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PII: S0924-7963(17)30523-7
DOI: doi:10.1016/j.jmarsys.2018.06.013
Reference: MARSYS 3099

To appear in: *Journal of Marine Systems*

Received date: 21 December 2017
Revised date: 6 June 2018
Accepted date: 22 June 2018

Please cite this article as: Ana Sabatés, Jordi Salat, Uxue Tilves, Vanesa Raya, Jennifer E. Purcell, Maria Pascual, Josep-Maria Gili, Verónica L. Fuentes , Pathways for Pelagia noctiluca jellyfish intrusions onto the Catalan shelf and their interactions with early life fish stages. Marsys (2018), doi:10.1016/j.jmarsys.2018.06.013

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

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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