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Distribution and abundance estimate of Australian snubfin dolphins (*Orcaella heinsohni*) at a key site in the Kimberley region, Western Australia

Marine Science

Project Core Team

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Project Team	granted
Program Leader	granted
Directorate	granted

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Context

The current lack of knowledge of the Australian snubfin dolphin (*Orcaella heinsohni*) meant that its conservation status could not be properly assessed in 2011 due to insufficient information on population dynamics and distribution. This species is known from tropical coastal waters of Australia and New Guinea, but tend to be shy, evasive and difficult to study. Although they range southwards to the the Pilbara region of WA, there has been little Western Australian-based research on this species and much of this remains unpublished. This project will compile existing data on snubfin dolphins across the Kimberley to gain a better understanding of their habitat use and distribution. The collation of data into a single database will also facilitate the study of population structure and demographics based on recognised individual animals. This project will assess dolphin distribution across the Kimberley region between 2004-2012.

This project was funded by a grant from the Australian Marine Mammal Centre and was undertaken in partnership with Dr Deborah Thiele (ANU) who provided the dolphin survey data and Dr Philip Bouchet (UWA) who provided data analysis expertise. A number of indigenous sea ranger groups in the Kimberley participated in dolphin surveys and are providing input to the associated broad-scale habitat use mapping.

Aims

This project will use existing data to:

1. Provide a quantitative abundance estimate of snubfin dolphins for Roebuck Bay in Western Australia that will be used as a baseline for this population and will also enable comparison with abundance estimates of the species from sites at Cleveland Bay (Qld) and Port Essington (NT).
2. Compare methods for abundance estimation (mark-recapture versus distance sampling) and the suitability of these methods for abundance estimation of this species.
3. Map the extent of occurrence and area of occupancy of snubfin dolphins in the Kimberley by combining traditional knowledge and dolphin sightings from indigenous sea rangers and scientific survey sightings.
4. Refine and populate a purpose built and standardised database which will support long term data collection and curation in WA and facilitate data-sharing between jurisdictions.

Progress

- A manuscript titled *Cross-cultural knowledge informs the distribution of snubfin dolphins in the Kimberley, Western Australia* has been submitted to the journal *Endangered Species*. The paper was accepted for publication but has subsequently been withdrawn at the request of co-authors.
- A manuscript on snubfin dolphin abundance contrasting distance sampling and mark-recapture survey techniques in Roebuck Bay has been prepared for submission.

Management implications

This research project has brought together scientific and traditional knowledge of a poorly understand marine mammal species of high conservation value. The implications and relevance for management are:

- Managers now have baseline knowledge of the abundance of snubfin dolphins in the proposed Yawuru Nag-ulagan / Roebuck Bay Marine Park.

- A database has been established that will be maintained by Parks and Wildlife for all dolphin research and monitoring where survey and photo-identification data is collected. The database ensures that standardised data is available for assessing population abundance and distribution. It also provides the capacity to develop sighting histories for individual animals, thus providing a better understanding of population demographics and life history. This database can also be used for information sharing across jurisdictions and between research organisations.
- The broad-scale collation of information and modeling has provided relevant information on area of occupancy and extent of occurrence that can be used to more accurately assess the conservation status of snubfin dolphins.
- Partnerships have been established with indigenous sea ranger groups to develop survey methodologies, data storage and reporting structures that are consistent with healthy country plans and reserve management plans.

Future directions

- Submission of the manuscript *Population estimate of the Australian snubfin dolphin (Orcaella heinsohni) Roebuck Bay, Western Australia* to a peer-reviewed journal.
- Re-submission of the manuscript *Cross-cultural knowledge informs the distribution of the Australian snubfin dolphin (Orcaella heinsohni) in the Kimberley, Western Australia* to the journal *Biological Conservation*.
- Support and advice will be provided to two Australian Government funded projects on snubfin dolphins through facilitating access to and training in the use of the Department's DoIFin Database.