

{rokbox title=|Location of the study areas :: Figure: Authors|
thumb=|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ecologia-trófica-larvas-atun-rojo-plosone-laizcarrion-et-al-2015-thumb.jpg|images/stories/ieo/imagenespublicaciones/centro-oceanografico-baleares-ecologia-trófica-larvas-atun-rojo-plosone-laizcarrion-et-al-2015.jpg{/rokbox}

Raúl Laiz-Carrión, Trika Gerard, Amaya Uriarte, Estrella Malca, José María Quintanilla, Barbara A. Muhling, **Francisco Alemany**, Sarah L. Privoznik, Akihiro Shiroza, John T. Lamkin, Alberto García, 2015.

[**Trophic Ecology of Atlantic Bluefin Tuna \(*Thunnus thynnus*\) Larvae from the Gulf of Mexico and NW Mediterranean Spawning Grounds: A Comparative Stable Isotope Study**](#)

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Abstract: The present study uses stable isotopes of nitrogen and carbon ($\delta^{15}\text{N}$ and $\delta^{13}\text{C}$) as trophic indicators for Atlantic bluefin tuna larvae (BFT) (6–10 mm standard length) in the highly contrasting environmental conditions of the Gulf of Mexico (GOM) and the Balearic Sea (MED). These regions are differentiated by their temperature regime and relative productivity, with the GOM being significantly warmer and more productive. MED BFT larvae showed the highest $\delta^{15}\text{N}$ signatures, implying an elevated trophic position above the underlying microzooplankton baseline. Ontogenetic dietary shifts were observed in the BFT larvae from the GOM and MED which indicates early life trophodynamics differences between these spawning habitats. Significant trophic differences between the GOM and MED larvae were observed in relation to $\delta^{15}\text{N}$ signatures in favour of the MED larvae, which may have important implications in their growth during their early life stages. These low $\delta^{15}\text{N}$ levels in the zooplankton from the GOM may be an indication of a shifting isotopic baseline in pelagic food webs due to diatrophic inputs by cyanobacteria. Lack of enrichment for $\delta^{15}\text{N}$ in BFT larvae compared to zooplankton implies an alternative grazing pathway from the traditional food chain of phytoplankton—zooplankton—larval fish. Results provide insight for a comparative characterization of the trophic pathways variability of the two main spawning grounds for BFT larvae.

Keywords: Larvae, Food web structure, Gulf of Mexico, Tuna, Stable isotopes, Plankton, Zooplankton, Predation