

StarKist longline tuna (Atlantic and Pacific Ocean) FIPs

Seabird mitigation techniques report

Introduction

Incidental catches of seabirds are prevalent across global longline fisheries. The method of fishing is conducive to bird bycatch because of the length of time that the lines are suspended in the water. The majority of bird hooking takes place during the line setting (Brothers, et al., 2010), where birds are thought to be attracted to the bait attached to the hooks before they enter the water. Once the line has been set, it is not retrieved for several hours, which can lead to the hooked birds drowning before they can be released from the hooks. Sometimes, even if the bird is alive upon retrieval of the line, it can still die as a result of fatal injuries caused by the hook entering the body. Although most bird catch occurs when the line is being set, this is thought to be an underestimation because once the line is set, it is not monitored until the line is hauled in. It is estimated that there are several unreported seabird mortalities that occur at sea as a result of depredation from larger predators (Brothers, et al., 2010).

Seabird populations, specifically the endangered, threatened, and protected (ETP) species like albatross, boobies, and gannets are at particular risk from mortality-induced capture in longline fisheries. These species are well-known to mate for life, meaning that if one of a pair is killed, the remaining individual will not reproduce and across a population, this can be detrimental. With declining populations of these vulnerable species across the world, they are facing a reality of potential extinction (Zhou, et al., 2019), so best practice mitigation techniques are required to be implemented across fisheries to reduce the number of seabird mortalities caused by the industry.

Tuna fisheries in the Atlantic and the Pacific Ocean are managed by two Regional Fisheries Management Organisations (RFMOs); the International Commission for the Conservation of Atlantic Tunas (ICCAT) and the Western and Central Pacific Fisheries Commission (WCPFC), respectively. Each RFMO has definitive and strict regulations about the use of seabird mitigation techniques across every vessel operating in the managed areas, including Tori lines, weighted lines, and night-setting (See Appendix for a full list of mitigation techniques). These regulations are in place to reduce the amount of seabird bycatch and interaction with the fishery to prevent further population collapse (Da Rocha, et al., 2021).

Current practices in the fisheries

Pacific Ocean longline FIP

The information supplied from the Pacific Ocean FIP vessels showed that all use a variety of seabird mitigation techniques (**Table 1**). Depending on equatorial position, the vessels adopt either singular or a combination of bird mitigation techniques onboard when operating in different parts of the ocean, as described by WCPFC bird mitigation requirements (see Appendix 1). For example, three of the vessels only use hook-shielding devices when operating South of 30°S, as is permitted by the WCPFC requirements. These three vessels also only use one mitigation technique, tori lines, when operating between 25°S - 30°S, again, as permitted by WCPFC. Overall, all vessels have a range of techniques onboard that will be used at various locations when operating.

Table 1: The seabird mitigation techniques used by the Pacific Ocean longline fishing vessels in the StarKist fishery when they operate in different equatorial areas of the Western and Central Pacific Ocean

Mitigation techniques used by the vessels at different equatorial regions				
Vessel name	South of 30oS	25oS-30oS	North of 23oN	Others
Shin Jaan Shin No. 368	Tori line and night setting	-	-	-
Shin Jaan Shin No. 66	Tori line and night setting	-	-	-
Hai Chien Tsing	Tori line and weighted branchline	-	-	-
Sheng Tsai No. 888	Tori Line, weighted branchline, and night setting	Weighted branchlines*	Side-setting or Bird curtain or weighted branchlines or deep-setting line shooter	-
Sheng Tsai No. 268	Tori Line, weighted branchline, and night setting	Weighted branchlines*	Side-setting or Bird curtain or weighted branchlines or deep-setting line shooter	-
Chuan Shyang No. 22	Hook-shielding *	Tori line*	Side-setting or bird curtain or weighted branchlines or management of offal discharge or blue-dyed bait	-
Sheng Ji Cyun No. 3	Hook-shielding*	Tori line*	Side-setting or bird curtain or weighted branchlines or management of offal discharge or blue-dyed bait	-
Fwu Maan No. 88	Hook-shielding*	Tori line*	Side-setting or bird curtain or weighted branchlines or management of offal discharge or blue-dyed bait	-
Liansheng No. 369	-	-	-	Side-setting and deep-setting line shooter

*Equatorial areas that accept only one mitigation technique to be implemented at any one time.

The most popular mitigation technique used across the vessels is the use of tori lines, featured on 100% of the vessels (Figure 1).

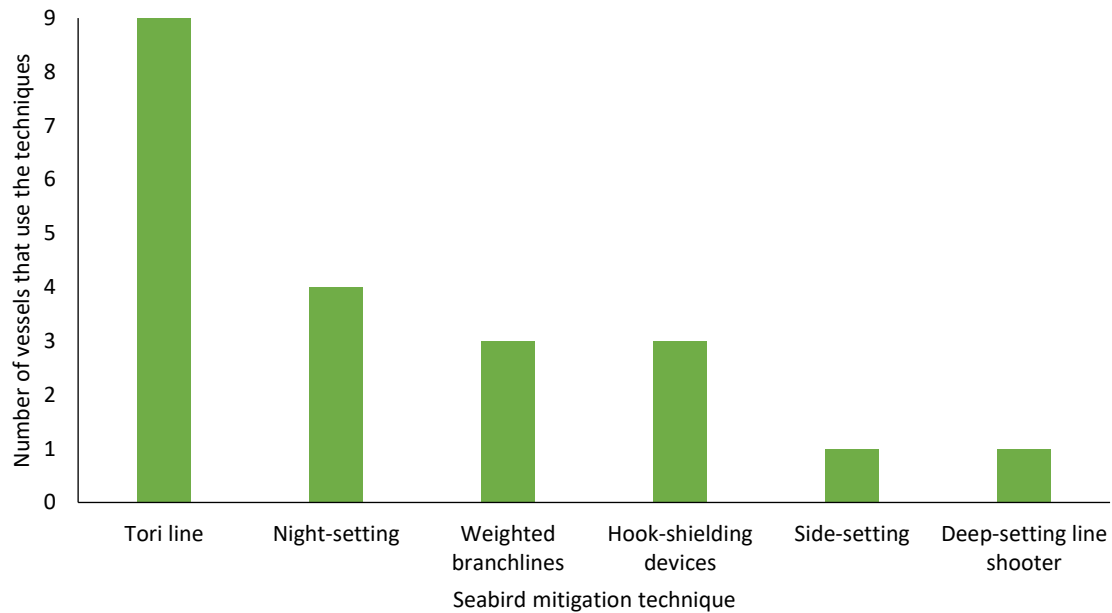


Figure 1: The number of vessels using each seabird mitigation technique across the fleet

There were a similar number of vessels that use night-setting, weighted branchlines, and hook-shielding devices across their operating areas, with side-setting and deep-setting line shooter techniques being used the least frequently.

There were only three vessels that identified the percentage coverage of the bird mitigation techniques, whereas the other vessels simply ticked which techniques that had onboard. It would be beneficial to understand how much each one contributed to the total coverage of mitigation techniques in order to make informed suggestions about improvements for the future.

All vessels appear to comply with the WCPFC regulations about seabird mitigation techniques, including the use of different techniques in different equatorial locations in the Pacific Ocean.

Atlantic Ocean longline FIP

Currently, we have not received the bird mitigation questionnaire answers regarding bird mitigation information from any of the Atlantic Ocean vessels within the StarKist fleet.

Next steps

In order to confirm that the information provided by the vessels is correct and to ensure that they are complying with the RFMO regulations, fishery observers or electronic monitoring (EM) systems should be supplied and implemented on the vessels. Following this, the information and data retrieved from the monitoring should be analysed and written into a report discussing compliance with the RFMO regulations.

The information discussed in this report should be relayed to the Atlantic Ocean fleet to ensure that they are also complying with the regulations of ICCAT. Similar implementation of either fisher observers or EM systems onboard the Atlantic Ocean vessels will ensure that they are in full compliance.

Although permitted by the WCPFC seabird mitigation technique requirements, using only one technique at a time may be less effective at deterring birds than a combination of techniques. Therefore, an effort to encourage the fishery to mandate a combination of techniques on board could help prevent bird losses to a greater extent than one technique.

References

Brothers, N., Duckworth, . A. R., Safina, C. & Gilman , E. L., 2010. Seabird bycatch in pelagic longline fisheries is grossly underestimated when using only haul data. *Plos One*, 5(8), p. e12491.

Da Rocha, N. et al., 2021. Reduction in seabird mortality in Namibian fisheries following the introduction of bycatch regulation. *Biological Conservation*, Volume 253.

Zhou, C., Jiao, Y. & Browder, J., 2019. Seabird bycatch vulnerability to pelagic longline fisheries: Ecological traits matter. *Aquatic Conservation: Marine and Freshwater Ecosystems*, 29(8), pp. 1324-1335.

Appendix 1

WCPFC bird mitigation requirements

South of 30° South

1. CCMs shall require their longline vessels fishing south of 30°S, to use either
 - a. At least two of these three measures:
 - i. Weighted branch lines;
 - ii. Night setting;
 - iii. Tori lines; or
 - b. Hook-shielding devices.

25° South -30° South

CCMs shall require their longline vessels fishing 25° South -30° South to use one of the following mitigation measures:

- i. Weighted branch lines;
- ii. Night setting; or
- iii. Hook-shielding devices.

North of 23° North

CCMs shall require their large-scale longline vessels of 24 meters or more in overall length fishing north of 23°N, to use at least two of the mitigation measures in Table 1, including at least one from Column A. CCMs also shall require their small-scale longline vessels less than 24 meters in overall length fishing north of 23°N, to use at least one of the mitigation measures from Column A in table 1.

Table 2: Mitigation measures

<i>Column A</i>	<i>Column B</i>
Side setting with a bird curtain and weighted branch lines	Tori line
Night setting with minimum deck lighting	Blue-dyed bait
Tori lines	Deep setting shooter
Weighted branch lines	Management of offal discharge
Hook-shielding devices	

ICCAT bird mitigation requirements

Table 3: Mitigation measures required by all ICCAT vessels

<i>Mitigation measure</i>	<i>Description</i>	<i>Specification</i>
Night setting with minimum deck lighting	No setting between nautical dawn and before nautical dusk. Deck lighting to be kept to a minimum	Specification Night setting with minimum deck lighting No setting between nautical dawn and before nautical dusk. Deck lighting to be kept to a minimum Nautical dusk and nautical dawn are defined as set out in the Nautical Almanac tables for relevant latitude, local time

		and date. Minimum deck lighting should not breach minimum standards for safety and navigation
Bird-scaring lines (Tori lines)	Bird-scaring lines shall be deployed during longline setting to deter birds from approaching the branch line.	For vessels greater than or equal to 35 m: - Deploy at least 1 bird-scaring line. Where practical, vessels are encouraged to use a second tori pole and bird scaring line at times of high bird abundance or activity; both tori lines should be deployed simultaneously, one on each side of the line being set - Aerial extent of bird-scaring lines must be greater than or equal to 100 m. - Long streamers of sufficient length to reach the sea surface in calm conditions must be used. - Long streamers must be at intervals of no more than 5m. For vessels less than 35m: - Deploy at least 1 bird-scaring line. - Aerial extent must be greater than or equal to 75m. - Long and/or short (but greater than 1m in length) streamers must be used and placed at intervals as follows: <ul style="list-style-type: none"> o Short: intervals of no more than 2m. o Long: intervals of no more than 5m for the first 55 m of bird scaring line. Additional design and deployment guidelines for bird-scaring lines are provided in Annex 1 of this Recommendation.
Line weighting	Line weights to be deployed on the snood prior to setting.	Greater than a total of 45 g attached within 1 m of the hook or; Greater than a total of 60 g attached within 3.5 m of the hook or; Greater than a total of 98 g weight attached within 4 m of the hook