

Killer whales (*Orcinus orca*) in Australian territorial waters

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Much of the information on killer whales in Australian territorial waters came from incidental sightings that were collated as part of state and Commonwealth wildlife databases, and from a sighting program on Macquarie Island. Other incidental information was sourced from previously unreported sightings from the public, marine charters and fishers. The Southern Ocean Cetacean Ecosystem Program (SOCEP, Dr Debbie Thiele) provided the only sighting data available from systematic cetacean surveys. No dedicated field study on killer whales has ever occurred in Australian waters.

To date a total of 933 unpublished and reliable records of killer whales have been collected from most regions of Australia's territorial waters. The majority of these records were incidental (848), and over 59% of all records were from Macquarie Island. Other regions where sightings were common included the coastal and continental shelf waters off South Australia, Victoria, south-east Tasmania and in the Australian Antarctic Territory. These records are likely to reflect increased killer whale aggregations in areas where their prey are concentrated and where fishing activities are seasonally active, combined with a disproportionate effort in recording sightings by some programs. No sightings have been recorded in the Australian territories of the Cocos Keeling Island Group and Christmas Island, possibly due to the lack of survey coverage in these regions. No additional sightings were recorded for the Heard and McDonald Island Group.

Their distribution and occurrence strongly reflected locations of prey aggregation, particularly breeding and feeding grounds. For example, they targeted the central and southern coasts of mainland Australia where they were recorded foraging for humpback whales and other large baleen whales, dugong, dolphins, seals and pelagic fish (including caught fish on longlines); the coast of Macquarie Island where their preferred prey were southern elephant seals and penguins; and the Antarctic region where they were observed to hunt minke whales and other large baleen whales along the ice-edge and in pack-ice. The degree to which these groups of killer whales specialise on prey types is unknown, although it is suspected that they have prey preferences while taking other prey opportunistically.

These observations were supported by a seasonal trend in sightings which suggest that groups of killer whales may migrate long distances and time these migrations to coincide with these prey aggregations. Group sizes were also consistent with prey types. Further research into the degree of morphological and genetic variation between groups of whales is likely to yield important evidence showing that a number of distinct populations may exist in the Australian territorial region.

(The information in this summary has been extracted Morrice, M. G. (2004). Killer whales (*Orcinus orca*) in Australian territorial waters. Technical Paper, Deakin University, Warrnambool, Victoria, Australia. 50 pp.)

Further extracts from Morrice (2004):

- The maximum number of individual killer whales seen in a group around Macquarie Island was 20 at Green Gorge (east coast) in October 1996.
- Photo-identified killer whales from Macquarie Island and mainland Australia have characteristics similar to Type A forms, however no Type B or C forms have been observed so far in Australian territorial waters outside the AAT (from Pitman and Ensor, 2003).
- For all records pooled, mean group size was 4 ($SD \pm 3.07$), ranging from 1 to 100. Mean group size for killer whales sighted in Antarctic waters ($6 \pm SD 5.15$, range 1-60) was larger than the rest of the Australian region.
- Calves of varying size range were observed in most months at Macquarie Island, with small calves observed during February in Antarctic waters. A decomposed stranded calf was recorded with its umbilicus still attached in April 2000 in South Australia.
- A photo-catalogue of predatory bite marks on southern elephant seals at Macquarie Island is held by John van den Hoff (AAD) and Margie Morrice (Deakin University)
- Many new seabird species were documented to be associated with foraging and feeding killer whales.
- Seventeen unpublished stranding records were collated from government agency databases, including two mass strandings (7-8 individuals). The type and quantity of scientific information and specimens collected from these animals varied, with valuable data (i.e. near complete autopsies) collected from five whales in the last seven years. Autopsy records for some whales provided clues to factors that could have contributed to the death of these whales such as old age, birth complications, being trapped inshore, and the presence of plastic bags and fishing line in the stomach.

References

- Morrice, M. G. (2004). Killer whales (*Orcinus orca*) in Australian territorial waters. Technical Paper, Deakin University, Warrnambool, Victoria, Australia. 50 pp.
- Pitman, R. L. and Ensor, P. 2003. Three forms of killer whales (*Orcinus orca*) in Antarctic waters. *Journal of Cetacean Research and Management* 5(2): 131-139.