A review of important bycatch species taken during fishing operations within the SIOFA area.

Report prepared in accordance with Project PAE2021-02. TOR2: Using SIOFA databases, assemble and document the important bycatch species taken during fishing operations within the SIOFA area and undertake Ecological Risk Assessments (ERAs) on these species.

Executive Summary

Catch data for the period 2016 to 2020 were made available from SIOFA Secretariat and included 3811 individual fishing operations for demersal longline (n= 2594), trawl (n=1208), hand-operated line (n=237) and pelagic longline (n= 2386).

The definition of bycatch is complicated by uncertainty in the specification of target species, as a result of this the analysis used all taxa reported in catches and each fishery (defined by gear type).

Of the 44 taxa that contributed > 1% of the catch in a fishery 23 were reported at species level and six of these are listed on the IUCN Redlist as either endangered (EN), vulnerable (VU) or near threatened (NT).

Tuna and deepwater sharks were identified as the two main groups of bycatch, as directed fishing for them is prohibited in SIOFA. Tuna taken in pelagic longline fisheries constituted the greatest bycatch by weight and deepwater sharks taken in demersal longline fisheries included the greatest number of high-risk species.

Based on the available catch data and the identification of species of conservation concern the inclusion of Leafscale gulper shark *Centrophorus squamosus* in the category of 'key species of concern" should be considered.

Conducting a semi-quantitative level 2 ecological risk assessment of important bycatch in SIOFA fisheries would require clarity on the target species in a fishery and bycatch reporting at a lower taxonomic level.

Introduction

Undertaking an ecological risk assessment provides a formal mechanism to determine which of the taxa that are caught as bycatch in particular fisheries might be at risk as a consequence of those catches. As with all risk assessments there is a need to establish the likelihood and consequence of an activity to determine the risk. In the context of bycatch species the likelihood of capture of a species can be assessed using catch data, while the consequence for a species is a product of its ecological and population characteristics. In many cases the latter