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Habitat use, distribution and abundance of coastal dolphin species in the Pilbara

Marine Science

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Project Team	granted
Program Leader	granted
Directorate	required

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Context

Australian snubfin (*Orcaella heinsohni*) and Australian humpback (*Sousa sahulensis*) dolphins inhabit Australia's north-western coastal waters, but little is known about the population sizes, distribution and residency patterns of these species. Current knowledge of these dolphin species in the Pilbara is currently poor and is limited to a dedicated study of humpback dolphins in Ningaloo Marine Park and Exmouth Gulf (Brown*, et al.* 2012) and opportunistic surveys and anecdotal sightings throughout the region (Allen*, et al.* 2012). Although the presence of several coastal dolphin species is expected in nearshore Pilbara waters (humpback, snubfin and bottlenose dolphins), very little is currently known of their residency, degree of use and habitat characteristics.

Human pressures on these species are increasing in the Pilbara through activities associated with expansion of the resources sector, including oil and gas exploration and production, coastal infrastructure development and shipping. While this is a key factor that proponents are required to address to secure State and Commonwealth environmental approvals, impact assessments for these species are complicated by the lack of best practice protocols and standards for survey design and data collection, which limits the comparison of different studies and study sites. This project will provide a better understanding of these species and their spatial and temporal use of Pilbara coastal waters and lead to greater certainty in assessing and managing impacts that relate to industrial developments. This project was designed to meet this priority need under the Wheatstone Offset C program.

Aims

This research is being conducted to develop a baseline understanding of key aspects of dolphin ecology in coastal Pilbara waters. The specific aims are to:

- Determine habitat use, distribution, abundance, residency, and movement patterns of dolphins in coastal Pilbara waters; and
- Identify the characteristics of habitats used by coastal dolphins, such as water depth, benthic substrate, timing and seasonal variation.

Progress

A three year research program has been initiated which will include both annual boat and aerial surveys. During this reporting period we have:

- Developed a survey design and protocol for vessel based surveys in the impact area (Onslow) as well as other suspected high use areas for dolphins.
- Conducted two boat-based dolphin surveys (autumn and winter) around Onslow. These data will be used to estimate the density and abundance of coastal dolphins in the area if the encounter and re-sighting rate is sufficient.
- Designed and conducted an aerial survey of coastal waters from Exmouth Gulf to Port Hedland and extending offshore to the 20 metre depth contour,including the Montebello Islands. Data collected from this survey will be used to produce an estimate of dolphin density for the surveyed area.
- Prepared the annual report for Chevron on Wheatstone Offset C.
- Developed a relationship with the Murujuga traditional owners to share information on dolphin sightings and important areas in the Dampier Archipelago and develop standardised survey protocols and data storage.

Management implications

- This research will provide a baseline understanding of dolphin habitat usage of the Pilbara region.

- This knowledge will inform the assessment of environmental impacts relating to future coastal developments and will assist to determine the conservation status of coastal dolphin species in Pilbara waters.
- The research will establish baseline data and long-term monitoring protocols for coastal dolphin species in State waters.

Future directions

- The established vessel survey methodology and design will continue for a third year and additional survey sites may be added in the Dampier Archipelago area.
- The aerial survey design will be reviewed based on recent results and adjusted as needed for the third aerial survey in 16/17.
- Existing data will be analysed to produce abundance estimates for at least two dolphin species (bottlenose and humpback dolphins) across the study area.
- Survey data will be collated with other datasets to produce spatial habitat models of dolphin presence and relationships with key environmental factors across the Pilbara region.