

***Oithona* species diversity and ecological niche in high latitude North Atlantic**

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The genus *Oithona* is distributed world-wide and can make up a considerable proportion of the total copepod and zooplankton abundance particularly at high latitudes. For this reason, *Oithona* play an important ecological role both within pelagic food-webs and biogeochemical cycles. Although over 20 species have been reported in the North Atlantic Basin, information about their latitudinal, seasonal and long-term occurrence remains relatively unknown because of the difficulty with their taxonomic identification. Given the spatial variation in *Oithona* species distribution for other oceanic basins such as the Pacific, a taxonomic investigation for the Atlantic Basin is timely. Preliminary analysis of the Continuous Plankton Recorder (CPR) survey shows that in the North Atlantic the genus *Oithona* is characterized by a significant latitudinal variation in its seasonal and interannual occurrence. However, it is unclear whether this variation in abundance is due to the presence of different species or to the effect of different biotic or abiotic ambient conditions on one dominant species or both. Here we present, for the first time, the basin-scale spatial and temporal pattern of distribution of *Oithona* species in the Atlantic Ocean in relation to ambient variables through the combined analysis of preserved samples and abundance data collected by the CPR survey. In particular we focus on the changes in occurrence of *Oithona* species in the high-latitude North Atlantic and make a preliminary estimation of their ecological niches.