

BLOOMING OF THE NOMAD JELLY FISH *RHOPILEMA NOMADICA* ALONG THE EGYPTIAN MEDITERRANEAN COASTS

Mohamed A. Abu El-Regal¹ and Tarek A Temraz^{2*}

¹ Marine Science department, Port Said University

² Marine Science department, Suez Canal University - temraz@yahoo.com

Abstract

A massive number of *Rhopilema nomadica* was recorded along the coasts of Port Said, Damietta and Alexandria along the Mediterranean coast in summer 2015. The ever occurring blooming event was only recorded along the Mediterranean Sea while no blooms was recorded along Ismailia, Suez and El-Sukhna along the Suez Canal and Gulf of Suez. The species was studied in order to evaluate impacts on fisheries and tourism activity in the area. Number of nomadic jellyfish was recorded for two weeks on the beach and the nets of fishermen. Regular shoreline surveys were carried out using a standard line-transect method. Jellyfish were identified to species and tallied to give an indication of relative abundance.

Keywords: Invasive species, Mediterranean Sea

Introduction

Rhopilema nomadica is a neritic epipelagic, swarming, planktotrophic jellyfish. It is native to the east coast of Africa and the Red Sea. It was introduced into the Mediterranean in the late 1970s. Although it is assumed to have arrived via the Suez Canal, *R.nomadica* is rare in the red Sea and is not known from elsewhere (Mills 2001). The blooming incidence may be attributed to global warming, pollution loads, eutrophication and overfishing together with increasing water temperature. Despite the scarcity of hard substrate along the Egyptian coast of the Mediterranean which was believed to essential for blooming of the nomadic jelly fish (Purcell, 2012) multiple blooming events were recorded along the Egyptian coast resulting in negative impacts on fisheries, socio-economic and health risks. In a changing world of biodiversity Jellyfishes are able to increase in abundance rapidly and adapt to new conditions following ecosystem regime shifts and can spread into any vacant niches. With very few exceptions, jellyfish are carnivores, and use their cnidocysts to kill their prey that, according to the species, can be either other jellyfish, or crustaceans, or fish eggs and larvae, or anything reaching a viable size for the predator.

Results and Discussions

Around 1000 to 5000 m³ of water were sampled depending on the abundance of jellyfish in each monitoring station of the selected coastal location (Figure, 1) along three coastal cities of the Mediterranean coast of Egypt. A total of 514 specimens were collected, measured and dissected for the reproductive and feeding biology. Large number of juvenile fishes of different species were removed from the gut of the jellyfish (Figure, 2). Juvenile fishes from the gut were measured and identified to species level. The size ranged from 10 cm to 64cm. guts of the jellies were dissected. A total of 65 fish specimens representing 10 species were identified *Sardinella aurita* and *Terapn jurba* were the most abundant fish species.



Fig. 1. Jelly fish in fishing nets



Fig. 2. Fish eaten by the nomadic jellyfish

References

- 1 - Boero, F. 2013. Review of jellyfish blooms in the Mediterranean and Black Sea. Studies and Reviews, General Fisheries Commission for the Mediterranean. No. 92, FAO, Rome, Italy. 53 pp.
- 2 - Boero, F., Bouillon, J., Gravili, C., Miglietta, M. P., Parsons, T., and Piraino, S. 2008. Gelatinous plankton: irregularities rule the world (sometimes). Marine Ecology Progress Series, 356: 299–310.
- 3 - Galil BS, Spanier E, Ferguson W .1990. The Scyphomedusae of the Israeli Mediterranean coast, including two lessepsian migrants to the Mediterranean. Zoologische Mededlingen 64(7):95-105
- 4 - Mills, C.E. 2001. Jellyfish blooms: are populations increasing globally in response to changing ocean conditions. *Hydrobiologia*, 451: 55-68.
- 5 - Purcell, J. E. 2012. Jellyfish and ctenophore blooms coincide with human proliferations and environmental perturbations. Annual Review of Marine Science, 4: 209–235.