

Seasonal movements of veined squid



In order to protect and sustainably manage fishery resource species, it is essential to understand their movements and habitat use. To detect the hypothesised migration of maturing veined squid *Loligo forbesi* from the west coast of Scotland (UK) to the North Sea and identify possible inshore-offshore movements, we analysed seasonal, spatial and environmental patterns in abundance and size distribution, based on commercial fishery landings data and trawl survey data from Scottish coastal waters (International Council for the Exploration of the Sea, ICES areas IVa, IVb and VIa). A geographic information system (GIS) was used to build monthly contour maps of abundance. Generalised additive mixed models (GAMM) were used to quantify patterns in size distribution and abundance. In most years, there was no evidence of movement from the West to the East coast of Scotland. Evidence of inshore-offshore movements during the life-cycle of the cohort that recruits in autumn (winter breeders) was found instead. The winter breeding cohort appears to spawn in inshore waters and some evidence suggests that the spawning grounds of the summer breeders

are also inshore. Across seasons, higher abundance of *L. forbesi* can generally be found in the north of Scotland at intermediate water depths and in warmer waters.

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