{rokbox title=|Bluefin tuna (BFT). Observed spatial distributions using presence-absence data for a) eggs and b) larvae. Observed spatial distributions using abundance data for c) eggs and d) larvae. Predicted spatial distributions for e) eggs and f) larvae :: Image: Authors| thumb=|images/stories/ieo/imagenespublicaciones/centrooceanografico-baleares-caracteristicas-medioambientales-zonas-puesta-atun-rojo-mediterraneo-reglero-et-al-2017-thumb.jpg|}images/stories/ieo/imagenespublicaciones/centrooceanografico-baleares-caracteristicas-medioambientales-zonas-puesta-atun-rojo-mediterraneo-reglero-et-al-2017.jpg{/rokbox}

Patricia Reglero, Maria Santos, **Rosa Balbín**, Raul Laíz-Carrión, Diego Alvarez-Berastegui, Lorenzo Ciannelli, Elisa Jiménez, **Francisco Alemany** ,
2017.
Environmental and biological characteristics of Atlantic bluefin tuna and albacore spawning habitats based on their egg distributions.
Deep Sea Research Part II: Topical Studies in Oceanography.
http://dx.doi.org/10.1016/j.dsr2.2017.03.013

Abstract: Tuna spawning habitats are traditionally characterized using data sets of larvae or gonads from mature adults and concurrent environmental variables. Data on egg distributions have never previously been used since molecular analyses are mandatory to identify tuna eggs to species level. However, in this study we use molecularly derived egg distribution data, in addition to larval data, to characterize hydrographic and biological drivers of the spatial distribution of eggs and larvae of bluefin *Thunnus thynnus* and albacore tuna *Thunnus alalunga* in the Balearic Sea, a main spawning area of these species in the Mediterranean. The effects of the hydrography, characterized by salinity, temperature and geostrophic velocity, on the spatial distributions of the eggs and larvae are investigated. Three biological variables are used to describe the productivity in the area: chlorophyll a in the mixed layer, chlorophyll a in the deep chlorophyll maximum and mesozooplankton biomass in the mixed layer. Our results point to the importance of salinity fronts and temperatures above a minimum threshold in shaping the egg and larval distribution of both species. The spatial distribution of the biotic variables was very scattered, and they did not emerge as significant variables in the presence-absence models. However, they became significant when modeling egg and larval abundances. The lack of correlation between the three biotic variables challenges the use of chlorophyll a to describe trophic scenarios for the larvae and suggests that the spatial distribution of resources is not persistent in time. The different patterns in relation to biotic variables across species and stages found in this and other studies indicate a still elusive understanding of the link between trophic levels involving tuna early larval stages. Our ability to improve short-term forecasting and long-term predictions of climate effects on the egg and larval distributions is discussed based on the consistency of the environmentally driven spatial patterns for the two species.

Keywords: Tuna, Larvae, Eggs, Distribution, Drivers, Chlorophyll, Hydrography