

CHANGES IN INTERTIDAL BIOMASS AND SPECIES RICHNESS ASSOCIATED TO THE SPREAD OF EXOTIC MACROALGAE

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Data about biodiversity and its changes through time and space can serve to identify processes of biodiversity loss. For example, the detection of invasive species during long term monitoring studies can allow scientists evaluate their impact on biodiversity. In this study we investigate if the biomass and species richness of an intertidal rocky shore assemblage in Mar del Plata, Argentina (38° S, 57° W) changed after the spread of the exotic alga *Ahnfeltiopsis devoniensis* (Familia: Phylloporaceae, Phylum: Rhodophyta). Invertebrates and macroalgae were sampled both in summer and winter from February 2007 to January 2011, and at three different tidal levels. Five quadrats (0.25 m²) were scraped at each level and all the organisms were collected for the quantification of biomass and species richness. A total of 55 taxa were found and organisms were identified to the species level in most cases. Sparse *A. devoniensis* thalli (3 % percent cover) were detected at the lower intertidal level in February 2007. However, by January 2010 their percent cover increased to 33 %. *A. devoniensis* biomass showed a 200 fold increase during that period and exceeded that of the otherwise dominant intertidal species, the mussel *Brachidontes rodriguezii*. The spread of *A. devoniensis* was accompanied by decreases in total species richness (from 42 to 37 species), macrofaunal biomass and abundance. The effects of this exotic alga on assemblage structure could primarily be attributed to displacement of *B. rodriguezii* – an ecosystem engineer that creates microhabitat for a large number of other organisms.

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Two-sentence Summary of the Study: The detection of invasive species during long term monitoring studies can allow scientists evaluate their impact on biodiversity. In this study we investigate if the biomass and species richness of an intertidal rocky shore assemblage changed after the spread of the exotic alga *Ahnfeltiopsis devoniensis*.

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