

## TUNISIAN FISH FAUNA AND THE GLOBAL WARMING

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### Abstract

In Tunisia, 356 species of fish were reported between 1884 and 2009, some for the first time in this work. After a critical review, we eliminated six species mentioned in the ichthyologic literature. Two others seem dubious but also require a review. They are not considered in this work. Analysis confirms the subtropical character of Tunisia fish fauna and especially of the Gulf of Gabes and that this character is accentuating.

**Keywords:** Biogeography, Fishes, Gulf Of Gabes, Global Change

### Introduction

This work updates the Tunisian fish species inventory [1]. It is based on the new records of species for the Tunisian waters available in the bibliography (after 2002) and on news observations made during surveying campaigns and visits to the main landing points.

### Material and methods

A grouping of the recorded fish species is given according to their geographic distribution [2] into: (1) Cosmopolitan (2) Atlanto-Mediterranean (3) Endemic (4) Indo-Pacific. The following categorisation of the recorded species is also given: species mainly distributed in cold and temperate waters and species having affinity for tropical and subtropical waters [2].

### Results and discussion

According to the data available in 2009, Tunisian fish biodiversity can be summarized as follows: Petromyzontiformes 1 species, Holocephali 1, Elasmobranchii 63, Chondrostei 1, Osteichthyes 282 for a total of 348 valid species belonging to 115 families, 229 genus and 30 Orders. Most species (294 of 348) have an Atlantic origin, 16 species are considered as sub-cosmopolitan and 25 are endemic to the Mediterranean. The Tunisian coasts are concerned by marine invaders originating from the tropical Atlantic (8 species) and Indo-pacific areas (13 species) (fig.1). Species coming from the northern Atlantic are mainly found in the northern zone, while the Subtropical and Saharian species are mainly found in the Gabes Gulf area. These results confirm the tropical character of this region. The species distribution along the Tunisian coasts is unbalanced; some species appear to be restricted to a particular sector; 54 were recorded only in the northern sector, mainly distributed in cold and temperate waters and 49 only in the southern sector, having mainly affinity for tropical and subtropical waters. *Carcharhinus melanopterus*, *Taeniura grabata*, *Pagrus coeruleostictus*, *Rhonchus Caranx*, *Dicentrarchus punctatus*, *Solea aegyptiaca* and species of genus *Epinephelus* and *Serranus*, having frankly tropical or subtropical affinity, are more abundant in the Gulf of Gabes than in the Northern. This work confirms the subtropical fish fauna of Tunisia and especially the Gulf of Gabes. Currently, this character is accentuated by the arrival, in addition to fish Lessepsian, Atlantic species with affinities for warmer waters such as *Seriola fasciata*, *Sphoeroides cutaneous* and also because of the development of populations *Balistes carolinensis*, *Caranx cryos*, *C. rhonchus*, *Synodus saurus*, *Sparisoma cretense...*. The new records are mostly thermophilic species such as the oilfish *Ruvettus pretiosus* (F. Gempylidae) observed recently in the gulf of Gabes. The specimen was 132 cm (TL) and it weighed 11 kg. Some species restricted to this region have been observed more and more in the north. These changes could be a sign of a climate change and global warming in generally. Climate change is operating in the Mediterranean, it is undeniable! The succession of thermal anomalies and so on stability of water masses occurred in the mid 80s would have greatly facilitated the blooms of jellyfish. In Tunisia the appearance of jellyfish was usually in September when vacationers begin to desert beaches. Over the past five years, the phenomenon became early which attracted public attention. The blooms of several species of jellyfish which mainly pulmo *Rhizostoma* were spectacular in May and June 2008 and 2009. This is especially due to climatic reasons that are causing their proliferation and possibly depletion of the leatherback turtle, large predatory of jellyfish. These phenomena could have negative consequences on fish stocks.

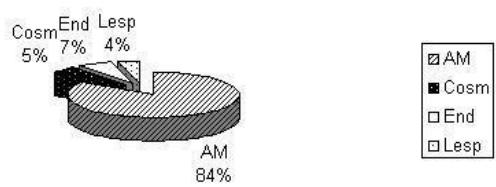


Fig. 1. Biogeographic characteristics of the fish fauna of Tunisia.

### References

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