

Parasite community composition of fishes reflects protection status of mangrove forests in a West African estuary

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Mangrove conservation

Fish populations

Parasite communities



Fisheries are an important ecosystem service of mangrove forests, but also exert a pressure on aquatic communities. Fisheries not only affect population sizes of fishes, but also their health and behaviour. **Parasite communities** might be a key indicator of **fisheries pressure**. However, wildlife parasite communities in tropical landscapes, like mangroves, are poorly characterised.

We need baseline data for ecological studies for parasites:

→ Species records + Molecular reference data



Baseline data

Methodology

- Parasitological screening of > 120 mangrove fishes
- Inside vs. outside marine protected area
- Morphological identification of parasites
- DNA barcoding (reference database)

Our data

- > 5,000 parasite specimens
- 30 species, many new geographical and/or host records
- 3 undescribed parasites species
- DNA sequences of all parasite species

Fisheries effects on parasites



- Does parasite biodiversity differ inside vs. outside the MPA?
- Are these differences linked to host size or host species?
- Does diversity of host parasite interactions differ inside vs. outside the MPA?

What we found (Fig. 1):

Gill parasites: biodiversity is higher under fisheries pressure

Gut + gill parasites: biodiversity is similar or lower under fisheries pressure

→ **Gut parasites have often more complex life cycles (reliant on >1 host species)**

BUT: only limited samples sizes and only 1 year and season tested

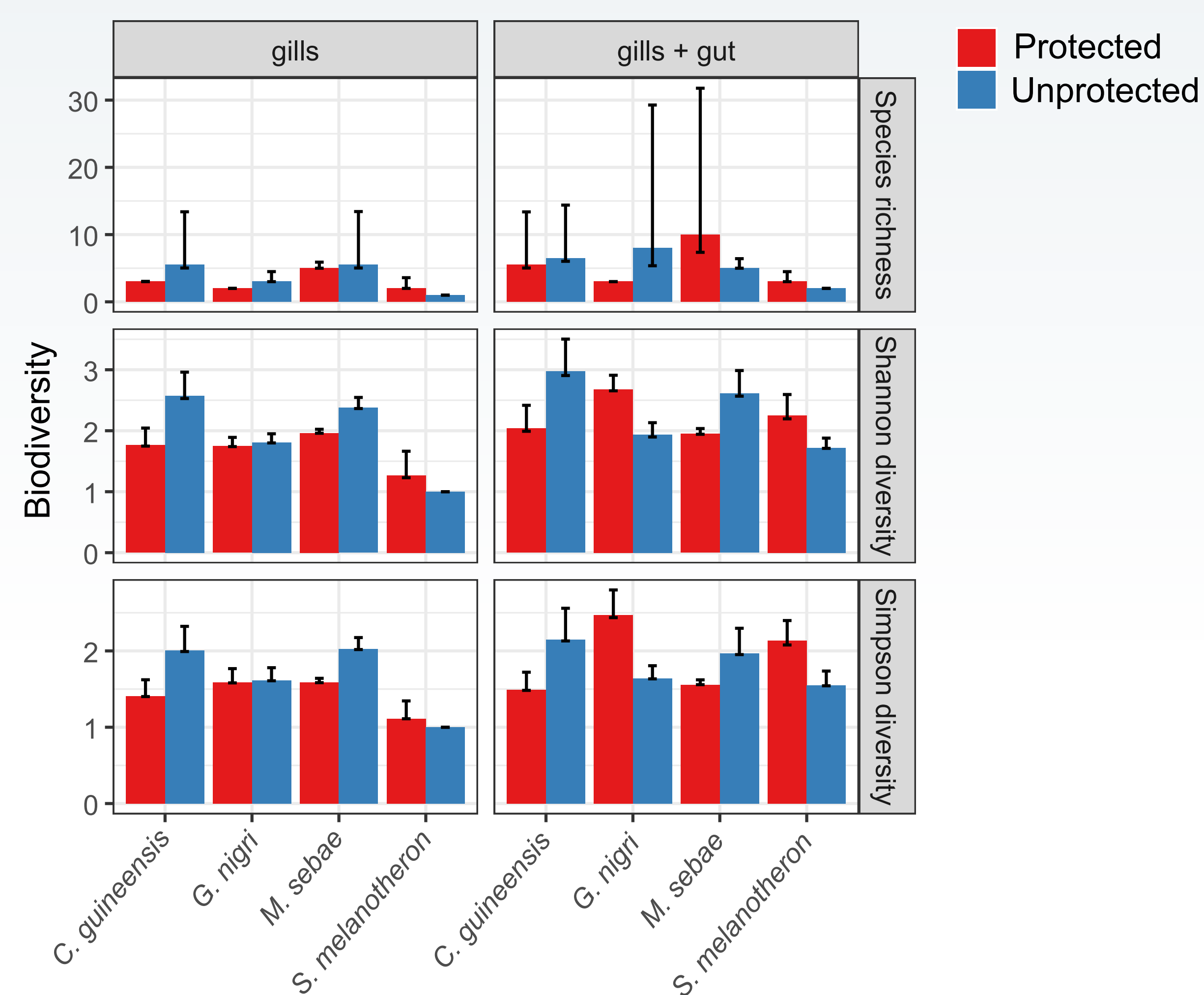


Figure 1. Biodiversity of parasite communities inside vs outside the Marine Protected area

In progress ...

Comparison across multiple years

- additional sampling campaigns (Sep 2024 & 2025)

Increase throughput of parasite community analysis

- metabarcoding of parasites

Link parasitic infection with fish feeding behaviour

- how do parasites affect fish diet?
- metabarcoding of fish gut contents
- impact of parasites on fish feeding rates in experimental set-up

Contact me!



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