

## EDITORIAL

In this issue appears the introductory article of the series 'The Seas Around Us'. The author, Bruce Hamon, was for many years a research scientist in the CSIRO Division of Oceanography and Fisheries. It will be apparent that our seas do differ in important features from those around the other continents. These features are in turn influenced by global changes, and we have all become aware of how the 'El Niño — Southern Oscillation' phenomenon in the central Pacific is closely associated with droughts and prolonged rainfall in the eastern half of Australia. The global movements of water within oceans also disperse the products of our civilizations. Well documented is the early appearance of DDT residues in penguins and more recently the dispersal of plastic derivatives has become a matter of concern. Their presence in the regurgitated food-castes of the Macquarie Island Cormorant is reported by Ken Green and his colleagues. Changes in features of the sea influence plankton production and the consequent food chains. Seabirds are a part of this chain, often at the end, because they feed on fish but in the highly productive regions of the higher latitudes they may feed on the plankton itself, e.g., penguins and petrels around Antarctica. For many of our seabirds around Australia there is still little information about what they feed on yet this knowledge is essential if their biology and causes of fluctuations in their abundance and distribution are to be understood. There is an urgent need for such studies so that the exciting opportunities arising from recent oceanographic studies can be realized. Seas can be visualized as a pattern of 'highs' and 'lows' and the surface temperatures associated with these features can be measured from the air and from satellites. The resultant imagery is available and is used regularly by fishermen. A knowledge of the food of seabirds will enable these data to be applied and thus enhance our understanding of their biology. Some local ornithologists have begun to apply these data to their 'sea watch' studies as has Wood in his studies on shearwaters and gadfly petrels (1990 a and b in his references in this issue).

Food, though present, must be accessible. Complementary to the oceanographic data are the improved meteorological data which has also become available from satellite-borne equipment.

Future bird 'crashes', characterized by numerous carcasses of migrating seabirds being washed onto our shores, should be analysed in conjunction with these data. There can be little doubt that inclement weather can lead to starvation.

Another important gap in our knowledge is feeding range of breeding and non-breeding birds. This has led to theoretical appreciations — as for penguins (Dann and Cullen, 1989, *Corella* 13(2): 34–37) but the true data will come from actually plotting the movement of a bird. This is why the recent report of the movements of Wandering Albatrosses (page 50) is so exciting. Jouventin and Weimerskirch have shown not only the daily and total distance these albatrosses can cover foraging for food but have been able to analyse their daily movements in relation to time of day and weather systems. They have even been able to suggest whether the bird may have alighted on the ocean to feed. Perhaps, some of the albatrosses captured offshore at Kangaroo Island, South Australia or at Bellambi, New South Wales were breeding on a distant Subantarctic Island. Perhaps, we are also underestimating the distance our local seabirds fly when breeding in order to exploit the changing opportunities to forage around our offshore eddies.

Changes in technology lead to exploitation of new regions and in Recovery Round-up may be seen the consequences. Ornithologists interested in the birds of the Subantarctic are becoming increasingly alarmed at the number of albatrosses recovered from long-line fishing. The general area from which these recoveries came are shown in the map on the inside of the back cover. It is now known that even breeding Wandering Albatrosses are vulnerable as they travel so far in the search of food. They do not breed until they are several years old and only rear a chick every second year. A decline in numbers at breeding places has been reported. It is to be hoped that nations who have bilateral agreements on conservation of birds, such as migratory species, can extend their concern and goodwill to these problems. In the meanwhile, it is to be hoped that those investigators who are trying to solve the immediate problem of rendering baited hooks on long-lines less attractive to albatrosses, receive adequate funding to find the urgently required solutions.

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