

The Reliability of Sight Recoveries of Banded Red-billed Gulls

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Tests were carried out to assess the reliability of reading band numbers of Red-billed Gulls *Larus novaezelandiae scopulinus* using field glasses. Most Red-billed Gulls can be baited to within 20 feet. At distances of 10 and 15 feet only 1.7% of the bands were misread, but at 20 feet the number of mistakes increased significantly to 5.0%. The total number of mistakes made up to 20 feet was only 2.2% higher than the number of mistakes made when reading the band of a captured bird. Sight records are therefore considered to constitute a reliable source of recovery data.

From April 1950 to 31 March 1965, 21,085 Red-billed Gulls were banded in New Zealand of which 4,778 have been recovered (C. J. R. Robertson pers. comm.). An estimated 40 per cent of the recoveries were sight records using field glasses, as Red-billed Gulls can be baited close enough to an observer for the band to be read in this way. Because so many of the recoveries depended on the acceptance of sight records, their reliability was assessed experimentally by comparing the proportion of errors to be expected from reading bands with field glasses, with that made in recording band numbers with the bird in the hand. The accuracy of reading band numbers in the field, depends on the quality of the band, the weather, the distance, the observer's eyesight and visual aids (Carrick and Murray 1970).

Four types of band have been used on the Red-billed Gulls in New Zealand. From 1950 to 1960 round aluminium butt-to-butt bands of two sizes were used; one 10 mm high, the other 6.8 mm high, but both with a diameter of 6.4 mm. The serial number on the small band was 2.5 mm high and consisted of four digits prefixed by the letter E. The number on the larger band was 4.5 mm high, with five digits, sometimes prefixed by the letter H. In the 1961-62 breeding season, a new type of band made of aluminium with a lock connection was introduced. It was 9.7 mm high with a diameter of 7.5 mm, and the serial number was 4.3 mm high with five digits prefixed by the

letter H. In 1962 yet another band was introduced, again of the butt-to-butt type, and this has been used for the Red-billed Gull since. This band is 1.0 mm thick, 9.0 mm high and 6.5 mm in diameter. The serial number is 4.0 mm high with five digits prefixed by the letter E.

Methods

The small band used from 1950 to 1960 was not used in the test because less than 500 were used on Red-billed Gulls. Bands used were worn bands recovered from Red-billed Gulls.

The bands were placed on sticks by a colleague and turned for the number to be read with 8 x 30 field glasses at distances of ten, fifteen and twenty feet. Some bands were placed upside-down. The irregular movements of gulls which often preclude the simultaneous reading of all the digits were simulated by erratically revolving the bands on the sticks. Recording band numbers from captured gulls was simulated by reading bands held in the hand. Messrs J. R. Jackson, J. E. Hilton and the author read the bands; all are experienced observers and are considered representative of the small number of ornithologists who regularly search for banded gulls.

Results

There were no significant differences between band types or between observers in the number

of sight or recording errors, so all have been analysed as one sample. For 720 bands read with field glasses 20 (2.8%) mistakes in recording the number were made. Only four (1.7% of 240) mistakes were made at 10 and at 15 feet, but at 20 feet, 12 (5.0% of 240) mistakes were made, a significant increase (Chi-square 3.869, $p = 0.05$). Fewer mistakes were made in recording bands placed upside-down than for those the correct way up, possibly because more care was taken, but the difference is not significant (Chi-square 0.433, $p = 0.5$). Only four (0.6%) of the 720 bands read in the hand were erroneously recorded.

As most sight recoveries using field glasses are made within 20 feet of the observer, and recording errors are only 2.2% greater at that distance than when reading the band from the hand, sight recoveries from banded Red-billed Gulls are considered to constitute a reliable source of recovery data.

In other studies where band numbers are read with field glasses or telescopes, it would be

advisable to assess the distance at which errors become significant.

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Reference

Carrick R. and Murray, M. D. (1970), 'Readable Band Numbers and "Scotchlite" Colour Bands for the Silver Gull', *Aust. Bird Bander*, 8: 51-56.

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