

# ALBATROSS STUDIES — KANGAROO ISLAND, SOUTH AUSTRALIA: A COMPLETE SUMMARY 1971–1988

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In a previous summary, results from banding and retrap data over the years 1971–1983 for three species of albatross *Diomedea* spp. and two species of Giant Petrels *Macronectes* spp. in Kangaroo Island waters were presented, and methods of capture discussed (Lashmar 1984). The additional birds handled since then, most of which were captured in Eastern Cove, are now included in a complete summary from 1971 to 1988. Twenty-eight recoveries representing 26 birds banded elsewhere by other banders and not previously reported are described as are other species occasionally found in these waters.

## GENERAL OBSERVATIONS

Albatrosses and giant petrels come to these waters mainly during the winter months to feed on cuttlefish *Sepia apama*, and the numbers of birds in Eastern Cove (Fig. 1) vary considerably from year to year. There is a marked difference in the consistency of the numbers in the area up to 1978 and from 1979 onwards. From 1971 to 1978 the average number was about 16, with a minimum of two in 1977 and a maximum of 40 in 1971. The average from 1979 to 1988 was about 41, with a minimum of two in 1988 and a maximum of about 80 in 1980. Usually there were about 35 to 45 birds present. The winter of 1988 was lacking in birds although there were plenty of cuttlefish available as food whereas in the past seasons, when there were few birds, there were usually only a few cuttlefish. During the 1988 winter, fishermen reported numerous Yellow-nosed Albatross *D. chlororhynchos* in the western part of Investigator Strait, which is the western entrance to the Gulf of St Vincent and Eastern Cove.

Over the years three single white-phase Southern Giant Petrels *Macronectes giganteus* were observed; two of them were captured and banded. A single Grey-headed Albatross *D. chrysostoma* was noted in Eastern Cove on five

occasions over three years and one was finally captured and banded in 1987. Other species of albatross are occasionally seen in Kangaroo Island waters. A Royal Albatross *D. epomophora* was observed by Swanson at Cape De Couedic on 2 February 1984 when it swam near to a crayfish boat. The black cutting edge on the bill was

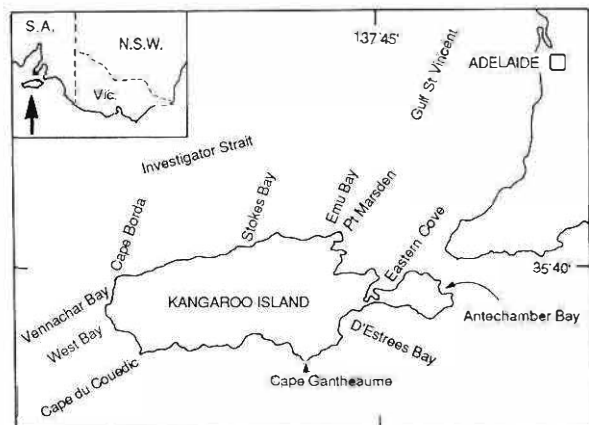


Figure 1. Map showing locations where albatrosses and giant petrels were banded and recovered off Kangaroo Island, South Australia.

plainly visible (N. R. Swanson, pers. comm.). In August a dead Light-mantled Sooty Albatross *Phoebastria palpebrata* was recovered beach-washed at De Estrees Bay by T. E. Dennis (pers. comm.). There are a number of records of Wandering Albatross *D. exulans* for this area. Only one, a mature bird, has been observed within Eastern Cove; it flew leisurely past Swanson's fishing boat, did a circuit of the cove and returned outside. Others were noted within the semi-enclosed seas north of Kangaroo Island, a raft of 12 were seen seven miles NW of Cape Borda in November 1954, and a single immature bird seven miles off Point Marsden in September 1968 (Swanson, pers. comm.). In 'outside' waters in January 1970, I observed an immature bird as it swam near to Swanson's boat while crayfish pots were being picked up off West Bay. N. R. Swanson (pers. comm.) observed single birds off Cape De Couedic in March 1984, and off Young Rocks, 20 miles south of Cape Gantheaume, in January 1983. Other unbanded beach-washed species found include Shy Albatross *D. cauta* and Grey-headed Albatross and Southern Giant Petrel,

giant petrels predominating. The sub-species of Black-browed Albatross *D. melanophrys impavida* has not been seen in this area, though it is sometimes seen off New South Wales (H. Battam, pers. comm.).

#### BANDING STUDIES AND RESULTS

Over the years 1971 to 1988, 298 birds were banded\* by me and my assistants with help from numerous other interested persons (Table 1). Of the 240 albatrosses banded, 209 were Black-browed Albatrosses, 25 were Yellow-nosed Albatrosses, five were Shy Albatrosses and one was a Grey-headed Albatross. In addition, 49 giant petrels were banded which included 34 Southern Giant Petrels, one Northern Giant Petrel *M. halli* and 14 unspecified in 1971

\*The bands used were supplied by the Australian Bird and Bat Banding Schemes of the Australian National Parks and Wildlife Services and the CSIRO, Division of Wildlife and Rangelands Research.

TABLE 1

Number of albatrosses, giant petrels and Pacific Gulls banded and retrapped at Kangaroo Island, South Australia, 1971-1988.

Species	1971	72	73	75	76	77	79	80	81	82	83	84	85	86	87	88	Total
Black-browed Albatross <i>Diomedea melanophrys</i>																	
Banded	2	15	3	2	1	2		12	17	37	36	24	14	25	4	15	209
Retrapped			1					1	6	9	16	17	5	14	1	2	72
Found dead											1				1		2
Yellow-nosed Albatross <i>D. chlororhynchos</i>																	
Banded			1			1	2	2		2	2	2	1	7	1	4	25
Retrapped																	
Shy Albatross <i>D. cauta</i>																	
Banded	1	1	1													2	5
Grey-headed Albatross <i>D. chrysostoma</i>																	
Banded																1	1
Southern Giant Petrel <i>Macronectes giganteus</i>																	
Banded		14*	2			2		1		2	7†	3	1	5	11	1	49
Retrapped		4						1			7	1		2	4	1	20
Pacific Gull <i>Larus pacificus</i>																	
Banded										1		1		1	2	4	9
Retrapped														1			1
Totals	3	34	8	2	1	5	2	17	23	51	69	48	21	55	24	30	393

\*1972 birds not specified, now known to include one *M. halli*. †Includes one *M. halli*.

although one of the latter, which had a pink-tipped bill, would have been a Northern Giant Petrel. When the opportunity arose Pacific Gulls *Larus pacificus* were also banded, and one of nine birds banded was retrapped later by a visiting bander using a cannon-net.

During the study period, 93 of the banded birds were retrapped at their place of banding; 74 Black-browed Albatrosses were retrapped and two were recovered dead (Table 1), and 16 Southern Giant Petrels and four unspecified giant petrels of 1971 were retrapped. No giant petrels have been retrapped other than in the season in which they were banded. Seven birds were recovered away from Kangaroo Island (Table 2). A Shy Albatross was recovered dead at Beachport in the south-east of South Australia, and a giant petrel (unspecified) at Tennyson (a suburb of Adelaide), South Australia was also dead. A Southern Giant Petrel was recovered exhausted at Pottsville Beach, Queensland, and died later. Four Black-browed Albatrosses, two of which were breeding, were retrapped by French ornithologists on the Kerguelen Islands.

Birds banded elsewhere were handled from time to time. Table 3 shows all live and dead birds on my records from 1954, and includes one additional from the banding office. There were 19 albatrosses of four species and nine giant petrels of both species. The birds came from one of three general areas (Fig. 2). Black-browed Albatrosses and Southern Giant Petrels came from the south Atlantic islands and Graham Land on the mainland of Antarctica; Yellow-nosed and Black-browed Albatrosses and Northern Giant Petrels were from islands in the south Indian Ocean, and Shy Albatrosses from Albatross Island in Tasmania. The proven oldest bird handled was a Black-browed Albatross, carrying a US Fish and Wildlife band, banded as a chick on 19 February, 1962 at South Georgia. I first captured this bird on 23 May, 1981, and then two seasons later on 13 June, 1983 when I added CSIRO band number 121-17605, as the original US band 568-01929 was becoming very worn and would soon be difficult to read. I recaptured this bird a third time on 25 May, 1984, by which time the bird would have been over 22 years old.

TABLE 2

Birds banded at Kangaroo Island, South Australia and recovered elsewhere.

Species Band number	Banding details			Recovery details				
	Place	Date	Bander	Place	Date	Finder	Distance	Status
Shy Albatross <i>Diomedea cauta</i>								
140-25901	Vennachar Bay	17/3/71	AL	Beachport, SA	24/4/71	AH	340 km ESE	Dead
Black-browed Albatross <i>D. melanophrys</i>								
120-64919	Eastern Cove	3/6/76	NS AL	Kerguelen Is	4/12/84	HW	5 690 km SW	Alive
120-64552	Eastern Cove	29/7/81	AL	Kerguelen Is	4/12/84	HW	5 690 km SW	Alive
121-17611	Eastern Cove	15/6/83	AL	Kerguelen Is	4/12/84	HW	5 690 km SW	Breeding
121-17612	Eastern Cove	21/6/83	AL	Kerguelen Is	27/12/84	HW	5 690 km SW	Breeding
Giant petrel <i>Macronectes</i> sp.								
130-50604	Eastern Cove	15/8/71	AL	Tennyson, SA	28/9/71	RJ	105 km NNE	Dead
Southern Giant Petrel <i>M. giganteus</i>								
130-50628	Eastern Cove	24/6/86	AL	Pottsville Beach Qld	2/8/86	DM	1 691 km NE	Dying

AH — A. Hunt; AL — A. Lashmar; DM — D. Mundy; HW — H. Weimerskirch; NS — N. R. Swanson; RJ — R. E. Jackson.

TABLE 3

Albatrosses and giant petrels banded elsewhere and recovered at Kangaroo Island, South Australia.

Species/ Band number	Banding details			Recovery details				
	Place	Date	Bander	Place	Date	Finder	Distance	Status
Wandering Albatross <i>Diomedea exulans</i>								
140-02784	Bellambi, NSW	20/8/59	DG	Stokes Bay	28/8/60	JS	1 264 km SW	Dead
Shy Albatross <i>D. cauta</i> †								
140-46516	Albatross I., Tas.	10/1/81	NB	Eastern Cove	6/8/81	AL	786 km NW	Alive
140-47117	Albatross I., Tas.	14/2/81	NB	off Couedic	13/5/81	JM	840 km WNW	Alive
280-02808	Albatross I., Tas.	30/3/83	NB	Eastern Cove	17/7/83	AL	786 km NW	Alive
280-03970	Albatross I., Tas.	1/4/84	NB	De Estress Bay	23/5/84	NK	795 km NW	Alive
280-06322	Albatross I., Tas.	26/3/85	NB	Eastern Cove	16/6/85	AL	786 km NW	Alive
280-06357	Albatross I., Tas.	26/3/85	NB	Eastern Cove	16/6/85	AL	786 km NW	Alive
280-07145	Albatross I., Tas.	28/3/85	NB	Eastern Cove	16/6/85	AL	786 km NW	Alive
280-08676	Albatross I., Tas.	21/3/86	NB	C. Gantheaume	4/2/87	TD	804 km NW	Dead
131-27230	Albatross I., Tas.	22/3/88	NB	Willson R. Beach	7/88	KW	786 km NW	Dead
Yellow-nosed Albatross <i>D. chlororhynchos</i>								
CF-12755	New Amsterdam	3/2/73	FS	Investigator St	9/73	NK	5 190 km E	Alive
CF-19206	New Amsterdam	21/2/82	FS	Eastern Cove	11/8/82	AL	5 190 km E	Alive
Black-browed Albatross <i>D. melanophrys</i>								
528-63606	Bird I., S. Georgia	18/2/61	US	Eastern Cove	4/6/75	NS	13 818 km ENE	Alive
568-01929	Bird I., S. Georgia	19/2/62	US	Eastern Cove	23/5/81	AL	13 818 km ENE	Alive
568-01929*	Bird I., S. Georgia	19/2/62	US	Eastern Cove	13/6/83	AL	13 818 km ENE	Alive
568-01929**	Bird I., S. Georgia	19/2/62	US	Eastern Cove	24/5/84	AL	13 818 km ENE	Alive
CF-12019	Kerguelen Is	20/1/73	FS	Eastern Cove	3/5/81	AL	5 690 km NE	Alive
CF-24850	Kerguelen Is	28/1/85	FS	Eastern Cove	16/6/85	AL	5 690 km NE	Alive
114-7289	Bird I., S. Georgia	15/4/85	BS	Eastern Cove	27/6/85	AL	13 818 km ENE	Alive
Giant Petrel <i>Macronectes</i> spp								
51697	Anvers I., Graham Land	3/57	FI	Antechamber Bay	7/7/57	AL	14 376 km NE	Alive
502-6614	Signy I., S. Orkney	3/67	BS	Antechamber Bay	26/7/69	AL	14 121 km ENE	Dead
Northern Giant Petrel <i>Macronectes halli</i>								
BS-3427	Kerguelen Is	10/2/72	FS	Antechamber Bay	15/7/72	AG	5 680 km ENE	Dead
Southern Giant Petrel <i>Macronectes giganteus</i>								
504-6302	Signy I., S. Georgia	5/3/71	BS	Vennachar Bay	13/2/72	RJ	13 981 km ENE	Dead
505-5291	Bird I., S. Georgia	2/73	BS	Emu Bay	30/9/73	DB	13 821 km ENE	Dead
506-1619	Signy I., S. Orkney	6/3/74	BS	Antechamber Bay	10/1/75	AL	14 121 km ENE	Dead
506-2704	Signy I., S. Orkney	25/3/75	BS	Eastern Cove	30/7/75	NS	14 097 km ENE	Alive
113-1352	Bird I., S. Georgia	28/3/79	BS	Eastern Cove	28/7/79	AL	14 097 km ENE	Alive
V-05215	Nelson I., S. Shetlands	4/3/86	BZ	Eastern Cove	11/7/86	AL	9 046 km ENE	Alive

AG — D. and A. Gilfillan; AL — A. Lashmar; DB — D. Barrington; DG — D. Gibson; JM — J. McGovern; JS — J. Stanton; NB — N. Brothers; NK — N. Buick; NS — N. R. Swanson; RJ — R. Jamieson; TD — T. Dennis; KW — K. Wiadrowski.

BS — British Trust for Ornithology; BZ — Brazilian; FI — Falkland Islands Dependencies Scientific Bureau; FS — OIS, French; US — United States Fish and Wildlife.

†All banded as pullus; \*New band added, 121-17605; \*\*Additional band, 121-17605.

Co-ordinates: Bellambi, NSW (34°20'S., 151°00'E.); Albatross I., Tasmania (40°22'S., 144°40'E.); New Amsterdam (37°50'S., 77°31'E.); Bird I., S. Georgia (54°00'S., 38°02'W.); Kerguelen Is (48°40'S., 68°38'E.); Anvers I., Graham Land (64°30'S., 65°00'W.); Signy I., S. Orkney (60°43'S., 45°36'W.); Nelson I., S. Shetlands (62°10'S., 58°50'W.).

TABLE 4

Annual recoveries of Black-browed Albatross *Diomedea melanophrys* banded at Kangaroo Island, South Australia and recaptured or found dead at Kangaroo Island.

Year*	Number banded	Recoveries in subsequent years										
		1973	1980	1981	1982	1983	1984	1985	1986	1987	1988	
1971	2											
1972	15	1	1	1	4	1						
1973	3					1						
1975	1											
1976	2			1		1	2					
1977	2			2			2					
1980	12			1		1			2		1	
1981	17			1	4	8	3		5			
1982	37				1	4**	4	1				1
1983	36					1	7	1	2	1		
1984	24						1	1	2			
1985	14								2			
1986	25								1			
1987	4									1**		
1988	15											

\*No boat was available on the years omitted, years ended on 30 June. \*\* one dead.

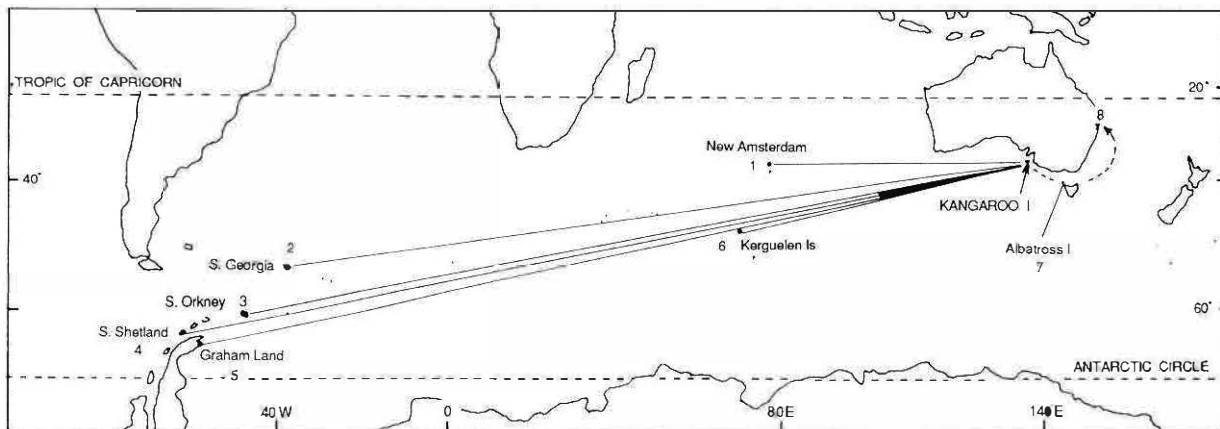


Figure 2. Map showing where albatrosses and giant petrels which visited Kangaroo Island, South Australia were banded. Birds banded at Kangaroo Island were retrapped on the Kerguelen Islands and in southern Queensland. 1 — Yellow-nosed Albatross; 2 — Black-browed Albatross, Southern Giant Petrel; 3, 4, and 8 — Southern Giant Petrel; 5 — Giant Petrel; 6 — Black-browed Albatross, Northern Giant Petrel; 7 — Shy Albatross.

The maximum time between banding and recovery of Black-browed Albatrosses banded at Kangaroo Island is 12 years: 120-64903 was banded on 17 July, 1971 and retrapped four times, the last time being 15 June, 1983. The next longest, 120-64503, was banded on 9 August 1976 and retrapped three times, the last being 27 June, 1985. Two other birds were retrapped after eight and seven years; the latter, 120-64919 was retrapped four times at Kangaroo Island and 16 months later on the Kerguelen Islands.

In the winter of 1985, two Black-browed Albatrosses were observed in Eastern Cove with colour-dyed breasts. The orange-brown dye had been placed on the birds in 1984 (about December) by French ornithologists on Kerguelen, on the same expedition during which four of my birds were retrapped. One of the dyed birds was captured and banded (121-17644).

Not infrequently no birds were captured, usually because the breeze was too strong and birds became airborne too quickly. Days of dead calm, which are infrequent in this area, are the best for capturing the smaller albatrosses and giant petrels.



Figure 3. A Black-browed Albatross (on right) about to be attacked by a Southern Giant Petrel. A white-phase giant petrel is also present (on left).

## BEHAVIOUR OF GIANT PETRELS

Of the two dead recoveries of Black-browed Albatrosses, the first one was noted at the time floating in the middle of Eastern Cove where a Southern Giant Petrel was busily feeding from the carcass which was quite fresh. I believe it was killed by a giant petrel. The second dead recovery was a freshly-picked skeleton washed ashore in Eastern Cove. A fisherman, now deceased, who worked in the area for a number of years told me he had seen giant petrels trying to drown albatrosses by smothering them with their wings and holding the albatross's head under water. I have also seen a giant petrel use its wings to cover an albatross (Fig. 3). Some years ago, P. Menhennet, the first resident NPWS district ranger on Kangaroo Island, noted a giant petrel drown a Black Swan *Cygnus atratus* by the same method while he was stationed here. I do not recollect whether the petrel then proceeded to feed on the carcass.

Rounsevell and Copson (1982) noted regular predation by both species of giant petrels on King Penguins *Aptenodytes patagonicus* over a period of 20 years at Lusitania Bay on Macquarie Island. It seems that giant petrels may prey on any seabird that is suitable as food.

## DISCUSSION

During the 1988 season in particular there were few albatrosses in the Eastern Cove area, even though cuttlefish were very plentiful. N. Brothers (pers. comm.) has suggested that possibly cuttlefish were plentiful further out to sea, thus the birds had no need to come inshore to feed. H. Battam (pers. comm.) found the 1988 season was a poor season also for Wandering Albatrosses at Wollongong, New South Wales, and only about 30 per cent of the usual number of birds were in the area even though cuttlefish 'were floating around all over the place untouched.' The temperature for the area at that time of year was the warmest on record, and birds were only present for a very short time.

During the years of few albatrosses off Kangaroo Island, 1973, 1974, 1977, 1978 and 1988, June 1974 and August 1978 were the only two months when air temperatures were average or lower

than average (Bureau of Meteorology records for Kingscote, Kangaroo Island). In other words, during those sparse years, the air temperatures for May to August (the albatross season) were higher than average, and this would appear to have been associated with the presence of albatrosses. In some years, it may also have been related to the quantity of cuttlefish available, which could influence the albatross numbers.

At the time of compiling these notes, Dr Henri Weimerskirch, the French ornithologist responsible for retrapping four of my Black-browed Albatrosses on the Kerguelen Islands, is spending two months at Crozet Island and this may perhaps result in further interesting recoveries of Australian banded birds.

The most abundant and frequently caught albatrosses were the Black-browed Albatross and Shy Albatross. The Black-browed Albatrosses came from islands to the west in the southern Atlantic and Indian Oceans, and the regularity with which banded birds were recaptured indicates that they were returning to a proven feeding area. All Shy Albatrosses, on the other hand, were from the nearest breeding site to the east, Albatross Island off north-west Tasmania. Eight of these birds were less than one-year old and the others about a year or a little older.

## ACKNOWLEDGMENTS

I wish to acknowledge the generosity of Mr and Mrs Michael Barlett who made a boat and outboard motor continually available. Their boat was ideal for the purpose and without it few birds would have been captured.

Dr Kim Lowe and Bruce Male searched records in the banding office for Kangaroo Island recoveries for which I thank them. I extend my thanks also to my 'B' class banders, Nils Swanson and Terry Dennis, who helped with the work and assisted to swell the numbers of birds caught. To the numerous other persons who sometimes sailed with me, I thank them for their assistance and company.

I also thank the staff of the Adelaide Bureau of Meteorology for a copy of the air temperatures registered for this area over the years of the survey.

## REFERENCES

- Lashmar, A. F. C. (1984). Albatross Studies — Kangaroo Island, South Australia. Summary of progress 1971–1983. *Corella* 8: 46–48.
- Rounsevell, D. E. and Copson, G. R. (1982). Growth rate and recovery of a King Penguin, *Aptenodytes patagonicus*, population after exploitation. *Aust. Wild. Res.* 9: 519–525.

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## THE WANDERER

Two French biologists, Pierre Jouventin and Henri Weimerskirch, working on the Crozet Islands in the southern Indian Ocean have succeeded in placing small transmitters on the Wandering Albatross *Diomedea exulans*, and tracking their foraging movements by satellite (*Nature*, 1990, 343 746–748). They report the movements of five males tracked during the incubation period and two flights of one male feeding a chick. One male moved north-west over the Indian Ocean and covered 5 609 km in a 24-day absence, and another moved east and flew 5 323 km in 24 days. A third bird travelled over 15 200 km in 33 days in a flight which took it east to encircle Heard Island, then south to near Antarctica at about 70° E from where it flew east to 30° E before flying north and north-east back to the Crozet Islands. The average speeds of these

flights were 49.2 to 58.4 km per h and birds flew at speeds of up to 80 km per h. They covered distances of up to 900 km per day. The male feeding a chick flew shorter distances of 381 and 330 km in three days. Details of one flight show the direction of flight and the distances travelled in relation to the prevailing weather systems. Birds flew all day but mostly during daylight; birds did fly at night when there was moonlight. High pressure systems trapped birds for one to seven days. The authors consider that the use of wind as the primary source of energy has enabled the evolution of the largest of flying seabirds; a bird which breeds on the few isolated islands of the Subantarctic and wanders over the whole of the southern seas to feed.

M. D. Murray