

# Identification of seabird killed and returned in New Zealand fisheries



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## Two parts:

a) Necropsy programme of seabirds killed and returned

- a) Taxon, sex, age-class and provenance
- b) Injuries, body condition and stomach contents

b) Photo-identification of seabird interactions on observed fishing vessels

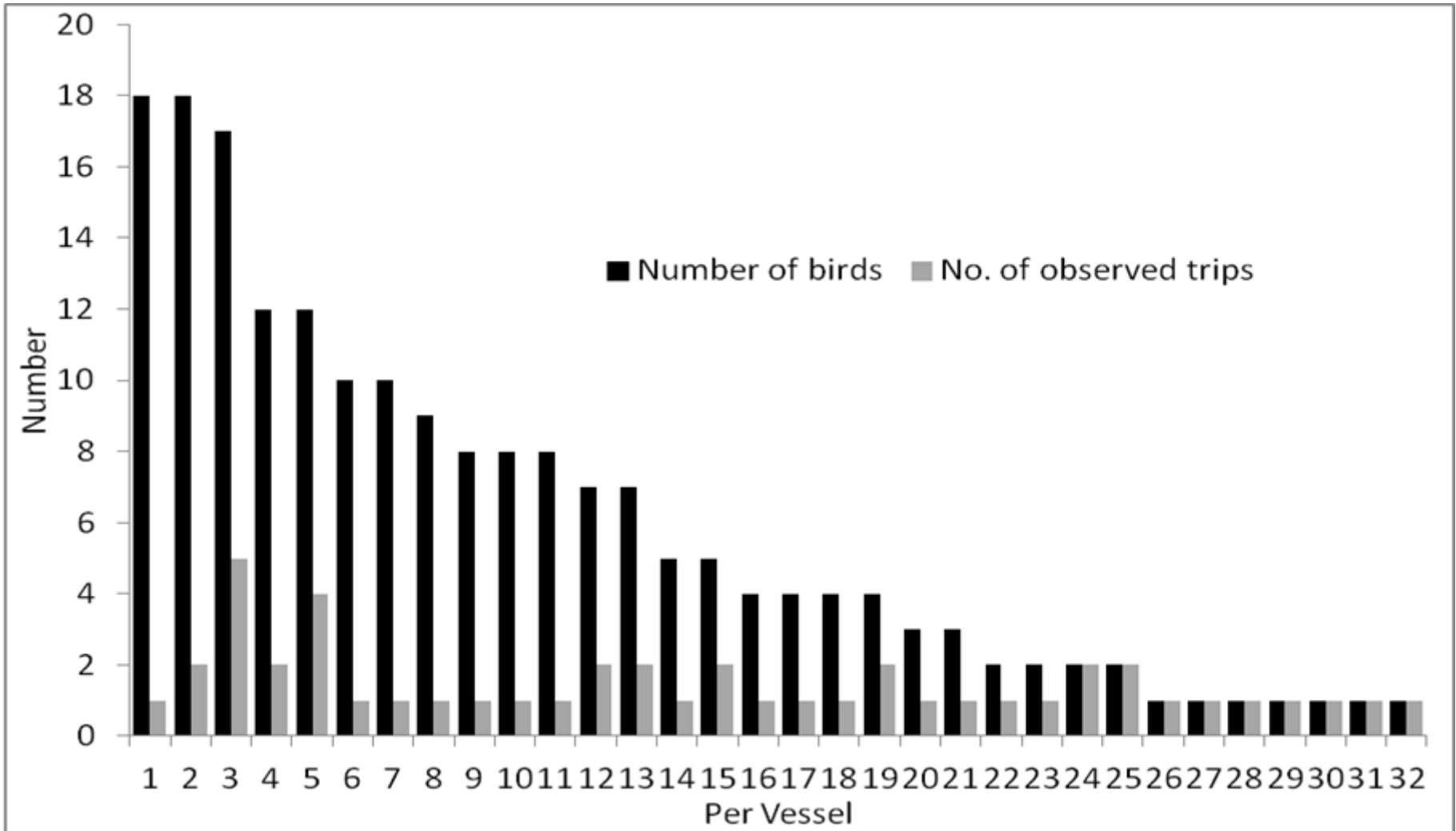
- a) Taxon
- b) Where possible, sex, age-class and provenance

**Note: Only covering 1 October 2010 to 30 June 2011**

## NECROPSY PROGRAMME:

- 191 seabirds returned
- 12 taxa
- 32 vessels, 47 trips
- Maximum of 18 birds from a single trip
- 5 species - 95% of returns
- 24% returned in March, 20% returned in October and 17% returned in February
- 71% males
- 96% adults
- 2 banded (both Buller's albatross)

## NECROPSY PROGRAMME (BIRDS PER VESSEL):



## NECROPSY PROGRAMME (FISHERIES):

Species	Trawl						Longline				Total
	Bottom				Midwater		Surface		Bottom		
	Scampi	Squid	Hoki	Other	Hoki	Squid	Tuna	Other	Tuna	Other	
Black petrel							1				1
Buller's albatross		4		2	2		10				18
Campbell albatross								1			1
Common diving petrel						1					1
Flesh-footed shearwater	15										15
Gibson's albatross								1	1		2
NZ white-capped albatross	2	15	1	3		2	2			1	25
Salvin's albatross	2		6								8
Short-tailed shearwater				1							1
Sooty shearwater	1	30	15	11		1					58
Southern royal albatross											1
White-chinned petrel	1	10	8	2		12	6	9		12	60
Total	21	59	30	19	2	16	19	11	1	13	191
	147						44				

## NECROPSY PROGRAMME (CAUSE OF DEATH):

Species	Longline				Trawl		Vessel strike	Total
	Bill or Throat	Wing	Legs or Feet	Not obvious	Warp	Net		
Total	29	9	2	2	16	131	2	191
<b>% of total longline or trawl</b>	<b>69</b>	<b>21</b>	<b>5</b>	<b>5</b>	<b>11</b>	<b>89</b>		
<b>Albatrosses (%)</b>	<b>45</b>	<b>22</b>	<b>0</b>	<b>0</b>	<b>94</b>	<b>18</b>	<b>50</b>	
<b>Non-albatross (%)</b>	<b>55</b>	<b>78</b>	<b>100</b>	<b>100</b>	<b>6</b>	<b>82</b>	<b>50</b>	

## NECROPSY PROGRAMME (OBSERVER ID):

Species	ID correct	ID wrong	ID as correct 'species' group	ID as seabird large or albatross	ID as 'petrel'	ID not on label	Total
Black petrel	1						1
Buller's albatross	16					2	18
Campbell albatross			1				1
Common diving petrel	1						1
Flesh-footed shearwater	15						15
Gibson's albatross			2				2
NZ white-capped albatross	15	1	4	3		2	25
Salvin's albatross	8						8
Short-tailed shearwater		1					1
Sooty shearwater	50	1			6	1	58
Southern royal albatross	1						1
White-chinned petrel	50	4			1	5	60
<b>Total</b>	<b>157</b>	<b>7</b>	<b>7</b>	<b>3</b>	<b>7</b>	<b>10</b>	<b>191</b>
<b>% of total longline or trawl</b>	<b>82</b>	<b>4</b>	<b>4</b>	<b>1.5</b>	<b>4</b>	<b>5</b>	

## PHOTO-IDENTIFICATION PROGRAMME:

- Protocols for observers is:
  - To take a photograph of all seabirds captured, including those released alive (if possible)
  - Make corresponding entry onto the photo log for every photograph taken
- Extract and photographs obtained from MinFish
  - Match by trip, station, specimen number, date, time and comments on photo log (where possible)
  - Each specimen identified to lowest possible taxon
  - Whether observer identification was correct



## PHOTO-IDENTIFICATION PROGRAMME:

- 299 seabird interactions reported or photographed (excluding those returned in autopsy programme)
  - 107 photographed and reported to MinFish
  - 57 photographed, but not reported
  - 135 reported, but not photographed
- 9 different groups (including 6 confirmed taxa) recorded by observers

## PHOTO-IDENTIFICATION PROGRAMME:

	Dead	Alive	Unknown	Total
Photographed & listed in MinFish extract	64 (60%)	43 (40%)	0	107
Photographed, but not listed in MinFish extract	34 (60%)	23 (40%)	0	57
No photograph, but listed in MinFish extract	22 (16%)	106 (79%)	7 (5%)	135
<b>Total</b>	<b>120 (40%)</b>	<b>172 (58%)</b>	<b>7 (2%)</b>	<b>299</b>

## PHOTO-IDENTIFICATION PROGRAMME:

Species	Photo & listed in MinFish extract	Photo, but not listed in MinFish extract	No photograph, but listed in MinFish extract	Total
Albatross (unidentified)			5	5
Antarctic prion		18		18
Black-backed gull			1	1
Black-bellied storm petrel		2		2
Black-browed albatross (unidentified)			3	3
Buller's albatross	6	1	15	22
Cape petrels (unidentified)			1	1
Common diving petrel	12	2	4	18
Fairy Prion			2	2
Flesh-footed shearwater			2	2
Giant petrel (unidentified)			2	2
NZ white-capped albatross	8	1	7	16
Petrel (unidentified)	2		15	17
Prion (unidentified)	6		5	11
Seabird (small)			1	1
Southern Royal Albatross			1	1
Salvin's albatross	1		10	11
Shy albatross (unidentified)			2	2
Sooty shearwater	14	19	22	55
Storm petrel (unidentified)	3		2	5
Westland petrel			2	2
White-chinned petrel	55	13	27	95
White-headed petrel		1		1
Unknown (Code doesn't exist)			6	6
<b>Total</b>	<b>107</b>	<b>57</b>	<b>135</b>	<b>299</b>

## PHOTO-IDENTIFICATION PROGRAMME (OBSERVER IDENTIFICATION):

### Options:

1. **Confirmed** = confirmed observer identification
2. **Retained** = observer identification was at lower taxonomic level than determined, and consistent with it, so retained
3. **New, consistent** = identification was to a lower taxonomic level and consistent with the observer identification
4. **New, not consistent** = identification was not consistent with observer identification

## PHOTO-IDENTIFICATION PROGRAMME (OBSERVER IDENTIFICATION):

**Note: for 107 photos with corresponding records**

Species (observer)	Confirmed	New, consistent	New, not confirmed	Total
Buller's albatross	6			6
Common diving petrel	11		1	12
NZ white-capped albatross	8			8
Petrel (unidentified)			2	2
Prion (unidentified)	1	1	4	6
Salvin's albatross				
Sooty shearwater	14			14
Storm petrel (unidentified)		3		3
White-chinned petrel	55			55
<b>Total</b>	<b>96</b>	<b>4</b>	<b>7</b>	<b>107</b>
	<b>89.7%</b>	<b>3.7%</b>	<b>6.6%</b>	

## PHOTO-IDENTIFICATION PROGRAMME:

### ISSUES:

- Many captures not photographed (45%)
- Poor photo quality
- Lack of replication
- Difficulties in matching photo with information (no autopsy label photographed for live specimens, photo logs sometimes insufficient)

## PHOTO-IDENTIFICATION PROGRAMME:



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## PHOTO-IDENTIFICATION PROGRAMME:

### RECOMMENDATIONS:

- Where possible, all seabirds should be photographed and recorded in logs (for MinFish extract) with haul and sample information
- Training on use of camera (including setting time and date stamp)
- Range of photographs (i.e. head, body, wings (upper and lower surface) and feet) required per specimen with scale if possible
- Accurate details of photographs kept in log (including photo numbers and comments)
- Description of interaction and injuries should be recorded in log
- Images and extracts should be provided throughout the year to enable more prompt reporting

## ACKNOWLEDGEMENTS:

- This work is funded through the Conservation Services Programme (Project INT2010/02), Department of Conservation.
- Thanks to all Ministry of Fisheries observers who retained the birds for autopsy, took the photographs, and completed log books (which contain important information on cause of death and other aspects of the interaction onboard).
- Kristopher Ramm who provided the link between Wildlife Management International Ltd, the Department of Conservation and the Ministry of Fisheries Observer Programme, and helped provide clarification on any discrepancy with autopsy tag data and photograph records.
- Kelvin Floyd (WMIL) developed the WMIL autopsy and photo-identification database.

Any questions?

