

# Growth in the Population of the Silver Gull on the Five Islands Group, New South Wales

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One of the most spectacular population increases of an Australian seabird has been that of the Silver Gull *Larus novaehollandiae* breeding on the Five Islands off Port Kembla, N.S.W. From a small and presumably stable breeding population of about 1 000 pairs prior to 1940, it has expanded to over 50 000 breeding pairs in 1978, thus becoming the most obvious bird of coastal, urban and suburban Wollongong, with increasing abundance also notable in its metropolitan foraging range.

This paper records some quantitative data on the population growth and suggests the principal factor responsible.

## Description

The Five Islands Group actually comprise four islands with a total land area of c.27 hectares. Big Island (area 19 ha) is the largest and is bisected by a low isthmus giving the impression of two islands. For a more complete description, maps and bibliography, refer Battam (1976 a, b, c).

Silver Gulls have been known to occupy the Five Islands since an ornithological visit by A. F. Basset Hull in 1914 (Hull 1916) when he recorded nesting on Bass Islet. Although he was unable to land, he reported the small (2.3 ha) island to be "simply covered" with gulls and terns. Gulls were not mentioned in the report of his earlier visit in October 1909 (Hull 1911).

Up to about 1940 Bass Islet and/or Martin Islet supported a total breeding population of probably less than 1 000 pairs. The massive increase which has occurred since that time has been accommodated on Big Island, which previously had no nesting gulls.

## Methods and Results

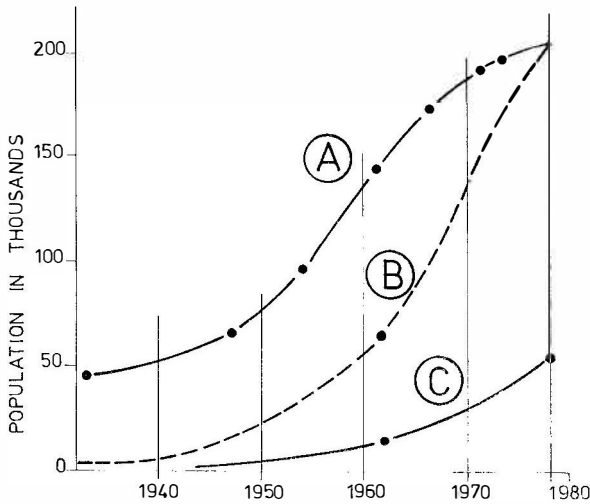
A nest count using the sample plot method was done on 10 November 1962. Seven selected plots, each measuring one square chain (405 m<sup>2</sup>) were surveyed and the total nesting area plotted on a plane table survey map. Giving due consideration to the areas of differing densities indicated by the sample plots, a total nest count was calculated. The total included empty nests that obviously had been used and recently vacated. The result was 17 000 nests covering an area of 4.2 ha, a density of 4 048/ha.

On 4 November 1978, the same method was used taking seven sample plots in roughly the same locations. This census gave a result of 51 500 nests occupying a total nesting area of 11.7 ha. As well as showing a threefold increase in the nesting population over 16 years, the above figures show a slight increase in nesting density of between 8 and 9% to 4 402/ha.

## Comments

Various environmental and biological pressures serve to control the unlimited expansion of animal numbers, availability of food being a principal factor. When this control is relaxed by the provision of more food from an expanding human population, a proportional population increase in an omnivorous scavenger should not be surprising, particularly when other potential controls, e.g. suitable nest site availability, predation and disturbance, have not significantly changed. This relationship is shown on the accompanying graph (Fig. 1), where the total population curve (B) is plotted on the assumption that, immediately prior to nesting, breeding birds account for about 50% of the total.

As well as being provided with a greater food supply in the form of edible scraps and garbage, the gulls are showing more resourcefulness and audacity in exploiting all means of sustenance, thus increasing further the carrying capacity of the coastal habitat. Traditional feeding areas like beaches, flooded fields, garbage tips, etc., are now augmented by picnic areas, schools, factories, shopping areas, city streets, sporting events, etc.; any place, in fact, where there is a



● Figure 1. Silver Gull numbers compared to human population trends in the Wollongong and Port Kembla region. A, Resident human population (5). B, Total gull population. C, Five Island nesting population (pairs).

chance of food scraps being discarded. They also feed at night in well-lit city areas and, at times, the synchronised hatching of certain flying insects in the forest areas of the district results in many hundreds of gulls engaging in aerial feeding close above the forest canopy.

On the Five Islands the gulls accept a wide variety of land surface conditions as being suitable for nesting (dense grass, almost bare earth, rocky areas, etc.), and as these areas are not yet fully utilised, it can probably be assumed that the gull population will continue to maintain a direct relationship with the increasing human population for some time.

Other species sharing the region naturally must be affected to some degree. No drastic effects are apparent away from the breeding grounds, but coincident with the rise of the Silver Gull there have been reductions in the Five Islands population of White-faced Storm-Petrels *Pelagodroma marina*, and probably shearwaters and penguins. The grass cover on Big Island progressively declined for several years, but has now recovered its former luxuriance, kikuyu having largely displaced the buffalo grass. What direct bearing the gulls have had on these changes, however, is not known. On the other

hand, the remaining surface nesting birds (Crested Tern *Sterna bergii* and Kelp Gull *L. dominicanus*) have shown significant increases.

### Acknowledgements

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