

## ICHTHYOPLANKTON ABUNDANCE AND DISTRIBUTION DURING LATE WINTER BLOOM AROUND THE CANARY ISLANDS IN RELATION TO MESOSCALE STRUCTURES

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**Abstract:** The study of early life stages (eggs and larvae) of marine fishes is of paramount importance to estimate the fate of marine fish populations, their management, and to estimate their biomass (Moyano et al., 2014). Small pelagic fishes were the objective of most studies carried out in coastal and shelf systems (Brochier et al., 2011). However, the distribution of oceanic ichthyoplankton and their adult populations are less known (Moyano et al., 2014), and their evaluation is of importance to assess their role in the biological carbon pump. The Canary Archipelago disrupts the main flow of the Canary Current (CC), leading to large mesoscale variability such as warm wakes and cyclonic and anticyclonic eddies downstream of the islands. Besides, the African costal upwelling promotes filaments reaching the archipelago and transporting fish larvae (Arístegui et al., 1994; Barton et al., 1998, 2004; Sangrà et al., 2005; Rodriguez et al., 2009). All these physical mechanisms influence the composition and distribution of these organisms (Rodriguez et al., 2009). During March 2022, ichthyoplankton was sampled on board the research vessel Ángeles Alvariño during the scientific expedition RAPROCAN 2203 around the Canary Islands and the African upwelling. Samples were collected by day and night using a Bongo 40 net fitted with nets of 200 µm mesh size and a flowmeter. Hauls were oblique and attempted to sample the surface layer down to 200 m. Our results showed (i) a higher abundance of fish larvae in the upwelling region, especially at nighttime, as expected, (ii) Clupeidae was the most abundant family in the area, and (iii) the abundance of fish eggs did not show any clear distribution pattern.

**Key words:** fish larvae, eggs, Clupeid, upwelling, eddies, filaments.

## References:

- Arístegui, J., Sangrà, P., Hernández-León, S., Cantón, M., Hernández-Guerra, A., & Kerling, J. L. (1994). Island-induced eddies in the Canary islands. *Deep-Sea Research Part I*, 41(10), 1509–1525. [https://doi.org/10.1016/0967-0637\(94\)90058-2](https://doi.org/10.1016/0967-0637(94)90058-2)
- Barton, E. ., Arístegui, J., Tett, P., & Navarro-Pérez, E. (2004). Variability in the Canary Islands area of filament-eddy exchanges. *Progress in Oceanography*, 62(2–4), 71–94. <https://doi.org/10.1016/j.pocean.2004.07.003>
- Barton, E. D., Arístegui, J., Tett, P., Cantón, M., García-Braun, J., Hernández-León, S., Nykjaer, L., Almeida, C., Almunia, J., Ballesteros, S., Basterretxea, G., Escánez, J., García-Weill, L., Hernández-Guerra, A., López-Laatzén, F., Molina, R., Montero, M. F., Navarro-Peréz, E., Rodríguez, J. M., ... Wild, K. (1998). The transition zone of the Canary Current upwelling region. *Progress in Oceanography*, 41(4), 455–504. [https://doi.org/10.1016/S0079-6611\(98\)00023-8](https://doi.org/10.1016/S0079-6611(98)00023-8)
- Brochier, T., Mason, E., Moyano, M., Berraho, A., Colas, F., Sangrà, P., Hernández-León, S., Ettahiri, O., & Lett, C. (2011). Ichthyoplankton transport from the African coast to the Canary Islands. *Journal of Marine Systems*, 87(2). <https://doi.org/10.1016/j.jmarsys.2011.02.025>
- Moyano, M., Rodríguez, J. M., Benítez-Barrios, V. M., & Hernández-León, S. (2014). Larval fish distribution and retention in the Canary Current system during the weak upwelling season. *Fisheries Oceanography*, 23(3), 191–209. <https://doi.org/10.1111/fog.12055>
- Rodríguez, J. M., Moyano, M., & Hernandez-Leon, S. (2009). The ichthyoplankton assemblage of the Canaries-African Coastal Transition Zone: A review. *Progress in Oceanography*, 83(1–4), 314–321. <https://doi.org/10.1016/j.pocean.2009.07.009>
- Sangrà, P., Pelegrí, J. L., Hernández-Guerra, A., Arregui, I., Martín, J. M., Marrero-Díaz, A., Martínez, A., Ratsimandresy, A. W., & Rodríguez-Santana, A. (2005). Life history of an anticyclonic eddy. *Journal of Geophysical Research C: Oceans*, 110(3), 1–19. <https://doi.org/10.1029/2004JC002526>