

Comparing seabird conservation and management measures

Introduction

Conservation and management measures for seabird bycatch mitigation have been adopted by the Indian Ocean Tuna Commission (IOTC), International Commission for the Conservation of Atlantic Tunas (ICCAT) and Western and Central Pacific Fisheries Commission (WCPFC). These measures were implemented at differing times, and vary considerably in their language and scope among the tuna Regional Fisheries Management Organisations (tRFMOs). The measures reflect, to varying degrees, practices for seabird bycatch mitigation developed by the Agreement on the Conservation of Albatrosses and Petrels (ACAP). The advice of ACAP changes over time, in light of new scientific findings concerning feasible, effective and efficient seabird bycatch mitigation techniques and technologies. ACAP advice provided in this document is new, released in 2016, and consequently there has been little opportunity for member States' to review and consider their domestic approaches or for considerations by the tRFMOs. However, the updated advice from ACAP provides a basis for reviewing relevant aspects of existing tRFMO measures within the context of seabird mitigation measures and the needs of the Commission for the Conservation of Southern Bluefin Tuna (CCSBT).

CCSBT has recommended¹ that its Members and Cooperating Non-Members comply with all current binding and recommendatory measures aimed at the protection of ecologically related species, including seabirds, which have been adopted by the IOTC, ICCAT and WCPFC, when fishing in the relevant Convention areas or areas of competence for these tuna RFMOs, irrespective of whether the Member or Cooperating Non-Member concerned is a member of the relevant Commission or otherwise cooperates with it. The relevant binding measures for these tuna RFMOs are presently:

a. Indian Ocean Tuna Commission

Resolution 12/06 On reducing the incidental bycatch of seabirds in longline fisheries (applies in the Convention area south of 25° South latitude).

b. Western and Central Pacific Fisheries Commission

Conservation and Management Measure 2015-03 Conservation and management measure to mitigate the impact of fishing for highly migratory fish stocks on seabirds (different requirements apply in the Convention area south of 30° South latitude, and north of 23° North latitude).

c. International Commission for the Conservation of Atlantic Tunas

¹ CCSBT (2011) *Recommendation to mitigate the impact on ecologically related species of fishing for southern bluefin tuna* (updated at the 18th annual meeting of CCSBT, 10-13 October 2011, Bali, Indonesia).

Recommendation 07-07 Recommendation by ICCAT on reducing incidental by-catch of seabirds in longline fisheries (applies in the Convention area between 20° South to 25° South latitude).

Supplemental Recommendation 11-09 Supplemental recommendation by ICCAT on reducing incidental bycatch of seabirds in ICCAT longline fisheries (applies in the Convention area south of 25° South latitude).

Pursuing consistency

Seabird bycatch mitigation in longline fisheries applies a 'shrink and defend' approach (Melvin et al., 2010). Longline fishing operators seek to ensure during line setting that mitigation techniques and technologies are applied continuously while baited hooks sink to below the depth that seabirds ordinarily dive. Additional mitigation measures may also be applied during line hauling to prevent seabirds from attempting to take baited hooks as the line returns to the surface.

ACAP assesses, on an ongoing basis, the available scientific research on implementing seabird bycatch mitigation in a feasible, effective and efficient way (ACAP, 2016). ACAP recommends that three best practice measures (branch line weighting, night setting and bird scaring lines) are applied simultaneously. These measures apply differently to fishing vessels 35 m and over total length (larger fishing vessels), and fishing vessels under 35 m total length (smaller vessels). Two additional measures are also endorsed by ACAP as best practice: hook-shielding devices, and time/area fishery closures. ACAP has assessed other seabird bycatch mitigation techniques and technologies. Some of these mitigation methods are recommended if certain conditions are able to be met, while others are not recommended.

The tRFMOs require longline fishing vessels to employ at least two of the three recommended best practice mitigation methods (branch line weighting, night setting and bird scaring lines): IOTC (south of 25° South), ICCAT (south of 25° South) and WCPFC (south of 30° South). The WCPFC allows a greater range of measures to be employed north of 23° North — longline fishing vessels are required to employ a minimum number of mitigation methods from choices set out in a two-column table. Noting that the three best practice measures are not used in combination, as recommended by ACAP, it is important to ensure that the mitigation methods employed across tRFMOs take account of new information. This ensures that best and improving mitigation methods apply to reduce seabird bycatch in longline fisheries, and mitigation methods that are ineffective are no longer used.

There is value in developing a shared understanding across tRFMOs about how each organisation is using mitigation methods to address seabird bycatch in longline fisheries, and about approaches for maintaining the currency of conservation and management measures for seabird bycatch mitigation. This paper considers the current measures of the tRFMOs for seabird bycatch mitigation and compares these to ACAP practice.

Comparing seabird bycatch mitigation across tuna RFMOs

The following summarises the seabird bycatch mitigation developed by ACAP, and the current implementation of these measures across the tuna RFMOs.

1. Branch line weighting

ACAP	IOTC	WCPFC	ICCAT
<p><i>Branch line weighting</i></p> <p>Recommended minimum standards for branch line weighting include the following:</p> <ul style="list-style-type: none"> a. 40 g or greater attached within 0.5 m of the hook; or b. 60 g or greater attached within 1 m of the hook; or c. 80 g or greater attached within 2 m of the hook. 	<p><i>Line weighting</i></p> <p>Line weights to be deployed on the snood prior to setting.</p> <ul style="list-style-type: none"> a. Greater than a total of 45 g attached within 1 m of the hook; or b. Greater than a total of 60 g attached within 3.5 m of the hook; or c. Greater than a total of 98 g attached within 4 m of the hook. 	<p><i>Weighted branch lines</i></p> <p>Following minimum weight specifications are required:</p> <ul style="list-style-type: none"> a. one weight greater than or equal to 40 g within 50 cm of the hook; or b. greater than or equal to a total of 45 g attached within 1 m of the hook; or c. greater than or equal to a total of 60 g attached within 3.5 m of the hook; or d. greater than or equal to a total of 98 g attached within 4 m of the hook 	<p><i>Line weighting</i></p> <p>Line weights to be deployed on the snood prior to setting.</p> <ul style="list-style-type: none"> a. Greater than a total of 45 g attached within 1 m of the hook; or b. Greater than a total of 60 g attached within 3.5 m of the hook; or c. Greater than a total of 98 g attached within 4 m of the hook.

Comment

There are new ACAP recommendations for branch line weighting. ACAP advises that studies demonstrate that branch line weighting where there is more mass closer to the hooks sink most rapidly and consistently (Barrington et al., 2016), thereby dramatically reducing seabird attacks on baits and most likely reducing mortalities (Jiménez et al., 2013; dos Santos et al., 2016). Studies of a range of weighting regimes, including placing weights at the hook, have shown no negative effect on target catch rates. ACAP advises that branch line weighting improves the effectiveness of other mitigation methods, such as night setting and bird scaring lines, in reducing seabird bycatch.

ACAP (2016) considers that it is important to enhance the priority accorded to line weighting providing certain pre-conditions can be met, among other things: (a) that the weighting regime is adequately specified; (b) safety issues are adequately addressed; and (c) issues concerning application to artisanal fisheries being taken into account.

ACAP (2016) identifies research needs for branch line weighting. These include continued refinement of line weighting configurations (mass, number and position of weights and materials) with regard to effectively reducing seabird bycatch and safety concerns, through controlled research and application in fisheries. Studies should also include evaluations of the effects of branch line weighting on the catch rate of pelagic fish and provide data that allow evaluation of the relative safety and practicality attributes of various weighting configurations.

2. Night setting

ACAP	IOTC	WCPFC	ICCAT
<p><i>Night setting</i></p> <p>Setting of longlines only at night is highly effective.</p> <p>Exceptions apply to twilight / nocturnal foragers, bright moonlight, in high latitudes during summer, and when using intense deck lighting.</p>	<p><i>Night setting with minimum deck lighting</i></p> <p>No setting between nautical dawn and before nautical dusk.</p> <p>Nautical dusk and nautical dawn are defined as set out in the Nautical Almanac tables for relevant latitude, local time and date.</p> <p>Deck lighting to be kept to a minimum.</p> <p>Minimum deck lighting should not breach minimum standards for safety and navigation.</p>	<p><i>Night setting with minimum deck lighting</i></p> <p>No setting between nautical dawn and before nautical dusk.</p> <p>Nautical dusk and nautical dawn are defined as set out in the Nautical Almanac tables for relevant latitude, local time and date.</p> <p>Deck lighting to be kept to a minimum.</p> <p>Minimum deck lighting should not breach minimum standards for safety and navigation.</p>	<p><i>Night setting with minimum deck lighting</i></p> <p>No setting between nautical dawn and before nautical dusk.</p> <p>Nautical dusk and nautical dawn are defined as set out in the Nautical Almanac tables for relevant latitude, local time and date.</p> <p>Deck lighting to be kept to a minimum.</p> <p>Minimum deck lighting should not breach minimum standards for safety and navigation.</p>

Comment

Setting longlines at night is highly effective at reducing incidental mortality of seabirds. ACAP advises that this is because the majority of vulnerable seabirds are inactive at night. The mitigation measure is consistent with best practice for night setting and deck lighting. It facilitates compliance by longline fishing vessels when moving from one area to another, as occurs during fishing for southern bluefin tuna.

ACAP (2016) advises that night setting is not as effective for twilight (crepuscular) and night (nocturnal) foragers. The effectiveness of this measure may be reduced during bright moonlight, and when using intense deck lights, and is less practical in high latitudes during summer, when the time between nautical dusk and dawn is limited. The Commission for the Conservation of Antarctic Marine Resources (CCAMLR) recommends that wherever possible, setting of lines should be completed at least three hours before sunrise (to reduce loss of bait to/catches of white-chinned petrel, *Procellaria aequinoctialis*).

ACAP (2016) identifies research needs for night setting. These include assessing the effectiveness of bird scaring lines and branch line weighting at night needs to be determined, possibly by way of using thermal or night vision technologies.

3. Bird scaring lines

ACAP	IOTC	WCPFC	ICCAT
<p><i>Bird scaring lines</i> <i>Recommendations for vessels > 35 m total length</i></p> <p>Simultaneous use of two BSLs, one on each side of the sinking longline, provides maximum protection from bird attacks under different wind conditions. The setup for BSLs should be as follows:</p> <ul style="list-style-type: none"> ▪ BSLs should be deployed to maximise the aerial extent, which is a function of vessel speed, height of the attachment point to the vessel, drag, and weight of bird scaring line materials. ▪ To achieve a minimum recommended aerial extent of 100 m, BSLs should be attached to the vessel such that they are suspended from a point a minimum of 8 m above the water at the stern. ▪ BSLs should contain a mix of brightly coloured long and short streamers placed at intervals of no more than 5 m. Long streamers should be attached to the line with swivels to prevent streamers from wrapping around the line. All long streamers should reach the sea- 	<p><i>Bird-scaring lines (Tori lines)</i></p> <p>Bird-scaring lines shall be deployed during the entire longline setting to deter birds from approaching the branch line.</p> <p>For vessels greater than or equal to 35 m:</p> <ul style="list-style-type: none"> ▪ 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 5 m. <p>For vessels less than 35 m:</p> <ul style="list-style-type: none"> ▪ Deploy at least 1 bird-scaring line. ▪ Aerial extent must be greater than or equal to 75 m. ▪ Long and/or short (but greater than 1 m in length) streamers must be used and placed at intervals as follows: 	<p><i>Bird-scaring lines (Tori lines)</i></p> <p>Bird-scaring lines shall be deployed during longline setting to deter birds from approaching the branch line.</p> <p>For vessels greater than or equal to 35 m:</p> <ul style="list-style-type: none"> ▪ 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 5 m. <p>For vessels less than 35 m:</p> <ul style="list-style-type: none"> ▪ Deploy at least 1 bird-scaring line. ▪ Aerial extent must be greater than or equal to 75 m. ▪ Long and/or short (but greater than 1 m in length) streamers must be used and placed at intervals as follows: 	<p><i>Tori lines</i></p> <p><i>Tori lines (South of 30° South)</i></p> <p><i>For vessels >=35 m total length</i></p> <ol style="list-style-type: none"> i. Deploy at least 1 tori line. Where practical, vessels are encouraged to use a second tori line at times of high bird abundance or activity; both tori lines shall be deployed simultaneously, one on each side of the line being set. If two tori lines are used baited hooks shall be deployed within the area bounded by the two tori lines. ii. A tori line using long and short streamers shall be used. Streamers shall be: brightly coloured, a mix of long and short streamers. <ol style="list-style-type: none"> a. Long streamers shall be placed at intervals of no more than 5 m, and long streamers must be attached to the line with swivels that prevent streamers from wrapping around the line. Long streamers of sufficient length to reach the sea surface in calm conditions must be used. b. Short streamers (greater than 1m in length) shall be placed no more than 1m apart. iii. Vessels shall deploy the tori line to

<p>surface in calm conditions.</p> <ul style="list-style-type: none"> ▪ Baited hooks should be deployed within the area bounded by the two BSLs. If using bait-casting machines, they should be adjusted so as to land baited hooks within the area bounded by the two BSLs. <p>If large vessels use only one BSL, it should be deployed windward of the sinking baits. If baited hooks are set outboard of the wake, the BSL attachment point to the vessel should be positioned several metres outboard of the side of the vessel that baits are deployed.</p> <p><i>Recommendations for vessels < 35 m total length</i></p> <p>Two designs have been shown to be effective:</p> <ol style="list-style-type: none"> 1. a design with a mix of long and short streamers, that includes long streamers placed at 5 m intervals over the first 55 m of the BSL, and 2. a design that does not include long streamers. Short streamers (no less than 1 m in length) should be placed at 1 m intervals along the length of the aerial extent. <p>In all cases, streamers should be brightly coloured. To achieve a minimum recommended aerial extent of 75 m, BSLs should be attached to the vessel such that they are suspended from a point a minimum of 7 m</p>	<ul style="list-style-type: none"> ○ Short: intervals of no more than 2 m. ○ Long: intervals of no more than 5 m for the first 55 m of bird scaring line. <p>Additional design and deployment guidelines for bird-scaring lines are provided in Annex I of this Resolution.</p>	<ul style="list-style-type: none"> ○ Short: intervals of no more than 2 m. ○ Long: intervals of no more than 5 m for the first 55 m of bird scaring line. <p>Additional design and deployment guidelines for bird-scaring lines are provided in Annex I of this Resolution.</p>	<p>achieve a desired aerial extent greater than or equal to 100 m. To achieve this aerial extent the tori line shall have a minimum length of 200m, and shall be attached to a tori pole >7m above the sea surface located as close to the stern as practical.</p> <ul style="list-style-type: none"> iv. If vessels use only one tori line, the tori line shall be deployed windward of sinking baits. <p><i>For vessels < 35 m total length</i></p> <ol style="list-style-type: none"> i. A single tori line using either long and short streamers, or short streamers only shall be used. ii. Streamers shall be: brightly coloured long and/or short (but greater than 1m in length) streamers must be used and placed at intervals as follows: <ol style="list-style-type: none"> a. Long streamers placed at intervals of no more than 5m for the first 55 m of tori line. b. Short streamers placed at intervals of no more than 1m. iii. Long streamers shall be attached to the line with swivels that prevent streamers from wrapping around the line. All long streamers shall reach the sea-surface in calm conditions. iv. Vessels shall deploy the tori line to achieve a desired aerial extent of 75 m. To achieve this aerial extent the tori line shall have a minimum length of 100m, and shall be attached to a tori pole >6m above the sea
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<p>above the water at the stern.</p>			<p>surface located as close to the stern as practical. If the tori line is less than 150 m in length, it must have a towed object attached to the end so that the aerial extent is maintained over the sinking baited hooks.</p> <p>v. If two tori lines are used, the two lines must be deployed on opposing sides of the main line.</p> <p><i>Tori lines (North of 23° North)</i></p> <p><i>Long streamer</i></p> <p>i. Minimum length: 100 m.</p> <p>ii. Must be attached to the vessel such that it is suspended from a point a minimum of 5 m above the water at the stern on the windward side of the point where the hookline enters the water.</p> <p>iii. Must be attached so that the aerial extent is maintained over the sinking baited hooks.</p> <p>iv. Streamers must be less than 5 m apart, be using swivels and long enough so that they are as close to the water as possible.</p> <p>v. If two (i.e. paired) tori lines are used, the two lines must be deployed on opposing sides of the main line.</p> <p><i>Short streamer (for vessels ≥ 24 m total length)</i></p> <p>i. Must be attached to the vessel such that it is suspended from a point a minimum of 5 m above the water at the stern on the windward side of a point where the</p>
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			<p>hookline enters the water.</p> <ul style="list-style-type: none"> ii. Must be attached so that the aerial extent is maintained over the sinking baited hooks. iii. Streamers must be less than 1 m apart and be 30 cm minimum length. iv. If two (i.e. paired) tori lines are used, the two lines must be deployed on opposing sides of the main line. <p><i>Short steamer (for vessels < 24 m total length)</i></p> <p>This design shall be reviewed no later than 3 years from the implementation date based on scientific data.</p> <ul style="list-style-type: none"> i. Must be attached to the vessel such that it is suspended from a point a minimum of 5 m above the water at the stern on the windward side of a point where the hookline enters the water. ii. Must be attached so that the aerial extent is maintained over the sinking baited hooks. iii. If streamers are used, it is encouraged to use the streamers designed to be less than 1 m apart and be 30 cm minimum length. iv. If two (i.e. paired) tori lines are used, the two lines must be deployed on opposing sides of the mainline.
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Comment

The specification of bird scaring lines varies between the tRFMOs. Aerial extent is a key element in effectiveness as a mitigation method by providing protection to baited hooks as

they sink. Use of brightly coloured streamers at regular intervals along the length bird scaring line, particularly long streamers that reach the sea surface in calm conditions, help to scare birds flying to and under the line, preventing them from reaching the baits hooks. It is important to consider the wind conditions and where the baited hooks are set when deploying a bird scaring line.

ACAP (2016) identifies research needs for bird scaring lines. These include developing methods that minimise entanglements of the in-water portion of bird scaring lines with longline floats remains the highest priority for research on bird-scaring lines. Other research priorities include: (1) evaluating the effectiveness of one vs. two bird scaring lines; and, (2) bird scaring lines design features including streamer lengths, configurations and materials, especially for very small vessels.

4. Hook-shielding devices

ACAP

Hook-shielding devices encase the point and barb of baited hooks to prevent seabird attacks during line setting until a prescribed depth is reached (a minimum of 10 meters), or until after a minimum period of immersion has occurred (a minimum of 10 minutes) that ensures that baited hooks are released beyond the foraging depth of most seabirds.

The following performance requirements are used by ACAP to assess the efficacy of hook-shielding devices in reducing seabird bycatch:

- a. the device shields the hook until a prescribed depth of 10 m or immersion time of 10 minutes is reached;
- b. the device meets current recommended minimum standards for branch line weighting
- c. experimental research has been undertaken to allow assessment of the effectiveness, efficiency and practicality of the technology against the ACAP best practice seabird bycatch mitigation criteria developed for assessing and recommending best practice advice on seabird bycatch mitigation measures.

Devices assessed as having met the performance requirements listed above will be considered best practice.

Comment

ACAP has recently assessed two hook shielding devices and, on the basis of the assessment, the devices have both been included on the list of best practice measures in pelagic longline fisheries. ACAP's assessment considered factors such as safety, practicality and the characteristics of the fishery when considering the efficacy of these seabird bycatch mitigation measures, and in developing best practice specifications.

At this time, the following devices have been assessed as meeting the performance requirements:

1. 'Hook Pod' – 68 g minimum weight that is positioned at the hook, encapsulating the barb and point of the hook during setting, and remains attached until it reaches 10 m in depth, when the hook is released (Sullivan et al., 2016; Barrington, 2016a).
2. 'Smart Tuna Hook' – 40 g minimum weight that is positioned at the hook, encapsulating the barb and point of the hook during setting, and remains attached for a minimum period of 10 minutes after setting, when the hook is released (Baker et al., 2016; Barrington, 2016b).

ACAP (2016) identifies research needs for hook shielding devices. These include conducting further field research to evaluate the relative contributions of the sink rates and hook protection components of hook-shielding devices in reducing seabird bycatch.

Recommendations concerning other mitigation measures

5. Side-setting with branch line weighting and bird curtain

ACAP	IOTC	WCPFC	ICCAT
<p><i>Side-setting with line weighting and bird curtain</i></p> <p>Side-setting must be used in combination with ACAP best practice recommendations for line weighting in order to increase sink rates forward of the vessel's stern, and hooks should be cast well forward of the setting position, but close to the hull of the vessel, to allow hooks time to sink as far as possible before they reach the stern.</p> <p>Bird curtains, a horizontal pole with vertical streamers, positioned aft of the setting station, may deter birds from flying close to the side of the vessel.</p> <p>The combined use of side-setting, line weighting and a bird curtain should be considered as a single measure.</p>	-	<p>Side setting with bird curtain and weighted branch lines</p> <ol style="list-style-type: none"> i. Mainline deployed from port or starboard side as far from stern as practicable (at least 1 m), and if mainline shooter is used, must be mounted at least 1m forward of the stern. ii. When seabirds are present the gear must ensure mainline is deployed slack so that baited hooks remain submerged. iii. Bird curtain must be employed: <ul style="list-style-type: none"> • Pole aft of line shooter at least 3 m long; • Minimum of 3 main streamers attached to upper 2 m of pole; • Main streamer diameter minimum 20 mm; • Branch streamers attached to end of each main streamer long enough to drag on water (no wind) – minimum diameter 10 mm. 	-

Comment

ACAP advises that research into side-setting with line weighting and bird curtain conducted in the North Pacific indicated that side-setting was more effective than other simultaneously trialled mitigation measures, including setting chutes and blue-dyed bait (Gilman et al., 2003).

ACAP considers that this mitigation method requires testing in the Southern Ocean with deeper-diving species, and at a larger spatial scale, before it can be considered as a recommended approach beyond the pilot fishery. The tests were conducted in a single pilot scale trial of 14 days in the Hawaiian pelagic longline fishery for tuna and swordfish with an assemblage of surface-feeding seabirds (Gilman et al., 2003).

6. Offal discharge

ACAP	IOTC	WCPFC	ICCAT
<p><i>Offal and discard discharge management</i></p> <p>Offal and discards should not be discharged during line setting.</p> <p>During line hauling, offal and used baits should preferably be retained or discharged on the opposite side of the vessel from that on which the line is hauled.</p> <p>All hooks should be removed and retained on board before discards are discharged from the vessel.</p>	-	<p><i>Management of offal discharge</i></p> <p>i. Either no offal discharge during setting or hauling;</p> <p>ii. Or strategic offal discharge from the opposite side of the boat to setting/hauling to actively encourage birds away from baited hooks.</p>	-

Comment

ACAP considers managing discharging of offal and discards should be considered good practice, and a supplementary measure to be used in addition to best practice mitigation measures (McNamara et al., 1999; Cherel et al., 1996). ACAP advises that offal and discards should not be discharged during line setting, and that offal and used baits should be retained during line hauling, then discharged on the opposite of the vessel from where line hauling occurred. All hooks should be removed and retained before discards are discharged from the vessel.

Mitigation measures that are not included in ACAP advice

The following summarises mitigation methods that are not recommended by ACAP, but which remain among the techniques and technologies under existing conservation and management measures of tRFMOs.

7. Blue-dyed bait

ACAP	IOTC	WCPFC	ICCAT
<p>NOT RECOMMENDED</p> <p>No experimental evidence of effectiveness in pelagic longline fisheries.</p>	-	<p><i>Blue-dyed bait</i></p> <ul style="list-style-type: none"> i. If using blue-dyed bait it must be fully thawed when dyed. ii. The Commission Secretariat shall distribute a standardized colour placard. iii. All bait must be dyed to the shade shown in the placard. 	-

8. Line shooters

ACAP	IOTC	WCPFC	ICCAT
<p>NOT RECOMMENDED</p> <p>No experimental evidence of effectiveness in pelagic longline fisheries.</p>	-	<p><i>Deep setting line shooter</i></p> <ul style="list-style-type: none"> i. Line shooters must be deployed in a manner such that the hooks are set substantially deeper than they would be lacking the use of the line shooter, and such that the majority of hooks reach depths of at least 100 m. 	-

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