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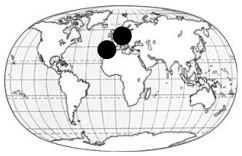

ECOPHYSIOLOGICAL RESPONSES OF INVASIVE VS NATIVE PLANT SPECIES IN COASTAL DUNE ECOSYSTEMS (PORTUGAL)

Sand dunes are habitats of great nature conservation interest, with a very characteristic and rich flora. Species like *Acacia* spp. have been introduced in the past, with the objective to stabilize sand dunes. However, some of these species became dominant, reducing native species density and biodiversity, causing serious ecological problems. It is our aim, to present the aspects related to the ecophysiological patterns, focusing on microclimate, gas exchange and water relations of invasive and native species. In particularly we want to determine the competitiveness or/and surviving of both invasive and native species in relation to water, witch is crucial for the interpretation of community dynamics and plant competition abilities. The study sites are located at the South and Centre of Portugal and are characterized by a mesomediterranean climate with different annual precipitation values. In order to obtain an integrative view of the ecophysiological patterns, several methods concerning water relations, photosynthesis and stable isotopes ($\delta^{13}C$, $\delta^{18}O$) *in situ* and under controlled conditions at different development stages (seedlings, juveniles and adult plants) have been performed. According to the obtained results, in general, the invasive species showed a very high susceptibility to water stress in all age classes, with a marked depression of metabolic activity during the drought season when compared with natural vegetation.

keywords: plant invasion, sand dunes, water relations, stable isotopes