

Assessment of Invertebrate diversity and fishing by mosquito net trawl in seagrass beds, Southwestern Madagascar.

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INTRODUCTION

In the bay of Toliara, the fishing practice of mosquito net trawls has become dominant on seagrass beds.

- ✓ This practice led to intense exploitation of seagrass fish and invertebrate communities.
- ✓ Their impact on ecosystem is however poorly documented.

OBJECTIVE:

characterize the abundance and diversity of macroinvertebrates in seagrass beds by analyzing the spatio-temporal patterns of catches in seagrasses from August 2018 to February 2019.

RESULTS

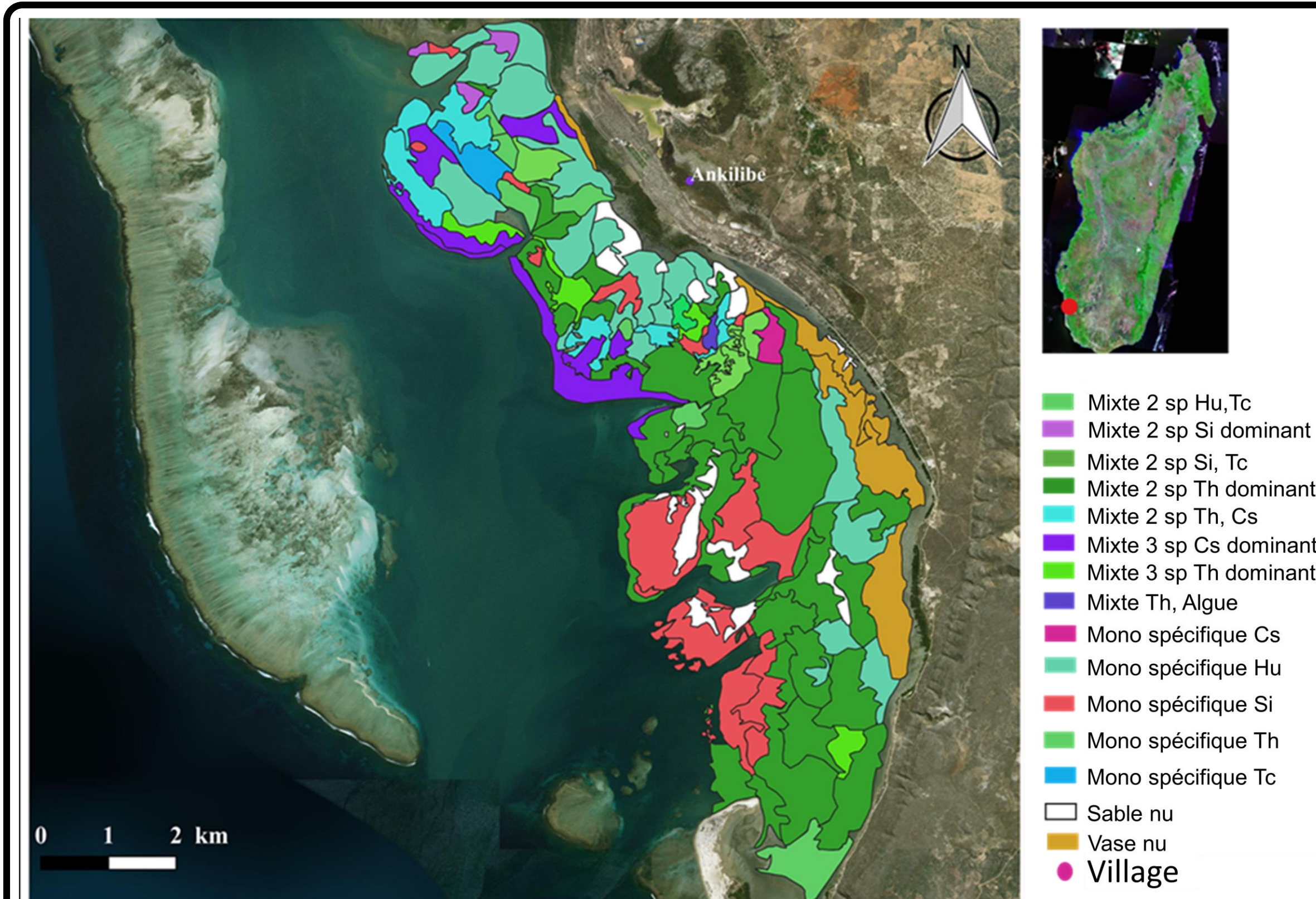


Fig.1: Mapping of the different groups of littoral benthic habitats encountered on the fringing reef of the southern bay of Toliara

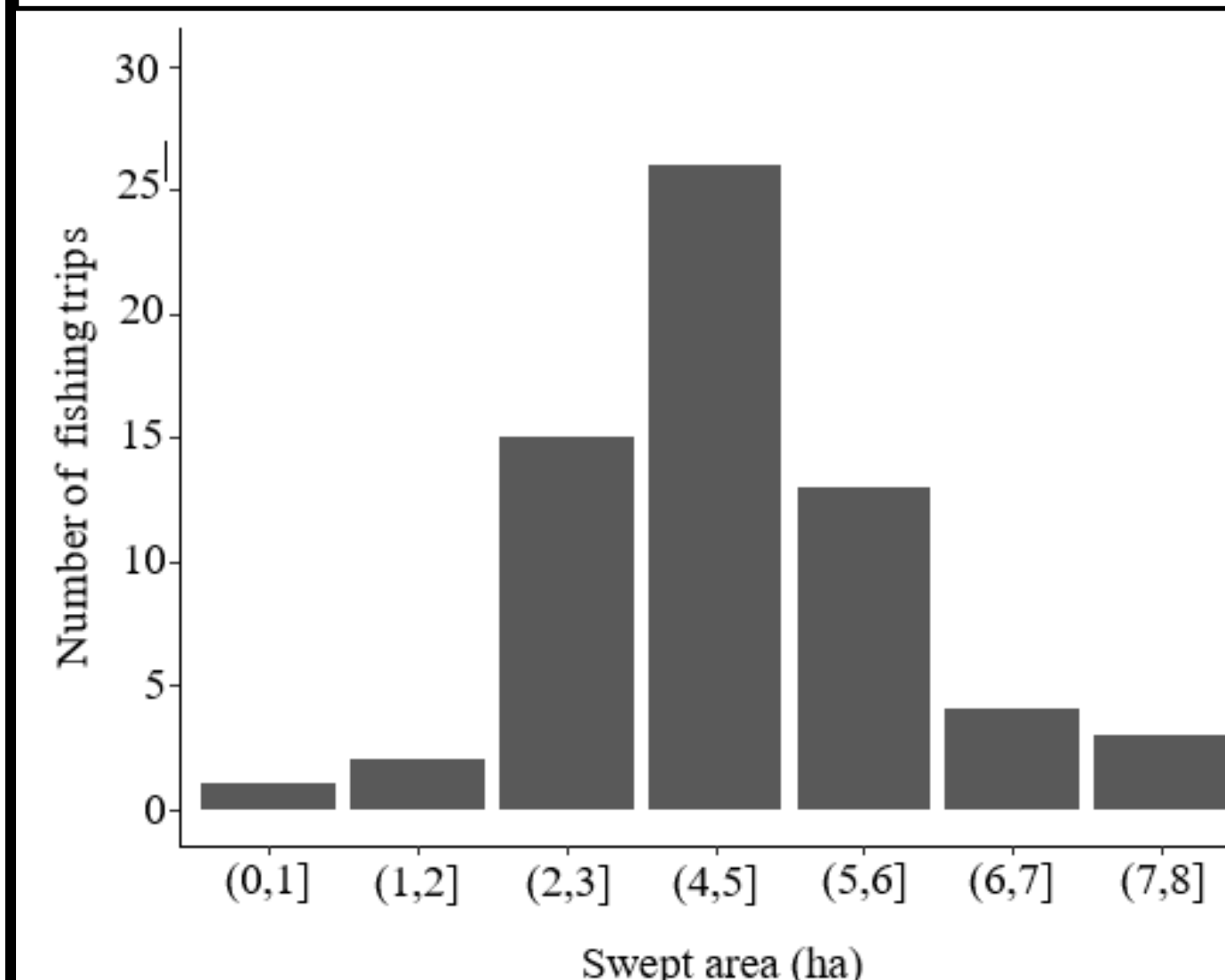


Fig.2: Distribution of the swept area obtained according to the number of samples collected

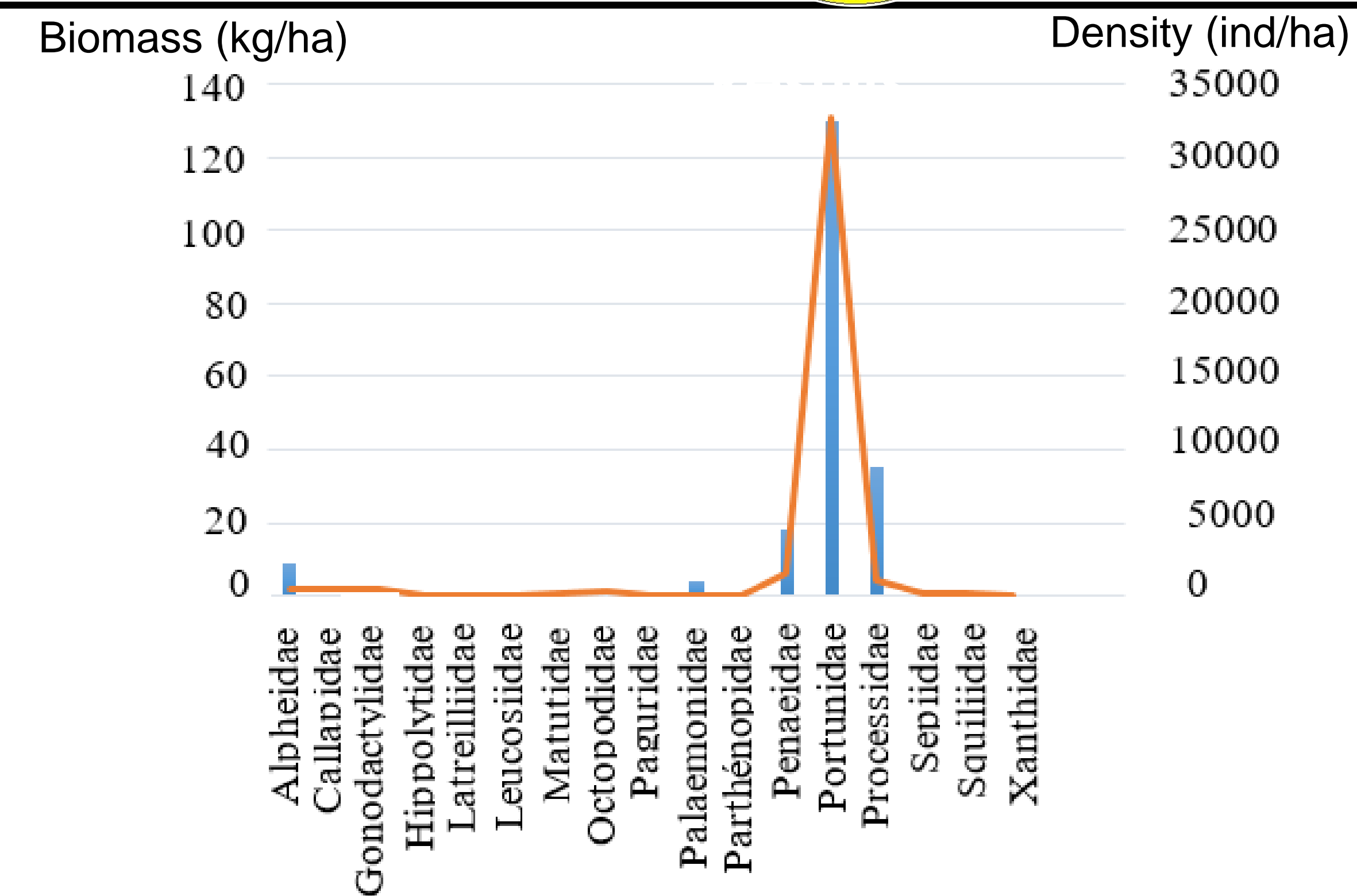
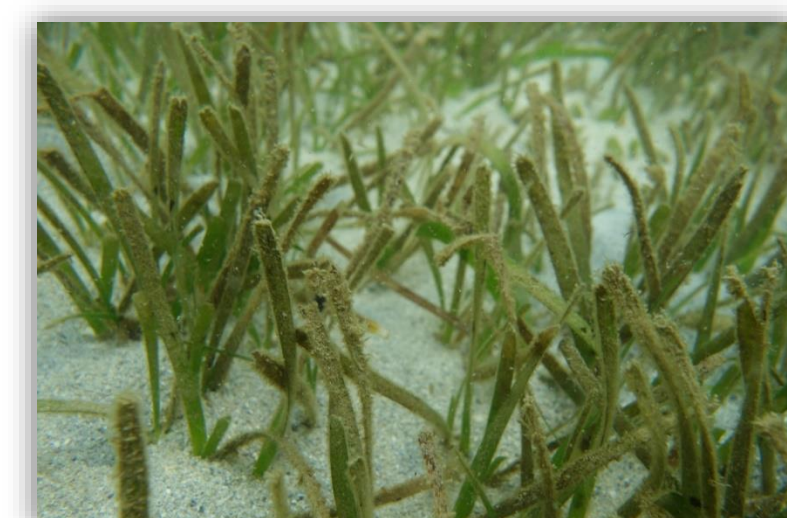


Fig.3: Summary of benthic macroinvertebrates density (ind.ha-1) and biomass (kg.ha-1) for 109 collected samples

METHODOLOGY

- Habitats** were preliminary mapped and described through satellite imagery and in situ observations
- Sampling effort**: Each dugout was equipped with a GPS plotter (CatLog2) that recorded positions at 30-second intervals helping to measure the area swept (in m²) on each trip, which varied with trawl length and trip duration.
- Taxonomic richness, diversity, biomass and size structure of invertebrate** community (dominant families) were assessed in relation to the nature and composition of the seagrass beds benthic habitats are recorded.
- Prices of the different commercial categories of registered catches



- ❖ 40 taxa of invertebrates were observed in catches.
- ❖ four family dominate total catches (Alpheidae, Portunidae, Processidae, and Penaeidae). *Thalamita* genus is utterly dominant in terms of density or biomass (100 % and 70 % respectively).
- ❑ Invertebrates caught by this gear are considered as by catch.
- ❑ Invertebrates by-catches, which yield from 1 to 72 % of the fishers 'income, were used for an animal feed (93, 9 %) and human consumption (6, 1%).

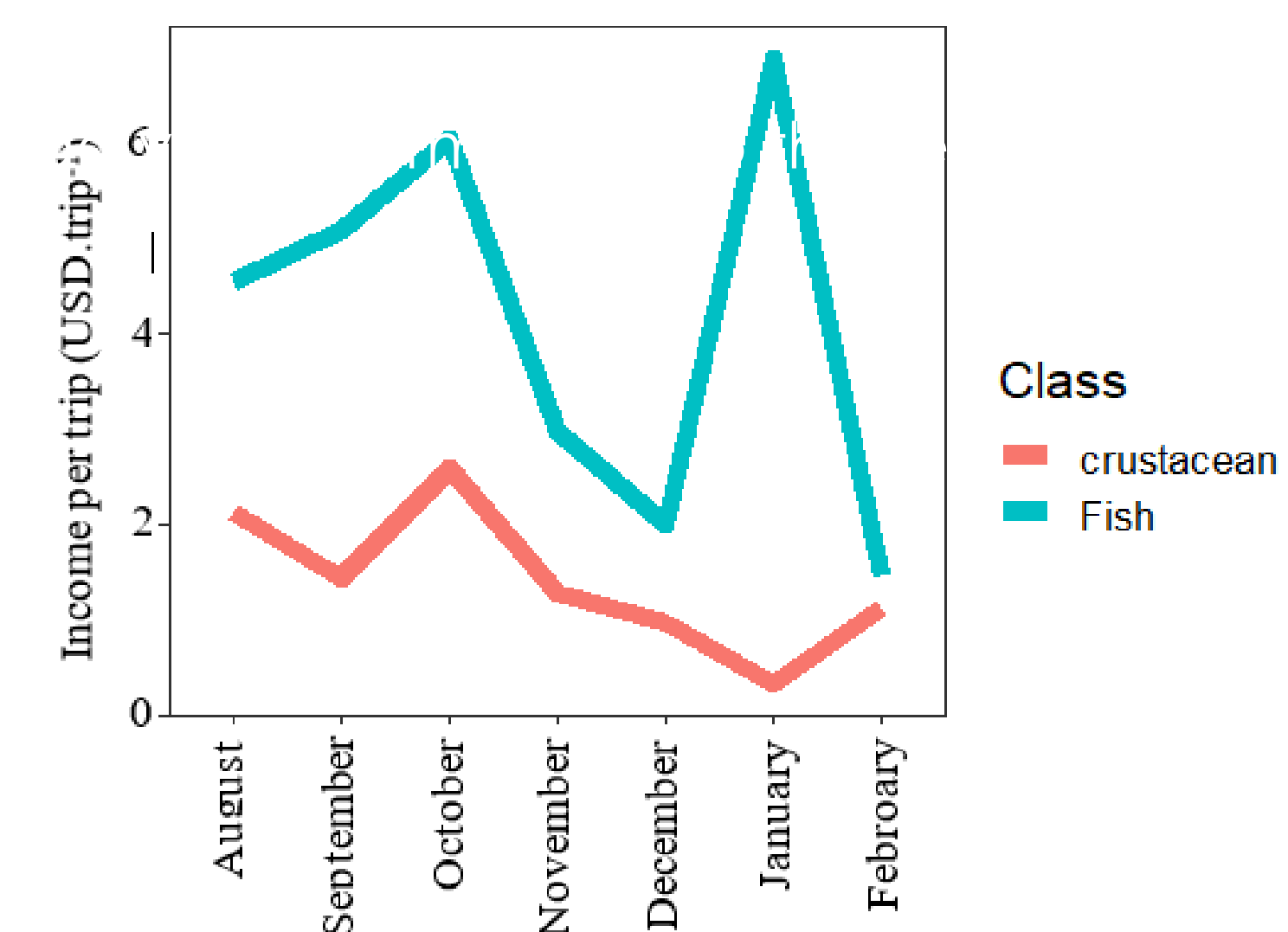


Fig.4: Part of invertebrate and fish catches in the monthly income.

CONCLUSION

- ✓ Mosquito net trawls capture a lot of macroinvertebrate diversity. They capture a significant biomass, mainly crustaceans. This practice can have consequences on the structure of benthic communities
- ✓ A total ban on mosquito net trawl in the bay would impact number of households, who would face food insecurity if no compensatory measures.