

## Appendix 4

### Measures to Reduce the Incidental Bycatch of Seabirds in Longline Fisheries

Mitigation	Description	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 the entire longline setting to deter birds from approaching the branch line.	<p>For vessels greater than or equal to 35 m:</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• Aerial extent of bird-scaring lines must be greater than or equal to 100 m.</li> <li>• Long streamers of sufficient length to reach the sea surface in calm conditions must be used.</li> <li>• Long streamers must be at intervals of no more than 5m.</li> </ul> <p>For vessels less than 35 m:</p> <ul style="list-style-type: none"> <li>• Deploy at least 1 bird-scaring line.</li> <li>• Aerial extent must be greater than or equal to 75 m.</li> <li>• Long and/or short (but greater than 1 m in length) streamers must be used and placed at intervals as follows: <ul style="list-style-type: none"> <li>○ Short: intervals of no more than 2 m.</li> <li>○ Long: intervals of no more than 5 m for the first 55 m of bird scaring line.</li> </ul> </li> </ul> <p>Additional design and deployment guidelines for bird-scaring lines are provided in the Supplemental Guidelines for Design and Deployment of Tori Lines as attached.</p>
Line weighting	Line weights to be deployed on the snood prior to setting.	<p>Greater than a total of 45 g attached within 1 m of the hook or;</p> <p>Greater than a total of 60 g attached within 3.5 m of the hook or;</p> <p>Greater than a total of 98 g weight attached within 4 m of the hook.</p>

## **Supplemental Guidelines for Design and Deployment of Tori Lines**

### **Tori line design** (see Figure 1)

1. An appropriate towed device on the section of the tori line in the water can improve the aerial extension.
2. The above water section of the line should be sufficiently light that its movement is unpredictable to avoid habituation by birds and sufficiently heavy to avoid deflection of the line by wind.
3. The line is best attached to the vessel with a robust barrel swivel to reduce tangling of the line.
4. The streamers should be made of material that is conspicuous and produces an unpredictable lively action (e.g. strong fine line sheathed in red polyurethane tubing) suspended from a robust three-way swivel (that again reduces tangles) attached to the tori line.
5. Each streamer should consist of two or more strands.
6. Each streamer pair should be detachable by means of a clip so that line stowage is more efficient.

### **Deployment of tori lines**

1. The line should be suspended from a pole affixed to the vessel. The tori pole should be set as high as possible so that the line protects bait a good distance astern of the vessel and will not tangle with fishing gear. Greater pole height provides greater bait protection. For example, a height of around 7 m above the water line can give about 100 m of bait protection.
2. If vessels use only one tori line it should be set to windward of sinking baits. If baited hooks are set outboard of the wake, the streamer line attachment point to the vessel should be positioned several meters outboard of the side of the vessel that baits are deployed. If vessels use two tori lines, baited hooks should be deployed within the area bounded by the two tori lines.
3. Deployment of multiple tori lines is encouraged to provide even greater protection of baits from birds.
4. Because there is the potential for line breakage and tangling, spare tori lines should be carried onboard to replace damaged lines and to ensure fishing operations can continue uninterrupted. Breakaways can be incorporated into the tori line to minimize safety and operational problems should a longline float foul or tangle with the in-water extent of a streamer line.
5. When fishers use a bait casting machine (BCM), they must ensure coordination of tori line and machine by: i) ensuring the BCM throws directly under the tori line protection, and ii) when using a BCM (or multiple BCMs) that allows throwing to both port and starboard, two tori lines should be used.
6. When casting branchline by hand, fishers should ensure that the baited hooks and coiled branchline sections are cast under the tori line protection, avoiding the propeller turbulence which may slow the sinkrate.
7. Fishers are encouraged to install manual, electric or hydraulic winches to improve ease of deployment and retrieval of tori lines.

**Figure 1.** Diagram of Bird Scaring Streamer Line.

