

INSHORE DOLPHINS MONITORING PROGRAM

SUMMARY

Coastal waters off Townsville and adjacent areas, including Cleveland Bay, Halifax Bay, and the Townsville Port limits, support populations of threatened Australian snubfin (*Orcaella heinsohni*) and humpback dolphins (*Sousa sahulensis*). These two species of dolphin are not well understood, and although the populations are known to be small, they do inhabit Cleveland Bay and are commonly seen around the Port. Both species are listed as Vulnerable under State and Federal legislation.

The Port has undertaken an Inshore Dolphin Monitoring Program (IDMP) across 2019-2024 associated with the Channel Upgrade capital dredging project. This program was designed to establish baseline information and monitor and report on changes, beyond natural spatial and temporal variation, in the distribution, abundance, habitat use and behaviour of Australian snubfin and humpback dolphins. The program built on the limited previous monitoring of these dolphins in Cleveland Bay between 1999 and 2019, and was completed as these species are not well understood or studied along the QLD coast and may have been impacted by the proposed capital dredging works.

MONITORING PROGRAM

The IDMP approach collected data annually in June–July, utilising boat-based photo-identification, photographic capture – recapture surveys of dolphins along transects throughout Cleveland and southern Halifax Bays, along with visual land-based surveys from a vantage point at the Port of Townsville. The boat based surveys consisted of one primary survey and six secondary surveys per bay, conducted across the June – July period, the repeat surveys strengthening the quality of the capture-recapture data and ensuring that estimation of not only abundance but life history parameters (survival, rate of change, emigration etc), movement patterns and habitat use can be made.

The primary boat-based surveys were supplemented with surveys undertaken by land-based personnel which focused on presence/absence of the dolphins near Port infrastructure, with an observation of presence/absence made every 15mins. Further measures of group size, age composition and behaviour were made where possible.

The inshore dolphin monitoring Program delivered is considered to be best practice monitoring of these marine megafauna, and was consistent with the Federal Government’s 2015 *Coordinated National Research Framework to Inform the Conservation and Management of Australia’s Tropical Inshore Dolphins*.

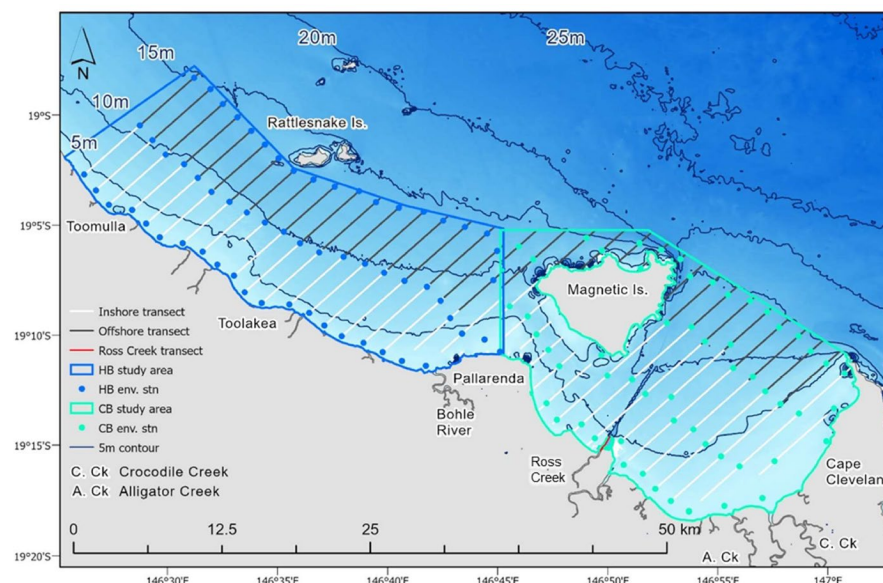


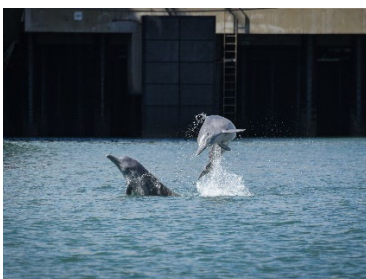
Figure 1: Map of Cleveland and Halifax Bays study areas inc. inshore and offshore transects, Ross Creek transect and environmental stations

INSIGHTS FROM THE INSHORE DOLPHIN MONITORING PROGRAM

As detailed across the Inshore Dolphin Monitoring Reports, the monitoring program has provided the following insights into inshore dolphins in the Townsville region:

- Across the six years of monitoring, snubfin and humpback dolphin estimated abundances have shown significant variability, particularly snubfin dolphins. There is uncertainty over the drivers for this variability, with it noted that ecological variables (food source, habitat quality, social structure), anthropogenic causes or a combination of both could be resulting in the changing spatial distribution. Abundance and density of both species were consistently higher in inshore waters of both bays compared to offshore, reflecting both species' frequent use of shallow, nearshore habitats.
- For snubfins, numbers in Cleveland Bay remained relatively stable from 2019-2021 (31–42 animals) before declining to near to zero from 2022-23 and then returning to levels similar to 2019-2021 in 2024. In contrast, snubfin dolphin populations in neighbouring Halifax Bay followed a completely opposite pattern, with abundance declining from 56 to 31 individuals between 2019–2021, then increasing to 111 in 2022 before decreasing again to 73 in 2023 and 60 in 2024. These patterns point to a temporary change in the distribution of snubfins from Cleveland Bay to Halifax Bay during 2022 and 2023 and a concurrent influx-sustained immigration into Halifax Bay.
- In contrast to snubfin dolphins, humpback dolphins exhibited an overall increase in abundance in both bays, although interannual variability was evident. In Cleveland Bay, the estimated abundance increased from 20 individuals in 2019 to 68 in 2024 (peaking at 81 in 2023). In Halifax Bay, which consistently supported the larger component of the population, abundance fluctuated, declining from 66 individuals in 2019 to 45 individuals in 2021 before increasing to 122 individuals by 2024. This pattern indicates short-term variability within a broader increasing trajectory. The simultaneous appearance of many newly identified humpback dolphins since 2022 suggests ongoing immigration, particularly into Halifax Bay between 2023 and 2024, and underscores the bay's connectivity with Cleveland Bay and adjacent regions.
- Dolphin occurrence around the Port from land based surveys closely mirrored the abundance and spatial-use patterns revealed by vessel surveys, with Humpback dolphins regularly recorded across the six years (with 2024 the peak of numbers) while snubfin dolphins were seen in 2019-2021 period before very limited sightings in 2022-23 followed by an increase in detections in 2024 similar to 2021.
- Overall, the monitoring program findings when considered with historic abundance estimates, indicate that recent abundance changes reflect dynamic habitat use and interannual variability within the region, rather than definitive evidence of long-term population trends. Both species were estimated to have high biological survival rates, with the changes in population estimates driven by increased movement of individuals between the bays and no long-term change in population dynamics. The findings for humpback dolphin's aligns with other healthy dolphin populations and suggests that humpback dolphins in the study area are not experiencing mortality pressures or population level declines from environmental variability or anthropogenic impacts.

Inshore dolphin reports are available on the Port's website at this link: [Environmental Monitoring | Port of Townsville](#)



CBEL_Humpback Dolphins



GJP_Humpback Dolphin



CBEL_Snubfin Dolphin