Antonio Box, Daniel Martin and Salud Deudero, (2010). Changes in seagrass polychaete assemblages after invasion by *Caulerpa racemosa* var. cylindracea (Chlorophyta: Caulerpales): community structure, trophic guilds and taxonomic distinctness. Sci. Mar. 74(2): 317-329

Abstract: A two-year study focusing on the associated polychaete assemblages revealed that the degradation of the *Posidonia oceanica* seagrass meadows, together with the colonisation of rhizomes by invasive *Caulerpa racemosa* in the Balearic Islands, have produced important changes in the ecosystem functioning, and have therefore affected the benthic faunal communities. The highest abundance and number of species occurred in *C. racemosa* from August to December. The species composition of the polychaete assemblage in *C. racemosa* is similar to that of *P. oceanica* but abundances of shared species differ between *Caulerpa* and *Posidonia*. Abundance, number of species and diversity were positively correlated with *C. racemosa* biomass. The spatial complexity provided by the network of *C. racemosa* fronds and stolons seemed to combine with that of the remaining seagrass mat to support a well developed polychaete assemblage. Although invaded meadows harboured significantly modified polychaete assemblages when compared with living *P. oceanica* meadows, the main impacts seem to be non-harmful (i.e. increased abundance and number of species) and mainly affect their seasonal patterns, which is a direct consequence of the corresponding biomass seasonality of *C. racemosa*.

Keywords: *Posidonia oceanica*, *Caulerpa racemosa*, Polychaeta, species diversity, trophic guilds, taxonomic distinctness, introduced species, Mediterranean.