Lalang-garram Joint Management Body tropical inshore dolphin survey in Lalang-garram/Camden Sound Marine Park, 23 -30 Sept 2019

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Non-technical summary

A survey of tropical inshore dolphins[1] (*jigeedany*) was recently done in Prince Regent River (PRR), Lalang-garram / Camden Sound Marine Park. The survey involved vessels following line transects with observers recording all sightings of dolphins. Photographs were taken of dorsal fins of all dolphins sighted to be used to identify individual animals based on the unique shape and markings of their fins. This information can be used to assess the number of dolphins that were using the PRR and St George Basin area during the survey, and to collect life history information on individual animals.

Based off *PV Worndoom*, two tender vessels, *Goolaan* and *Pinyjiri*, covered a total of 693.1 kms of survey transect lines over five days (25-30th September 2019), equating to 58 hours dedicated searching for dolphins in the PRR area (and an additional 81.8km and nine hours off effort transiting). The survey effort resulted in sightings of 86 dolphins (including resights over multiple days) and an encounter rate of 0.1 dolphins per km of transect line or 1.13 dolphins per hour of survey effort. Snubfin dolphins (*Orcaella heinsohni*) were the predominant dolphin species sighted during the survey, with an encounter rate ranging 0.03-0.13 dolphins per km of transect line across the five days. A total of 19 individual snubfin dolphins including two calves and 11 individual humpback dolphins including three calves were sighted over the five days (excluding resights).

Of the 19 individual snubfins identified, 47% (9) of these have been seen in previous surveys. One individual known as OhLG02 has been observed in each survey year, and with a calf in 2016 and 2019. Most (73% of snubfin and 77% of humpback) dolphins were successfully photographed to a standard that they could be identified based on distinct markings on their dorsal fins. This makes it possible to recognise them as individuals and potentially track their life history if the marks remain stable over time. In addition to the 86 dolphins sighted in the PRR area, six bottlenose dolphins (*Tursiops aduncus*) were sighted from *PV Worndoom* near the Slate Islands and South Entrance either side of Sampson Inlet and eight humpback whales (*Megaptera novaengliae*) including three calves in Camden Sound. Two of the bottlenose dolphins had been sighted around the Samson Inlet area during the transit to PRR for the 2018 survey. The four cetacean species recorded in the survey are important to maintaining the target of species diversity within the marine park.

Most dolphins were sighted in the upper section of the PRR near Camp Creek with fewer observation out in St George Basin. Small tissue samples (blubber with skin) from three snubfin dolphins were also successfully collected using a biopsy dart gun.

This survey suggests that the PRR area supports approximately 20 snubfin dolphins at one time. Nine of the dolphins sighted this year have been observed in previous surveys (2016 & 2018) with four individuals present in all three surveys, suggesting a high degree of site fidelity. Given their local value and conservation status this survey highlights the importance of such a small population using a marine

park, where pressures can be actively managed to benefit the conservation status and persistence of the species. This is particularly important given the increasing boat activity (recreational and commercial) in the PRR area and greater Lalang-garram / Camden Sound and Lalang-garram Horizontal Falls Marine Parks.

We recommend that the survey is repeated every 2-3 years, post 2020 survey, to ensure that any changes to dolphin populations would be detected and managed. Regular survey effort will also be necessary to track the evolving dorsal fins ('natural tags') which will improve our understanding of the individual life histories of dolphins in the marine park. Commercial tour operators that regularly visit the area could be trained in using the Dolphin Watch app and photographing dorsal fins, which would contribute valuable data to complement the periodic high intensity surveys. Continued effort to collect biopsy tissue samples is required to gain samples from a minimum of five individuals for genetic analyses on relatedness and connectivity.

1. Introduction

A small population of tropical inshore dolphins[1] (*jigeedany*), including Australian snubfin (*Orcaella heinsohni*) and Australian humpback dolphins (*Sousa sahulensis*), are known to inhabit Prince Regent River (PRR) in the Lalang-garram / Camden Sound Marine Park (LGCSMP). Snubfins are endemic to tropical waters of northern Australia and southern Papua New Guinea. Generally, little is known about them across most of their range with the exception of several important areas (e.g. Roebuck Bay). Snubfins are known to occur in small populations that may have limited range patterns. Growing numbers of recreational and large commercial vessels visiting PRR is likely to increase pressure on this population. Joint managers of LGCSMP have highlighted the need to better understand the population and the potentially increasing pressures upon them. Dr Raudino, lead dolphin researcher in the Marine Science Program, proposed a research project to better understand this population and its place in the context of the broader Kimberley. The aim of the overall project is to provide the joint park managers with the capacity to confirm and quantify the site-fidelity and long-term dynamics of a small population of snubfin dolphins that inhabit the PRR in the LGCSMP, particularly in response to increasing human pressures.

An initial research expedition was conducted in 2016 by the Department of Biodiversity, Conservation and Attractions (DBCA) – Dambimangari Joint Management team and an external scientist. They surveyed tropical inshore dolphins[1] (*jigeedany*) in Lalang-garram / Camden Sound Marine Park, with a focus on the PRR and adjacent waters. This was followed by a second expedition in 2018 with scientists from the Marine Science Program (Dr Holly Raudino and Ellen D'Cruz). These initial surveys have been used to refine research design and survey methodology, train staff and establish baseline information on dolphin presence and identification in the study area.

Between 23 and 30 Sept 2019, a third research expedition on *PV Worndoom* was undertaken involving DBCA, Dambimangari Rangers and elder and scientists. This report describes the field trip activities, data collection, results and makes recommendations on future survey needs to inform management of dolphin population.

The objectives of this research expedition were:
1. To collect data on the distribution and relative abundance of tropical inshore dolphins/*jigeedany* within the study area using photo-identification.

[1] Australian snubfin (*Orcaella heinsohni*), Australian humpback (*Sousa sahulensis*) and Indo-Pacific bottlenose (*Tursiops aduncus*) dolphins.

2. To opportunistically collect biopsy samples from tropical inshore dolphins/*jigeedany* for assessments of genetic connectivity between populations across the Kimberley.
3. To refine the strategy for ongoing monitoring of tropical inshore dolphins/*jigeedany* in the PRR area.

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Holly Raudino, Research Scientist, Marine Science Program (DBCA)
Anthony Richardson, Marine Ranger, Parks and Wildlife Service (DBCA)

2. Research activities

23 Sep: Arrive at Koolan Island and transit to Deewai.
24 Sep: Depart Deewai and transit to St George Basin.
25 Sep: Prince Regent River dedicated dolphin survey.
26 Sep: Prince Regent River dedicated dolphin survey.
27 Sep: Prince Regent River dedicated dolphin survey.

28 Sep: Prince Regent River dedicated dolphin survey.
29 Sep: Prince Regent River dedicated dolphin survey.
30 Sep: Prince Regent River dedicated dolphin survey (morning only). Dolphin team depart.

More detail on the dolphin surveys is included below under Methods.

Methods

Survey Design

A key objective of this project has been to develop a survey design and protocol that is reproducible and can be implemented at least once annually over a number of years by the joint management team to produce an indicator of the condition of the dolphin population (i.e. numbers are stable, declining or increasing) within the survey area.

The survey design consists of several transects that adequately cover the study area and would likely capture all dolphins in the area on a given day. The study area and transects were selected based on several important factors:

1) the length of transect route can be completed within a single good weather day given moderate numbers of dolphin sightings;
2) the narrowness of the waterway increases the chances of a survey detecting dolphins if they are present;
3) the survey area is apparently regularly used by reasonable numbers of both snubfin and humpback dolphins;

4) its sheltered waters increase the likelihood that planned survey activities can be completed in suitable calm sea conditions; and
5) it is the focal point of the majority of commercial (cruises, tours and fishing) and recreational boating within the St George Basin/ Prince Regent area.

During a survey, the transects should be repeated a minimum of three times over a three day – weeklong period at least once per year, preferably around the same time. The transects need to be repeated a minimum of two times over a short period (days) but ideally three times each survey as dolphins will be missed on individual transects due to biases; these include 1. The dolphins are at the water surface but missed by observers (perception bias due to observer fatigue) or 2.the dolphins are submerged during a dive and not available to be detected (availability bias). To build an adequate baseline dataset on number of dolphins using the PRR area, the survey should be run annually for a minimum of three consecutive years.

A survey can only be conducted in suitable sea conditions (Beaufort Sea State [BSS] ≤2). Dolphins have a low surfacing profile, so may be missed in conditions (BSS >2) where white caps are present, resulting in a misleading underestimate of the number of dolphins using the area.

Data Collection

During this expedition, daily surveys were conducted from tenders, Goolaan and Pinyjiri, following pre-determined routes through areas of interest. When both tenders were on survey at the same time in the same area, they followed separate transects and when on the same transect they concentrated on opposite ends of the river when tide would allow. In addition, several hours of survey effort were conducted from the roof of PV *Worndoom* on transit from Koolan Island to Montgomery Reef, and from Samson Inlet to PRR.

Each vessel was given a different transect to follow, ensuring spatial separation across the survey area. Vessels maintained 8-10knots while on transect, slowed during dolphin sightings and transited between transects at faster speeds. A minimum of three people were onboard each vessel; the skipper and two observers dedicated to scanning for dolphins (with the naked eye) ahead and on each side of the vessel. When dolphins were sighted, the point where the transect was left was noted by the skipper using the onboard navigation system and the dolphin group was approached to collect data on group size, composition (i.e. species, sex and age class) and behavioural activity. The location (latitude and longitude) of the sighting was recorded using a hand-held Garmin GPS. Photographs of the dorsal fins of all dolphins in the group were taken for the purpose of photo-identification of individual animals. Each vessel had at least one person using a DSLR camera with a 400mm zoom lens for photo-identification. When conditions were suitable, an attempt was made to get biopsy samples from individual dolphins. This was done using a DANinject dart gun with specially designed floating darts. The dart is aimed to hit just below the dorsal fin of the individual dolphin and takes a core of tissue which contains both skin and blubber and can be analysed genetically.

Data Analysis

Individual dolphins were identified from photographs primarily based on patterns of nicks and notches on the trailing and leading edge of the dorsal fin as well as secondary marks such as pigmentation, scars, rake marks, wounds and lesions on the surface of the dorsal fin. Scars, wounds and lesions on other parts of the body visible at the surface were also used when present. These are evolving tags that can

change relatively quickly due to interactions with conspecifics, predation attempts and fisheries interactions. If the dorsal fin is substantially modified individual dolphins may be mis-identified which will lead to misleading estimates because dolphins are being double counted.

Sighting histories (produced from repeat sightings of the same individual dolphin on multiple occasions over time) provide valuable information on the age and composition of the population and on residency patterns. Annual or more frequent surveys would provide better data on life history of the population and population recruitment such as calving and weaning. It would also be possible to estimate home range size of individual dolphins through repeat sightings of the same individuals.

After the survey, all photographs were qualitatively analysed for focus, contrast, angle, visibility and proximity of the fin and the best photos of each individual were retained. Individuals were categorised by the degree of marks on the dorsal fin as either distinctive (D1), subtle (D2) or clean (D3). The overall number of clean fins was calculated for each group and for each day, however, the same clean fin individuals could potentially have been resighted between days as they had no distinguishing features.

All images and sighting information were entered into the DolFIN database. Attempts to match individual dolphins to those already in the photo-identification catalogue were made by two researchers independently. If a match was not made, then the individual was added to the photo-identification catalogue and given a new ID code.

3. Results

The survey of the PRR area covered 693.1 km and 58 hours of transects on effort (and an additional 81.8km and nine hours off effort transiting). Transit from Koolan Island to PRR covered an additional 225 km.

Four species of cetaceans were observed, bottlenose dolphin (*Tursiops aduncus*), humpback dolphin (*Sousa sahulensis*) snubfin dolphin (*Orcaella heinsohni*) and humpback whale (*Megaptera novaengliae*). The bottlenose dolphins (6 individuals) and humpback whales (8 adults, 3 calves) were recorded during the transit through the LGCSMP to PRR. The bottlenose dolphins were sighted near the Slate Islands and South Entrance either side of Sampson Inlet and the humpback whales in Camden Sound.

In PRR two species of dolphin were sighted (snubfin and humpback). The combined effort in the study area resulted in 86 dolphins (of the two species) being sighted in 27 groups, 66 of these were on transect. This equated to 0.1 dolphins per km of transect or 1.13 dolphins per hour of survey effort. This included repeated sightings of the same individual dolphins.

Dolphin sightings
Results are presented according to the two areas: (1) Lalang-garram marine parks; (2) Prince Regent River.

Table 3.1 Dolphin and whale sightings: Lalang-garram marine parks

Species	**# sightings**	**Group size range; mean**	**Number of calves detected**
Bottlenose dolphin (*Tursiops*)	2	3	0
Humpback whale (*Megaptera*)	4	1-4; 2	3

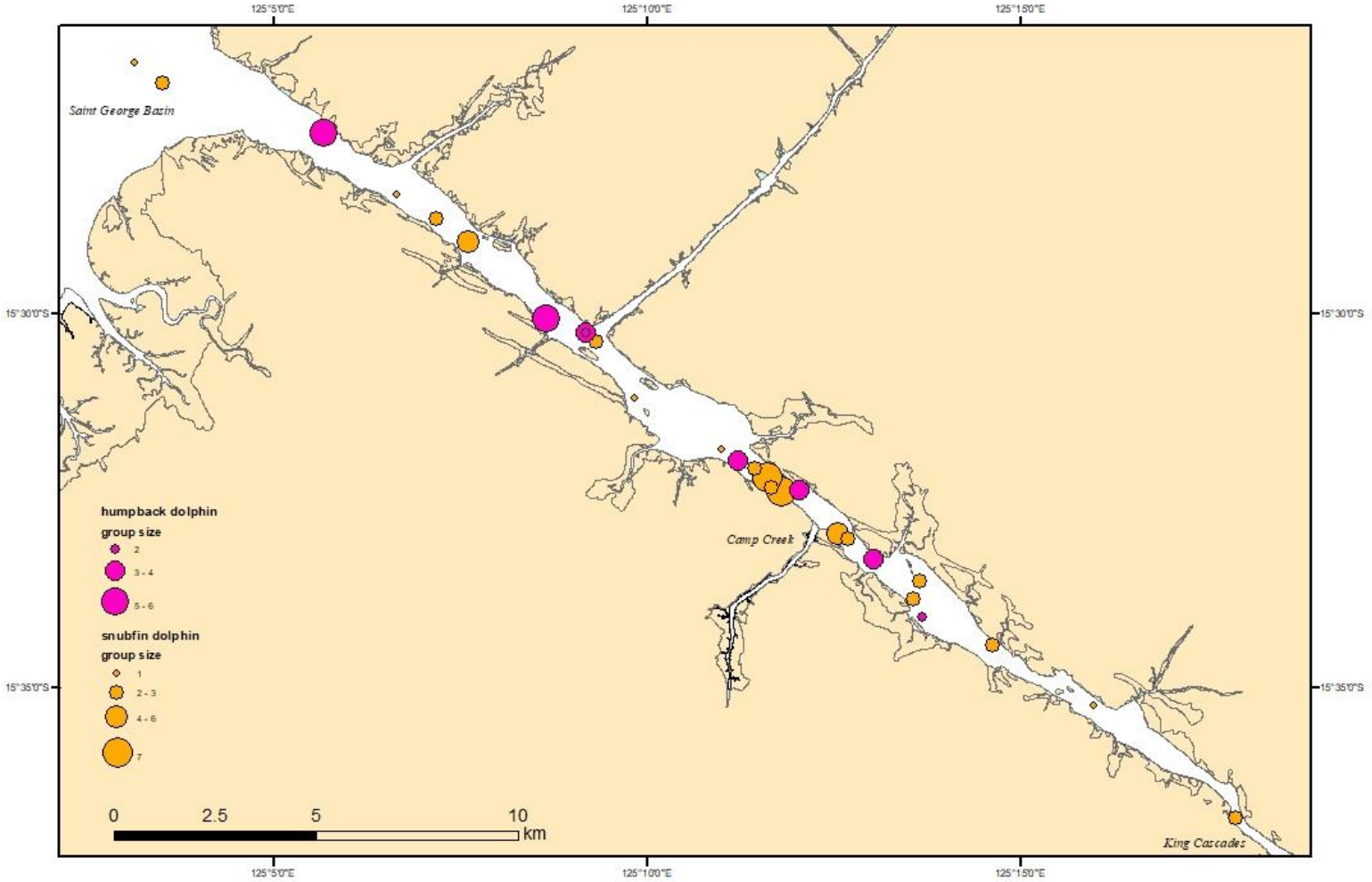
Sightings off survey effort (i.e. opportunistic).

Table 3.2 Dolphin sightings: Prince Regent River

Species	# sightings	Group size range; mean	Number of calves detected
Snubfin (*Orcaella*)	19	1-7; 3	2
Humpback (*Sousa*)	8	1-6; 3	3

Includes sightings while both on and off (i.e. opportunistic) survey effort.

Figure 3.1. Dolphin sightings in the Prince Regent River survey area.



Encounter rates

Encounter rates were calculated as a measure of the number of dolphins observed per km of survey effort. Encounter rates were calculated per km per day, illustrating how variable this measure can be between days (Tables 3.4 & 3.5).

Encounter rates were calculated using the best estimate of group size for each sighting, including any calves present. If the same individual is observed more than once in one day (shown by photo-ID), then it is only counted once. Some snubfin dolphins were resighted multiple times over the week-long survey. Dolphins observed opportunistically while not on survey effort (e.g. while motoring at speed between areas) were not included.

Table 3.4 Overall encounter rates: PRR

Date	km effort	# snubfin dolphins per km effort	# humpback dolphins per km effort
2019_09_25	101	0.07	0.03
2019_09_26*	182.3	0.04	0.04
2019_09_27	59.6	0.13	0.05
2019_09_28*	204.8	0.03	0.02
2019_09_29*	159.3	0.06	0.01
2019_09_30	60.9	0.03	0.06

**on 3 days there were 2 vessels surveying at the same time. For encounter rate by individual boat, see Table 3.5.*

Table 3.5 Encounter rates when two boats were operating concurrently. Encounter rates for each boat are presented separately where two boats were used concurrently.

Date	km effort	# snubfin dolphins per km effort	# humpback dolphins per km effort	Boat name
2019_09_26	90.7	0.04	0.02	Goolaan
2019_09_26	91.6	0.04	0.06	Pinyjiri
2019_09_28	93.8	0	0.05	Goolaan
2019_09_28	111	0.04	0	Pinyjiri
2019_09_29	78.8	0.03	0.02	Goolaan
2019_09_29	80.5	0.08	0	Pinyjiri

Table 3.6 Resighting history of individual snubfins identified in the Prince Regent River study area, ticks indicate sighted and present, crosses indicate absent or missed.

Dolphin ID code	2016	2018	2019
OhLG01	✓	x	✓
OhLG02	✓	✓	✓
OhLG03	✓	x	?
OhLG04	✓	✓	✓

OhLG05	✓	x	✓
OhLG06	✓	✓	✓
OhLG07	✓	x	✓
OhLG08	✓	x	✓
OhLG09	✓	✓	✓
OhLG10	x	✓	x
OhLG11	x	✓	x
OhLG12	x	✓	x
OhLG13	x	✓	✓
OhLG14	x	x	✓
OhLG15	x	x	✓
OhLG16	x	x	✓
OhLG17	x	x	✓
OhLG18	x	x	✓
OhLG19	x	x	✓
OhLG22	x	x	✓
OhLG23	x	x	✓

3.7 Resighting history of individual humpback dolphins identified in the Prince Regent River study area, ticks indicate sighted and present, crosses indicate absent or missed.

Dolphin ID code	**2016**	**2018**	**2019**
SSLG01	✓	x	x
SSLG02	✓	✓	✓
SSLG03	✓	x	✓
SSLG04	✓	x	✓
SSLG05	✓	x	x
SSLG06	✓	x	x
SSLG07	✓	x	x
SSLG08	✓	x	x
SSLG09	✓	x	x
SSLG10	✓	x	x
SSLG11	✓	x	x
SSLG12	✓	x	x
SSLG13	✓	x	x
SSLG24	x	✓	x
SSLG28	x	✓	x
SSLG29	x	x	✓
SSLG30	x	x	✓
SSLG31	x	x	✓
SSLG32	x	x	✓
SSLG33	x	x	✓
SSLG34	x	x	✓
SSLG35	x	x	✓
SSLG35	x	x	✓

Photo-identification ('Photo-ID')
Photo-ID data collection was very successful: 73% of snubfin and 77% of humpback dolphins sighted were successfully photographed to a suitable standard so that they could be identified based on distinct marks on their dorsal fins.

For the PRR area, 19 distinctive snubfin and 11 distinctive humpback dolphins were identified using photographs. Two snubfin calves and three humpback dolphin calves were sighted. Nine of the 13 snubfin dolphins that were identified in 2016 and 2018 were resighted in the 2019 survey suggesting some degree of site fidelity to the PRR area (Table 3). This brings the total to 21 individually distinctive snubfin dolphins that have been photo-identified for PRR, excluding calves (Appendix 1).

Biopsy darting
We were successful in getting three very small, but not full, samples (i.e. 'plugs' of blubber with skin) using new dart heads with sharpened cutting edge and two slits with prongs added to the design trialled in 2018. The three individuals biopsied were OhLG09, OhLG14, OhLG15 (Mum) (Figure 3.3).

Figure 3.2 Dart head with (a) syringe and tail and (b) prongs and (c) slits added to the dart head in 2019 in an attempt to improve tissue sample retention.

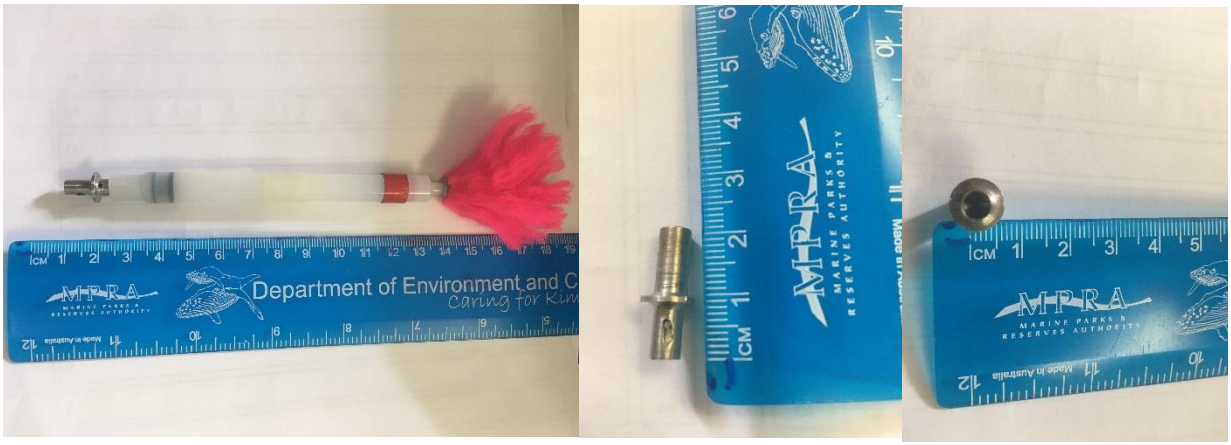


Figure 3.3 The three individuals biopsied were OhLG09, OhLG14, OhLG15 (Mum).

Figure 3.4 The biopsy wound is visible below the dorsal fin of the snubfin dolphin OhLG14 where a biopsy attempt was made on 27th September using the DANinject system.

Other observations

On the 25th September we observed a group of eight snubfin dolphins using spitting (Figure 3.7) as a feeding technique apparently disorientating the fish and directing it towards the dolphin's mouth. We also observed cooperative feeding where the dolphin group formed a circle with their heads orientated towards the centre apparently herding small fish for the benefit of the group. Two species of fish were photographed and snubfins were observed spitting and feeding on these fish species in two different encounters; wolf herring (*Chirocentrus dorab*) and a small species of trevally possibly Fringe-finned trevally (*Pantolobus radiatus*) pictured below (Figure 3.5).

Figure 3.5 Wolf herring (*Chirocentrus dorab*) and Fringe-finned trevally (*Pantolobus radiatus*)

Figure 3.6 Snubfin feeding close to the survey boat on small trevally fish.

Figure 3.7 Snubfin spitting water ahead of itself, a scare tactic thought to disorientate the fish and direct the fish back towards the dolphin's mouth.

Discussion

More snubfin dolphins were identified in the recent survey (19) compared to 2018 (8) and 2016 (9) which is likely due to more survey effort in 2019. Using two vessels allowed a more intensive survey effort and demonstrates the availability and perception biases when using one vessel. That is, with two boats covering the same stretch of water (albeit on reciprocal transects), encounter rate differed as a result of dolphins being missed because they were submerged and unavailable or observers were scanning a different area or were fatigued and missed them surfacing. Sea conditions were fair throughout the dedicated survey with consistently light winds in the morning and strong winds in the afternoon resulting in survey effort being concentrated in the morning as afternoon conditions were unsuitable (BSS >2) for sighting, photographing and biopsying dolphins.

The behaviour of the dolphins over the course of the week became increasingly evasive with dolphins dispersing and having longer times below the surface when re-encountered. It is possible that this was a result of multiple encounters with the same individuals and the cumulative exposure to the boats time resulting in the dolphins becoming more wary and avoiding the boats. However, this changed behaviour may also have been affected by the king spring tides that peaked at the end of the survey which could have influenced their foraging behaviour. Dolphins are typically more difficult to approach when foraging as they surface erratically.

We now have three years (albeit not consecutive) of survey effort that suggest the area supports approximately 20 snubfin dolphins at any one time. Nine of the dolphins sighted this year were seen in both previous years (2016 & 2018) which suggests that there is a high degree of site fidelity. The small population of snubfins that use the PRR is reportedly locally important to Dambimangari (Adrian Lane, personal communication). Given their local value and conservation status (vulnerable globally on the IUCN Redlist, near threatened in Queensland, priority species that is data deficient precluding conservation assessment in Western Australia) this survey highlights the importance of such a small population using a marine park, where threats can be actively managed to benefit the conservation status and the persistence of the species.

If human pressures continue to increase in the PRR e.g. increased boat activity, then monitoring through regular (annual) survey will become even more important to ensure the population is not impacted. This may include the need for additional surveys at different times of year (peak and off-peak seasons) to monitor the dolphin population as well as collection of data on numbers of boats present at any one time and across the season to monitor the pressure. The number of dolphins using the area and encounter rates can then be compared between years to detect changes that can then be assessed relative to changes in boat pressure. Additional research questions may need to be explored, including activity budgets for the dolphins and habitat use to determine whether these factors change in the presence of increasing numbers of vessels. Together these data may provide a point of comparison to investigate whether dolphins are being displaced from the area or continue to use the area regardless of boat activity. It should be noted that dolphins may continue to use an area, for example to forage, even if it is sub-optimal due to boat traffic which may impact their short term activity budget. If exposure is continued and chronic it may result in a fitness cost to the population (Allen and Read, 2000, Pirotta et al., 2015).

Despite successfully obtaining three very small tissue samples we did not get any full 'plugs' of blubber with skin. This may have been due to the biopsy needle tip not being sharp enough or the internal prongs needing to be pushed further towards the centre of the dart. It is advised the darts are tested on a common species, such as bottlenose dolphins before another survey. This is to ensure the prongs are retaining samples and the cutting edge is sharp enough. While the improvements made to the dart heads made them more effective, there is still additional refinement needed.

Given the mixed success of the DANinject dart heads to date we recommend continuing to pursue this alternative system to the PAXARMS, as the Department owns multiple DANinject systems and does not own a PAXARMS. The PAXARMS are also considerably more expensive than the DANinject system. We encourage the continued collection of tissue samples as a minimum of five individuals sampled are required for genetic analyses of relatedness and connectivity between populations (Roebuck Bay to Northern Territory).

4. Recommendations

To fulfil the aims of estimating abundance, home range size and critical habitat, and obtaining genetic samples the following tasks should be actioned.

1. At a minimum conduct a PRR survey with 2-3 repetitions of the transects over a 3-7 day period at least once per year, preferably around the same time and avoiding spring tides. A minimum of one week should be allocated to the task, given unpredictable weather conditions. Where possible, use two vessels for the survey.

2. Collect a minimum of 30 sightings, preferably ~100 sightings of each individual dolphin, to estimate home range accurately.
3. Collect tissue samples from a minimum of five individuals for genetic analyses on relatedness and connectivity.
4. Further modify DANinject dart heads (sharpen and bend prongs towards centre) and trial on bottlenose dolphins if possible before continuing to use in the PRR surveys.

Acknowledgements

Dambimangari traditional owner Janet Oobagooma was generous in sharing her knowledge and sea country. Michael Hourn and Brett Francis's knowledge of the survey area maintained safe operation of *PV Worndoom* which was integral to the successful completion of the survey.

References

ALLEN, M. C. & READ, A. J. 2000. Habitat selection of foraging bottlenose dolphins in relation to boat density near Clearwater, Florida. *Marine Mammal Science,* 16**,** 815-824.

PIROTTA, E., MERCHANT, N. D., THOMPSON, P. M., BARTON, T. R. & LUSSEAU, D. 2015. Quantifying the effect of boat disturbance on bottlenose dolphin foraging activity. *Biological Conservation,* 181**,** 82-89.


OhLG01
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