

The Maldives billfish fishery – an update

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Abstract

Fishers have been targeting billfish in the Maldives for a long time but the billfish fishery in the Maldives did not expand until recently. The complete ban of shark fishing across the Maldives in 2010 appeared to have compelled those engaged in the shark fishery to target billfishes. In addition, billfishes are a popular fish consumed by tourists visiting the Maldives. The expansion of the tourism industry had opened new opportunities for billfish fishers and has also initiated big game fishing targeting billfish and other large fish. In the targeted billfish fishery, fishers from several communities across the country, catch billfish using troll lines and drop lines along the outer edge of the atolls. Billfish are also taken as bycatch in the longline fishery and also occasionally in the large yellowfin handline fishery and the troll fishery targeting kawakawa and frigate tuna. Foreign longline vessels were allowed to fish in the Maldives EEZ from mid 1980s till 2010. The catch from these longline vessels were not landed in the Maldives. By 2009 the government of Maldives decided not to issue or renew licences for foreign longline vessels but in 2011 issue of licences to small local longline vessels began. In addition reef shark fishing was banned in 2009 and a country wide shark fishing ban came into effect in 2010 which resulted in more local fishers targeting billfish across the country. A large portion of the billfish caught by these fishers is salted dried and exported. In 2011 more than 500 tons of salted dried billfish were exported. While the export data provide some indication of the amount of billfish caught in the Maldives, but what is not accounted for is the amount of billfish consumed within the country. Since billfish are exploited throughout the Maldives and are landed at several landing sites, it has been a challenge for Ministry of Fisheries and Agriculture (MOFA) to obtain accurate catch statistics on this fishery.

Introduction

For centuries Maldivian fishers have fished for tuna using pole and line. Among the tuna species caught in the Maldives skipjack tuna is the most popular fish and is widely consumed across the country. In the past fishers have rarely targeted other large pelagic species but with the introduction of tourism in early 1970s and improvement in fishery technology today fishers target large pelagic species such as marlin, sail fish and large tuna. The tourism industry has expanded over the years and more than one million tourists arrive every year in the Maldives. The tourism industry opened new opportunities for the fishers as tourist resorts readily bought different varieties of fish at a higher price than the local processors. In addition locals gradually got exposed to consuming other species of fish other than tuna. This resulted in the increase in harvesting of other reef fish species and large pelagics. Large pelagic species such as sailfish and marlin are now more readily available to the locals.

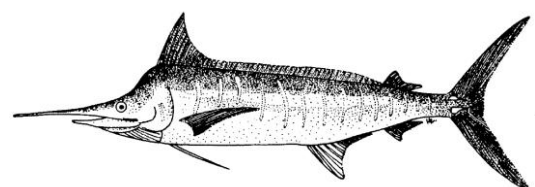
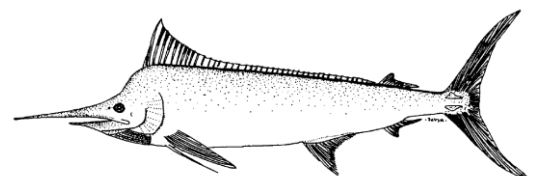
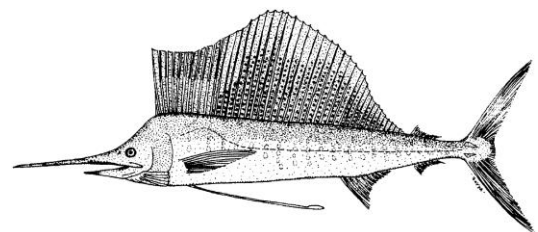
In 2010 a complete ban on shark fishing in the Maldives was introduced and this affected many fishers. Several fishers who were engaged in the shark fishery took to billfish fishing targeting marlin and sail fish along the outer edge of the atolls. Most of the billfish caught by these fishers were sold to the local processors who made salted dried fish for export. Billfish fishery in the Maldives is wide spread and landings take place across the country.

Billfish fishery

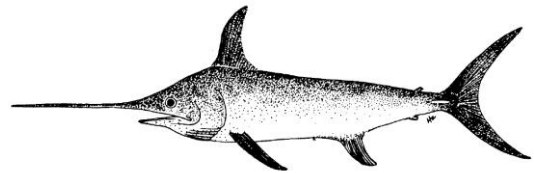
Species

The billfish species in the Maldives include:

1. Scientific name: *Xiphias platypterus*
Common name: Indo-Pacific sail fish
Local name: Fangandu hibaru
2. Scientific name: *Makaira indica*
Common name: Black marlin
Local name: Kalhu mas hibaru
3. Scientific name: *Makaira mazara*
Common name: Indo-Pacific blue marlin
Local name: Noo mas hibaru



4. Scientific name: *Xiphias gladius*
 Common name: Sword fish
 Local name: Thungandu hibaru, Kanneli hibaru



Fishing method and gear

Billfish fishers frequently use troll and driftline gear for fishing. The troll lines are made from approximately 100m long monofilament line (80 to 150 lb). One end of the line is attached to a float while the other has a lure on it. The locally made artificial lures are attached to the line with a small fish or a slice of fish to attract the billfish. Troll lines are operated from small boats 20 to 40 feet in length, with a crew of 2 to 4, along the edge of the reef outside the atolls.

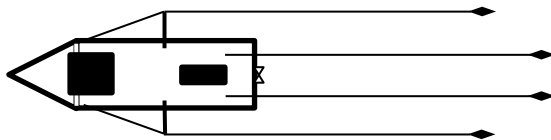


Figure 1: Troll gear used for billfish fishing.



Figure 2: Wooden vessels constructed on the local islands used for billfish fishing.



Figure 3: Small boat operated on the outer edge of the atoll targeting billfish.

Usually four troll lines are operated from a single boat. Once the fish is hooked fishers let go of the line with the float attached to the line. Fishers wait for a while to tire the fish before quickly pulling it on to the boat and kill it with a hard blow to its head.

The drift lines are laid on the outside of the atoll along the reef. The drift line consists of a float, 30m monofilament line (150 – 200 lb), swivel, a wire lead and a barbed hook. Live bait is attached to the hook. Often round scad and bigeye scad are used as bait. Some even use redtooth trigger fish as bait. A boat may lay about 10 to 15 drift lines along the reef. These are mainly day time operations and fishers return to the port by evening.

Several tourists come to the Maldives to carryout big game fishing every year. These big game fishers staying on the tourist resorts use rods and reels with artificial lures to target billfish and other large pelagic species. They fish on speed boats or local boats (*dhoani*).

Billfish is also targeted by the 25 longline vessels (2014) operating in the Maldives. These longline vessels operate beyond 100 miles from the shore inside Maldives EEZ.

As a bycatch

Billfish is sometimes caught in the handline fishery targeting large yellowfin. Since billfish is a good food fish and can be sold it is never discarded. The fish is preserved in ice on the boat until it is landed.

Bycatch in the billfish fishery

As the fishing is done on the outer edge of the reef a number of other species of fish are caught. These include dolphin fish, barracuda, jobfish, dogtooth tuna, wahoo and some other reef fish. None of the bycatch species are discarded as they are good food fish and can be sold at the local fish market.

Billfish landing sites

Billfish landing takes place at several fish landing sites across the Maldives. These include:

1. Male' fish market – the main fish market in the capital supplying fish to more than hundred thousand people living on Male' and the nearby islands. Some tourist resorts also buy fish for their guests from this market. Billfish is sold as a whole fish for local hotels and tourist resorts while sliced pieces of fish is made available for the locals who do not want to buy a whole fish.
2. Local islands – on several inhabited islands billfish is consumed by the locals while on some 12 other islands the fish is salted and dried for export to Sri Lanka.
3. Tourist resorts – Several billfish fishers directly sell their catch at the tourist resorts.



Figure 4: Billfish at sold Male' fish market.



Figure 5: A sailfish sliced to sell at the Male' fish market.

4. Longline catch landing sites – There are three landing sites where longline catches are packed and exported.

Catch statistics

It is not clear how many tons of billfish are caught throughout Maldives as the catch are landed in several local islands, tourist resorts and Male’ fish market (main fish market in the country). A large portion of the catch includes sailfish. Several tons of billfish are consumed in the country while others are salted dried and exported to Sri Lanka. At present billfish data is reported by the longline fishery and the large yellowfin handline fishery.



Figure 6: Salted dried billfish.

Due to various challenges, at present, there is no proper mechanism to enumerate the billfish landing in the Maldives. The customs export data (figure 7) provide some information on the billfish caught in the country but it does not provide any information on the amount of bill fish consumed in the Maldives.

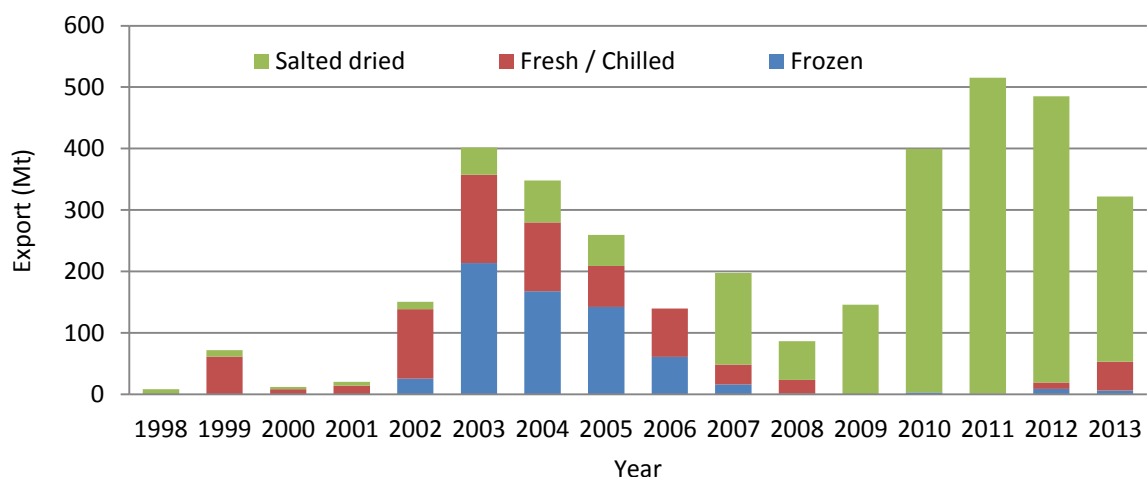


Figure 7: Export of billfish produces from 1989 to 2013 (MOFA statistics).

Salted dried, fresh/chilled and frozen billfish were mainly exported from the Maldives. Apart from these products smoked billfish was exported but not in significant amounts. Ministry of Fisheries and Agriculture (MOFA) fisheries statistics did not show any records of salted dried billfish exported in 2006 but for the same year there was a record indicating 215kg of smoke marlin was exported. In 2009 the government of Maldives stopped issuing licenses to foreign

longline vessels operating in the Maldives EEZ. In 2009, 2010 and 2011 there was almost no fresh/chilled or frozen billfish exported from Maldives. Issuing of licenses for the local longline vessels began towards the end of 2011 and by end of 2014 there were 25 longline vessels operating in the Maldives. With this increase in longline vessel the export of fresh/chilled and frozen billfish increased in the recent years.

In 2009 reef shark fishing ban came into effect throughout the Maldives and then in 2010 there was complete ban on shark fishing in the Maldives introduced. This resulted in many fishers, who were engaged in the shark fishery, to switch to billfish fishing. Most of the billfish caught by the fishers from the local islands were salted dried on the islands. Hence the export of salted dried billfish also increased in the recent years.

Recommendations

Although the longline and tuna logbook data provide some information on the billfish landing in the country, to fully understand the scale of billfish fishery in the Maldives, it is essential to record the billfish landed at Male' fish market and the tourist resorts. At present government is working with the stakeholders to establish an efficient data collection mechanism throughout the country by introducing logbooks and applications using which fishers could easily report their catch. It is also important to establish such a system to gather data from the recreational fishers since the tourist arrival has exceeded one million per year and the number of resorts are increasing across the country. It will also be useful to engage in collaborative work with international agencies to fully understanding the size of billfish fishery in the Maldives.