



Seabird abundance project update

F. Thompson, E. Abraham & M. Oliver

Dragonfly

CSP/NPOA – Seabirds Technical Working Group
5 October 2009

Outline

1 Data collection and grooming

- Diaries and forms

- Data entry

- Reconciliation

2 Summary of data

- Fisheries

- Observers

- Species distributions

Diaries and forms

Data collection and grooming

Seabird abundance observations

- Observers on fishing vessels estimate sea bird abundance
- Conducted for DOC by the MFish observer programme
- Project has been running since 2000
- Initially data recorded in observer diaries
- Also recorded on longline forms
- Since 2005 data recorded on specially developed CSP forms

Diaries and forms

Data collection and grooming

2709#

Haul 1. 16 Oct.

	XBP	XAL	
1520	10		
1520	20	1	
1620	30	10	feeding
1720	30	12	
1800	30	10	

Haul 2 17 Oct.

	XBP	XAL	
1130	30	4	
1330	40	6	
1410	50	12	feeding
1530	30	15	
1730	50	15	

Haul 3 18 Oct.

	XBP	XCP	XAL	
1140	10	5	1	
1210	30	10	2	following
1310	20	10	6	
1410	20	10	1	
1710	20	5	4	
1930	20	5	4	

haul 4 19 Oct.

	XBP	XAL	
1255	6	2	following
1345	20	1	
1715	30	4	
1900	10	0	
1915	10	0	

haul 5 20 Oct.

	XBP	XAL	XCM	
1200	20	6	4	following
1530	20	2	2	
1730	30	6	0	
1930	30	0	0	

haul 6 21 Oct.

	XBP	XAL	XCM
1300	10	2	1
1500	30	1	0
1700	40	2	0
1900	40	2	0

Diaries and forms

Data collection and grooming

Number of trips with data collected

	Longline	Notebook	CSP	Total
2001	13	121	0	134
2002	4	112	0	116
2003	16	98	0	114
2004	50	100	0	150
2005	24	104	0	128
2006	13	48	62	123
2007	13	0	115	128
2008	10	0	152	162
2009	0	0	3	3
Total	143	583	332	1058

Years ending in June, with data from July 2000 to June 2008

Data entry

Data collection and grooming

Getting the data keyed

- Forms since July 2004 have been keyed
- and continue to be keyed as they come in
- Data entry system developed (python, django)
- The CSP developed forms have been double entered

Data entry

Data collection and grooming

Abundance data keyed

	Trips keyed		Forms	Stations	Obs.
	Once	Multi			
2004	48	0	68	791	4 056
2005	114	3	165	2 352	11 661
2006	66	49	178	2 677	14 511
2007	20	109	203	3 444	17 419
2008	11	136	376	5 895	26 114
2009	16	29	88	1 742	7 289
Total	275	326	1 078	16 901	81 050

Years ending in June.

Reconciliation

Data collection and grooming

- The abundance information keyed on CSP forms has been double entered to allow the data to be reconciled
- Each trip's data has been viewed, and reconciled, using a custom grooming application
- Data has been compared with the original forms as it has been reconciled

Abundance Database // Grooming

All trips

Reconcile trip 2000

{'abundances': 17, 'columns': 2, 'stations': 2}

Sorted by [Station](#) [Abundance](#) [Time](#) [Date](#) and [Station](#)

Station	Type	Date	Time	Dist.	XWA	XWM	XBM	XWC	XSH	XCP	FUR	HSL
1	H	None	10:20:00	<	25	100	25	50	25	100		
4	H	None	11:05:00	<	20	200	50	50	150	100		
7	H	None	11:25:00	<	10	200	20	50	100	150		
10	H	None	10:45:00	<	5	100	25	50	100	100		
12	H	None	09:15:00	<	40	400		100	100	100		
16	H	None	12:05:00	<	10	250	25	100	100	150		
20	H	None	08:00:00	<	10	150	15	100	100	100		
21		None	14:30:00	<							none	1
22	H	None	11:00:00	<	10	200	20	100	150	100		
23	H	None	19:40:00	<							none	1
25	H	None	12:20:00	<	10	150	15	50	100	100		
28	H	None	13:10:00	<	10	100	10	100	100	100		
31	H	None	19:00:00	<	10	150	15	50	100	100		
33	H	None	12:40:00	<	10	100		50	150	100		
36	H	None	14:35:00	<	15	150		100	250	100		
40	H	None	11:40:00	<	10	150	20	100	200	100		
41	H	None	10:54:00	<	10	100		50	50	50	none	1
44	H	None	12:20:00	<	10	100		50	100	100		
45	H	None	12:20:00	<	20	270	30	100	200	100		
Station	Type	Date	Time	Dist.	XWA	XWM	XBM	XWC	XSH	XCP	FUR	HSL
48	H	None	11:05:00	<	20	200	20	150	250	100		
52	H	None	10:05:00	<	10	100	10	100	100	100		
56	H	None	09:43:00	<	10	200	10	50	50	50		
59	H	None	09:20:00	<	10	200	10	50	50	50		
63	H	None	12:55:00	<	30	250	50	50	100	100		
66	H	None	11:50:00	<	20	250	50	50	150	100		
69	H	None	09:35:00	<	10	200	20	100	200	100		
73	H	None	11:50:00	<	10	150	20	50	200	100		
76	H	None	10:35:00	<	10	150	30	100	200	100		
76	H	None	10:55:00	<	10	150	30	100	200	100		

Reconciliation

Data collection and grooming

Error rates

- 2130 corrections were made during reconciliation
 - 540 (0.7% of 77 756) abundance observations were added
 - 419 (0.5% of 77 756) abundance observations were corrected
 - 998 (5.9% of 17 047) station details were corrected
 - 171 (2.1% of 8038) species codes corrected
 - 2 (0.2% of 970) CSP trip key numbers corrected

Linking to COD data

- Using trip and event keys abundance observations were linked to the Central Observer Database (COD) data
- Adds station data (latitude, longitude, target species etc.)
- linked to trawl, surface longline, and bottom longline records

Fisheries

Summary of data

Number of trips by fishery

	Trawl			Longline		Total
	Squid	Hoki	Other	Surface	Bottom	
2004	13	4	8	9	6	40
2005	23	22	38	6	19	108
2006	7	23	28	4	11	73
2007	17	9	39	11	9	85
2008	16	27	76	20	17	156
2009		17	21	7	1	46
Total	76	102	210	57	63	508

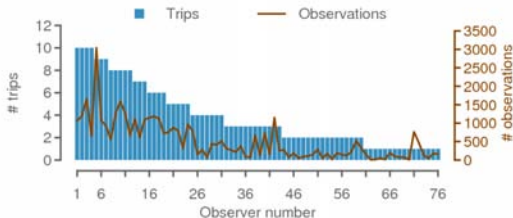
Note: 2009 forms continue to be keyed, and not all keyed forms have been reconciled.

Observers

Summary of data

Source of observer names

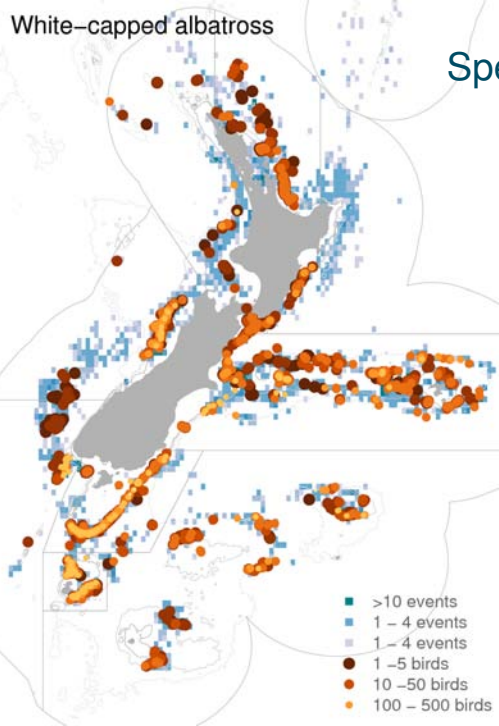
- From the COD, we have the names of observers on each trip
- We have defined "the" observer as the more experienced of the two observers on each trip
- There are 77 different observers in the data set



White-capped albatross

Species distributions

Summary of data

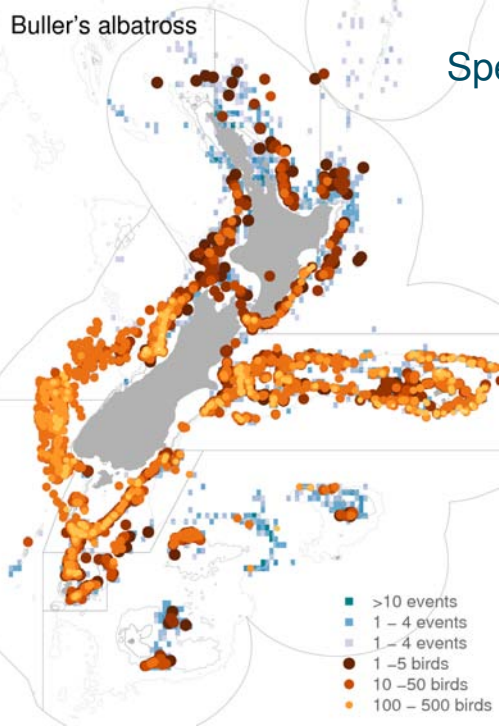


- White-capped albatross are distributed widely
- includes the XWM and the XSY codes.

Buller's albatross

Species distributions

Summary of data

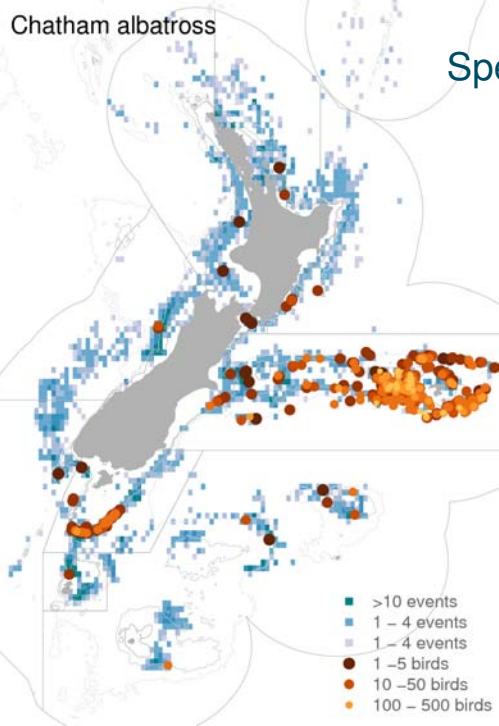


- Buller's albatross are seen in large numbers in the Southern blue-fin tuna fishery
- Widely distributed

Chatham albatross

Species distributions

Summary of data

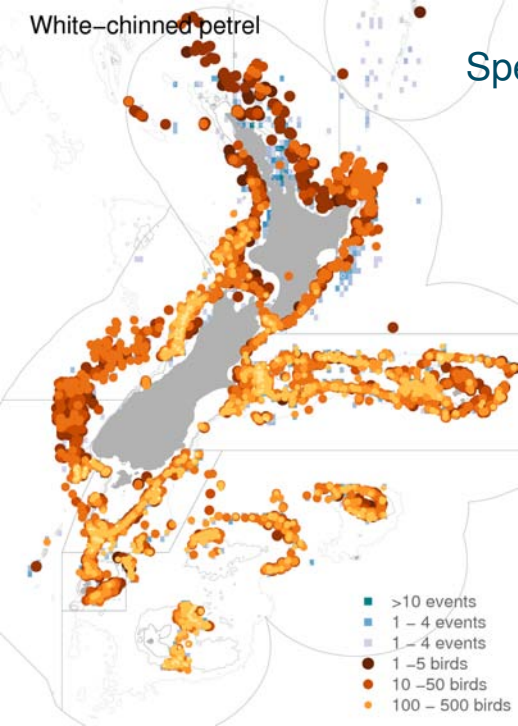


- The Chatham albatross distribution is concentrated near the Chatham islands
- Also seen in numbers on the Stewart-snares shelf

White-chinned petrel

Species distributions

Summary of data

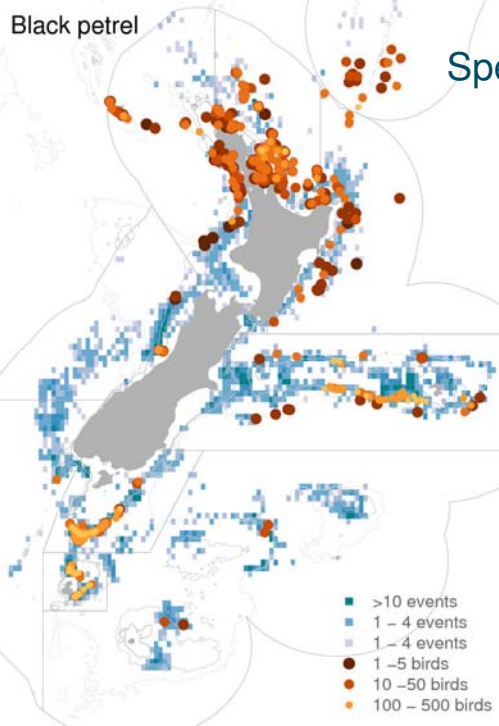


- White-chinned petrels are everywhere
- Higher concentrations in the south

Black petrel

Species distributions

Summary of data

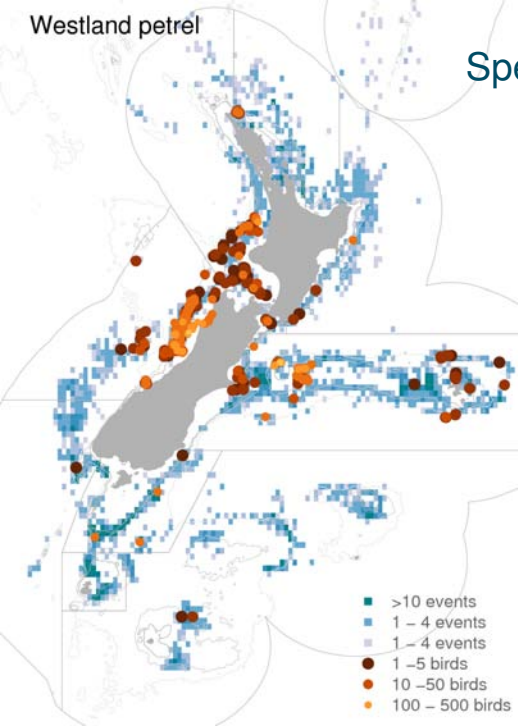


- Black petrels are concentrated in the Hauraki gulf
- The observations in the south are probably due to observers miss interpreting the XBP code

Westland petrel

Species distributions

Summary of data

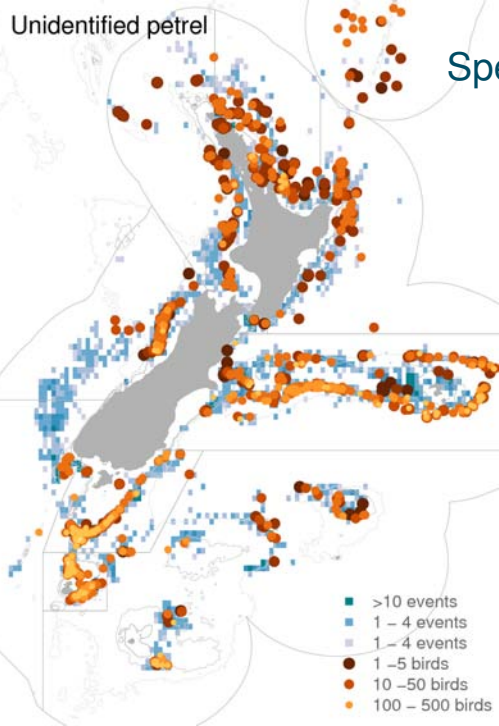


- Do Westland petrels travel as far as North Cape and Campbell Island?

Unidentified petrel

Species distributions

Summary of data



- Widespread use of the unidentified petrel code