

TITLE: INVENTORY OF MICROPLANKTONIC COMMUNITY FROM FIVE COASTAL WATER BODIES OF RIO DE JANEIRO STATE, BRAZIL

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ABSTRACT:

Microplankton community is the base of the trophic web on freshwater ecosystems. It plays an important role on generation and transfer of energy to higher trophic levels. The aim of this study was to present a survey of microplanktonic community from five coastal water bodies in a port area (Açu Port) of Rio de Janeiro State, between Campos do Goytacazes and São João da Barra Municipalities. Samples were collected in 2016 on each season on Iquipari, Veiga, Salgada and Açu Lagoon and Quitingute Channel, using 50 µm net for the protozooplankton and microzooplankton community and 20 µm net for the phytoplankton community and were fixed with 4% formalin solution. Specimens were identified to the lowest possible taxonomic level. Salinity was measured by a portable Hanna Multiparameter. A total of 345 taxa were found in microplankton community, distributed among 14 Phylum: Cyanobacteria, Chlorophyta, Charophyta, Euglenozoa, Amoebozoa, Cercozoa, Ciliophora, Foraminifera, Heliozoa, Ochrophyta, Myxozoa, Rotifera, Gastrotricha and Nematoda. Ochrophyta was the richest Phylum, with 65 taxa, followed by Rotifera, Chlorophyta and Amoebozoa with 56, 47 and 45 taxa respectively. The most common phytoplanktonic species were *Planktolyngbya limnetica*, *Nitzschia scalaris* and *Synechocystis aquatilis* with 71, 64 and 61% of frequency respectively and among microzooplanktonic species were *Centropyxis aculeata* and *C. discoides*, both with 54% of frequency. Some high frequency species like *Lyngbya aestuarii* (54%) *Oscillatoria sancta* (39%) and *Microcystis aeruginosa* (36%) are potential toxin-producing. The environments we studied were different from each other, in terms of both community composition and salinity values. Quitingute Channel and Veiga Lagoon had the lowest salinity values and has the richest communities, with 196 and 152 taxa respectively, whereas Salgada Lagoon had the highest salinity values and presented only 10 taxa. The Phylum Euglenozoa and Amoebozoa, characteristic of freshwater, occurred in high frequency only in Veiga Lagoon and Quitingute Channel. The other environments presented taxa that are opportunistic and euryhaline, like *Campylodiscus innominatus*, *Anabaenopsis elenkinii*, *Brachionus plicatilis*, *B. angularis*, *Blepharisma* sp and Foraminifera. Knowing the planktonic community is of primordial importance for supporting management decisions and environmental monitoring at any water body and this inventory is presented to fill this knowledge gap.

Keywords: zooplankton, phytoplankton, protozoa, coastal lagoon

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