

Darwin Harbour is a hotspot of Marine Megafauna. Middle Arm threatens our Marine Megafauna species.

Dr Carol Palmer



(A) **Australian Snubfin**



(B) **Australian Humpback**



(C) **Bottlenose**



(D) **Dugong**



(E) **Green Turtle**



(F) **Hawksbill Turtle**

Opening Statement

Background

- I have a PhD in research “Conservation biology of dolphins in coastal waters of the Northern Territory, Australia” and have continued to specialise in dolphins, whales, and Marine Megafauna (sea turtles).
- I am a Senior Research Associate at Charles Darwin University through Marine Megafauna funding.
- I have 30 years conservation research, monitoring, and management experience for both land and sea projects across northern Australia. I initiated the first research and monitoring of four coastal dolphins to be undertaken for the first time ever in the NT in 2007 and including the Darwin region. Also, I did the first satellite tagging and movement patterns of false killer whales (a dolphin) (*Pseudorca crassidens*) in the Southern Hemisphere and was carried-out in the Northern Territory and in 2023, we identified that the northern Australian false killer whales are a unique coastal species.
- I have many years’ experience of tracking and studying coastal dolphins, false killer whales and sat tagging foraging green and hawksbill turtles for the first time in the Top End of the NT.
- In 2008, I commenced studying dolphins in the Darwin region. We have seen a decline in the three coastal dolphins, Australian snubfin, Australian humpback, and coastal bottlenose due to previous developments across Darwin Harbour. The marine and

coastal habitats within Darwin Harbour including Middle Arm, contain Marine Megafauna species that are of local, national, and international significance.

- Today I will speak briefly about Coastal dolphins, Sea turtles, noting that many more creatures call this Darwin Harbour home. Darwin Harbour which is directly connected to Middle Arm is a hotspot for Marine Megafauna species.
- The Middle Arm development will have significant marine impacts on marine ecosystems and marine megafauna that including increasing large numbers of vessels transits through Darwin Harbour, and the increased vessel activity and the sea clearing (“dredging”). Sea clearing will result in temporary and/or permanent habitat loss due to direct removal of habitat, or damage to habitats through dumping of dredge material.
- Sea clearing is like land clearing – the marine megafauna needs their space to forage, play and live in the unique sea country. While I will speak about the dredging (sea clearing), sea life and habitat impact of the Middle Arm development, there are substantial conservation concerns from escalating threats associated with coastal and port developments and oil and gas developments here across Middle Arm and Darwin Harbor.
- Furthermore, it is now critical for climate change to be acknowledged and research instigated in the most northern capital city in Australia – Darwin. The cumulative impacts on marine life based on climate change across the NT is happening now.
- It is my opinion that if Middle Arm proceeds, we will see a significant decline in the significant marine megafauna species and productive sea country habitats, and this will be devastating because Darwin Harbour has been a significant and amazing place to live.

Marine Mammals - Coastal Dolphins – ^A Australian Snubfin (*Orcaella heinsohni*), ^B Australian Humpback (*Sousa sahulensis*), both Australian endemic dolphin species, ^C Bottlenose (*Tursiops aduncus*) and ^D Dugong (*Dugong dugon*).

- I have provided the Committee images of the marine mammals found in Darwin Harbour at A,B,C and D of this statement.
- The three species of coastal dolphins in the past were regularly recorded in Darwin Harbour, the Australian snubfin, Australian humpback, and Bottlenose . Preliminary results suggested that populations of the 3 species appeared to be residential, and all 3 species use the area for foraging. Darwin Harbour including Middle Arm consist of estuaries that are biologically productive systems that support the three coastal dolphin species and serve as important nursery grounds for their prey.

Sea Turtles – ^E Green (*Chelonia mydas*) and ^F Hawksbill (*Eretmochelys imbricata*).

- Across the NT coastal sea country, and in the Darwin Harbour the numbers have declined in part due to sea temperature and nesting temperature increasing and loss of forging habitats.