

SHORT NOTE

Long distance movements of 'adult' variable oystercatchers (*Haematopus unicolor*) in New Zealand

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The variable oystercatcher (*Haematopus unicolor*) is considered to be mostly resident or sedentary, with territories defended all year (Marchant & Higgins 1993). Heather & Robertson (2015) noted that the breeding and wintering distributions of variable oystercatchers were similar, but there was some movement to estuaries outside the breeding season.

On 27 February 2012, CB and MNB saw a variable oystercatcher marked with an engraved leg flag

(hereafter referred as AA6) near Portobello, Otago Harbour (45.84°S, 170.66°E). The bird had been banded on 30 January 2009 near McKee Reserve, Ruby Bay, Tasman (41.22°S, 173.08°E) where it was part of a roosting flock of non-breeding birds. The straight-line distance between the banding and re-sighting locations is ~576 km (Fig. 1). AA6 was at least three years old when banded (based on plumage and bare part colours) and was in early primary moult (moult score 6 out of 50; feather scoring after Ginn & Melville 1983). The only other re-sighting of this bird was on 2 May 2010, by DC at Mapua, Tasman Bay, some 4.5 km from the banding site.

Received 2 July 2020; accepted 11 July 2020

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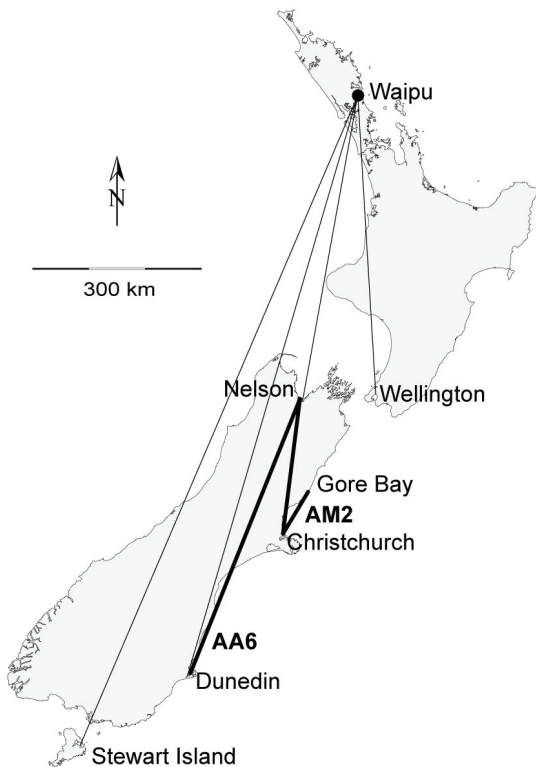


Figure 1. Movements of marked variable oystercatchers. Thick lines show the movements of two 'adults' from Tasman Bay to Christchurch (AM2) and Dunedin (AA6, this study); thin lines show reported movements of birds which were described by Marchant & Higgins (1993) as 'doubtful'.

A second bird (AM2) marked at Ruby Bay on 25 July 2015 (aged as 'adult' when banded – at least in its 3rd year) moved to the Avon-Heathcote Estuary, Christchurch (43.55°S, 172.72°E, ~260 km) where it was re-sighted by GB 11 times between 30 October 2015 and 10 August 2018. It was last recorded on 11 December 2018 at Gore Bay, Canterbury (42.862°S, 173.309°E), some 87 km northeast of Christchurch.

Marchant & Higgins (1993) noted that the longest distance for a recovered dead variable oystercatcher (age not given) was 119 km, and the longest accepted re-sighting of a colour-banded live bird (age not given) was 125 km; subsequently there has been one recovery 146 km from the banding site (New Zealand National Bird Banding Scheme data). Dowding & Moore (2006) reported that most re-sightings of colour banded birds were within 60 km of the banding site, which accords with Baker (1974) who reported an average dispersal distance of 36 km for 27 colour-banded 'immature' birds.

Baker (1974) also noted an 'immature' travelling 483 km from its natal site, and a bird banded as a chick moving 570 km (Baker 1985); these records are not in the New Zealand National Bird Banding Scheme database. Recent re-sightings of birds colour-banded as chicks at Kaikoura include records from Golden Bay (215 km), and the Avon-Heathcote Estuary, Christchurch (145 km) (Rowe 2019). One colour-banded juvenile from Otago was reported at the Avon-Heathcote (some 310 km) (Schweigman 2002). Marchant & Higgins (1993) also reported several long-distance (>1,000 km) sight-records of colour-banded birds (age not given), but these were considered 'doubtful'.

All the juvenile birds that moved from Kaikoura and returned did so within 3.2 years (Rowe 2019). Both birds that undertook long-distance movements from Tasman Bay were at least in their third year of life, but could have been older, when banded. Most variable oystercatchers apparently do not start breeding until five or six years old, or even older (Dowding 2014), although breeding by younger birds has been recorded (Cook *et al.* 2007). It is thus possible that AA6 and AM2 may have dispersed from natal areas and spent their immature years in Tasman Bay before departing to explore breeding opportunities elsewhere.

Four other variable oystercatchers were caught at the same time as AA6. One has never been re-sighted, but the other three were seen at the capture site or adjacent coastal areas (within ~5 km) – one (at least 3 years old when banded) for seven years, and two for 11 years (one in its second year, the other at least three years old, when banded); most recently on 29 June 2020 (at which time they were 13 and at least 14 years old respectively). There is no evidence of any of these birds recruiting into the Tasman Bay breeding population.

Waimea Inlet/Tasman Bay appears to serve as a nursery ground for variable oystercatchers, as evidenced by the presence of juveniles from Kaikoura (Rowe 2019), and the fact that the number of juvenile birds present is greater than can be accounted for by local breeding production (DSM, WAC, DC *unpubl. data*).

Hockey *et al.* (2003) proposed that the African black oystercatcher (*H. mouquini*) had a dichotomous dispersal pattern, in which juveniles either stayed within 150 km of their natal area or migrated 1,500–2,000 km to nursery grounds where they remained until 2–3 years old, whereupon they returned to their natal area. Subsequent study indicates that juvenile African black oystercatchers disperse 'to a range of distances from a few to more than 2,000 km from natal sites' (Rao *et al.* 2014). Juvenile African black oystercatchers that undertake long-distance dispersal move outside the breeding range of the species and thus potentially benefit from the

absence of aggression and interference from adults (Leseberg 2001).

It is now apparent that variable oystercatchers also display a range of dispersal patterns, some being local others long distance. However, there would appear to be no advantage to long distance movements similar to that postulated for African black oystercatchers since variable oystercatchers are generally distributed along the mainland coasts of New Zealand (Robertson *et al.* 2010). Indeed, Tasman Bay, in addition to being a nursery area, supports a large breeding population of variable oystercatchers (Moorhouse 2017; DSM *unpubl. data*). However, at present it appears that there are both sufficient foraging areas and roost sites which are not occupied by territorial pairs where non-breeding birds are able to congregate. The future conservation management of nursery areas is of national importance.

The population of variable oystercatchers is increasing; Heather & Robertson (2015) suggest that it has trebled since the 1970s. It will be of interest to see whether movement patterns change if more breeding territories are established and thus sites where immature/non-breeding birds can forage and roost undisturbed become scarcer and/or whether there is an increase in the non-breeding 'floater' population of birds waiting to acquire a territory. Much remains to be learned regarding dispersal and movements of variable oystercatchers and the links between breeding populations.

ACKNOWLEDGEMENTS

We thank Jan Walker for assistance in providing information about the Christchurch sightings, Peter Langlands for the Gore Bay sighting, and Michelle Bradshaw, Mala Nesaratnam, and Sandy Taylor for providing information from the New Zealand National Bird Banding Scheme. Helpful comments by Paul Sagar, Jim Briskie, and an anonymous reviewer improved this note.

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