

Observations of Sea Birds Between Sydney and Perth

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A total of 27½ hours was spent in observing birds off the southern coast of Australia, between February 13 and 20, 1963, while I was a passenger on the s.s. Orsova, enroute from Sydney to Fremantle. Records were kept of the distribution and abundance of all species observed and notes were taken on their habits and field identification marks. In addition, a daily record of sea and air conditions was obtained from the ship's log.

A system was devised for determining population density. This was done by counting or estimating the total number of individuals of each species for a one hour period. It was assumed that under average conditions of visibility all birds could be seen out to a distance of 500 yards on either side of the ship from my position on the forecandle about 40 feet above the water. Since the ship steamed at a speed of about 20 knots the total number of birds counted in an hour would be the number in an area of 10 square nautical miles. It is realized that this figure is at best only a rough index to density, and no doubt experienced observers will question anyone's ability to identify pelagic birds out to 500 yards from a ship. With practice, however, many species can be identified at reasonably great distances, and it should be pointed out that a majority of birds which approach within 500 yards of a ship also approach much closer, thus simplifying identification problems. In those instances where birds could be seen but not identified within 500 yards of the ship, they were recorded in the same relative percentages as similar species seen and identified. I feel that any error caused by this procedure is slight.

Since periods of observation in different localities varied from one to several hours, it was decided that abundance could best be compared by using the highest hourly individual count for each species in each locality. This gives a maximum density (number of individuals per 10 square nautical miles) in each locality.

All observations are divided into 13 localities. Except in the Great Australian Bight when the ship was as far as 250 miles off the coast, observations are all within 25 miles of the main coast, but the ship was always at least 2 miles and usually more than 5 miles out to sea. Birds recorded in bays and harbours while the ship was entering and leaving port are not included. The number in parenthesis following the name of each species is the maximum density as described above. Estimated numbers are preceded by an asterisk.

Locality 1: south-east coast of New South Wales about 5 miles south-east to 45 miles south of Sydney (3 to 10 miles off the coast); 13 Feb.; two hours observing; sea temperature 75° F.; air temperature 80° F.; wind NNE at 10 knots. Species: Wedge-tailed Shearwater, 30, (24); Red-tailed Tropic-bird, 1, (1); Pomarine Skua, 5, (4); Silver Gull, 3 (3); Crested Tern, 1, (1).

Notes: The Red-tailed Tropic-bird was seen at latitude $34^{\circ} 30'$ S. and was identified as an adult of this species by its all white upper parts (the colour of the long central tail feathers not being discernible). The bird appeared slightly larger and heavier-bodied than the White-tailed Tropic-bird. It flew about 20 feet above the water with deep steady wingbeats but did not approach close to the ship. Only one of the Pomarine Skuas was an adult, with projecting blunt twisted tail feathers, but the others were identified by size and plumage characteristics which are described later.

Locality 2: south-east coast of New South Wales about 15 miles east south-east to 40 miles south of Becroft Head (about 15 to 20 miles off the coast); 13 Feb.; two hours observing; sea temperature 74° F.; air temperature 77° F.; wind NE at 12 knots. Species Great-winged Petrel, 30, (21); Wedge-tailed Shearwater, 75, (56); Pomarine Skua, 30, (25); Arctic Skua, 5, (3).

Notes: Wedge-tailed Shearwaters become increasingly less common and Great-winged Petrels increasingly more common as the ship steamed south. These two species look very much alike in the field, both being completely dark brownish-black and medium sized. Furthermore, both species were usually seen singly or in small groups. The Great-winged Petrel, however, was rather easily identified by the prominent whitish patch around the base of its beak, a feature particularly noticeable in direct sunlight. The relatively long tail of the Wedge-tailed Shearwater could be distinguished at quite some distance and identified this species from all other similar ones. Also, the beak of the Great-winged Petrel is black and relatively short and thick, whereas the beak of the Wedge-tailed Shearwater is grey and longer and more slender. I did not find the long narrow wings of the Great-winged Petrel to be a useful field mark, nor the pale coloured feet (which were rarely visible) of the Wedge-tailed Shearwater. Both species frequently flew very close across the bow of the ship, but the Wedge-tailed Shearwater had a tendency to turn and follow along with the ship for a short distance whereas the Great-winged Petrel usually flew directly away. Only three adult Pomarine Skuas and one adult Arctic Skua were seen, all the other birds being immature and very difficult to tell apart unless they were seen together, at which time the larger size of the Pomarine was apparent. However, the amount of white showing in the primaries from above was a rather good field mark, the Pomarine showing slightly more than the Arctic. Also, the dark phase (uniformly dark plumage) seemed to be more common in the Arctic Skua (two of five Arctic Skuas were dark-phased and only three of 30 Pomarine Skuas). Most of the birds were white below with a more or less prominent dark chest band and varying amounts of dark barring and mottling, with a pale yellowish-white collar across the hind neck. It might be pointed out that dark immature Pomarine Skuas could be confused with Great Skuas but show considerably less white in the primaries from above as well as being somewhat smaller. Both Pomarine and Arctic Skuas followed along behind the ship for long periods in

much the same manner as gulls, readily picking up galley refuse thrown overboard, and as many as 25 at one time were counted following the ship.

Locality 3: Bass Strait about 40 miles east north-east to 5 miles south of Wilson's Promontory, Victoria (about 5 to 20 miles off the coast); 14 Feb.; two hours observing; sea temperature 63° F.; air temperature 61° F.; wind SSW at 13 knots. Species: Yellow-nosed Albatross, 1, (1); White-capped (Shy) Albatross, 2, (1); (2 unidentified albatrosses); Short-tailed Shearwater, *55,000, (*35,000); Fluttering Shearwater, 3, (2); Diving Petrel, 1, (1); (1 unidentified skua, probably Pomarine); Pacific Gull, 10, (8); Silver Gull, 6, (5); Crested Tern, 2, (2).

Notes: The Short-tailed Shearwater is another dark medium-sized species which was most readily identified by its tremendous abundance and its manner of flight, the birds following one another in long lines with constant banking and turning just above the waves and gliding up to 40 feet above the water then back down again. The under wing was paler than in other similar species (except the Sooty Shearwater from which it is almost impossible to tell it in the field), but I found this an unreliable field mark as the colour of the under wing appeared very whitish at times and quite dark on other occasions. In some areas the water was almost covered with these birds, and on one occasion there were an estimated 10,000 individuals concentrated in an area no greater than a thousand yards across. Much of the time there were at least 1,000 birds in sight scattered in all directions from the ship. Frequently large numbers would alight on the water to pick up food in a particular area. The Fluttering Shearwaters were all seen singly and were identified by their relatively small size (appearing considerably smaller than Short-tailed Shearwaters), dark brownish upper parts, white under parts, and rapid fluttering wingbeats just above the water. Their flight was usually in a direct line with only occasional gliding for brief periods. The dark upper parts extended to below eye level on the sides of the head, and the under wing was white with a rather broad dusky border. The Diving Petrel appeared hardly larger than a Starling and flew low across the water in an almost straight path with rapid wing beats and no gliding.

Locality 4: Bass Strait about 20 miles west of Wilson's Promontory to 2 miles south of Cape Schank, Victoria (about 2 to 15 miles off the coast); 14 Feb.; three hours observing; sea temperature 63° F.; air temperature 62° F.; wind W at 15 knots. Species: Yellow-nosed Albatross, 1, (1); White-capped Albatross, 14, (6); Short-tailed Shearwater, *45,000, (*20,000); Fluttering Shearwater, 10, (5); Diving Petrel, 28, (21); Australian Gannet, 1, (1); (5 unidentified skuas, probably Pomarine); Crested Tern, 16, (6).

Notes: The Yellow-nosed Albatross flew very close across the bow of the ship but the White-capped Albatross, which was almost always seen singly, showed no interest in the ship and only rarely

approached closer than 300 or 400 yards. The White-capped Albatross was easily identified by the under wing pattern which was white with a black tip and only a very narrow black border. Another good field mark was the pale greyish or yellowish-green beak, and the back was greyer than in similar species. The Yellow-nosed Albatross was identified by its black beak with a bright yellow ridge line on top, as well as the wider black border of the under wing. Diving Petrels were seen singly or in small groups flying rapidly just above the waves, and often rose from the water ahead of the ship. Crested Terns were seen singly and in pairs and groups of three. None of the skuas approached the ship close enough for positive identification.

Locality 5: extreme south-east coast of South Australia, about 25 miles south south-east to 20 miles west south-west of Cape Banks (about 12 to 15 miles off the coast); 17 Feb.; two hours observing; sea temperature 56° F.; air temperature 56° F.; wind ENE at 3 knots. Species: Little Penguin, 1, (1); Wandering Albatross, 1, (1); White-capped Albatross, 515, (310); Short-tailed Shearwater, 72, (45); Fluttering Shearwater, 14, (9); Australian Gannet, 1, (1); (7 unidentified skuas); Silver Gull, 650, (430); Crested Tern, 14, (8).

Notes: The Little Penguin was swimming on the surface as the ship passed about 40 yards from it. Because of its small size and diving habits this species is very difficult to observe at sea and is probably more common than my records would indicate. The white back, mottled upper wing coverts, large pink beak and pink feet easily identified the Wandering Albatross as it flew close alongside the ship. Perhaps due to the very calm sea more than half of the White-capped Albatrosses were observed sitting on the surface, sometimes in loose groups of more than 100 birds. The exceptional visibility, resulting from the calm sea and an overcast grey sky, made it possible to see albatrosses when they were flying a great distance away, perhaps farther than a mile. Some apparently immature birds had a darker mantle with small white patches in the primaries. Although a few White-capped Albatrosses flew close across the bow, the majority remained far off to one side of the ship. Short-tailed Shearwaters were seen singly or in small groups of up to a dozen individuals, but one group of 25 birds was seen. Fluttering Shearwaters were almost always flushed from the surface of the water ahead of the ship, and were seen singly or in small groups of up to 4 birds. Silver Gulls were seen in flocks of up to 250 individuals, mostly sitting on the calm surface. Crested Terns were seen singly or in pairs. None of skuas came close enough for identification, though I think it most likely they were Pomarine.

Locality 6: south-east coast of South Australia about 20 miles south south-west to 30 miles west north-west of Cape Jaffa (15 to 25 miles off the coast); 17 Feb.; two hours observing; sea temperature 60° F.; air temperature 61° F.; wind SSE at 9 knots. Species:

White-capped Albatross, 11, (7); Short-tailed Shearwater, 2, (1); Fluttering Shearwater, 60, (59); Pomarine Skua, 2, (2).

Notes: Birds became much less abundant after the ship passed Cape Jaffa (heading north-west). All the White-capped Albatrosses were seen singly, usually resting on the surface. The Fluttering Shearwaters were all seen in the first hour (except one bird), and were flushed from the water ahead of the ship either singly or in small groups of up to 8 individuals.

Locality 7: Gulf of St. Vincent and Investigator Strait about 30 miles south-west of Adelaide to 25 miles south-west of Cape Spencer, South Australia (about 5 to 25 miles off the coast); 18 Feb.; four hours observing; sea temperature 66° F.; air temperature 66° F.; wind SE at 13 knots. Species: (1 unidentified albatross); Fleshy-footed Shearwater, 16, (5); Short-tailed Shearwater, *2,750, (*1,500); White-faced Storm-Petrel, 18, (11); Australian Gannet, 3, (2); White-breasted Cormorant, 8, (6); Arctic Skua, 6, (3); (4 unidentified skuas, probably Artic); Crested Tern, 38, (11).

Notes: The only species of shearwater seen in the Gulf of St. Vincent was the Fleshy-footed, and it was evenly distributed singly or in pairs throughout the whole locality. Another dark shearwater, it was identified from the several other similar species by its rather conspicuous pale flesh-coloured or greenish-yellow beak, and also by its slightly larger size and rather slow flight with alternate flapping and gliding just above the water. I did not find the pale-coloured feet a useful field mark since they were practically never visible. This species frequently flew very close across the bow, showing little fear of the ship. The Short-tailed Shearwaters were abundant in the late afternoon and at dusk in the vicinity of Althorpe Island, apparently returning to land for the night. White-faced Storm-Petrels were seen singly and in pairs except for one group of four birds, but only in the vicinity of Althorpe Island. These little birds fluttered just above the water, frequently dragging the surface with their feet and picking up food with their beaks. They showed little fear of the ship and often approached within 10 or 20 yards. The White-breasted Cormorants were seen only in the Gulf of St. Vincent, flying past the ship singly or in small groups, except two birds seen singly which were swimming on the surface of the rough sea. Only one adult Arctic Skua was seen but the others were identified by the hardly visible white primary quills from above. They were seen singly except for one pair.

Locality 8: Great Australian Bight steaming west on latitude 35° 30' S approximately between longitudes 131° E and 130° 10' E (about 250 miles off the coast of South Australia); 19 Feb.; two hours observing; sea temperature 62° F.; air temperature 64° F.; wind NE at 30 knots. Species: Wandering Albatross, 4, (4); Great-winged Petrel, 10, (6); Short-tailed Shearwater, 103, (58).

Notes: From one to four Wandering Albatrosses followed in the ship's wake throughout the two hour period. Great-winged Petrels

were seen singly throughout the locality, usually passing close across the bow of the ship. The birds in this area did not show the prominent whitish face patch which was a conspicuous feature of this species off the coast of New South Wales. Only rarely was the area around the base of the beak seen to be somewhat paler in colour. The long wings were held back at a slight angle when a bird was gliding in strong wind. The Short-tailed Shearwaters were seen singly and in small groups of up to 8 individuals, usually passing a considerable distance in front of the ship and only very rarely approaching within 200 yards. From Great-winged Petrels this species could best be identified by its manner of flight and paler under wing. The wings were held more stiffly, wing-beats were more rapid, turns were made at a steeper angle of bank, and there was a greater tendency to soar at heights 40 to 50 feet above the water. When the two species were seen together the shorter wings of the Short-tailed Shearwater were noticeable, and at close range the difference in size and colour of the beaks could be observed.

Locality 9: Great Australian Bight steaming west on latitude 35° 30' S approximately between longitudes 128° 40' E and 128° 15' E (about 240 miles south of Eucla, Western Australia), 19 Feb.; one hour observing; sea temperature 62° F.; air temperature 68° F.; wind NE at 26 knots. Species: (2 unidentified Albatrosses); Great-winged Petrel, 10, (10); Short-tailed Shearwater, 36, (36).

Notes: The two Albatrosses were seen singly both at very long distance from the ship; their mantle was dark and the under wing white with a wide black border. The habits of Great-winged Petrels and Short-tailed Shearwaters were not changed from those recorded from the previous locality.

Locality 10: Great Australian Bight steaming west on latitude 35° 30' S approximately between longitudes 127° E and 126° 35' E (about 200 miles off the coast of Western Australia); 19 Feb.; one hour observing; sea temperature 62°F.; air temperature 69°F.; wind NE at 24 knots. Species: Great-winged Petrel, 12, (12).

Notes: Seen singly; habits as before.

Locality 11: South coast of Western Australia about 110 miles to 65 miles east of Eclipse Island, King George Sound (about 40 to 60 miles off the coast); 20 Feb.; two hours observing; sea temperature 65° F.; air temperature 66° F.; wind WSW at 18 knots. Species: Yellow-nosed Albatross, 9, (5); Great-winged Petrel, 75, (40); Fleishy-footed Shearwater, 8, (5); Little Shearwater, 24, (22); Wilson Storm-Petrel, 1, (1).

Notes: The Yellow-nosed Albatrosses were seen singly and showed little interest in the ship, usually passing 300 or 400 yards away. Great-winged Petrels and Fleishy-footed Shearwaters were almost always seen singly and both species usually flew very close across the bow of the ship, at which time their quite different beaks were clearly visible. The wings of the Fleishy-footed Shearwater are somewhat broader than those of the Great-winged Petrel, and the flight correspondingly slower. Great-winged Petrels in this locality

showed no signs of a whitish face patch. Little Shearwaters generally passed well ahead of the ship and were seen singly or in pairs. In strong wind they flew with alternate gliding and rapid wing-beats just above the waves in a rather erratic manner with sharp turns and banks. They appeared blacker above than Fluttering Shearwaters, but in strong sunlight the upper parts looked greyish. The dark upper parts extended only to the eye level on the sides of the head, giving the birds a white faced appearance which was visible even at long distances. The under wing was very white with only a narrow black border. The Wilson Storm-Petrel was seen only briefly, darting erratically just above the surface among the high waves about 50 yards from the ship, and was identified by its all dark plumage with a prominent white rump.

Locality 12: South coast of Western Australia about 25 miles east south-east to 35 miles west of Eclipse Island, King George Sound (about 10 to 15 miles off the coast); 20 Feb.; two and a half hours observing; sea temperature 67° F.; air temperature 68° F.; wind WSW at 13 knots. Species: Yellow-nosed Albatross, 22, (13); Great-winged Petrel, 5, (5); Fleshy-footed Shearwater, 43, (28); Australian Gannet, 3, (2); Crested Tern, 1, (1).

Notes: The Yellow-nosed Albatrosses were seen singly or in pairs except for one group of three, and occasionally were noted resting on the water with their beak tucked under one wing. Some individuals showed small white mottling and patches on the mantle. The feet were pinkish. Fleshy-footed Shearwaters showed a tendency to follow along with the ship off the beam for several minutes at a time. Three Great-winged Petrels (a single bird and a pair) were flushed from the surface of the water ahead of the ship, apparently where they had been resting. Two Gannets (seen singly) were also sitting on the water and these birds did not fly until the ship was only 20 or 30 yards from them.

Locality 13: South coast of Western Australia about 10 miles east south-east of Point Nuyts to 8 miles south of Point D'Entrecasteaux (about 5 to 10 miles off the coast); 20 Feb.; two hours observing; sea temperature 69° F.; air temperature 68° F.; wind SSW at 13 knots. Species: Yellow-nosed Albatross, 21, (18); Fleshy-footed Shearwater, 144, (105); Fluttering Shearwater, 4, (3).

Notes: Yellow-nosed Albatrosses were seen singly except for one group of five individuals. Fleshy-footed Shearwaters were also seen singly except for one large group of 80 birds apparently concentrated in an area of abundant food. Two single birds and one pair of Fluttering Shearwaters were identified by their dark brownish upper parts which extended below eye level on the sides of the head.

For comparison purposes the 13 localities are grouped into 5 areas as follows: **Area A:** south-east coast of New South Wales; localities 1 & 2; four hours observing. **Area B:** Bass Strait; localities 3 & 4; five hours observing. **Area C:** east coast of South Australia; localities 5, 6, & 7; eight hours observing. **Area D:** Great Australian Bight; localities 8, 9, & 10; four hours observing.

Area E: south coast of Western Australia; localities 11, 12, & 13; six and half hours observing.

The following table compares the total number of individuals in the first column and the maximum density in the second column for each species in each area.

Species	Area A	Area B	Area C	Area D	Area E
Little Penguin			1	1	
Wandering Albatross			1	1	4 4
Yellow-nosed Albatross		2	1		52 18
White-capped Albatross		16	6	526	310
Great-winged Petrel	30 21				32 12 80 40
Fleshy-footed Shearwater			16	5	195 105
Wedge-tailed Shearwater	105 56				
Short-tailed Shearwater		100,000	35,000	2,829	1,500 139 58
Fluttering Shearwater		13	5	74	59 4 3
Little Shearwater					24 22
Wilson Storm-Petrel ..					1 1
White-faced Storm Petrel ..			18	11	
Diving Petrel		29	21		
Red-tailed Tropic-bird ..	1 1				
Australian Gannet		1	1	4	2 3 2
White-breasted Cormorant				8	6
Pomarine Skua ..	30 25			2	2
Arctic Skua	5 3			6	3
Pacific Gull		10	8		
Silver Gull	3 3	6	5	650	430
Crested Tern	1 1	18	6	52	11 1 1

According to McGill (*A Handlist of the Birds of New South Wales*, Nov., 1960) there are only six known records of the Red-tailed Tropic-bird for New South Wales, so the occurrence of this species on February 13 south of Sydney is significant. Other noteworthy records are the rather large number of Great-winged Petrels seen off the south-east coast of New South Wales, the big flocks of White-capped Albatrosses in South Australian waters, and the abundance of Yellow-nosed Albatrosses off the south coast of Western Australia during February.

Although this article is concerned with birds seen off the coast, I think it worthwhile to mention that almost all the skuas seen in Sydney harbour, Port Phillip Bay, and the Gulf of St. Vincent were Arctic Skuas, and it seems that this species prefers sheltered coastal harbours and bays. The Pomarine Skua, on the other hand, was more abundant in open waters off the coast.