

CIESM Congress Session : Cartilaginous fish I

Moderator : Alen Soldo, Split Univ., Croatia

Moderator's Synthesis

The session discussion focused (a) on the threat of extinction facing a number of shark species worldwide and (b) on new genetic tools available for their identification. Throughout geological history, catastrophic events have radically changed the Earth's environment, resulting in the extinction of a significant percentage of species. Sharks as a group have survived five major mass extinction episodes in the 450 million years of their evolutionary history, undergoing two major adaptive radiations. The worse such event happened at the end of the Paleozoic, 251 million years ago, killing more than 90% of the species, but leaving relatively intact the early representatives of elasmobranchs – the ancestors of modern sharks and rays. Recent evidence suggests that the sixth mass extinction of wildlife is now under way, killing off large ocean dwellers.

Sharks and other cartilaginous fish are particularly threatened, due to the impact of destructive fisheries that reach deeper and deeper and to the slow growth characteristics of these species. The problem is global: due to the overexploitation of the teleost fish stocks, fisheries now increasingly target sharks and rays. The Mediterranean characterized by multispecies fishery where many sharks and rays constitute an important bycatch of commercial fisheries targeting teleost fishes, and where management measures are grossly inadequate, is much affected. Many Mediterranean cartilaginous species are now considered rare or missing, i.e. not seen anywhere in the region for at least one decade. The rarity of catch data, of species-specific landing data, of CPUE data, fishing effort, species biological and ecological data etc, is dramatic.

Scientists and fisheries managers worldwide are struggling with a lack of basic information for many shark and ray species, often wrongly identified. The identification problem is exacerbated by the common fishery practice of removing the head, tail, and most fins from landed sharks while still at sea. Removing the major morphological identifying characters of the sharks prevents precise species identification and management. The recent emergence of various genetic techniques will facilitate the identification of species, subspecies, populations, strains, hybrids and individuals. However, these techniques are “young”, not widely used, and it is still a challenge to describe accurately the distribution of species or stock boundaries.

