

EXPLOITATION PATTERN OF THE MEDITERRANEAN FISHERIES

Athanasios c. Tsikliras ^{1*}, Amny Dinouli ¹ and Konstantinos i. Stergiou ²

¹ Department of Ichthyology and Aquatic Environment, University of Thessaly, Volos, Greece - tsikliras@uth.gr

² Laboratory of Ichthyology, Department of Zoology, Aristotle University of Thessaloniki, Thessaloniki, Greece

Abstract

The annual landings of the Mediterranean fisheries were analysed for the period 1970-2005 and classified into exploitation categories based on the shape of the catch curve and the year of overall maximum catch. In 2005, about 22% of the Mediterranean fisheries are characterised as crashed, 39% as overfished, 23% as fully exploited, whereas developing fisheries were confined to less than 16%. These results, although encouraging compared to available global estimates, sound the alarm of fisheries sustainability, and ask immediate conservation and management measures.

Keywords: Fisheries, Conservation

Introduction

Despite the long history of fisheries exploitation of the Mediterranean Sea, data concerning stock assessment are lacking or sporadic, thus inducing a strong impediment for the management of this large marine ecosystem as a whole. Existing stock assessment attempts concern a low number of species, when compared to the multispecies assemblages exploited (i.e. more than 150 commercial species). In contrast, the long time-series of landings available, offer a useful and cheap, yet in some cases unreliable, background information for evaluating the status of fisheries, as well as their ecological footprint [1]. The aim of the present work was to assess the exploitation status of the Mediterranean fisheries stocks for the period 1970-2005 using the methodology of [2], and compare them with the corresponding global trends and/or similar work performed elsewhere.

Materials and methods

The annual landings, expressed as live weight equivalent of catches, have been recorded since 1970 for the Mediterranean and the Black Sea (FAO area 37) by the General Fisheries Commission for the Mediterranean (GFCM) [3]. The GFCM catch data refer to the legal and reported large- and small-scale fisheries, excluding discarded catch, illegal, unreported, recreational and sport fishing. Catch statistics were extracted from the GFCM dataset for all available records or stocks (=species-area combinations). The annual status of fisheries (1970-2005) was classified into one of the following four categories: developing, fully exploited, overexploited, and crashed [2]. The classification is based on the relationship between the catches of a given year compared to the year of overall maximum catch. Thus, in a developing fishery, the year of catch is before year of maximum catch, and catch is less than 50% of the overall maximum catch; in a fully exploited fishery the catch is greater than 50% of maximum catch; in an overexploited fishery, the year of catch is after year of maximum catch, and catch is between 10% and 50% of the overall maximum catch; and in a crashed fishery, the year of catch is after the year of maximum catch, and catch is below 10% of the overall maximum catch.

Results and Discussion

Based on the overall maximum landings, which varied among stocks, in 2005 (the most recent year available), 336 out of the 1480 stocks analysed can be classified as crashed (22.7%), 583 as overfished (39.4%), 335 as fully exploited (22.6%) and 226 as developing (15.3%). In the 1970s, the majority of the stocks were largely underexploited and most fisheries (around 80%) were developing (Fig. 1). Only a few stocks were overexploited and even fewer can be characterised as crashed. Over the last 20 years, however, an increasing percentage (averaging 19.6% for 1996-2005) of stocks suffers from overexploitation. The cumulative percentage of overfished and crashed stocks increased dramatically from 10% in 1977, to 20% in 1987, 30% in 1990, 40% in 1995, 50% in 2000 and 60% in 2005. Interestingly enough, the percentage of fully exploited stocks has remained rather unchanged since 1970 (averaging 23.6±2.52% for 1970-2005). The degree of exploitation of the Mediterranean fisheries is disappointing compared to previous estimates for the area (74% of the Mediterranean stocks are either fully exploited or overexploited: [4]) but encouraging compared to the current global pattern (the developing fisheries are less and the overexploited/crashed ones are more: [5]), the NE Atlantic and the North Sea (in 1999, 50% of fisheries were overfished or collapsed: [2]).

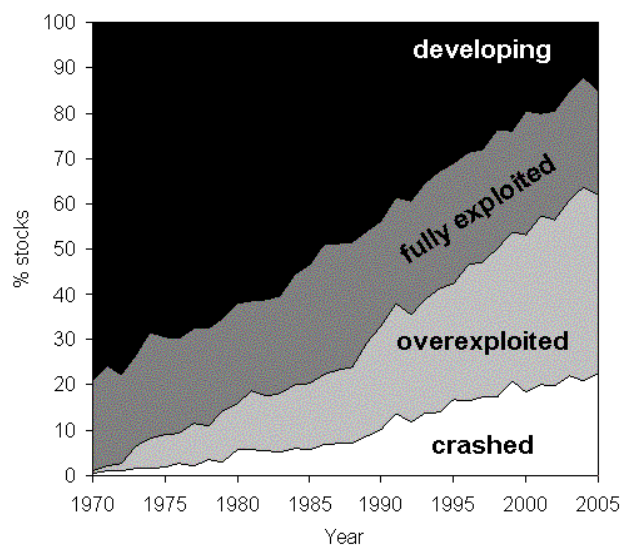


Fig. 1. Trend in the status of Mediterranean marine fisheries resources (1970-2005) based on FAO statistics (status definitions adopted by [2])

Since traditional management schemes seem to have failed to prevent exhaustion of the marine resources, future management should be directed towards reducing fishing effort and excluding large areas from fisheries exploitation.

References

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