

GENETIC STOCK STRUCTURE AND CONNECTIVITY IN MEDITERRANEAN AND BLACK SEAS SPINY DOGFISH *SQUALUS ACANTHIAS*

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Abstract

The spiny dogfish or piked dogfish *Squalus acanthias* is taken in demersal and pelagic fisheries in the Mediterranean and Black seas, where it is currently considered an Endangered and Vulnerable species, respectively, due to declining population trends attributed to overfishing [1]. Initially thought to be widespread in the Mediterranean Sea, the species suffers from common misidentification basin-wide and may in fact be restricted to a few regions [2] such as the Gulf of Lion and the Adriatic Sea. Beyond issues in species identification, little is known about the stock structure and level of connectivity among stocks in the Mediterranean and Black seas, despite the relevance of such information for adequate fisheries management.

This study aims at clarifying the genetic stock structure of *S. acanthias* and estimate current connectivity levels among stocks in the Mediterranean and Black seas. Mitochondrial ND2 and control region sequence data, and 16 nuclear microsatellite loci genotypes were obtained for Adriatic and Black seas collections, as well as from adjacent Atlantic population from around the British Isles. Results show the existence of distinct genetic stocks in the Adriatic and Black Seas with little connectivity between them, as well as with the Atlantic counterparts. Moreover, the Black Sea population exhibits much lower genetic diversity than the Adriatic and Atlantic populations, both at the mitochondrial and nuclear markers. These results have direct application to fisheries management, highlighting the need for urgent adequate management of these unique stocks.

Keywords: nuclear microsatellites; mitochondrial ND2; genetic stocks; Adriatic Sea; Black Sea; sharks

References

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