Brief overview:

1st informal intersessional meeting for the review of WCPFC CMM 2018-03

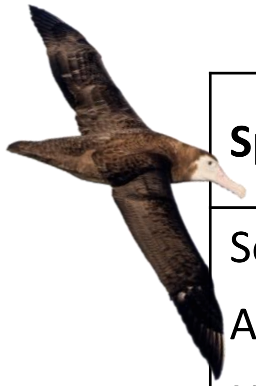


07 May 2024

The 1st meeting provided background & summarised all available evidence on individual mitigation methods:

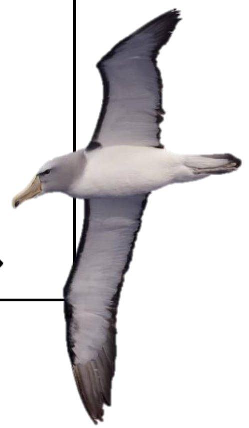
- An overview of longline bycatch impacts on seabird populations
- MSC Fishery Standard v3.0 and seabirds
- Mitigation methods that are not considered ACAP best practice
- Branch line weighting efficacy & specifications
- Tori line efficacy & specifications
- Night setting efficacy & specifications
- Novel mitigation methods

An overview of longline bycatch impacts on seabirds



Species	IUCN status	Breeds in WCPO	Forages in WCPO	$N_{breeding\ pairs}$	Trend
Southern Royal Albatross	(CR)	✓	✓	6,347	↓
Antipodean Albatross	EN	✓	✓	8,654	↓
Northern Royal Albatross	EN	✓	✓	4,261	↔
Indian Yellow-nosed Albatross	EN		✓	33,988	↓
Grey-headed Albatross	EN	✓	✓	80,633	↓
Westland Petrel	EN	✓	✓	6,223	↔
Wandering Albatross	VU	✓	✓	10,072	↓
Short-tailed Albatross	VU	✓	✓	889	↑
Salvin's Albatross	VU	✓	✓	58,563	↓
White-chinned Petrel	VU	✓	✓	1,317,278	↓
Black Petrel	VU	✓	✓	5,456	↔

Updated extract of SC18-EB-WP-03



WCPFC19 noted a global decline in specific ACAP seabird population trends, which are vulnerable to threats posed by longline fisheries in the WCPO, ultimately, leading to this review of CMM 2018-03

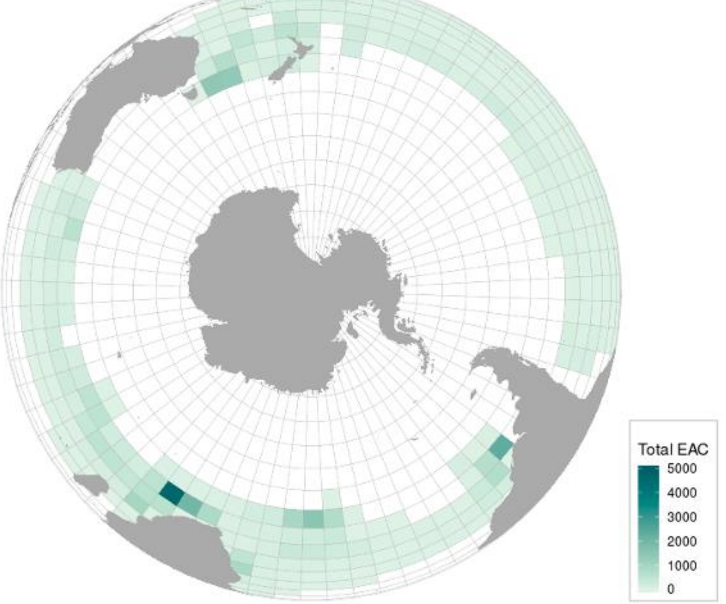
An overview of longline bycatch impacts on seabirds

Pelagic longline mortality estimates:

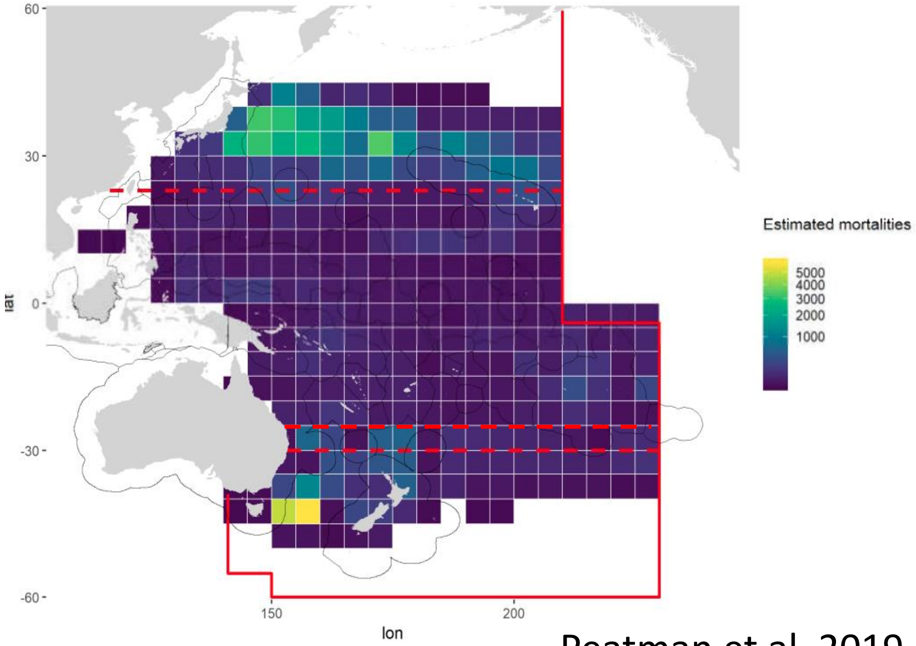
Are a complex product of seabird distribution, fishing effort, and risk, but several attempts have been made:

- Globally: 50,000-75,000 seabirds annually (Anderson *et al*. 2011)*
- Southern Hemisphere: 39,000-43,000 petrels and albatross annually (JP, SAF, AUS & NZ data only; Abraham *et al*. 2019)*
- Southern Hemisphere: 12,000-25,000 petrels and albatrosses annually (NZ data only; Edwards *et al*. 2023; multi-country update for CCSBT in progress)*
- WCPFC: 11,000-25,000 seabirds annually (Peatman *et al*. 2019)*

*These estimates have a range of varying caveats and shortcomings, and all are subject to poor observer coverage, and sometimes limited tracking data, challenging comparisons and inferences.



Abraham et al. 2019



Peatman et al. 2019

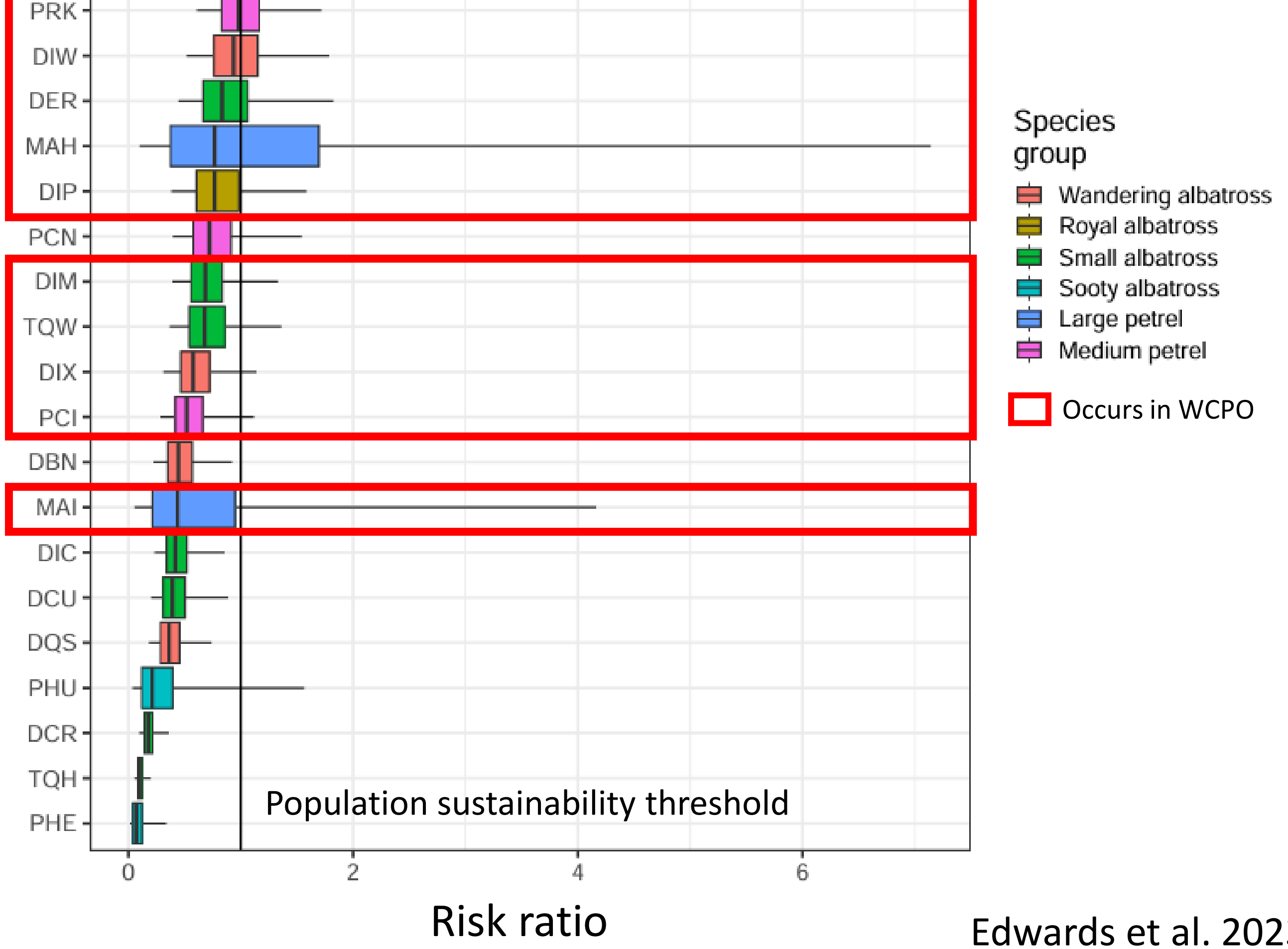
An overview of longline bycatch impacts on seabirds

A recent Southern Hemisphere Risk Assessment (using NZ data only), highlighted 17 WCPO species as potentially bycaught beyond sustainable levels*

These species represent the majority (81%) of “at-risk” species

(Note a multi-country update of this modelling effort is in process through CCSBT)

*These estimates have a range of caveats and shortcomings, and all are subject to poor observer coverage, and sometimes limited tracking data, challenging inferences.



Edwards et al. 2023

An overview of longline bycatch impacts on seabirds

Other threats:

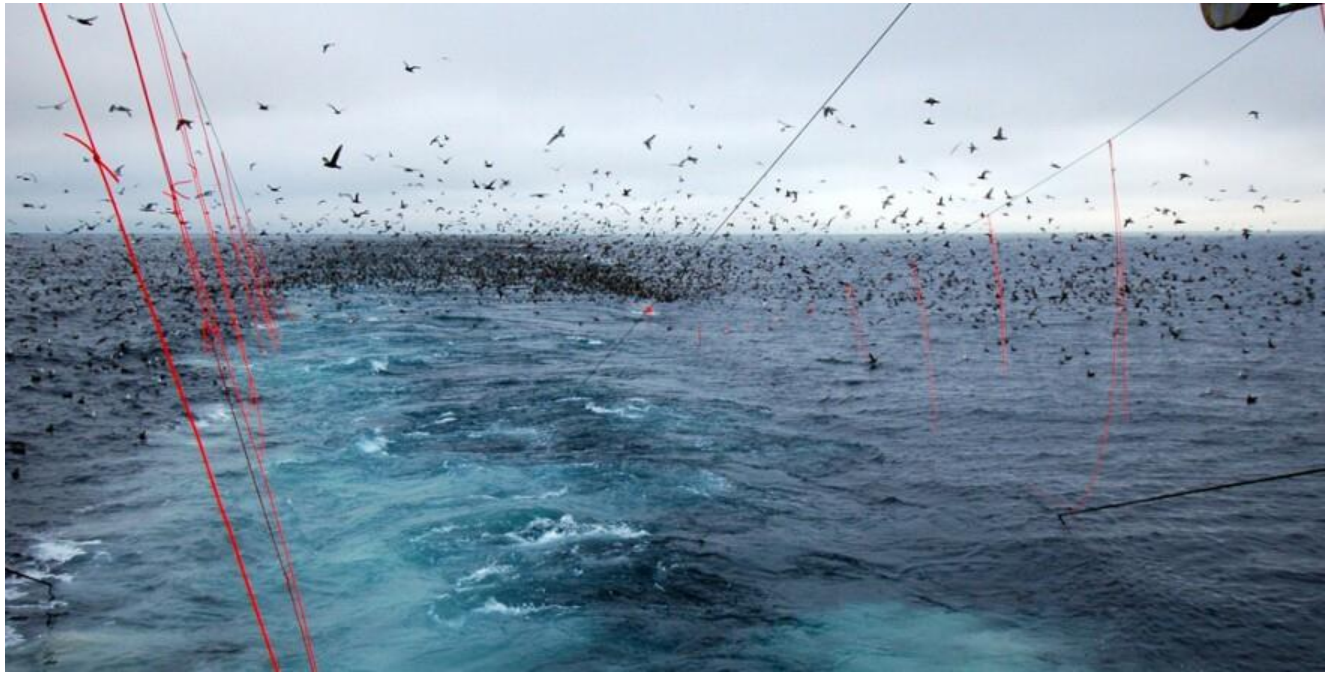
Terrestrial threats to seabirds in the WCPO have largely been addressed:

- ~70% of ACAP breeding sites in the WCPO are free of invasive species
- Harvesting by humans (e.g. for feathers) has stopped

No current direct evidence for climate change driving declines in the WCPO (yet)

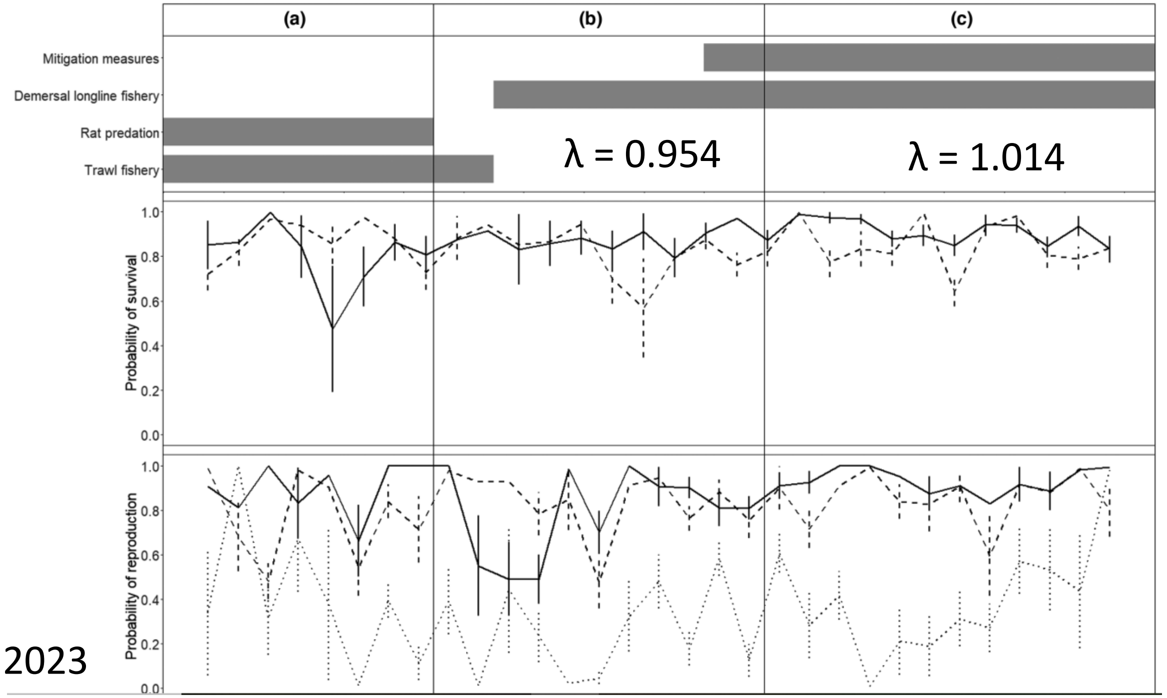
Considering all lines of evidence, observed declines are most likely driven at least partially by bycatch at unsustainable levels in pelagic longline fisheries

An overview of longline bycatch impacts on seabirds



Solutions exist:

- A variety of mitigation methods have been proven to reduce bycatch to negligible levels.
- These mitigation methods have been developed over decades.
- Effective use of proven mitigation methods can allow seabird populations to recover.



Dasnon et al. 2023

Review of WCPFC CMM 2018-03

Purpose:

“To ensure that effective mitigation methods are required and applied across the Convention Area where there is bycatch risk to vulnerable seabirds from longline fishing.”



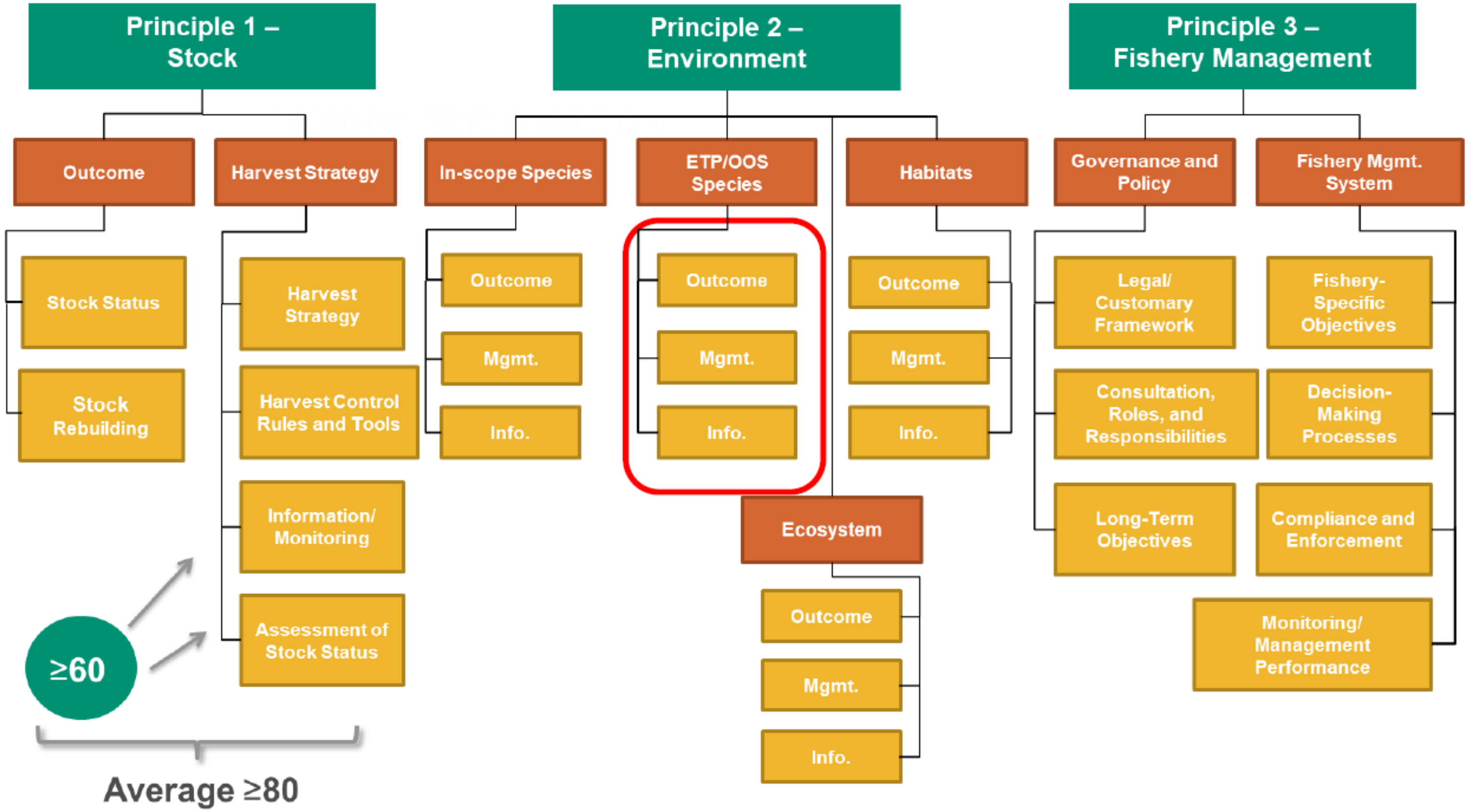


MSC Fishery Standard v3.0 and seabirds

The review of CMM 2018-03 is relevant to MSC certification

- Seabirds fall within the ETP/OOS species category, part of Principle 2 (Ecosystem Impacts) of the MSC Assessment tree
- The category is assessed through:

1. ETP/OOS species outcomes,
2. ETP/OOS species management,
3. ETP/OOS species information



MSC Fishery Standard v3.0 and seabirds

ETP/OOS species outcome assessment:

- Intent: the UoA does not I) hinder ETP/OOS recovery to a favourable conservation status (>50% of carrying capacity over 3 gen. or 100 years), and II minimizes impact on ETP/OOS units.
- The UoA needs to demonstrate that mortalities are "unlikely" to hinder recovery, for ETP/OOS units that are not at favourable conservation statuses,
- There are defined thresholds to determine whether ETP/OOS mortalities are "negligible" (i.e. a level at which the UoA is not hindering recovery):
  - If ETP/OOS breeding population is <5000 adults, impact cannot be considered "negligible"
  - If average annual mortalities from the UoA are >10 individuals, impact cannot be considered "negligible"
- When mortalities of ETP/OOS units are above "negligible" levels, MSC requires:
  - The Risk-based Framework to be applied or,
  - The likelihood that the UoA is hindering recovery of ETP/OOS units to a favourable conservation status needs to be evaluated using existing quantitative assessments

MSC Fishery Standard v3.0 and seabirds

ETP/OOS species management assessment:

- Management measures or strategies should ensure to achieve the ETP/OOS species outcome (i.e., not hindering recovery or negligible impact)
- Management measures should be implementable “on the water”
- It is the MSC’s intent that any relevant best practice measures for the UoA should be complied with
- Existing best practices for seabirds include:
  - FOA best practices to reduce incidental catch of seabirds in capture fisheries
  - FAO technical guidelines for responsible fisheries
  - ACAP publications

MSC Fishery Standard v3.0 and seabirds

ETP/OOS species information assessment:

- Information needs to adequate to assess impact and efficacy of management for achieving the ETP/OOS species outcome
- Specific to, fisheries that
  1) operate in the high seas,
  2) have ETP/OOS species interactions, and
  3) are managed by RFMOs,
  to meet MSC 'best practice, they need to have 30% independent observation coverage
- Further details, the original MSC presentation, and additional resources/training can be found on the WCPFC website

Mitigation methods that are not considered ACAP best practice

Blue dyed bait:

- Blue-dyed bait is hypothesised to make bait less visible to seabirds
- Blue-dyed bait has not been proven effective in the WCPO & other bycatch mitigation methods are proven to be (vastly) more effective,
- Blue-dyed bait may decrease target catch rate
- Blue-dyed bait is perceived as impractical

Gilman et al. 2003, Cocking et al. 2008, Gilman et al. 2007, 2008, Ochi et al. 2011, Gilman et al. 2022, ACAP 2023

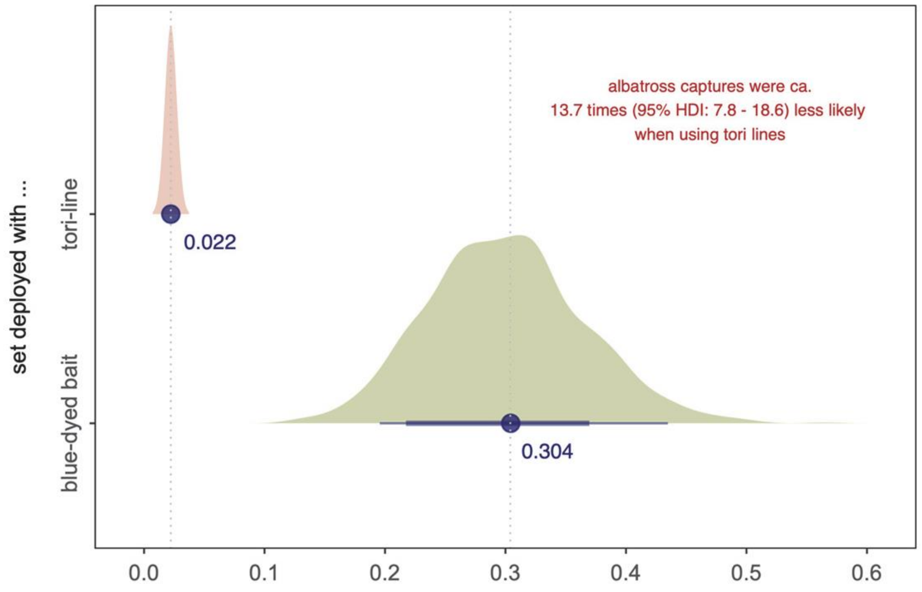
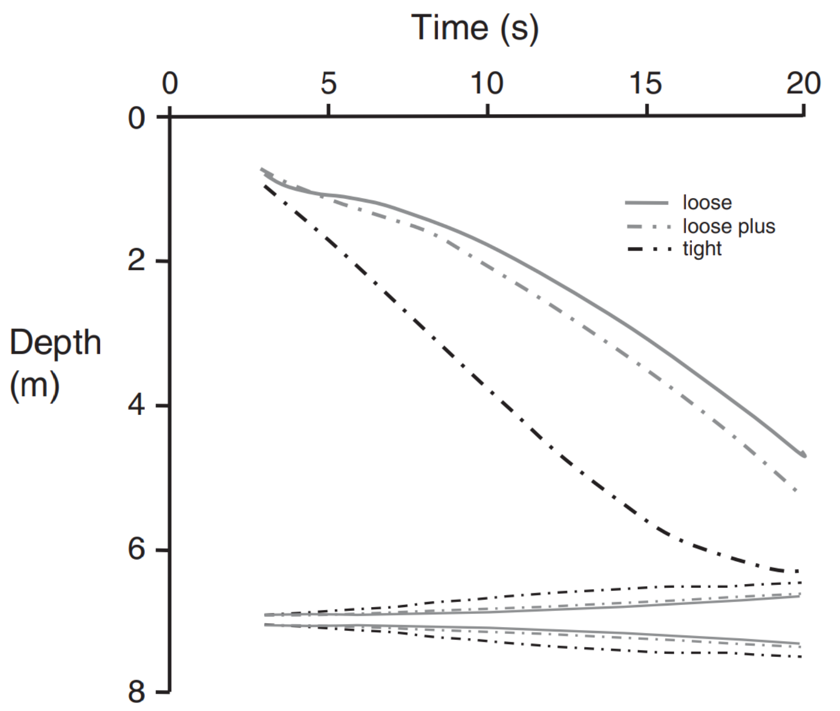


Fig. 2. Bait is completely thawed and dyed blue by soaking in a large tub with dissolved blue food coloring to achieve regulatory-required darkness

Mitigation methods that are not considered ACAP best practice

Deep setting line shooter:

- Line shooters deploy mainlines at speeds faster than the vessel speed, removing tension, allowing mainlines to enter the water immediately astern of the vessel
- Variation in tension and propeller turbulence slow sink rates of hooks, causing seabird bycatch risk to <u>**increase**</u>
- No clear evidence for effectiveness of line shooters in reducing seabird bycatch appears to exists



Robertson et al. 2010

Mitigation methods that are not considered ACAP best practice

Management of offal discharge:

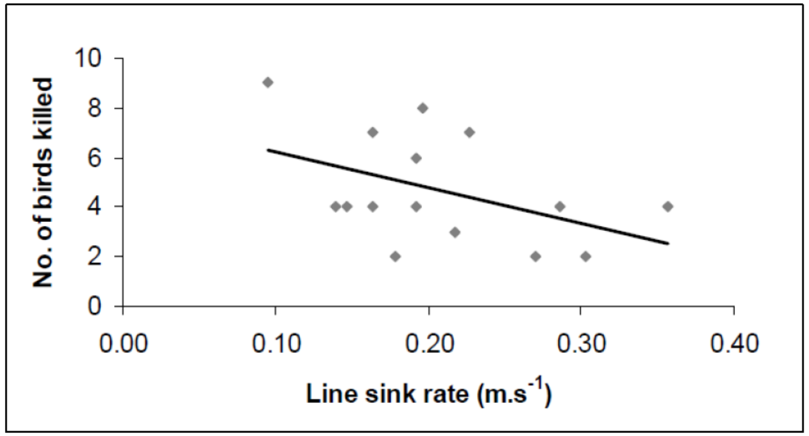
- Offal discharge can attract seabirds to vessels, putting them at risk
- No current evidence supports offal discharge as an effective primary mitigation method during setting
- Strategic offal management can increase bycatch as birds get conditioned to attend vessels
- Offal discharge management is one of few options to reduce bycatch during hauling, if possible/practical
- Offal discharge management is still relevant as a common-sense operational practice.

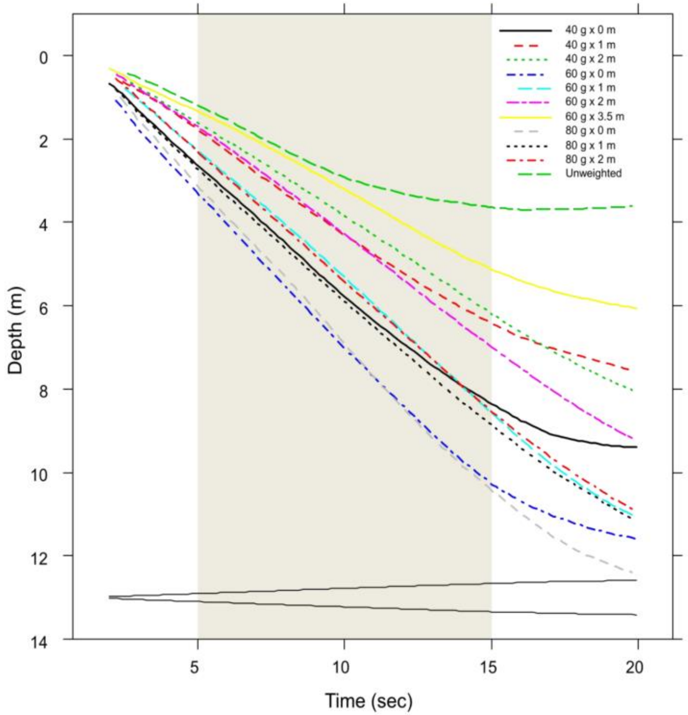
McNamara et al. 1999, Cherel et al. 1999, Rexer-Huber & Parker 2019, WCPFC-SC19-EB-IP-21

Branch line weighting efficacy & specifications

- Branch line weighting more rapidly sinks hooks beyond the reach of seabirds
- A faster sink rate reduces the window of availability of baited hooks to seabirds and thus achieves greater effectiveness.
- New evidence since specifications were adopted by WCPFC show that improved sink rates can be achieved through modification of the specifications
- Studies have found no or little effect on target catch
- Advice and options to improve crew safety are available

Petersen et al. 2008

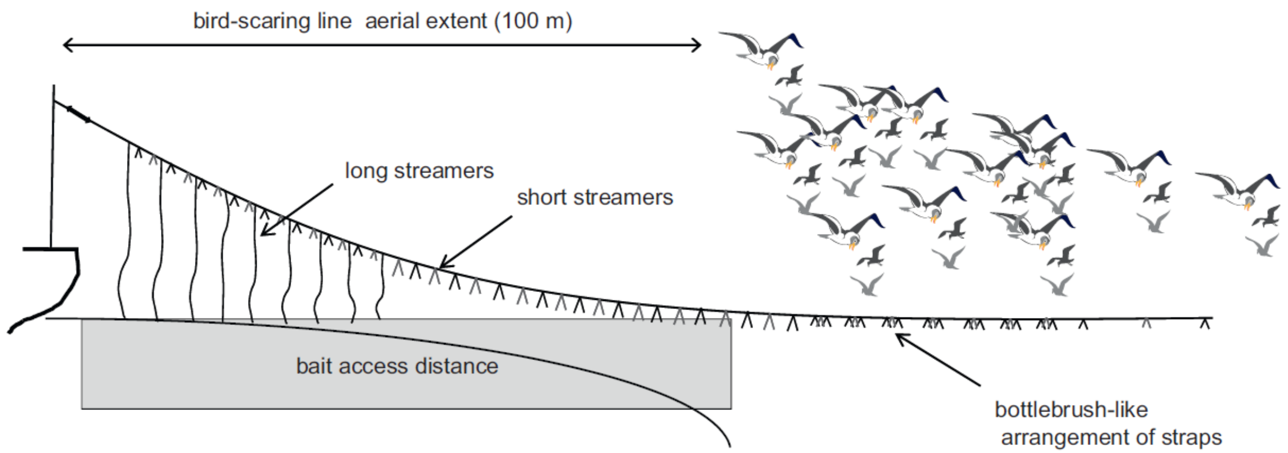


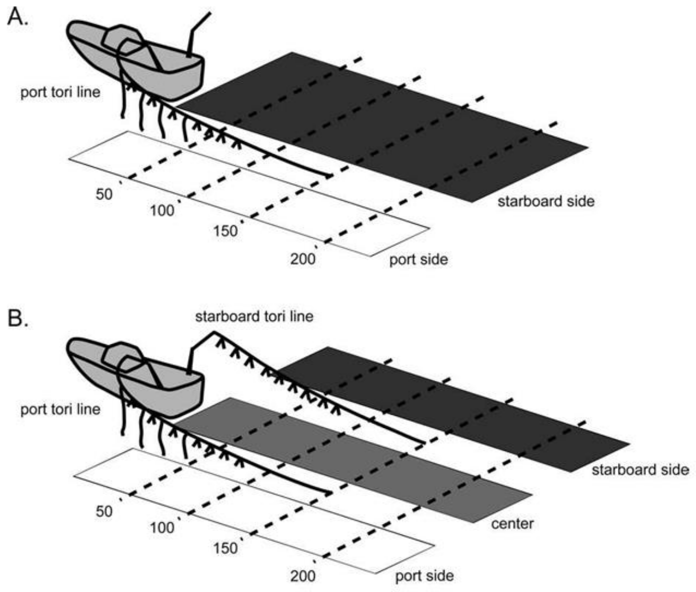


Barrington et al. 2016

Tori (bird scaring) line efficacy & specifications

- Tori lines prevent seabirds from accessing hooks during setting
- Tori lines come in different specifications
- Evidence from around the world illustrates their efficacy
- All evidence shows that tori lines do not decrease target catch rate, and can increase it
- Pairing tori lines further improves efficacy
- Tori lines must have the right specifications to function and must be monitored and maintained as entanglement can occur





Tori (bird scaring) line specifications in the Southern Hemisphere (South of 25° S)

Specifications	**CMM 2018-03 requirements**		**ACAP Best Practice**	
Vessel size	**≥35 m**	**<35 m**	**≥35 m**	**<35 m**
# tori lines	1-2	1-2	1-2	1-2
Long streamers	• Colourful • Intervals <5 m • Swivels • reach sea surface in calm conditions	Optional: • Colourful • Intervals <5 m for first 75 m • Swivels optional • Reach sea surface in calm conditions (but first 15 m may be modified	• Colourful • Intervals <5 m • Swivels • reach sea surface in calm conditions	Optional: • Colourful • Intervals <5 m for first 75 m • Swivels optional • Reach sea surface in calm conditions (but first 15 m may be modified
Short streamers	• Colourful • >1 m length • <1 m intervals	• Colourful • >1 m length • <1 m intervals	• Colourful • >1 m length • <1 m intervals	• Colourful • >1 m length • <1 m intervals
Aerial extent	≥100 m	≥75 m	≥100 m	≥75 m
Tori line length	>200 m	Sufficient to maintain aerial extent	>200 m	Sufficient to maintain aerial extent
Deployment height	>7 m	>6 m	>8 m	>6 m
Deployment location	If using 1: windward of sinking baits, if using 2: at opposite sides of deployment line	If using 1: windward of sinking baits, if using 2: at opposite sides of deployment line	If using 1: windward of sinking baits, if using 2: at opposite sides of deployment line	If using 1: windward of sinking baits, if using 2: at opposite sides of deployment line

Tori (bird scaring) line specifications in the Northern Hemisphere (North of 23° N)

Specifications	CMM 2018-03 requirements		ACAP Best Practice	
Vessel size	**≥24 m**	**<24 m**	**≥35 m**	**<35 m**
# tori lines	0-2	0-2	0-2	0-2
Long streamers	Optional: • Intervals <5 m • Swivels optional • As close to water as possible	Optional: • Intervals <5 m • Swivels optional • As close to water as possible	Required: • Colourful • Intervals <5 m • Swivels required • Reach sea surface in calm conditions	Optional: • Colourful • Intervals <5 m • Swivels optional • Reach sea surface in calm conditions
Short streamers	• >0.3 m length • <1 m intervals	Optional: • >0.3 m length • <1 m intervals	• Colourful • >1 m length • <1 m intervals	Required: • Colourful • >1 m length • <1 m intervals
Aerial extent	Over sinking hooks	Over sinking hooks	≥100 m	≥75 m
Tori line length	≥100 m	NA	≥200 m	Sufficient to maintain aerial extent
Deployment height	≥5 m from where line enters water	≥5 m from where line enters water	>8 m	>6 m
Deployment location	If using 1: windward of sinking baits, if using 2: at opposite sides of deployment line	If using 1: windward of sinking baits, if using 2: at opposite sides of deployment line	If using 1: windward of sinking baits, if using 2: at opposite sides of deployment line	If using 1: windward of sinking baits, if using 2: at opposite sides of deployment line

Tori line efficacy & specifications

Small vessels tori line specifications have been subject to intensive study (Katsumata et al. 2015, Goad & Debski 2017, Ochi 2022, Ochi 2023):

- Initially, result suggest that streamer-less tori lines are as effective as small streamer tori lines
- Yet, experiments were confounded by varying, suboptimal aerial extents
- BPUE under all tori line treatments in experiments were still high
- There appears little compelling evidence to consider streamer-less tori lines, or small-streamer tori lines with suboptimal aerial extents, an effective mitigation method
- Achieving adequate aerial extent in small vessels can be challenging. Yet, NZ has proven feasibility, but vessel/hull/superstructure material remains a challenge.

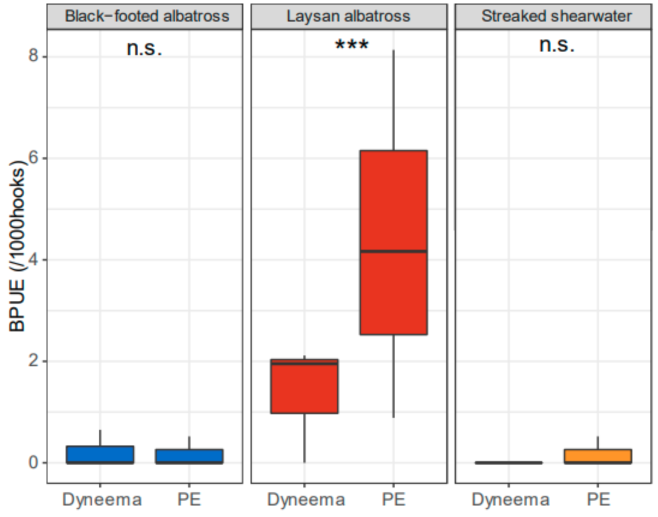
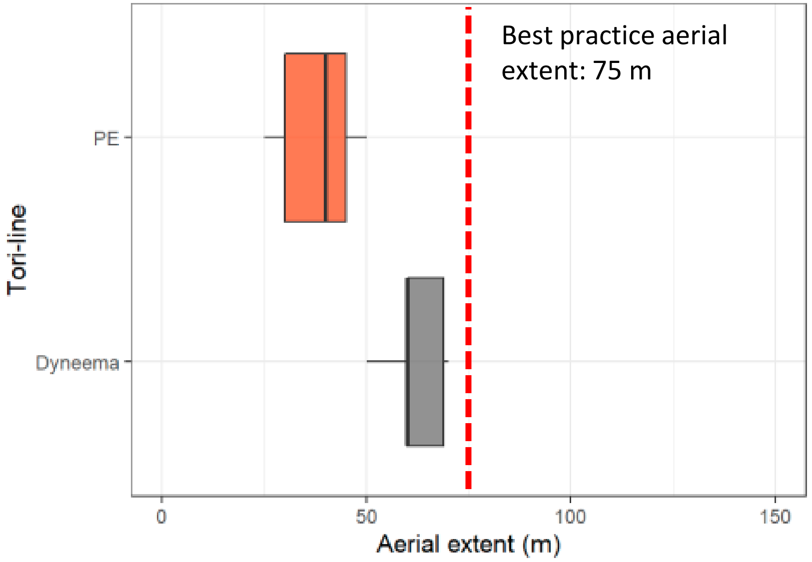


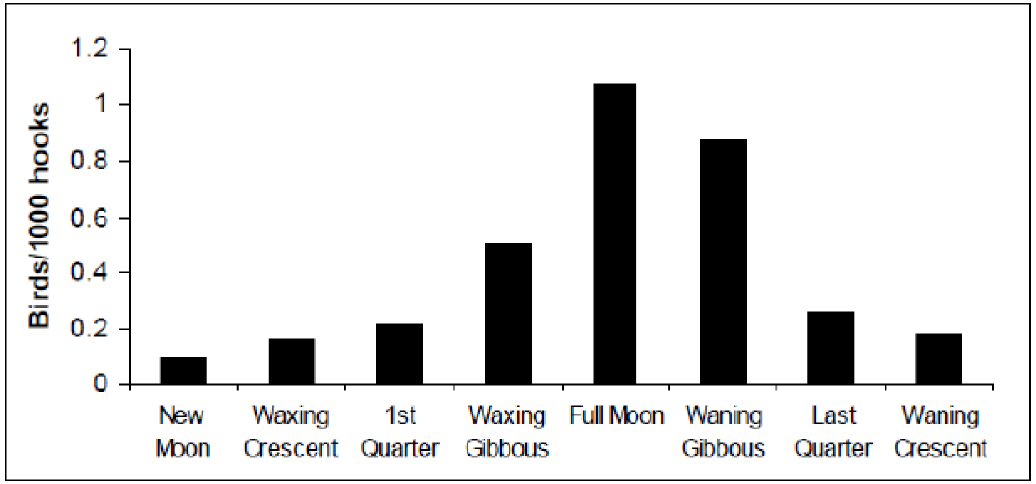
Figure 5 Bycatch rate (BPUE) for each tori-line recorded in the bycatch mitigation effectiveness experiment. Asterisks indicate for significant testing in BPUE between tori-lines using the generalized linear model, and *** denotes p < 0.001.

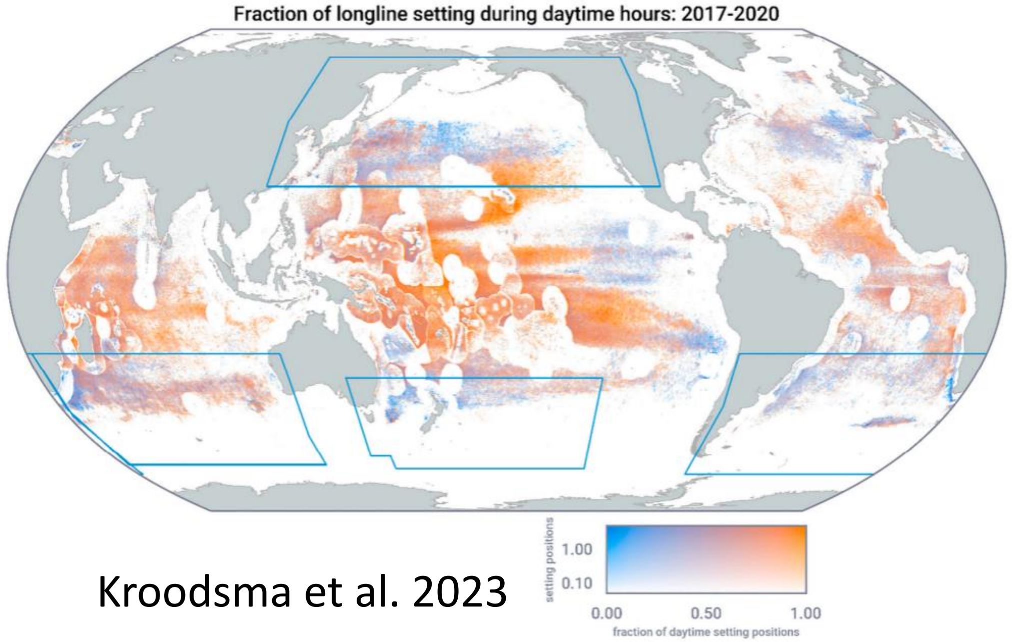


Night setting efficacy & specifications

- Many seabirds are less active at night
- However, some seabirds are still active at night and the effectiveness of night setting is greatly reduced during moon-lit nights
- CMM2018-03 specification aligns with ACAP advice
- Globally, the implementation of night setting has been found to be poor
- Artificial light should be minimised at all times to avoid seabird disorientation and attraction leading to collisions with the vessel and/or its superstructure

Petersen et al. 2008



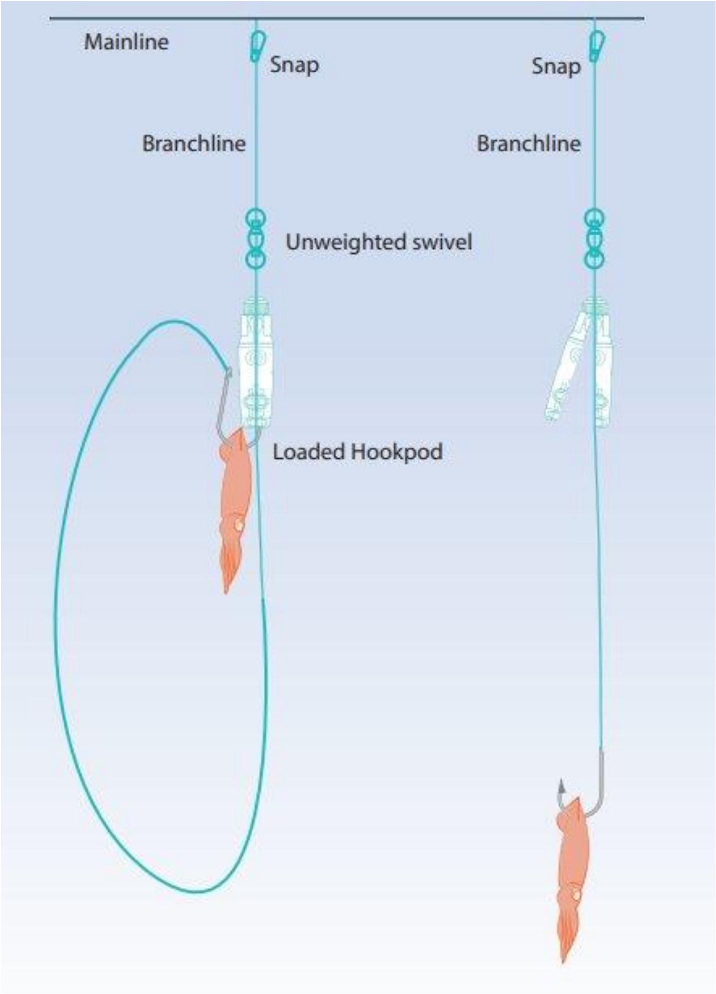


Kroodsma et al. 2023

Novel mitigation methods

Hook-shielding devices:

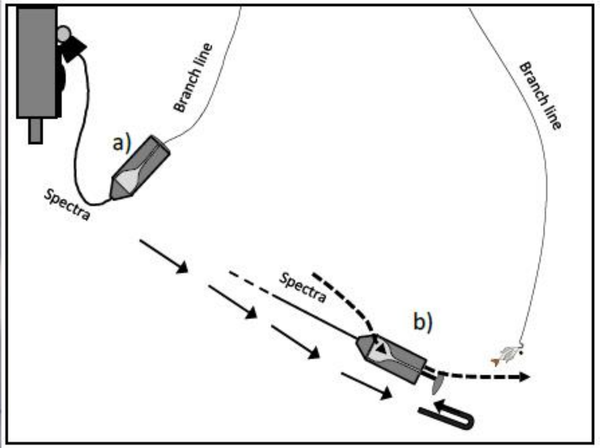
- Shield the hook until a certain depth is reached
- Can be used without other mitigation options
- Have lower bycatch rates than any other bycatch mitigation measure
- Generally, do not decrease target catch rates
- Have practical considerations, including costs ($10), entanglement potential, and training requirements
- Only two devices are currently approved in WCPFC: Hookpod LED (Sullivan et al. 2018) and Hookpod Mini (Goad et al. 2019)



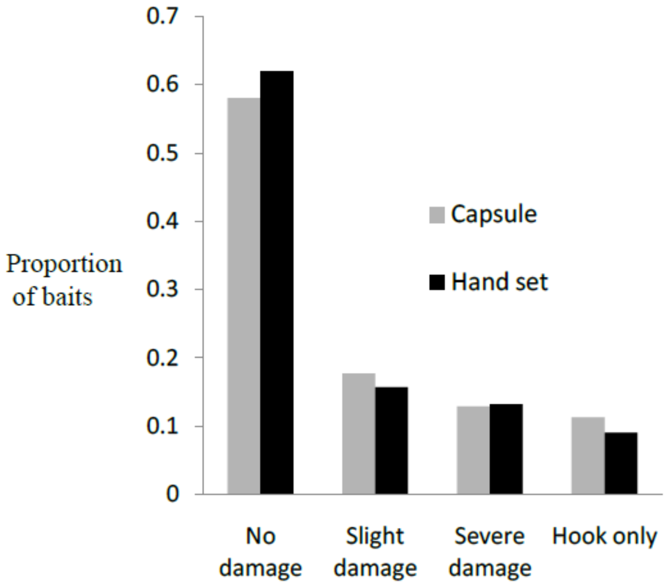
Novel mitigation methods

Underwater bait setters:

- Set bait automatically below the dive depth of seabirds
- Reduce seabird bycatch substantially
- Do not reduce target catch rates
- Do not increase baitloss
- Are considered practical, but expensive
- Are currently not listed as an accepted bycatch mitigation method in WCPFC



Robertson et al. 2015, 2018



The 2nd informal intersessional meeting on the review of WCPFC CMM 2018-03 will:

- Provide an update on seabird distribution, population trajectories, fisheries overlap & dive depths,
- Provide further insights into seabird bycatch experiments,
- Review the evidence on effectiveness of combinations of mitigation methods,
- Discuss industry perspectives on implementation,
- Discuss MCS tools, and
- Outline the next steps


Looking forward
to working with you

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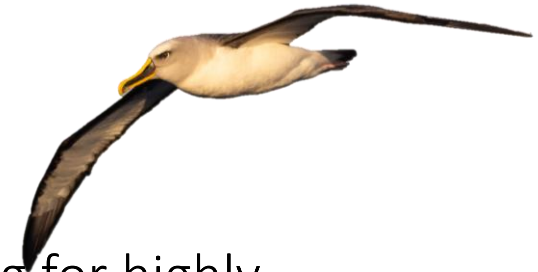

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