INT 2009/02
Photo-identification of live seabirds captured in New Zealand fisheries

Progress Report 29 October 2010

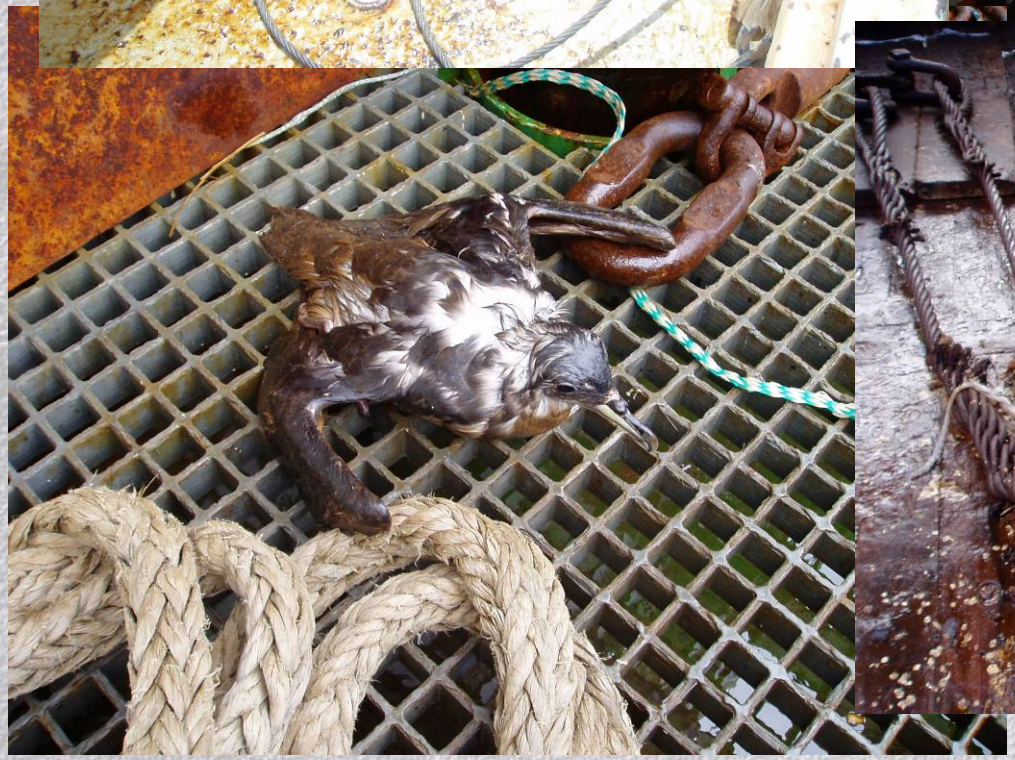
Objectives

Using photographs taken by observers, to accurately identify seabirds captured and released alive following interactions with New Zealand fishing vessels during the period 1 October 2004 to 30 September 2010.

1. To identify, from photographs taken by observers, the seabirds captured and released alive during the 2004/05 to 2009/10 fishing years
2. Update the observer database as necessary with correct identifications.

Historic protocol for Observers

- obtain photographs of all marine mammal and seabirds captured (including those released alive if possible)
- make an entry in a photo log for every photograph taken



Methods

- Data extract for all seabirds captured 2005/06 to 2008/09
- Photos sought for all cases where no value for identification at autopsy (live and dead)
- Matching by trip, station, specimen number, date, time and comments on photo log
- Photos provided to expert (David Thompson, NIWA)

Some problems

- Many captures not photographed
- Sometimes poor photo quality and lack of replication
- Difficulties in matching (no autopsy label photographed for live specimens, photo logs sometimes insufficient)

Expert determination

- Each specimen identified to lowest possible taxon
- Features used noted
- Whether observer identification should be superceeded was recorded
- Any other comments

Results classification

Confirmed = expert identification confirmed observer identification

Retained = observer identification was at lower taxonomic level than expert determination, and consistent with it, so retained

New, consistent = expert identification was to a lower taxonomic level and consistent with the observer identification

New, not consistent = expert identification was not consistent with observer identification

Examples

Obs code	Photo nos	DT ID code	DT ID (no code)	DT features used for ID	DT comments	Result
XSA	P9070128-29	XSA	Salvin's albatross	Bill and head morphology		Confirmed
XCP	P9070125	XSS	Seabird - small		Impossible to tell from picture	Retained
XAL	P1260010-13	XAU	Gibson's albatross	Size, colouration		New, consistent
XAL	P1010051	XSH	Sooty shearwater	Size, colouration, feet		New, not consistent

Result of expert photograph determination, by year

Year	Confirmed	Retained	New, consistent	New, not consistent	Total
2005/06	8	3	4	4	19
2006/07	55	2	22	11	90
2007/08	43	3	7	7	60
2008/09	41	4	7	2	54
Total	147	12	40	24	223

Result of expert photograph determination, by life status of seabird

Life status	Confirmed	Retained	New, consistent	New, not consistent	Total
Dead	93	3	11	14	121
Live	54	9	29	10	102
Total	147	12	40	24	223

Result of expert photograph determination, by observer identification

Species (observer)	Confirmed	Retained	New, consistent	New, not consistent	Total
Albatross (unidentified)	1		5	1	7
Black-browed albatross (unidentified)	2		1	1	4
Cape petrels		1	1	1	3
Penguins			1		1
Petrel (unidentified)	6		3		9
Prions (unidentified)	2				2
Seabird - large			3		3
Storm petrels			1		1
Unidentified fish				1	1
Wandering albatross (unidentified)			21		21
Average	**21%**	**2%**	**69%**	**8%**	

Result of expert photograph determination, by observer identification

Species (observer)	Confirmed	Retained	New, consistent	New, not consistent	Total
Black petrel	**4**				**4**
Black-backed gull	1				1
Black-bellied storm petrel	1		1		2
Buller's albatross	17	2			19
Buller's shearwater		3	1		4
Cape petrel	2		1		3
Chatham Island albatross	1				1
Common diving petrel	4			1	5
Fairy prion		2		1	3
Flesh-footed shearwater	**6**				**6**
Grey petrel	5				5
Grey-backed storm petrel		1		2	3
Northern royal albatross	1				1
Salvin's albatross	14			1	15
Shy albatross				7	7
Sooty shearwater	27		1		28
Southern giant petrel				4	4
Southern royal albatross	1				1
Wandering (Snowy) albatross				3	3
Westland petrel	2				2
White chinned petrel		1			1
White-capped albatross	17	1			18
White-chinned petrel	29	1		1	31
White-faced storm petrel	3				3
Yellow-eyed penguin	1				1
Average	**80%**	**6%**	**2%**	**12%**	

Result of expert photograph determination, by observer identification

Species (observer)	Confirmed	Retained	New, consistent	New, not consistent	Total
Black petrel	4				4
Black-backed gull	1				1
Black-bellied storm petrel	1		1		2
Buller's albatross	17	2			19
Buller's shearwater		3	1		4
Cape petrel	2		1		3
Chatham Island albatross	1				1
Common diving petrel	4			1	5
Fairy prion		2		1	3
Flesh-footed shearwater	6				6
Grey petrel	5				5
Grey-backed storm petrel		**1**		**2**	**3**
Northern royal albatross	1				1
Salvin's albatross	14			1	15
Shy albatross				7	7
Sooty shearwater	27		1		28
Southern giant petrel				4	4
Southern royal albatross	1				1
Wandering (Snowy) albatross				**3**	**3**
Westland petrel	2				2
White chinned petrel		1			1
White-capped albatross	17	1			18
White-chinned petrel	29	1		1	31
White-faced storm petrel	3				3
Yellow-eyed penguin	1				1
Average	**80%**	**6%**	**2%**	**12%**	

Result of expert photograph determination, by observer identification

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Buller's albatross	17	2			19
Buller's shearwater		3	1		4
Cape petrel	2		1		3
Chatham Island albatross	1				1
Common diving petrel	4			1	5
Fairy prion		2		1	3
Flesh-footed shearwater	6				6
Grey petrel	5				5
Grey-backed storm petrel		1		2	3
Northern royal albatross	1				1
Salvin's albatross	14			1	15
Shy albatross				**7**	**7**
Sooty shearwater	27		1		28
Southern giant petrel				**4**	**4**
Southern royal albatross	1				1
Wandering (Snowy) albatross				3	3
Westland petrel	2				2
White chinned petrel		1			1
White-capped albatross	17	1			18
White-chinned petrel	29	1		1	31
White-faced storm petrel	3				3
Yellow-eyed penguin	1				1
Average	**80%**	**6%**	**2%**	**12%**	

Recommendations (underway)

- training for new observers is provided on the importance of photography as a tool for protected species identification;
- training for new observers is provided on how to take suitable photographs for identification use, and overcome common problems encountered;
- training for new observers is provided on filling out photo logs and setting camera date/time so as to facilitate matching to interaction events; and
- expert identification of photographs of seabirds not returned for autopsy is conducted routinely alongside the autopsy programme.

E.g. photgrpahic tips to observers

- take multiple pictures
- try to photograph multiple angles and features (including upperparts, underparts, head, legs/feet)
- ensure time and date is correct on the camera – esp. after changing battery etc.
- always check the result and re-photograph if needed
- when reviewing, zoom in to check focus
- try metering on neutral areas (not black or white)
- if white autopsy label is influencing exposure (causing a dark animal to be under exposed), take additional pictures without the label in frame
- use macro setting for close-ups
- in low light try to utilise extra lighting to achieve good focus

Recommendations

- ensure training on photographic methods is provided to all existing observers;
- update the observer manual to more fully describe the nature of photographs that observers should obtain;
- require photograph numbers be entered into comments field of observer non-fish bycatch form;
- update the photo log provided to observers to help ensure full matching information is collected; and
- ongoing monitoring of the extent and utility of observer photographic records (i.e. what proportion of interactions are photographed, and how suitable those photographs are for determining identification).