ID: W2937552017

TITLE: Predicting the conservation status of Europe?s Data Deficient sharks and rays

AUTHOR: ['Rachel H.L. Walls', 'Nicholas K. Dulvy']

ABSTRACT:

ABSTRACT Shark and ray biodiversity is threatened primarily by overfishing and the globalisation of trade, and Europe has been one of the most documented heavily fished regions for a relatively long time. Yet, we have little idea of the conservation status of the hundreds of Data Deficient shark and ray species. It is important to derive some insight into the status of these species, both to understand global extinction rates and also to ensure that any threatened Data Deficient species are not overlooked in conservation planning. Here, we developed a biological and ecological trait model to predict the categorical conservation status of 26 Northeast Atlantic and 15 Mediterranean Sea Data Deficient sharks and rays. We first developed an explanatory model based on all species evaluated on the International Union for Conservation of Nature (IUCN) Red List of Threatened Species TM , using maximum body size, median depth (as a proxy for fisheries exposure), and reproductive mode, and then predicted the status of all Data Deficient species. Almost half of Northeast Atlantic (46%, n =12 of 26), and two-thirds of Mediterranean (67%, n =10 of 15) Data Deficient species are predicted to be in one of the three IUCN threatened categories. Northeast Atlantic Data Deficient species are predicted to be 1.2 times more threatened than evaluated species (38%, n =36 of 94), whereas threat levels in the Mediterranean Sea are relative for each (66%, n =38 of 58). This case study is intended for extrapolation to the global shark and ray dataset upon completion of the global IUCN Red List assessment. Trait-based, categorical prediction of conservation status is a cost-effective approach towards incorporating Data Deficient species into (i) estimates of lineage-wide extinction rates, (ii) revised protected species lists, and (iii) Red List Indices, thus preventing poorly known species from reaching extinction unnoticed.

SOURCE: bioRxiv (Cold Spring Harbor Laboratory)

PDF URL: https://www.biorxiv.org/content/biorxiv/early/2019/04/25/614776.full.pdf

CITED BY COUNT: 1

PUBLICATION YEAR: 2019

TYPE: preprint

CONCEPTS: ['IUCN Red List', 'Threatened species', 'Overfishing', 'Conservation status', 'Near-threatened species', 'Data deficient', 'Conservation-dependent species', 'Endangered species', 'Geography', 'Mediterranean climate', 'Biodiversity', 'Ecology', 'Fishery', 'Mediterranean sea', 'Critically endangered', 'Biology', 'Fishing', 'Habitat']