16941 - STUDIES OF PLANKTON AS AN EFFECTIVE TOOL TO DETECT NEW INVASIONS

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Monitoring programs focusing on marine planktonic surveys can be a successful tool to detect new invasive species. The main advantage compared to invasions documented based on occasional adult captures is that provides evidence that a population is reproducing and therefore well-established in the area. Most benthic estuarine and marine species have planktonic larvae. It is during this early pelagic stage when the highest dispersal potential occurs influencing the connectivity among populations. Our study is a good example of how plankton studies could help to detect larval stages of invasive species before detecting the adult populations. We conducted eight years plankton sampling in the Balearic Islands and in some coast of Spain (NW Mediterranean Sea), providing the first record of the Oriental shrimp, Palaemon macrodactylus. This speciesis spreading from their native estuarine waters of Southeast Asia to new regions probably through ballast waters. Taking into account the larval stage duration, their distribution and the hydrodynamic scenarios in the area, our individuals could not have come from the nearest known seated adult population (in the Atlantic Sea) but from local populations established in the area but not cited yet. The larvae we report in this study inhabited open marine waters even around a Marine Protected Area (Cabrera Island), suggesting that in the Balearic Islands, the life cycle strategies of this estuarine species could include exporting the larval stages to offshore marine areas. The establishment of this species in the lagoons of Adriatic Sea (central Mediterranean) was subsequently confirmed through the finding of adult populations, but not yet in W Mediterranean. Implications of the presence of this species for connectivity studies and to predict the potential of populations to establish in their habitats are discussed.