

## Status of fisheries of billfish of Pakistan: Status and Trends

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### ABSTRACT

Billfish form important part of the landings of tuna and tuna like fishes from Pakistan contributing about 8 to 10 % in total landings of tuna gillnet operations. Its landings during 2021 was reported to be about 4,025 m. tons which is about 5.61 % less than 2020. The decrease is attributed to a much longer closed season observed by the tuna gillnet fisheries in 2021. Fishing in 2021 was stopped in the late April or beginning of May and initiated only in last week of August i.e. almost no fishing for four months as against normal 2 month ban of June and July.

Out of six species of billfishes Indo-Pacific sailfish (*Istiophorus platypterus*) contributed about 1,892 m. tons, black marlin (*Istiompax indica*) 983 m. tons, striped marlin (*Kajikia audax*) 845 m. tons whereas Indo-Pacific blue marlin (*Makaira mazara*) contributed 305 m. tons. Contribution of shortbill spearfish (*Tetrapturus angustirostris*) and swordfish (*Xiphias gladius*) was insignificant.. Billfishes are not locally consumed but transported to neighboring country through land or sea route.

### INTRODUCTION

Pelagic gillnetting is an important component of the coastal and offshore fisheries of Pakistan, as about 700 fishing vessels are engaged in harvesting of tuna and tuna like fishes. Historically pelagic gillnetting is one of the oldest fisheries of the area. Gillnets consisting of multifilament nylon nets are used for catching tunas and other pelagic species which include billfishes. Information about tuna gillnet fisheries of Pakistan is known through the work of Khan and Moazzam (2019), Moazzam (2011, 2012, 2014, 2018, 2019, 2020), Moazzam and Ayub (2015), Moazzam and Nawaz (2014), Moazzam, *et al.* (2016) and Nawaz and Moazzam (2014).

Six species of billfishes belonging to six genera and two families are reported from Pakistan. Of these, one species i.e. swordfish (*Xiphias gladius*) belongs to family Xiphidae whereas all other species belonged to family Istiophoridae. Four species of billfishes including Indo-Pacific sailfish (*Istiophorus platypterus*), black marlin (*Istiompax indica*), striped marlin (*Kajikia audax*) and Indo-Pacific blue marlin (*Makaira mazara*) are occasionally in the commercially landings. These species form an important part of the landings of tuna gillnet vessels operating in coastal and offshore waters. Swordfish (*Xiphias gladius*) and shortbill spearfish (*Tetrapturus angustirostris*) are seldom represented in the commercial landings in Pakistan.

Limited information about the billfish landings of Pakistan is available. Some scanty information is available through the work of Moazzam (2011), Moazzam and Usmani ((2004), Osmany *et al.*, (2009) and Rashid (1966). Moazzam (2013), however, provided some details of billfish fisheries of Pakistan including species composition, gears, fishing boats, area of fishing and other aspects

of the fisheries. A major part of the information presented by Khan and Moazzam (2019) and Moazzam (2013, 2018, 2019 and 2020) was based mainly on the fisheries statistical data being published by Marine Fisheries Department. These data, however, do not provide information about species composition of billfishes.

## MATERIALS AND METHODS

The information presented in the present study is based on the interaction with fishermen that are engaged in gillnet fishing for tuna and tuna like species in coastal and offshore waters of Pakistan. WWF-Pakistan Crew Based Programme is the major source of the data presented in this paper (Moazzam, 2019, 2020).

## RESULTS AND DISCUSSIONS

### Landings

Government of Pakistan publishes a Handbook of Fisheries Statistics of Pakistan (Anonymous, 2013-updated) which contains landing data of commercially important fish species including billfishes (Fig. 1). No information about species composition of billfishes is available in these publications and data of all species of billfish is pooled.

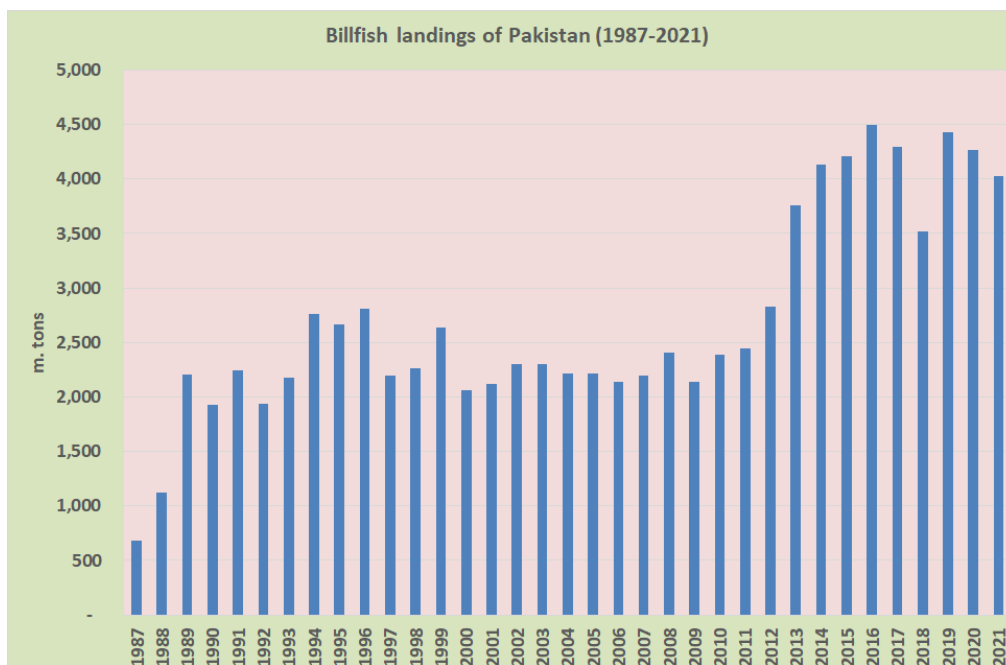


Fig. 1. Billfish landings according to Government Statistics (Anonymous, 2013; updated)

Highest landings of billfish was reported in 2016 when a total of 4,500 m. tons was landed but a major decrease was noticed in 2018 when the landings of billfish reached a level of 3,521 m. tons but again increased to 4,431 m. tons in 2019. Since then the landings have a decreasing trend and landings decreased to 4,025 in 2021. The decrease is attributed to a much longer closed season observed by the tuna gillnet fisheries in 2021. Fishing in 2021 was stopped in the late April or

beginning of May and initiated only in last week of August i.e. almost no fishing for four months as against normal 2 month ban of June and July.

### **Species Composition**

Government of Pakistan used to providing data to IOTC in which data of all billfishes were pooled, however, since 2018 data generated through WWF-Pakistan’s Observer Programme has been used to reconcile with the Government data. An exercise of reconstruction of data since 1987 was done which included determination of species composition of billfishes which was, later on, communicated to IOTC through Government of Pakistan.

The data for 2021 is presented in Table-I which indicates that Indo-Pacific sailfish (*Istiophorus platypterus*) is the dominating species in the landings contributing about 41.01 % of the landings of billfish which is followed by black marlin (*Istiompax indica*) contributing about 24.42 % of the total billfish landings. Striped marlin (*Kajikia audax*) contribution was about 20.99 % whereas blue marlin (*Makaira mazara*) contributed only 7.58 %. Contribution of shortbill spearfish (*Tetrapturus angustirostris*) and swordfish (*Xiphias gladius*) was insignificant, therefore, not represented graphically.

Table-I. Species composition of billfish during 2019-2021.

Species	2019	2020	2021	Percentage Increase or Decrease
Indo-Pacific Sailfish	2,214	1,980	1892	-4.44
Black Marlin	978	1,013	983	-2.96
Striped Marlin	865	912	845	-7.35
Blue Marlin	374	359	305	-15.04
Sub-total Billfish	4,431	4,264	4,025	-5.61

### **CONCLUSION**

Billfishes are among the species of large pelagic that fetch very high prices in the target market in neighboring country. Large gillnet vessels that operate in coastal, offshore, Exclusive Economic Zone (EEZ) and Area beyond National Jurisdiction (ABNJ) target tuna and billfish species. There is no preference of any particular species of billfish in the market, however, before landings the billfishes are beheaded, gutted and cut into large chunks, therefore, it is difficult, rather impossible, to collect length frequency data from landing centers. Data on length frequency, however, was collected through WWF-Pakistan Crew Based Programme. A part of this data for of Indo-Pacific Sailfish (*Istiophorus platypterus*) was analyzed and presented in IOTC WPB17-22 (Moazzam, 2019)

There was a decreasing trend noted for billfish in 2021 as the landings has decreased by 5.61 % as compared to 2020. Major decrease was noticed in case of blue marlins whose landings is decreased

to the extent of 15.04 %. In case of Indo-Pacific Sailfish the decrease was 4.44 % whereas landings of black marlin and striped marlin have decrease by 2.96 % and 7.53 %. The decrease is attributed to a much longer closed season observed by the tuna gillnet fisheries in 2021.

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