

RELATIONSHIP BETWEEN THE JELLYFISH *Pelagia noctiluca* OCCURENCE AND CATCH  
OF TUNNY FISH IN THE MEDITERRANEAN SEA (ADRIATIC)

Tamara VUČETIĆ

Institute of Oceanography and Fisheries, Split, YUGOSLAVIA

ABSTRACT

*It has been drawn to attention the coincidence between the occurrence of the jellyfish Pelagia noctiluca and the intensity in the catch of the tunny fish in the Mediterranean Sea (Adriatic)*

RESUMI

*On a essayé de porter l'attention sur la covariation des phénomènes d'apparition spasmodique de la Méduse Pelagia noctiluca et d'intensité de la pêche du thon en Adriatique.*

Searching for the explanation of the unusual occurrence of the jellyfish *Pelagia noctiluca* in the Central and North Adriatic many recent and historical data of the biotic and abiotic environmental factors have been analysed. Looking for the possibility to explain this phenomenon in the sense of predator-prey relationship we found unexpected coincidence between the period of the maximum catch of the tunny fish and the period of the increased findings of *Pelagia* (Vučetić, in press).

It was to be expected that the number of the prey-jellyfish *Pelagia* would decrease at the time od predators - tunny fish increased in number. The statistical data has shown just the opposite. At the time of the higher catch of the tunny fish in the Adriatic and in the Mediterranean Sea *Pelagia* occurred in the Adriatic and along the French coast in great numbers (Goy, in press; Vučetić, in press) (Fig. 1.).

Both findings could be explained in two different ways: first, due to a rich year class of tunny fish a higher or maximum catch appeared, as well as the jellyfish increase in numbers in the period of higher primary production (Degobbis et al., 1979) as a response to better environmental conditions (food). Second explanation could be that: it looks like an increase of population density of tunny fish and the jellyfish swarms because of the change in their distribution or the direction of motion, that could be due to passive transport by currents or active movement following the food density gradient to the coastal zone.

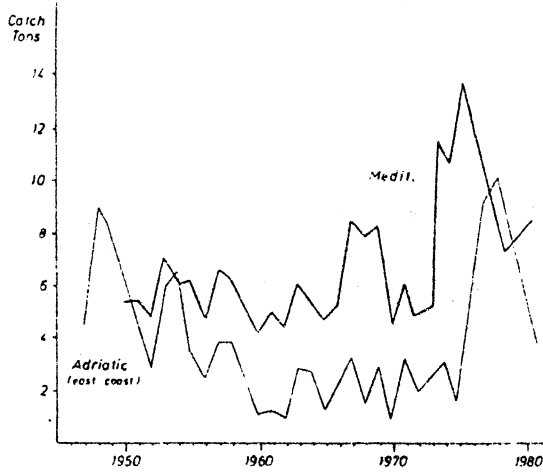


Fig.4 Catch of tunny fish in the Mediterranean and Adriatic

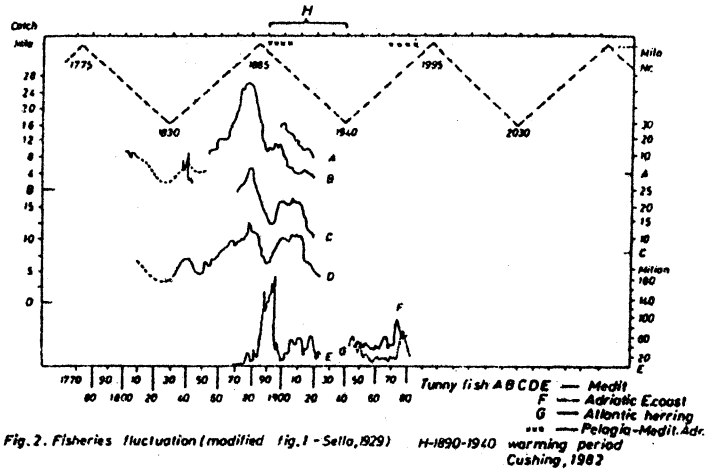


Fig.2. Fisheries fluctuation (modified Fig.1 - Sella, 1929)

H-1890-1940 warming period  
Cushing, 1982

Not only the recent findings show parallel fluctuations in the tunny fish catch and the intensity of *Pelagia* occurrence but also analysing some historical data (1885-1983) we found the same synchronic fluctuations. Sella (1929) brings attention to the increase in tunny fish catch in the period later on called by Le Danois (1934) "transgressions oceaniques". After we have compared these data with the *Pelagia* findings it was possible to state that the maxima for the both analysed parameters happened to be in the same period. (Fig.2.).

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