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Primary Research Paper

Seasonal dynamics of *Zostera noltii* Hornem. in two Mediterranean lagoons

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Abstract

The density, biomass and shoot morphology of two populations of *Zostera noltii* were monitored from January 1998 to July 1999 at two shallow Mediterranean lagoons of Biguglia and Urbino, which differ in hydro-morphological conditions and nutrient loading. Monitoring included the principal biological and foliar parameters (shoot density, aboveground and belowground biomass, length, width and number of leaves, LAI and coefficient A: percentage of leaves having lost their apex), the organic matter contents of the sediment and the environmental conditions (salinity, turbidity, temperature, nutrient concentrations and dissolved oxygen levels). The two populations of *Z. noltii* displayed seasonal changes in density (1600–19600 m^2), aboveground biomass (11–153 g. DW. m^{-2}), leaf length (33–255 mm), and leaf width (0.9–1.8 mm). Temperature and turbidity were significant environmental factors influencing the temporal changes observed in the *Z. noltii* meadows studied. Conversely, the belowground biomass, the number of leaves per shoot and the LAI did not undergo any seasonal changes. In the Biguglia lagoon, the functioning dynamics of the *Z. noltii* seagrass beds are determined by the catchment area and the inputs of nutrients derived from it, whereas in the Urbino lagoon the dynamics of the *Z. noltii* beds depend on low levels of water turbidity.