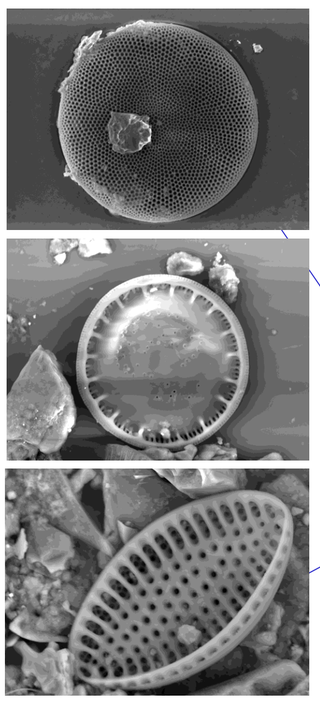
Microphytobenthos of sandy beaches at the influence zone of the Amazon river: Composition and spatio-temporal variation

Jéssica Caroline Evangelista Vilhena[1] e Maíra Pombo[1].
[1]Programa de Pós-Graduação em Biodiversidade Tropical – UNIFAP
Email: vilhena.jessica@gmail.com

Introduction

Microphytobenthos is the term used to define bentonic microalgae and cyanobacteria occurring in the upper centimeters of the sediment of iluminated environments, specially in coastal areas such as beaches, mangroves and vegetation beds. These organisms are often found in aggregrates, creating biofilms in a patchy distribution.



Importance of microphytobenthos

► Protagonists in biogeochemical cycles like:
1. Silicon cycle;
2. Phosphorus cycle;
3. Carbon cycle.

► Important carbon sequestrators;
► Prevention of soil erosion;
► Primary energy resource for other trophic levels.

The Brazilian coast west of the Amazon river is located entirely in the Amapá state. It is about 750 km long and can be divided in two zones: estuarine, under the influence of the Amazon river, and the Atlantic, oceanic zone.
There are few sandy beaches along the oceanic coast, all well-preserved due to their remoteness. These beaches have particularitied such as a large continental shelf, mega-tide and the influence of the greatest continental discharge of the world. Despite their uniqueness, they are totally devoided of studies regarding biodiversity and specific environmental features. The investigation of these sandy beaches primary producers is a step-up in this context.

Objectives

► To quantify the primary production of the microphytobenthos in sandy beaches of Amapá;
► To inventory its diatom diversity;
► To model their spatial and seasonal variation.

Materials and Methods

Study area: Amapá sandy beaches, Northern Brazil.

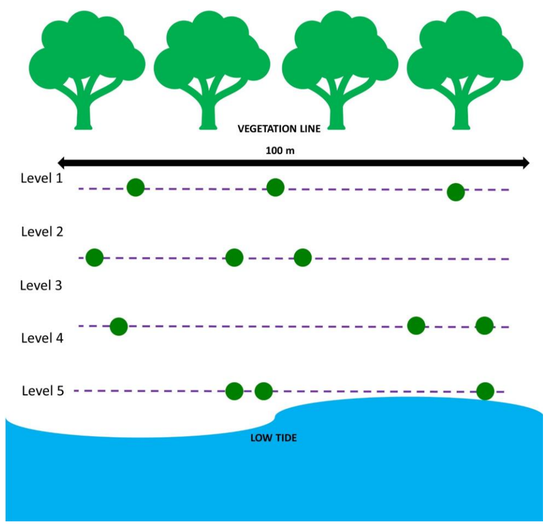
Samaúma beach

Goiabal beach

Nazaré beach

Sampling design: Five levels across the littoral extension, each with 3 random replicates, to estimate:

► Abundance - Richness - Diversity;
► Primary production (Chlorophyll-a);
► Total nitrogen, phosphorus and carbon;
► Granulometry;
► Salinity (one per sampling station).



Parcial results

► Review article: Soft-bottoms diatoms samples: could differences in cleaning methods affect the recognition of diversity patterns?
► SEM images and partial identification of diatoms from the 3 beaches.