

# Environmental quality of sandy beaches:

bioindicators as proxies for revealing chronic marine pollution

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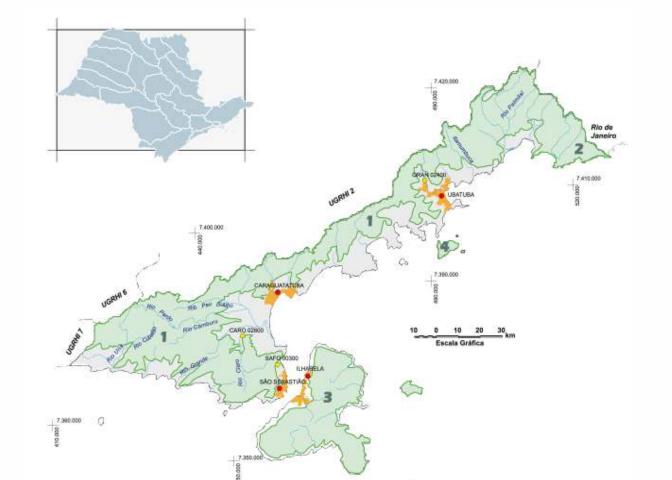
# MAIN QUESTIONS



How are pollutants spatially distributed on the northern coast of São Paulo State?



Do physiological condition and populational structure reveal long-term stress related to environmental contamination levels?



# WHY?

Pollutants



#### Macrobenthos -----

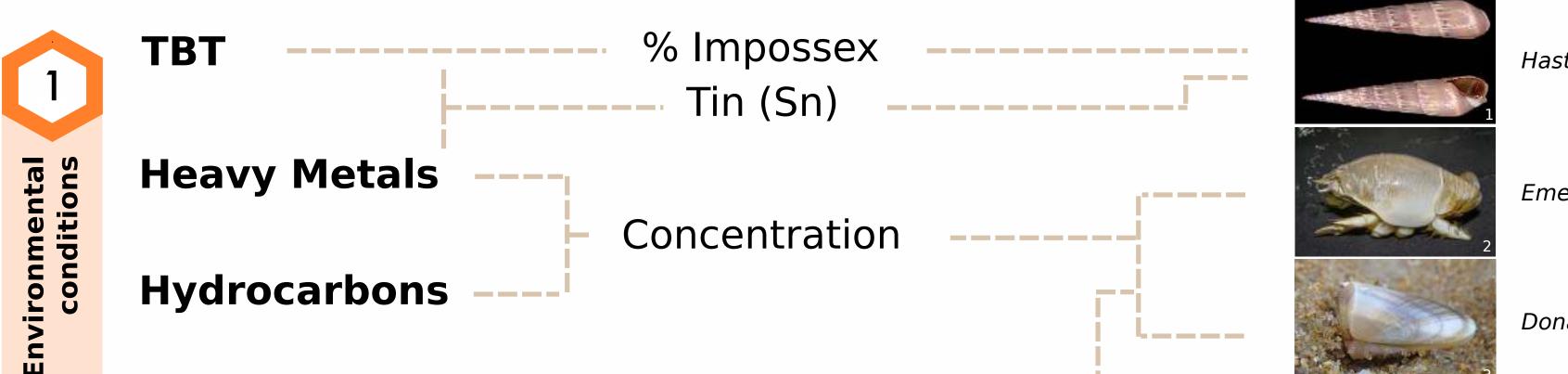
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Sandy beaches

Rapidly dispersed Toxicity and persistence Biotransference Bioaccumulation

Potential indicators to assess variations in habitat quality Good and services Highly impacted Poorly studied

HOW?



Hastula cinerea

Emerita brasiliensis

Donax hanleyanus

**Microplastics** ––– Number of particles





## **Organism level**

DNA damage



Energetic status (energy reserves)

### **Population level**

Density/Abundance

Body size

Number of eggs

Gonado-somatic index

Credits: Conquiliologistas do Brasil 2Cláudio Dias Timm Biogo Luiz