flora mac 2012

Madeira Cabo Verde
Selvagens
Açores CANÁRIAS

5 - 8 September Funchal | Portugal

Scientific Abstract book
program **Excursion guide**

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P59. Spatial patterns of distribution of non-indigenous marine species in urban coastal areas: the influence of vessel traffic activity

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Vessel's hulls and the water contained in their ballast are known to be the major responsible threat leading to the introduction of benthic non-indigenous marine species into new environments. This is particularly relevant in harbours and marinas where boats make their stops and discharge their ballast water. Here, we examine the presence of Non-Indigenous Marine Species (NIMS) in the benthic communities of two marinas subject to different maritime activity (international at Ponta Delgada vs. local at Vila Franca). In each marina two sites were selected to provide a representation of the spatial variability within each location. In each site, samples were taken from two different hard structures: concrete and PVC, by scraping an area of 10 x 10 cm until no macrobiota was visible. In the laboratory samples were sorted and species determined to the lowest taxonomic level possible.

The composition of native species was variable in time and space but there were no consistent patterns. In contrast, NIMS were significantly more abundant on PVC than on concrete on both marinas. Moreover, the numbers of NIMS on PVC was significantly greater at Ponta Delgada (the international marina). The ratio between the numbers of NIMS and native species was also significantly greater on PVC and at Ponta Delgada. Furthermore, there was a hump-shaped relationship between the numbers of NIMS and native species suggesting that the influence of native species on the colonisation of NIMS changes from positive to negative as richness of native species increases.