Concept Plan SP 2014-021

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

Marine Science

Project Core Team

Supervising Scientist	Holly Raudino
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Project status as of Dec. 6, 2019, 2:15 p.m.

Approved and active

Document endorsements and approvals as of Dec. 6, 2019, 2:15 p.m.

Project Team	granted
Program Leader	granted
Directorate	granted

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Biodiversity and Conservation Science Program

Marine Science

Departmental Service

Service 6: Conserving Habitats, Species and Communities

Aims

Although little is known about population size, distribution and residency patterns, it is well accepted that Australian snubfin (*Orcaella heinsohni*) and Australian humpback dolphin (*Sousa sahulensis*) inhabit Australia's tropical north-western coastal waters (Allen_, et al. *2012). Indo-Pacific humpback dolphins occur across Australia's entire northwest coast including resident populations at Ningaloo Marine Park and most likely the Dampier Archipelago as well as further north into the Kimberley. The snubfin dolphin is endemic to northern Australia with identified resident populations in the Kimberley, Northern Territory and Queensland (Brown*, et al. *2014; Brown*, et al. *2014). While this species has been sighted occasionally in the Pilbara, their presence and use of this area is yet to be determined, however the Pilbara is likely to represent the southern extreme of their range (Allen*, et al._ 2012).

Limited surveys have been conducted targeting coastal dolphins in the Pilbara; exceptions include 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). Aerial surveys that were targeting humpback whales sighted dolphins but were unable to differentiate between species due to the high altitude flown (1000 ft) (Jenner & Jenner 2004; Jenner & Jenner 2010). Although the presence of several coastal dolphin species is expected in nearshore waters (humpback, snubfin and bottlenose dolphins) (Hanf 2014) the residency, degree of use and habitat characteristics of these species are unknown in the Pilbara.

Human pressures and impacts on these species are increasing, in particular in the Pilbara through activities associated with the rapid expansion of resources sector, including oil and gas exploration and production, coastal infrastructure development and shipping. This is often a key factor that proponents are required to address to secure environmental approvals at the State and Commonwealth levels. However, as noted above, the knowledge base on these species across their range is very poor. In addition, there are no agreed best practice protocols or standards for survey design and data collection on these species that allow for comparison to be made between studies and study sites. A better understanding of these species and their use of tPilbara coastal waters is needed to provide good temporal and regional context for assessing and managing impacts and to reduce uncertainty in the approvals process. As such, the draft_ Strategic Research Priorities for Marine Mammal Conservation and Management in Western Australia 2014_ recognised both snubfin and humpback dolphins as high priority species for fundamental research

Expected outcome

This research will enable a better understanding of coastal dolphin species at a regional and national scale including distribution, abundance, habitat use, movement and connectivity. The main outcomes and benefits will be:

- Distribution and abundance including high density areas and spatial and temporal patterns of coastal dolphins will be identified and mapped across the Pilbara to allow managers to assess conflicts with potential pressures;
- Key habitat will be identified which can be used to assess potential overlap with pressures such as habitat loss from coastal development and displacement from industrial development leading to better informed decision making during Environmental Impact Assessment processes;
- Populations will be defined for coastal dolphin species (humpback, bottlenose and snubfin, where applicable) which will allow managers to assess the relative conservation significance of different populations or species in relation to pressures or factors like restricted distributions;

- Baseline data will inform ongoing regional monitoring and management and for comparison with other regions;
- A state-wide database will be implemented modelled on the Northern Territory database 'DolFIN' to archive and manage survey and photo-Identification data which will improve information management, compatibility and information sharing between jurisdictions
- Data on population abundance and distribution of humpback and snubfin dolphins in the Pilbara will allow a more comprehensive assessment of their conservation status at a State and National level.

Strategic context

This project will meet the following objectives of the Corporate and Science Division Strategic Plans

(Corporate Plan) - To conserve, protect and manage the state's native fauna and flora based on best practice science

(Strategic Science Plan) -

- G2/2.1 Undertake the research needed to resolve the conservation status of threatened and priority species; 2.27 Conduct priority research on threatened species as a basis for understanding and managing threatening processes
- G3/3.1 Provide the scientific basis for, and assist with, the development of cost-effective protocols for monitoring resource condition at various scales (landscape, ecosystem, protected area and species).
- S3/3.4 Review and strengthen current partnerships.

Expected collaborations

This project is funded by Wheatstone Offset funding and is in line with the Science Plan prepared to meet this offset. Both the Science Plan and this specific project have been discussed with and circulated to regional Parks and Wildlife staff responsible for offset programs and marine conservation and management (including Pilbara Regional Manager (Alisdair MacDonald), Exmouth District Manager (Arvid Hogstrom), Pilbara Marine Program Coordinator (Rachael Marshall), Ningaloo Marine Park Coordinator (Peter Barnes) and Reserves Officer (Carolyn Williams). These discussions have included opportunities to collaborate with the Region and other offset programs in shared field work and in field logistics. Further discussions will be undertaken with these regional staff in Exmouth and Karratha in both the planning phase and when data is available. In particular their advice and participation in liaising with Indigenous rangers (where appropriate in the Pilbara), gathering local knowledge and planning logistics will be valuable. Local staff will participate in surveys where possible.

GIS support for the project has been discussed with Kathy Murray in the GIS section.

Stuart Field (Offset coordinator) has liaised with Glen Young of Chevron on our behalf about the engagement of the new sea ranger group that is being led by Chevron in the Onslow area and active participation will be sought, once the group is established. For the Dampier surveys, the Murujuga rangers and traditional land owners will be consulted and included as participants in the project. engaged.

In addition to the internal collaboration, further collaboration will be sought with research institutions with some capacity and expertise in marine mammal research. Murdoch University Cetacean Research Unit has expertise in coastal dolphin survey methodology and in genetic biopsy sampling of small cetaceans. We are liaising with them over their involvement in survey work and in tissue sample collection for genetic analysis as well as the potential for analsying aerial survey data for dolphin species. We have also initiated discussions with UWA regarding the analsysis of tissue samples for stable isotopes to inform trophic level and diet studies of the dolphin species in the Pilbara.

Proposed period of the project

July 1, 2014 – June 30, 2018

Staff time allocation

Role	Year 1	Year 2	Year 3
Scientist	SCL2 1.0 FTE; SCL4 0.1 FTE	SCL2 1.0 FTE; SCL4 0.1 FTE	SCL2 1.0 FTE; SCL4 0.1 FTE
Technical	L3 0.5 FTE; L3 0.25 FTE	L3 0.5 FTE; L3 0.25 FTE	L3 0.5 FTE; L3 0.25 FTE

Role	Year 1	Year 2	Year 3
Volunteer Collaborator			

Indicative operating budget

Source	Year 1	Year 2	Year 3
Consolidated Funds (DPaW) External Funding	253,778	242,731	242,731