

# Early cephalopod life stages in the Sargasso Sea: abundances and distribution patterns

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Here we report on a comprehensive collection of mainly early life cephalopods that were sampled during two research cruises to the Sargasso Sea with the FRV Walther Herwig III in April 2014, and the RV Maria S Merian in April 2015. In 2014, 714 specimens were collected by a pelagic midwater trawl, and further 1,349 specimens by an Isaac Kidd midwater trawl. A total of 2,487 cephalopods were caught during the cruise in 2015. They belonged to 36 species (20 families). The most abundant family was represented by the flying squids (Ommastrephidae). Identification of cephalopods was supported by DNA barcoding of the COI locus. The subtropical convergence zone (STCZ) was found approximately around 27 °N. This frontal system was characterised by a sharp near-surface temperature gradient and divided the Sargasso Sea into a northern and a southern area. This distinction was also reflected in the cephalopod community composition. For example, the cranchiid *Leachia lemur* prevailed in the northern part, and the cirrate octopod, *Japetella diaphana* was mainly distributed in the southern part of the study area. PCA and RDA analyses detected a significant correlation between species occurrence and sea surface temperature. Ordination analysis (MDS) showed significant differences in the cephalopod assemblages between day and night with midwater forms (Enoploteuthidae, Pyroteuthidae) dominating the night catches, probably due to their upward migration into the top 200m during the night.