{rokbox title=|Illex coindetii :: Photo: COB-IEO| thumb=|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-hidroclimatic-and-distribution-cephalopods-mediterranean-puerta-et-al-2014-thumb.jpg|}images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-hidroclimatic-and-distribution-cephalopods-mediterranean-puerta-et-al-2014.jpg{/rokbox}

Patricia Puerta, **Manuel Hidalgo**, María González, Antonio Esteban, **Antoni Quetglas**, 2014. **Role of hydro-climatic and demographic processes on the spatio-temporal distribution of cephalopods in the western Mediterranean**. Mar Ecol Prog Ser. 514:105-118.

Abstract: Fluctuations in marine populations occur both in terms of abundance and distributional ranges, and this has major implications for marine ecology and fisheries management. However, little is known about the variability in, and factors influencing, spatial dynamics in marine groups other than fish. Using time series data from trawl surveys conducted in the western Mediterranean Sea from 1994 to 2012, we analysed the variability in population distribution (latitude, longitude and depth) of 2 cephalopod species with contrasting life histories, viz. the nektobenthic squid *Illex coindetii* and the benthic octopus *Eledone cirrhosa*. We investigated the influence of demographic information (population density and mean individual size) together with environmental variables (including chlorophyll a concentration, runoff, precipitation, temperature and climate) to identify the main drivers shaping the cephalopod distributions in 4 shelf regions with contrasting oceanographic and geographic conditions. Marked inter-annual fluctuations were found in the distribution of the 2 species. In general, squid and octopus populations were affected by the same variables, but the effect of each variable depended on the species and study region. Different life strategies resulted in contrasting responses to the environment, with *I. coindetii* associated with variables contemporary to spring surveys. In contrast, *E. cirrhosa* was primarily affected by conditions during the previous winter. Vertical distribution was mainly explained by individual body length, while chlorophyll, temperature or local climate proved to be more important for geographical displacements.

Keywords: Spatio-temporal distribution, Spatial ecology, *Illex coindetii*, *Eledone cirrhosa*, Demography, Hydro-climatic conditions