FALSE KILLER WHALES (*PSEUDORCA CRASSIDENS*) IN NEW ZEALAND WATERS

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Abstract

On a global scale, false killer whales (*Pseudorca crassidens*) remain one of the lesser-known delphinids, with most knowledge about the species originating from infrequent stranding reports. Herein I examine the occurrence, site fidelity and association patterns of false killer whales in the waters of northeastern New Zealand from historic stranding records (1870 to date) and at-seas observations collected between 1995 and 2012.

Despite the infrequency of strandings (28 recorded events in 144 years), false killer whales are among the most numerous cetaceans to strand on New Zealand shores due to large mass strandings events. Stranding records suggest that the species occurs predominantly in North Island waters, with only 7% of strandings (n = 2) recorded on South Island shores. Hawkes Bay and the Chatham Islands appear to be stranding hotspots for the species in New Zealand.

At-sea encounters support occurrence in northern waters, with all sightings reported in waters off northeastern New Zealand. False killer whales were infrequently encountered in the study area; however, of the 61 distinctive photo-identified individuals, 88.5 % (n = 54) were resighted, with 70.5 % (n = 43) resighted on three or more occasions, with two individuals observed eight times. Eighty-five percent (n = 52) were observed in more than one year and at least two individuals were resighted almost seven years after their initial identification, with movements as far as 650 km documented for eight individuals.

Results indicate that all false killer whales photo-identified in the study area so far, are linked in a single social network. Group sizes ranged from 20 to *ca*. 150 ($\bar{x}$ = 46.7, SD = 28.48). Distance from shore and bottom depth ranged from < 1 to 67.4 km ($\bar{x}$ = 9.16, SD = 14.85) and 25 to 350 m ($\bar{x}$ = 105.33, SD =86.66) respectively, with most records in shallow (< 100 m) continental shelf waters. Occurrence in these nearshore waters is likely seasonal, with all sightings between December and May, coinciding with the shoreward flooding of a warm current during that period. Abundance estimates indicate that the number of individuals that occurred in the study area during the sampling period may be as low as 111. While some individuals exbibited injuries consistent with detrimental fishery interactions, these were scarce (n = 2), with no new injuries recorded since 2007.

Additionally, interspecific associations between false killer whales and common bottlenose dolphins (*Tursiops truncatus*) are described, with the two species observed together during 91.5 % (n = 43) of encounters. These mixed-species groups occurred across the entire range of the study area and during all encounter months. Group sizes for common bottlenose

dolphins within these mixed-species groups ranged from 5 to *ca*. 250 ($\bar{x}$ = 62.8, SD = 42.79). Photo-identification shows repeat inter- and intraspecific associations among individuals. Thirty-four percent (*n* = 51) of common bottlenose dolphins photo-identified in mixed-species groups with false killer whales had repeat associations with false killer whales, with 28.2 % (*n* = 42) resighted in such groups in more than one year. Individuals were observed together with false killer whales up to 1832 days (*ca*. 5 years, *n* =2) after association was initially recorded and across a range as far as 650 km (*n* = 1). While foraging was observed during 39.5% (*n* = 17) of mixed-species encounters, observed predation by killer whales (*Orcinus orca*) and close interspecific interactions suggest that anti-predatory and social factors may also play a role in the formation of these mixed-species groups.

This study represents the first long-term record of seasonal resightings of this species in New Zealand waters and suggests the likelihood of a small local population. A precautionary approach in the assignment of the species' appropriate conservation status is therefore recommended.

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