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**TCC Draft Report and Information Paper of the Voluntary Small Working Group on
Seabird Bycatch Mitigation**

WCPFC-SC3-EB SWG/WP-8

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1. Background

At its Second Regular Session in December 2005, the WCPFC agreed that the Scientific Committee (SC), in consultation with the Technical and Compliance Committee (TCC) should:

- investigate seabird mitigation measures applied and being tested by other RFMOs, particularly those of the Commission for Conservation of Antarctic Marine Living Resources;
- investigate the utility of implementing compatible measures; and
- recommend specific seabird mitigation measures for consideration at the Third Regular Session of the Commission.

At its Second Regular Session in August 2006 (SC2), the SC developed a series of recommendations for the WCPFC in this regard. Included in these recommendations was a table of mitigation measures that have been applied in other RFMOs (Table 1, para. 169 of the Summary Report of SC2). The SC recommended that CCMs should require their longline fishing vessels to use at least two measures from the table, including at least one from column A. In addition, the SC2 recommended that thawed bait should be compulsory. The SC2 recommendations only apply to longline fishing vessels fishing either south of 30° South or north of 23° North. The SC2 recommendation notes that technical specifications (definitions) for each of the measures in the table would need to be developed.

At its Second Regular Session in September 2006, the Northern Committee (NC2) suggested to the Commission that it request the International Scientific Committee (ISC) and the SC work jointly to follow up the SC2 recommendation and, where necessary, compile or develop detailed definitions and specifications for each of the seabird bycatch mitigation methods included in Table 1 of the SC2 main report. It also requested that the results of this joint ISC-SC work be provided to the Third Session of the NC in 2007.

At its Second Regular Session in October 2006, the Technical and Compliance Committee (TCC2) was unable to make significant progress on this matter. This was partially due to the limited time available and partially due to the outcome from NC2.

Noting the inability to recommend technical specifications for the measures identified by the SC, a voluntary working group was called by the TCC. The purpose of the small working group was for any interested CCMs to consider the technical specifications of the mitigation measures recommended by the SC, including contributing to the collation of technical specifications for seabird mitigation devices currently employed in longline fisheries in which vessels flying their flag are active.

The information collated by the small working group is intended to support the deliberations of WCPFC to consider specific seabird mitigation measures at its Third Regular Session in December 2006.

2. Participation and Content

Four CCMs (Australia, the European Union, New Zealand and the United States of America) participated in the small working group. Mitigation measures used by participants are collated in Table 1. The small working group also collated the technical specifications for mitigation measures that are employed by other RFMOs (Table 2).

The small working group also received correspondence from the Convenor of the Seabird Bycatch Working Group of the Advisory Committee to the Agreement on the Conservation of Albatrosses and Petrels (ACAP).

The Convenor of the ACAP working group reported on the outcomes of a workshop on seabird bycatch mitigation in pelagic longline fisheries that was conducted in October 2006 to coincide with the meeting of the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR). Based on this workshop, the ACAP bycatch working group presented advice on the mitigation measures in the SC2 recommendation. The correspondence from the ACAP bycatch working group is at Attachment 1.

3. Results

Table 1 – Technical Specifications for Mitigation Measures used in pelagic longline fisheries by WCPFC CCMs participating in the small working group

Mitigation Measure	Australia	European Union (Spain)	New Zealand	United States of America ¹ (Hawaii)	United States of America (West Coast)
Thawed Bait	All Areas <ul style="list-style-type: none"> No frozen bait. 	No requirement	<ul style="list-style-type: none"> Not compulsory but thawed bait encouraged 	All areas if shallow-setting and north of 23°North if deep-setting¹ <ul style="list-style-type: none"> Bait must be completely thawed unless side-setting 	North of 23°North <ul style="list-style-type: none"> Bait must be completely thawed
Tori Lines	South of 25° South <ul style="list-style-type: none"> Minimum of 100 metres in length. Must be deployed so that the line remains above the water for a minimum of 90 metres from the boat. 	No requirement	All Areas <ul style="list-style-type: none"> Minimum of 150 metres in length and 3mm diameter. Should be deployed so that the line remains above the water for a minimum of 100 metres from the boat. 	No requirement	No requirement

¹ Because the seabird (and sea turtle) bycatch mitigation requirements for the Hawaii longline fishery differ depending on whether a vessel is deep-setting or shallow-setting, the US has detailed definitions of the two types of sets. Deep-setting is defined as deploying longline gear such that all float lines are at least 20 m in length, there are a minimum of 15 branch lines between floats, without the use of any light sticks or other light-emitting devices, and resulting in the possession or landing of no more than 10 swordfish. Shallow-setting is defined as deploying longline gear in a manner that does not meet the definition of deep-setting.

Mitigation Measure	Australia	European Union (Spain)	New Zealand	United States of America ¹ (Hawaii)	United States of America (West Coast)
Tori Lines (cont)	<ul style="list-style-type: none"> • Must have streamers attached at a distance of no more than 3.5 metres apart. • Streamers must be long enough so that they are as close to the water as possible. 		<ul style="list-style-type: none"> • Streamer line is suspended at the stern from a point 4.5m above the water. • Streamer line is attached to the vessel such that the line is directly above the point where the bait hits the water. • Must have streamers attached at a distance of no more than 5 metres apart. • There must be a minimum of 5 branched streamers each consisting of 2 strands approximately 3mm in diameter. • The length of the branched streamers should be approximately 3.5m nearest the ship and 1.25m for the fifth streamer. 		

Mitigation Measure	Australia	European Union (Spain)	New Zealand	United States of America ¹ (Hawaii)	United States of America (West Coast)
Tori Lines (cont)	<ul style="list-style-type: none"> Must have a drogue attached to the end that will create enough drag to meet the 90 metre coverage requirement. 		<ul style="list-style-type: none"> Swivels must be incorporated at the towing point and before and after the point of attachment of each branch streamer. A weight or buoy at the end of the streamer line is optional as in bad weather this may cause entanglement with fishing gear. 		
Night Setting	<p>South of 25^o South</p> <ul style="list-style-type: none"> Night setting only compulsory when not using weighted swivels. “Night” defined as between nautical dusk and nautical dawn. No requirement re: deck lighting 	<ul style="list-style-type: none"> Setting only allowed between setting and rising of the sun. No external lights other than those needed for fishing operation and vessel safety/navigation. 	<ul style="list-style-type: none"> Not compulsory but where employed, lighting should be reduced as much as possible 	<ul style="list-style-type: none"> Night setting only compulsory when shallow setting and not side setting. Gear deployment at least one hour after local sunset and completing deployment no later than local sunrise “Night setting” also means “using only the minimum vessel lights to conform with navigation rules and best practices.” 	No requirement

Mitigation Measure	Australia	European Union (Spain)	New Zealand	United States of America ¹ (Hawaii)	United States of America (West Coast)
Side Setting	No requirements	No requirements	No requirements	<p>All areas if shallow-setting and north of 23°North if deep-setting (if do not side set, must thaw bait, dye bait blue and discharge offal)</p> <p>Mainline deployed from port or starboard side as far from stern as practicable (at least 1m), and if mainline shooter is used, must be mounted at least 1m forward of the stern.</p> <p>When seabirds are present the gear must be deployed so that baited hooks remain submerged.</p> <ul style="list-style-type: none"> • Bird curtain must be employed: <ul style="list-style-type: none"> ○ Pole aft of line shooter at least 3m long; ○ Min of 3 main streamers attached to upper 2m of pole; ○ Main streamer diameter min 20mm; 	No requirement

Mitigation Measure	Australia	European Union (Spain)	New Zealand	United States of America ¹ (Hawaii)	United States of America (West Coast)
Side Setting (cont)				<ul style="list-style-type: none"> ○ Branch streamers attached to end of each main streamer long enough to drag on water (no wind) – min diameter 10 mm. 	
Weighted Branch Lines	<p>South of 25° South (daylight setting only)</p> <ul style="list-style-type: none"> • Either: <ul style="list-style-type: none"> • 60 gram swivels located no more than 3.5 metres from the hook; or • 98 gram swivels located no more than 4 metres from the hook. 	No requirements	No requirements	<p>All areas if shallow-setting and north of 23° North if deep-setting</p> <ul style="list-style-type: none"> • Only compulsory for side setting or deep setting (unless using basket-style gear, in which case must ensure mainline is deployed slack to maximize its sink rate). • 45 gram minimum weight on each branch line within 1 metre of each hook. 	<p>North of 23° North</p> <ul style="list-style-type: none"> • 45 gram minimum weight on each branch line within 1 metre of each hook (unless using basket-style gear, in which case must ensure mainline is deployed slack to maximize its sink rate).

Mitigation Measure	Australia	European Union (Spain)	New Zealand	United States of America ¹ (Hawaii)	United States of America (West Coast)
Blue Dyed Bait	No requirement	No requirement	No requirement	<p>All areas if shallow-setting and north of 23°North if deep-setting</p> <ul style="list-style-type: none"> • Only compulsory when not side setting. • Bait dyed blue to an intensity specified on quality control card (which is provided to fishermen). • Maintain at least two cans (0.45 kg each) of blue dye on board. 	<p>North of 23°North</p> <ul style="list-style-type: none"> • Bait dyed blue to an intensity specified on quality control card. • Maintain at least two cans (0.45 kg each) of blue dye on board.
Deep Setting Line Shooter	No requirement but vessels achieve deep setting by combination of low vessel speed and high shooter speed.	<ul style="list-style-type: none"> • Vessels must be equipped with a line-throwing device • Vessel must use light monofilament gear components for both mainline and droplines, incorporating light sticks 	No requirement	<p>All areas if shallow-setting and north of 23°N if deep-setting</p> <p>Only compulsory when deep setting and not side setting (if using basket-style gear, must instead ensure mainline is deployed slack to maximize its sink rate)</p>	<p>North of 23°North</p> <ul style="list-style-type: none"> • If deep setting west of 150° West with monofilament main longline, a line shooter must be used.
Bait Caster	No requirement	No requirement	No requirement	No requirement	No requirement
Underwater Setting Chute	No requirement	No requirement	No requirement	No requirement	No requirement

Mitigation Measure	Australia	European Union (Spain)	New Zealand	United States of America ¹ (Hawaii)	United States of America (West Coast)
Mgt of Offal Discharge	<p>All Areas</p> <ul style="list-style-type: none"> • No discharge while setting • No discharge while hauling with exemption for small vessels – offal must be discharged on opposite side of vessel. 	<p>South of 30° South</p> <ul style="list-style-type: none"> • During the setting and hauling of the longline, wastes should be thrown over board only at the vessel's opposite side of that where fishing operations are taking place or whenever those are finished. 	<p>Not compulsory but offal discharge on port side during hauling encouraged.</p>	<p>All areas if shallow-setting and north of 23°North if deep-setting</p> <p>Only compulsory when not side setting.</p> <ul style="list-style-type: none"> • Offal or spent bait must be discharged on opposite side of boat while setting and hauling, when seabirds are present. • Sufficient quantities of offal or spent bait must be specifically retained for the purpose of strategic discharge. • Hooks must be removed from offal and spent bait before its discharge. • Swordfish bills, liver and heads must be removed, head must be cut in half vertically, and heads and livers must be periodically discharged as above. 	<p>North of 23°North</p> <ul style="list-style-type: none"> • Offal or spent bait must be discharged on opposite side of boat while setting and hauling. • Sufficient quantities of offal or spent bait must be specifically retained for the purpose of strategic discharge. • Hooks must be removed from offal and spent bait before its discharge. • Swordfish bills, liver and heads must be removed, head must be cut in half vertically, and heads and livers must be periodically discharged as above.

Mitigation Measure	Australia	European Union (Spain)	New Zealand	United States of America¹ (Hawaii)	United States of America (West Coast)
Bycatch Limits	Maximum allowable capture rate of 0.05 birds per 1,000 hooks. Breach of this criteria triggers legislated change of management arrangements.	N/A	N/A	N/A	N/A

Table 2 – Technical Specifications for Mitigation Measures in use by other RFMOs

Mitigation Measure	CCSBT	IOTC	CCAMLR
Thawed Bait	Encouraged but not compulsory	No requirement	No requirement
Tori Lines	<p>South of 30⁰</p> <ul style="list-style-type: none"> • Recommended length of 150m • Maximum of 5-7m between streamers. • Number of streamers may vary with setting speed • Ideally streamers should be paired and hang just clear of the water. • Swivels should be used to attach the line to the vessel and streamers to the line to avoid tangles. • Tori pole should be as high as possible. 	<p>South of 30⁰ South</p> <ul style="list-style-type: none"> • Minimum of 150 metres in length. • Must have streamers attached at a distance of no more than 5 to 7 metres apart depending on setting speed. • Streamers should hang just clear of the water • Swivels should be used to avoid tangling. • Should be deployed so that the line remains above the water for a minimum of 100 metres from the boat. 	<p>CCAMLR Area</p> <ul style="list-style-type: none"> • Single tori lines for longliners required; paired tori lines encouraged. Minimum of 150m • No more than 5m between streamers • Streamers should reach the sea surface in the absence of wind and swell • Streamer length should be of a minimum of 6.5m at the vessel end of the line and 1m for the seaward end. • Swivels should be used to avoid tangling • Line should be attached to the vessel a minimum of 7m above the water at the stern.

Mitigation Measure	CCSBT	IOTC	CCAMLR
Night Setting	Encouraged but not compulsory	<ul style="list-style-type: none"> Setting only allowed between setting and rising of the sun. No external lights other than those needed for fishing operation and vessel safety/navigation. 	<ul style="list-style-type: none"> Setting only allowed between setting and rising of the sun unless using the integrated weight longline system Only minimum ships lights necessary for safety should be used when setting at night.
Side Setting	No requirements	No requirements	No requirements
Weighted Branch Lines	Encouraged but not compulsory	No requirements	<p>Autoline</p> <ul style="list-style-type: none"> systems minimum of 50g/m integrated weights, for non-integrated weights 5kg every 50-60m <p>Spanish method</p> <ul style="list-style-type: none"> Min 8.5kg for max of 40m or 6kg at a max distance of 20m
Blue Dyed Bait	Encouraged but not compulsory	No requirement	No requirement
Deep Setting Line Shooter	No requirement	No requirement	No requirement
Bait Caster	<ul style="list-style-type: none"> Bait casting machine should throw directly under the tori line protection The use of bait casting machines which throw port and starboard requires two tori lines to be used 	No requirement	No requirement
Underwater Setting Chute	No requirement	No requirement	No requirement

Mitigation Measure	CCSBT	IOTC	CCAMLR
Mgt of Offal Discharge	<ul style="list-style-type: none"> Discharge of offal should be avoided during setting and hauling. It is not however compulsory. 	<p>South of 30° South</p> <ul style="list-style-type: none"> Waste must be discharged on opposite side of fishing 	<p>CCAMLR Area</p> <ul style="list-style-type: none"> Discharge during setting is prohibited and discharge during hauling should be avoided but where necessary should occur on the opposite side of the vessel. Vessels without these capabilities are not authorised to fish in the Convention area
Haul scaring device			<p>A device designed to discourage birds from accessing baits during the haul of longlines shall be used in those areas defined by CCAMLR as average-to-high or high risk.</p>
Bycatch Limits	No requirements	No requirements	<ul style="list-style-type: none"> If 3 seabirds are caught by a vessel during the extended season, then fishing by that vessel shall cease immediately (this applies only for specified fisheries).

4. Conclusion

There are a number of broad similarities in the specifications for most mitigation measures employed by the small working group participants and other RFMOs. As an initial position, it would not be a difficult task to incorporate components from relevant CCMs' designs such that minimum specifications could be introduced for all CCMs without impacting on devices currently in use.

The information and advice provided by the ACAP bycatch working group supports the introduction of a system that prescribes the use of a range of mitigation devices while further research and investigation is undertaken to identify more effective methods or designs.

Therefore, use of a range of measures, the technical specifications of which are based on acceptable compromise of currently employed measures, may be an appropriate way forward in the short term. Such a position would constitute positive progress and meet the ongoing need for flexibility to allow CCMs and individual fishers to trial mitigation measures that suit their fishing style and location.

Attachment 1 – Advice received from the ACAP bycatch working group



Agreement on the Conservation
of Albatrosses and Petrels

Mr Wez Norris
Australian Fisheries Management Authority
PO Box 7051
Canberra Mail Centre ACT 2610

Dear Wez

WCPFC - TECHNICAL & COMPLIANCE COMMITTEE WORKING GROUP TO CONSIDER TECHNICAL SPECIFICATIONS FOR SEABIRD BYCATCH MITIGATION

I am writing to you in my capacity as Convenor of the Seabird Bycatch Working Group, which is a working group of the Advisory Committee to the Agreement on the Conservation of Albatrosses and Petrels (ACAP). ACAP is an international Agreement that aims to achieve and maintain a favourable conservation status for albatrosses and petrels, and the Seabird Bycatch Working Group is tasked with coordinating ACAP action to address the at-sea threats posed to seabirds by fisheries interactions.

On 14 October 2006 a workshop was held in Hobart, Australia, to consider seabird bycatch mitigation in pelagic longline fisheries. The workshop was staged in Hobart to take advantage of experts already in Hobart for the annual meeting of the Incidental Mortality Associated with Fishing (IMAF) ad hoc Working Group of the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR). The meeting was also a component of a research program developed by Washington Sea Grant (WSG) that was recently funded by the David and Lucile Packard Foundation to develop best management practices to conserve seabirds in pelagic longline fisheries. Fundamental to this proposed work was convening an “advisory committee body” to help guide the research program, which is to be staged in seabird hot spots in the southern hemisphere. Recognising that the needs in the area of seabird bycatch mitigation for pelagic fisheries are much broader than any one research program, the scope of the workshop was expanded to a broader information sharing and planning exercise.

The meeting was convened and facilitated by Mr Ed Melvin of the Washington Sea Grant Program, and attended by many of the scientists and technicians currently active in seabird bycatch mitigation research.

Amongst other things the workshop discussed the seabird recommendation drafted by the 2006 meeting of the Scientific Committee to the Western and Central Pacific Fisheries Commission (WCPFC), which will be considered by the WCPFC Commission in December 2006. In particular, the workshop evaluated the recommended suite of mitigation measures to be considered when operating south of 30 degrees S and north of 23 degrees N. I am writing to you now to convey our views with the intention of assisting the Commission in its efforts to minimise seabird bycatch in WCPFC fisheries.

The workshop participants congratulated the WCPFC on the progressive approach being taken to minimise seabird bycatch within its area of jurisdiction, and agreed that the framework with a column A and column B approach developed at the August Scientific Committee meeting was a progressive step. The workshop participants also emphasised the importance of the view expressed at the WCPFC Scientific Committee meeting that the seabird recommendation was for interim measures, which will need to be updated as new research comes to light. The workshop participants felt it was important to stress this, if the recommendation is to be developed into a Resolution by the WCPFC. If adopted as such, we feel that the WCPFC has a good opportunity to lead the development of 'best-practice' mitigation for pelagic longline fisheries.

The measures detailed in the recommendation include side-setting, night-setting, tori lines, weighted branch lines, blue-dyed bait, line-shooters, bait casters, underwater-setting chutes and offal discharge management procedures. The workshop reviewed all these measures, in particular examining their effectiveness on both surface-foraging and diving seabirds, and their practicality and safety when used on fishing vessels.

In terms of Column A, workshop participants agreed that streamer lines and night setting were among the most effective mitigation measures available, when deployed correctly. The workshop participants noted however that there were some caveats to the effectiveness of these measures, which would be valuable to bring to the attention of the WCPFC.

Streamer lines

Streamer lines are the most widely prescribed and accepted seabird mitigation tools in pelagic and demersal fisheries, with a body of data collected on their effectiveness from observer programmes. However, controlled studies demonstrating their effectiveness in pelagic fisheries remain very limited. In addition, work remains to be done to develop optimal designs for pelagic fisheries, in order to reduce tangling and make handling easier. Current work (e.g. by Ed Melvin, Washington Sea Grant) is seeking to redress this.

Night setting

Night setting is a widely accepted practice known to reduce the capture of all seabirds, particularly diurnal seabirds such as albatrosses. However, this approach is less effective during full moon periods and under intensive deck lighting, and it does not completely eliminate mortality of nocturnal feeders (e.g. white-chinned petrels)

Side setting

Side-setting has been tested in Hawaiian fisheries and found to be highly successful. However, this measure has so far had limited testing on larger vessels and has not yet been tested in the Southern Ocean, where deeper-diving seabird species are present. Extensive testing under operational conditions, particularly in Southern Ocean fisheries where shearwaters and white-chinned petrels are present, is necessary before it can be known to have wider application..

In terms of Column B, a range of studies have indicated the effectiveness of dyed bait, underwater setting chutes and line weighting, but results are not unanimous: some studies have met with mixed results. Bait casters are no longer considered to be a mitigation measure and few studies have been made on the effectiveness of 'deep setting line shooters'.

In addition to the measures outlined in Column A and Column B, a setting capsule that delivers baits well below the surface is in development, but remains untested and may not be widely applicable to high-seas fisheries.

It was concluded that the measures prescribed in the recommendation are a good depiction of measures believed to reduce seabird bycatch (with the exception of bait casters). However, caveats can be associated with almost all of these measures. This reiterates the point made at the WCPFC Scientific Committee meeting on the importance of having combinations of measures, which is the strength of the Column A and Column B structure that is developed in the recommendation. However, it also underlines the importance of making it clear that these are interim measures, pending the results of necessary research. The key aim of the workshop was to identify areas of research that are vital in order to address current data gaps.

We have also noted the recommendation from the meeting of the Northern Committee which recommends work in 2007 to further develop specifications for seabird bycatch mitigation measures. ACAP and other workshop participants would be glad to offer to assist the Commission in these endeavours to address seabird bycatch.

Yours sincerely

Barry Baker
Convenor
ACAP Seabird Bycatch Working Group

7 November 2006