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Pathways for *Pelagia noctiluca* jellyfish intrusions onto the Catalan shelf and their interactions with early life fish stages

Ana Sabatés^{1*}, Jordi Salat¹, Uxue Tilves¹, Vanesa Raya¹, Jennifer E. Purcell², Maria Pascual¹, Josep-Maria Gili¹, Verónica L. Fuentes¹

¹ Institut de Ciències del Mar - CSIC, Ps. Marítim de la Barceloneta 37-49, E-08003 Barcelona, Spain

² Western Washington University, Department of Biology, Bellingham WA 98225, USA

*Corresponding author: anas@icm.csic.es

ABSTRACT

This study investigates the possible pathways for *Pelagia noctiluca* intrusions over the shelf to understand the interactions between jellyfish and fish larvae. To assess how the presence of *P. noctiluca* may influence populations of *Engraulis encrasicolus* and *Trachurus trachurus*, we analyzed the effect of environmental conditions on the abundance and spatial distribution of *P. noctiluca*, medusae and ephyrae, and early life stages of these two fish species along the Catalan coast. The highest concentrations of *P. noctiluca* were found offshore, all along the Northern Current path. Their occurrence over the shelf was associated with intrusions of open sea waters that contoured anticyclonic eddies generated by the oscillatory behaviour of the current. Anchovy larvae were found widely over the shelf, but were especially abundant in the north and in waters influenced by the Ebro river. Spatial patterns of anchovy larvae were defined better by physical environmental factors than by the presence of *P. noctiluca*, whose distribution clearly was

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