

Shark and ray identification manual

for observers and crew of
the western and central Pacific
tuna fisheries

Timothy Park, Lindsay Marshall,
Aymeric Desurmont, Boris Colas and Neville Smith



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Introduction

The SPC *Shark and ray identification manual for observers and crew of the western and central Pacific tuna fisheries* has been developed to improve the identification of shark and ray species encountered in the tropical and subtropical tuna fisheries of the Western and Central Pacific Ocean (WCPO), as well as informing on correct methods for their handling and release. The manual is designed to be a concise field guide for use by fisheries observers and fishers who collect the operational data and whose reports are the principal sources of catch information for fisheries management in the world's largest tuna fishery.

Although sharks and rays are an incidental bycatch of pelagic tuna fisheries, these fisheries are accredited with causing significant declines in the populations of some shark and ray species. The 44 shark and ray species in this guide include those with adaptations to being pinnacle predators, huge planktonic feeders or small parasitic predators of large pelagic fish and mammals. These species are included because they are caught incidentally, or are set on because of their association with tuna, or interact with fishing operations through their depredation of the catch in the WCPO tropical and subtropical tuna fisheries.

Because pelagic shark and ray populations are adversely affected by tuna fisheries, the Western and Central Pacific Fisheries Commission (WCPFC) has designated 14 shark species and six mobulid species as **Key Shark Species** (for data provision) in the WCPO. Vessels fishing in the WCPO and fisheries observers are required to report their catch for each of the 14 Key Shark Species, which are listed below.

- Blue shark (*Prionace glauca*) – since 2008
- Mako sharks (*Isurus oxyrinchus*, *I. paucus*) – since 2008
- Oceanic whitetip shark (*Carcharhinus longimanus*) – since 2008
- Thresher sharks (*Alopias superciliosus*, *A. pelagicus* and *A. vulpinus*) – since 2008
- Silky shark (*C. falciformis*) – since 2009
- Porbeagle shark (*Lamna nasus*) – (south of 20°S) since 2010
- Hammerhead sharks (*Eusphyra blochii*, *Sphryna lewini*, *S. mokarran* and *S. zygaena*) – since 2010
- Whale shark (*Rhincodon typus*) – since 2012

- Manta and mobulid rays (*Mobula* spp.) – since 2017. Note that the manta and mobulid species identified as Key Shark Species by SC13¹ have since undergone a revision of nomenclature, which is reflected in the species listed in this guide (*Mobula alfredi*, *M. birostris*, *M. tarapacana*, *M. mobular*, *M. thurstoni*, and *M. kuhlii*).

Furthermore, some of these Key Shark Species have been designated as **Species of Special Interest (SSI)**. The shark and ray SSI are the oceanic whitetip, the silky shark, the whale shark and the mobulid rays. These are regulated as no-retention, no-live landing species (OCS, FAL), no-targeted-set by purse-seine vessels (RHN), and all require specific data to be collected by observers, including location, length, sex, fate and condition. Observers should also record their interactions with the primary fishing gear.

This guide is organised in three tools:

1. The first provides a pathway of 43 identification key steps. It is preceded by illustrated definitions of shark and ray key external features.
2. The second consists of detailed illustrations of the 44 species of sharks and rays to show key features and their natural colouration when alive.
3. The third details the WCPFC best handling guidelines for the safe release of whale sharks and mobulids (since 2018), and other sharks (since 2019) incidentally caught during fishing operations. Reference sources are also provided.

¹ WCPFC-SC13-2017/ST-WP-07