



Seabird interactions with smaller vessel deepwater bottom longline operations

Final Report: MIT2013-03

Johanna Pierre

Finlay Thompson

John Cleal

Introduction: Bottom longline fisheries

- Small vessels:
 - Fewer hooks, manual operations, inshore
- Large vessels:
 - More hooks, autoline operations, offshore



Photo: J. Pierre

Introduction: Bottom longline fisheries

- “In between” vessels:
 - Mix of characteristics
 - Middle-sized
 - Fish in deeper water
 - Targets: LIN, BNS, HPB, SCH, RIB



Photo: <http://www.shipspotting.com/gallery/photo.php?lid=1490314>



Introduction: Seabird risk

- BLL vessels < 34 m
- Not targeting BNS, SNA
 - Greatest estimated potential risk to seabirds (Richard and Abraham 2013)
 - Most uncertainty in risk estimation
 - Salvin's albatross, black petrel, flesh-footed shearwater



Photo: DOC



Introduction: Seabird risk

- BLL vessels < 34 m, BNS target
- BLL vessels > 34 m
- 8 albatross species
- Black petrel
- Flesh-footed shearwater



Photo: DOC

A photograph of a seabird, likely a booby, in flight. The bird is white with dark wings and a yellow beak. It is flying towards the right of the frame.

Objectives: CSP Project MIT2013-03

- To review observer, fisher, and catch effort data on vessel operations, and findings from previous mitigation projects in deepwater bottom longline fisheries, and identify key risk factors for seabird interactions
- To characterise the range of bottom longline vessels over 20 m with respect to factors relating to seabird captures
- To provide recommendations on mitigation practices in this fishery



Methods: Vessel characterisation

- All BLL fishing effort 2000/01 – 2012/13
- MPI's Warehouse and COD databases
 - Fisher-reported catch-effort data
 - Observer-reported data

Non-fish / Protected Species Catch Return Form number NPC

1. Complete **separate returns** for each fishing trip where non-fish / protected species incidental catch occurs.
2. Non-fish / protected species include: corals, sponges, bryozoans, seabirds, marine mammals, marine reptiles and protected fish (see explanatory notes for a detailed list of species).

3. **Non-fish / Protected species incidental catch**
Complete a **separate row** for each non-fish / protected species caught in a fishing event.

Date tow / set began (dd/mm/yy)	Time tow / set began (24-hr clock)	Form number from catch effort return	Species code	Estimated weight of corals, sponges or bryozoans (kg)	Seabirds /Mammals /Reptiles / Protected fish		
					Number alive, uninjured	Number alive, injured	Number dead
/ /	:			0kg			
/ /	:			0kg			
/ /	:			0kg			
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Use additional pages if you run out of space to record non-fish / protected species incidental catch from this trip.

4. Enter a cross in **one** of the circles to show the MFish catch effort form type used during the trip.

TCEPR CELR LCER TLCER NCELR Other → If other, enter the form type used

5. Permit holder and vessel details

Name of permit holder I declare that the information I have given on this return is correct and complete, and that I have read and understood the explanatory notes supplied with this return.

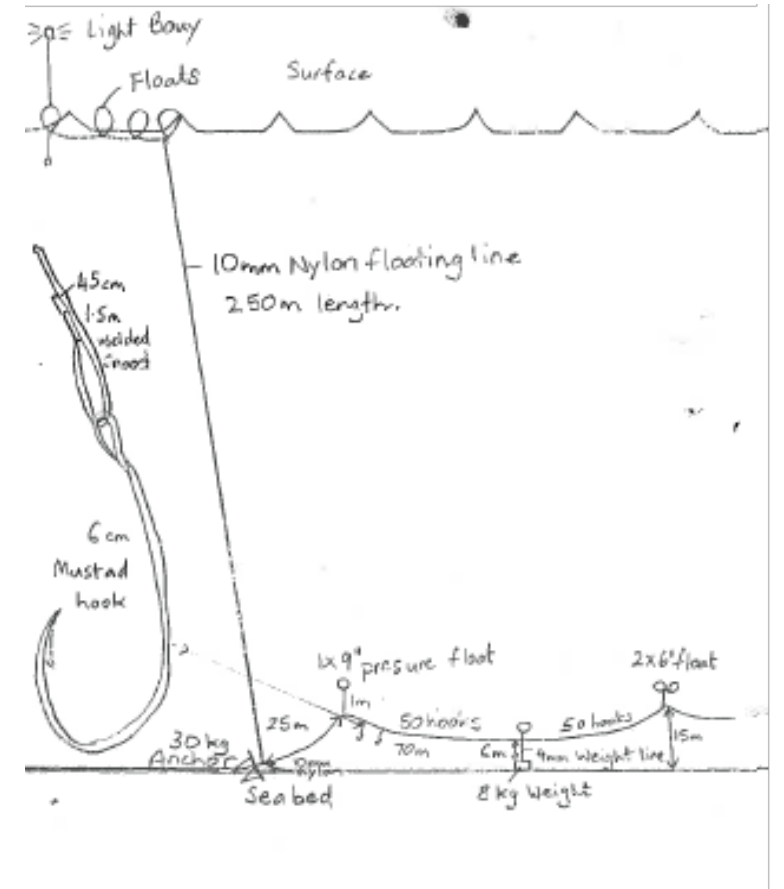
Client number of permit holder Signature of permit holder or authorised person

Name of vessel Date signed **20**

Registration number of vessel Send completed returns to PO Box 297, Wellington (NZ).

Methods: Other data sources

- Observer trip documentation: hard-copy
- DWG records: ling fishing activity
- Bycatch mitigation literature





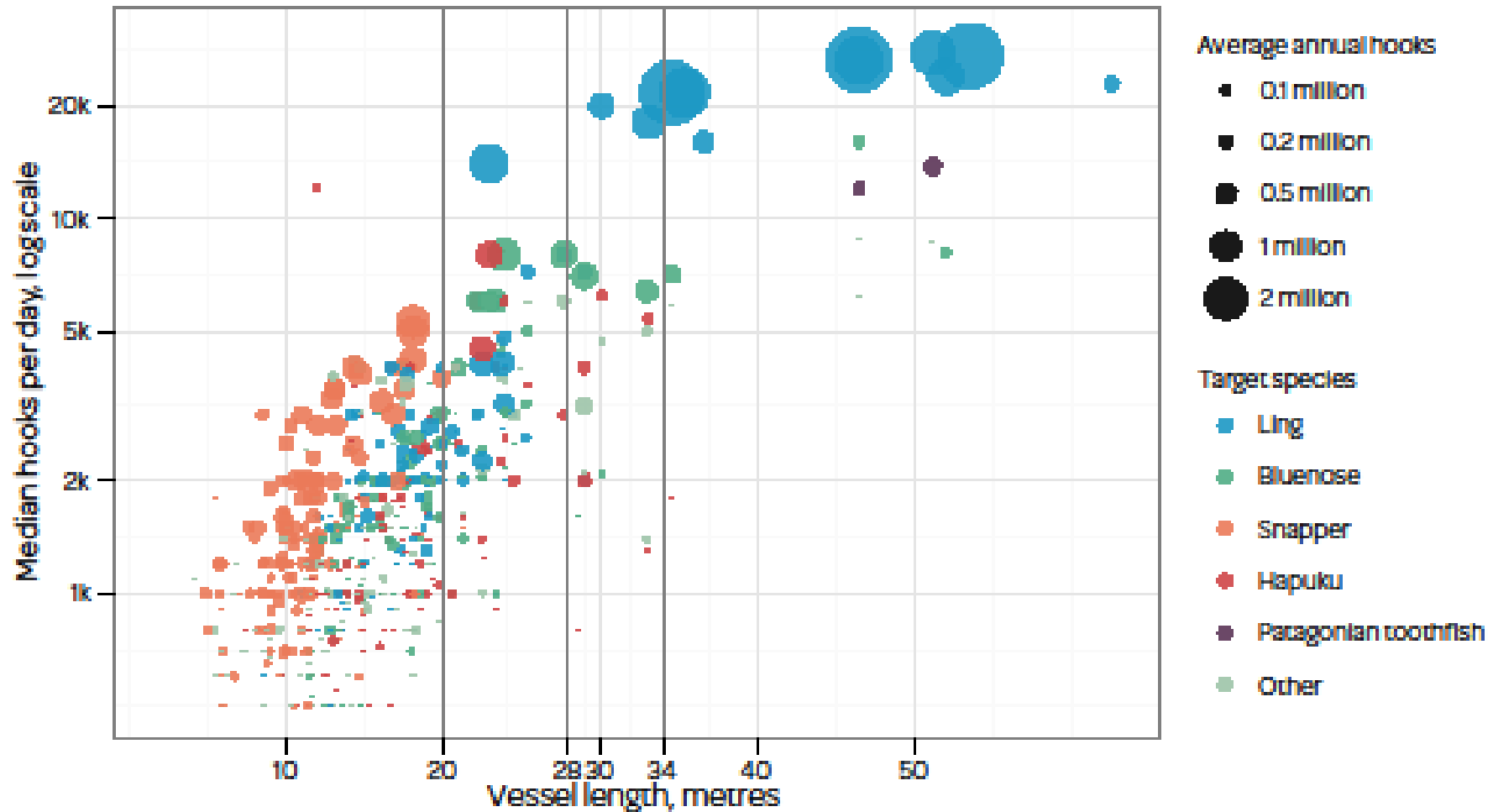
Results: Three vessel strata

- < 20 m, SNA, < 5000 hooks/day,
< 500 000 hooks/year
- > 34 m, LIN, > 10 000 hooks per day,
> 2 million hooks/year
- 20 - 34 m, LIN, BNS, HPB, RIB, SCH
< 10 000 hooks/day, 500 000
hooks/year
- 19 vessels > 20 m operating 2012/13



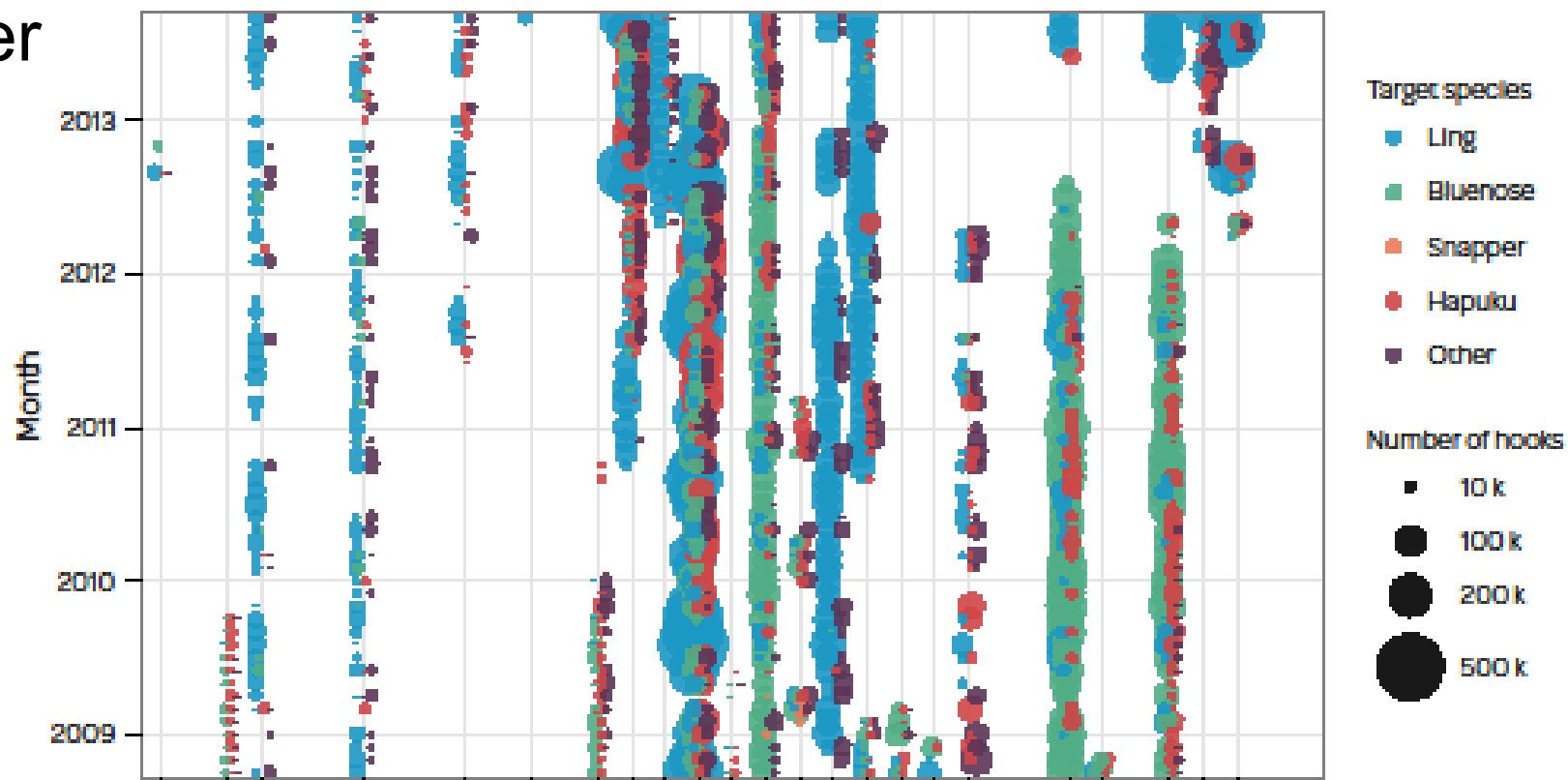
Photo: J. Pierre

Results: Three vessel strata



Results: Target species

- Largely consistent over time
- LIN most important
- BNS, HPB

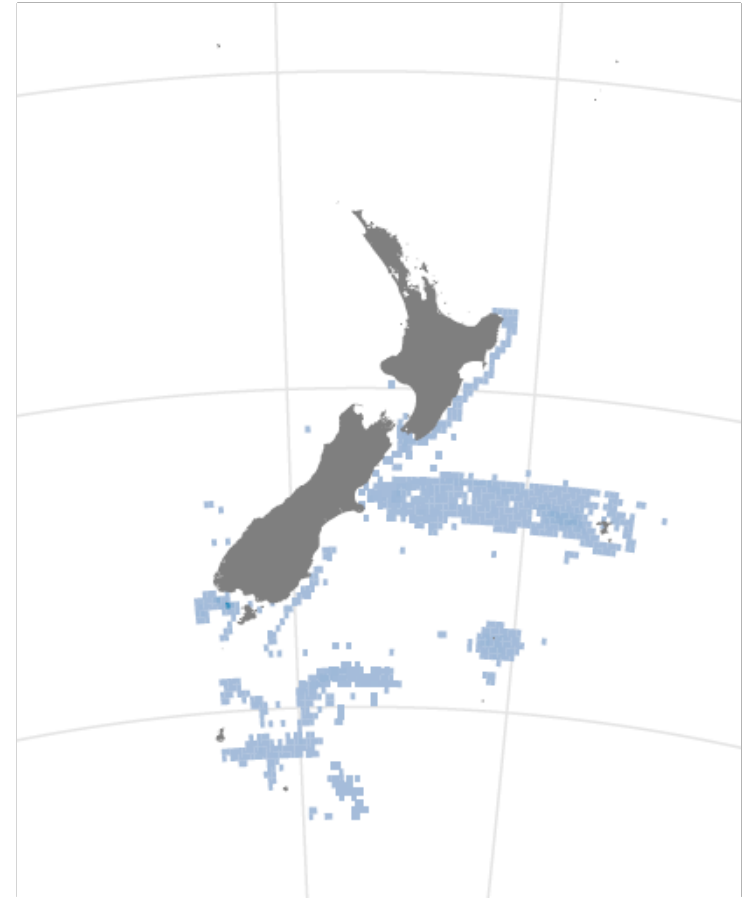


Results: Location of fishing effort

- LIN most widespread



Vessels 20 – 34 m



Vessels > 34 m

Results: Fisher-reported seabird captures

- 53–147 birds per year since 2008/09
- White-chinned petrels
- Salvin's albatross
- Grey petrels
- Chatham Island albatross
and others

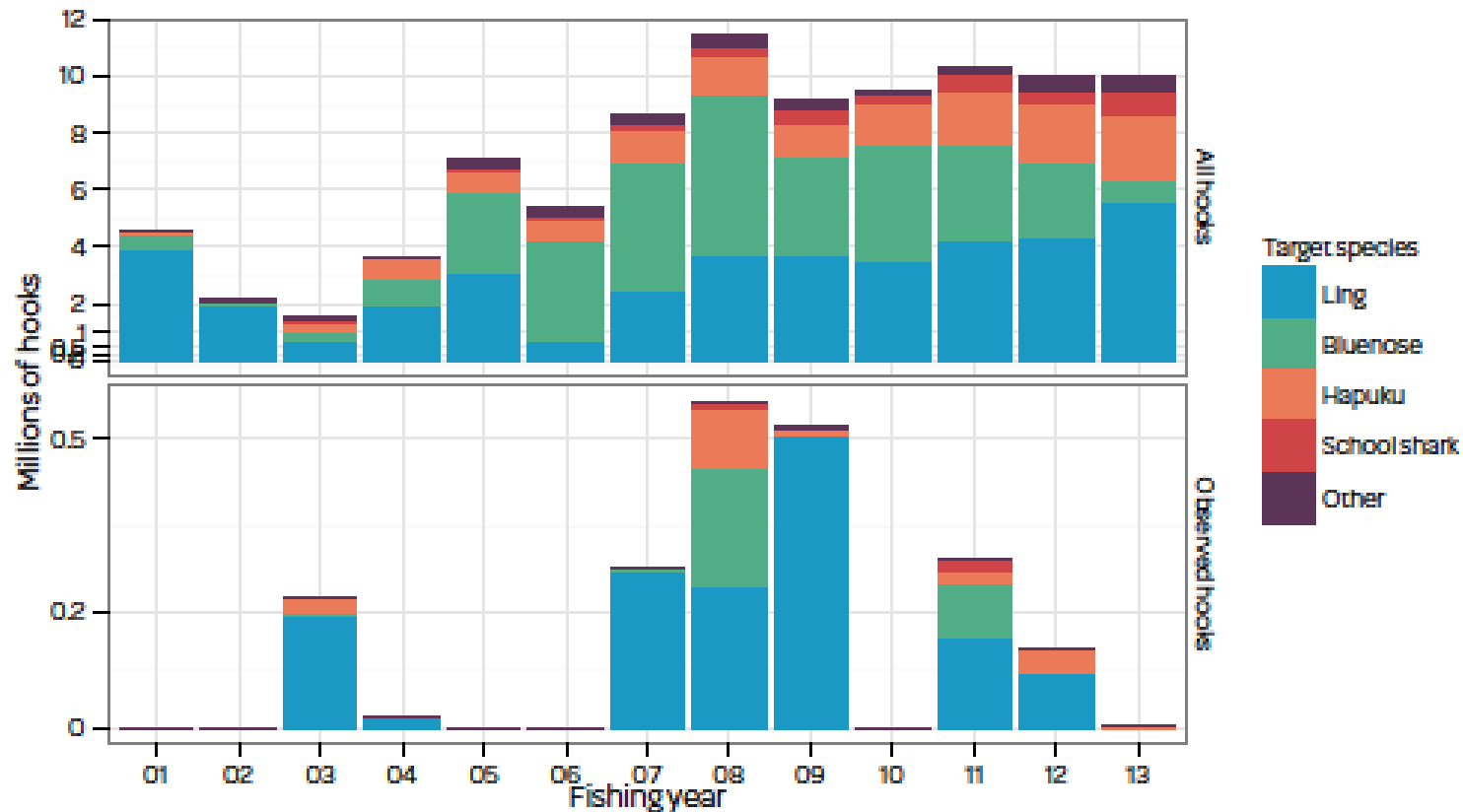


Photo: Duncan Wright, CC BY-SA 2.0



Results: Observer coverage

- Vessels > 20 m
- 2012/13: 0.04% of hooks set
- 2007/08: 4.9% of hooks set
 - Highest coverage ever



Results: Observer-reported seabird captures

- Vessels > 20 m
- 2000/01 – 2005/06: 29 – 508 birds observed caught
- 2006/07 – 2012/13: 9 – 51 birds caught
- No – low observer coverage



Results: Observer-reported seabird captures

- Since 2006/07:
 - Chatham, southern royal, Campbell, black-browed, southern Buller's, Salvin's albatross
 - white-chinned, black, Cape, grey petrel
 - Sooty shearwater





Results: Vessel operations

- Factory and fresh fish vessels
- Autoline and manual systems
- Integrated weight and externally-weighted line
- J hooks and circle hooks



Results: Management context

- DWG managed most ling stocks since 2004/05
- Code of Practice since 2004
- Autoline then more inclusive in scope
- DWG collecting information to develop new operational procedures

Ling Fishers Training Manual



The Mitigation of Incidental Seabird Capture in New Zealand Ling Longline Fisheries

Important message: *Since this was written new Fisheries Bottom Longline Regulated measures have been introduced, offal control, Night setting & Line weighting are regulated, ensure you know and understand the new regulations & specifications.*

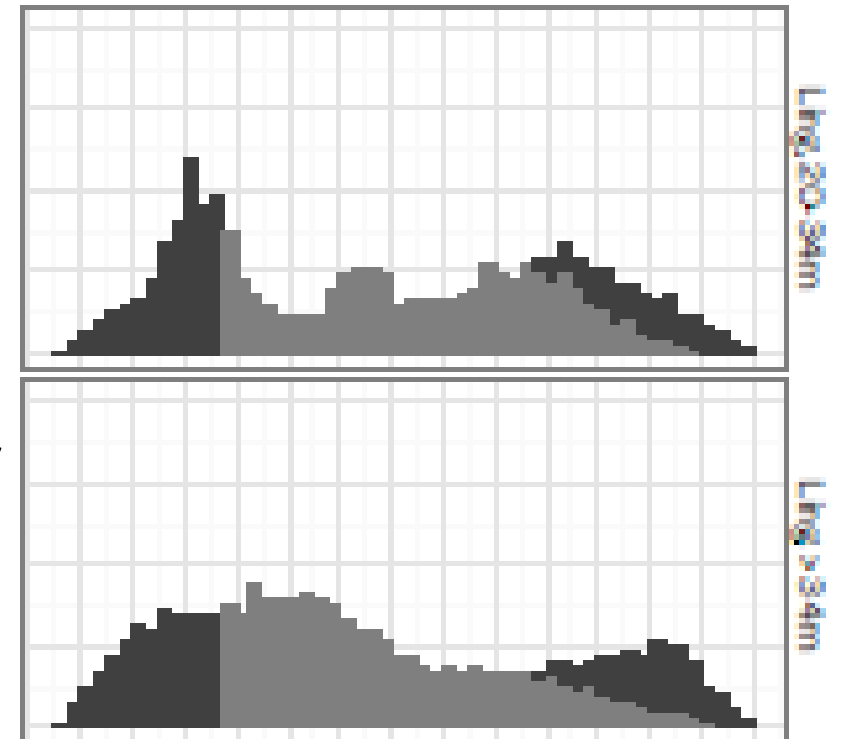
Greg Lydon





Results: Mitigation

- Some mitigation measures being used
 - Tori lines, offal retention, line-weighting
- Extent of usage unclear
- Specifications of measures in use unclear
- Recording inconsistent, incomplete





Discussion: Vessel characterisation

- Can group the “in between” vessels
 - Size, target species
- Ling-target fishing especially important in this group
- Diversity in gear and vessel operations





Discussion: Seabird bycatch

- Is an ongoing bycatch risk
- Uncertainty
 - No – low observer coverage
 - Significant bycatch events
- Large events associated with predictable risk factors
- Effective measures available to reduce risk





Recommendations

- Increase observer coverage to document bycatch levels
- Collect information on gear to better characterise bycatch risk
- Ensure observer information is consistently collected
- Store observer data electronically to ensure accessibility



Recommendations

- Explore efficacy when mitigation measures in place
 - Longline sink rates
 - Tori line construction
 - Tori line deployment
 - Offal management practices
- Improve existing practices where needed
- Implement effective measures when not in place
- Amend regulated measures as appropriate



Questions?

