

ID: W2131164662

TITLE: Coastal urbanization leads to remarkable seaweed species loss and community shifts along the SW Atlantic

AUTHOR: ['Fernando Scherner', 'Paulo Antunes Horta', 'Eurico C. Oliveirã', 'José Carlos Simonassi', 'Jason M. Hall?Spencer', 'Fungyi Chow', 'José Marcos C. Nunes', 'Sônia Maria Barreto Pereira']

ABSTRACT:

Coastal urbanization is rapidly expanding worldwide while its impacts on seaweed communities remain poorly understood. We assessed the impact of urbanization along an extensive latitudinal gradient encompassing three phycogeographical regions in the SW Atlantic. Human population density, number of dwellings, and terrestrial vegetation cover were determined for each survey area and correlated with diversity indices calculated from seaweed percent cover data. Urban areas had significantly lower calcareous algal cover (?38%), and there was significantly less carbonate in the sediment off urban areas than off reference areas. Seaweed richness averaged 26% less in urban areas than in areas with higher vegetation cover. We observed a remarkable decline in Phaeophyceae and a substantial increase of Chlorophyta in urban areas across a wide latitudinal gradient. Our data show that coastal urbanization is causing substantial loss of seaweed biodiversity in the SW Atlantic, and is considerably changing seaweed assemblages.

SOURCE: Marine pollution bulletin

PDF URL: None

CITED BY COUNT: 114

PUBLICATION YEAR: 2013

TYPE: article

CONCEPTS: ['Urbanization', 'Species richness', 'Biodiversity', 'Ecology', 'Geography', 'Vegetation (pathology)', 'Environmental science', 'Physical geography', 'Biology', 'Medicine', 'Pathology']