{rokbox title=|Vertical distribution of Pelagia noctiluca early life stages :: Image: Authors| thumb=|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-abundance-pelagia-noctiluca-early-life-stages-western-mediterranean-ottmann-et-al-2021-thumb.jpg|}images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ieo-abundance-pelagia-noctiluca-early-life-stages-western-mediterranean-ottmann-et-al-2021.jpg{/rokbox}

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Abundance of *Pelagia noctiluca* early life stages in the western Mediterranean Sea scales with surface chlorophyll.
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Abstract: *Pelagia noctiluca* is the most successful and well-studied jellyfish in the Mediterranean Sea. This species tolerates a wide range of water temperatures and succeeds in low to medium food regimes, but factors driving its distribution and population dynamics remain poorly understood. Here we applied a multiscale analytical approach using survey data and a physical-biochemical coupled model to assess how environmental factors affect the 3-dimensional distribution and seasonal abundance of *P. noctiluca* early life stages. The surveys took place after the spring bloom, when warm water favors fecundity and growth, but food shortage limits the reproductive investment and early survival. We found that most early life stages of *P. noctiluca* remained above the shallow thermocline and upper mixed layer where temperature is warm. Their spatial distribution was positively correlated with surface chlorophyll concentration, and over 90% of the variation in interannual abundance was explained by basin-scale productivity in June. Warmer water during winter and spring seasons coupled with protracted spring blooms increase the population of *P. noctiluca*, and this explains the trend of increasing outbreaks observed in the western Mediterranean Sea over the past decades.

Keywords: Jellyfish, Ephyra, Metaephyrae, Spatial distribution, Diel vertical migration, Temperature, Chlorophyll concentration