercial interest, as suggested for some other regions of the San Jorge Gulf. It must be noted that Argentinean hake (*Merluccius hubbsi*) fishing (developed using bottom trawlers) is banned at the studied area, but the Argentine red shrimp (*Pleoticus muelleri*) fishing (developed also by a trawler fleet) is allowed. Finally, considering the finding of egg cases of the catshark *S. bivius*, this area may also have interesting characteristics for oviparous chondrichtian species and should be better explored to know if it would be necessary any particular management in order to preserve target species from anthropogenic impacts.

Literature cited:

1. López Gappa J.; Landoni N. A., Biodiversity of Porifera in the Southwest Atlantic between 35 S and 56 S. *Revista del Museo Argentino de Ciencias Naturales* 2005, 7, (2), 191-219.
2. Schejter L.; Calcinaï B.; Cerrano C.; Bertolino M.; Pansini M.; Giberto D.; Bremec C. Porifera from the Argentine Sea: Diversity in Patagonian scallop beds. *Italian Journal of Zoology* 2006. 73 (4), 373-385.
3. Schejter L.; Bertolino M.; Calcinaï B.; Cerrano C.; Bremec C., Epibiotic sponges on the hairy triton *Fusitriton magellanicus* in the SW Atlantic Ocean, with the description of *Myxilla (Styloptilon) canepai* sp. nov. *Aquatic Biology* 2011. 14 (1), 9-20.

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