Looking for Dolphins and Dugongs in Jabalbina-Yalanji Sea Country

Isabel Beasley, Rickie Burchill and Jabalbina Rangers

20 January 2017
# Table of Contents

**Table of Contents** ......................................................................................................................... 2

**Acknowledgements** ...................................................................................................................... 3

Jabalbina Yalanji Training and Boat-based Surveys ............................................................................ 3

Project Sponsors – Boat Surveys ............................................................................................................ 3

**Executive Summary** ....................................................................................................................... 4

**Background** ....................................................................................................................................... 7

Introduction – Jabalbina Yalaji Aboriginal Corporation ....................................................................... 7

Introduction – Supporting Indigenous Capacity to Conduct Inshore Dolphin Research and Monitoring .................................................................................................................. 8

Project Aims and Objectives ................................................................................................................ 9

Project Activities .................................................................................................................................... 9

**Study Area** ......................................................................................................................................... 10

**Training and Boat-based Surveys** .................................................................................................... 11

Project Participants ................................................................................................................................ 11

Inshore Dolphin Training ....................................................................................................................... 11

*Species Identification Exercise* ......................................................................................................... 12

*Species Distribution Mapping Exercise* ............................................................................................ 12

The species distribution mapping exercise aimed to gain an understanding of what marine mammal species (including dugong) may be found in Eastern Kuku Yalanji Sea Country, and what regions may be most important ................................................................................................. 12

Survey Protocols and Data Entry ......................................................................................................... 13

Boat-based Surveys ................................................................................................................................ 13

*Vessel Used* ........................................................................................................................................ 13

*Transect Lines* ..................................................................................................................................... 14

*Data Collection* .................................................................................................................................... 14

Survey Effort ........................................................................................................................................... 16

*Beaufort Conditions During Surveys* .................................................................................................. 17

Dolphin Sightings ................................................................................................................................. 17

*Relative Sighting Rates* ...................................................................................................................... 18

*Bottlenose dolphins* ........................................................................................................................... 18

*Humpback dolphins* ............................................................................................................................ 19

Megafauna Sightings ............................................................................................................................... 20

**Photo-identification** ......................................................................................................................... 21

*Bottlenose dolphins* ............................................................................................................................ 21

*Humpback dolphins* ............................................................................................................................ 22

**Discussion** .......................................................................................................................................... 25
Acknowledgements

Jabalbina Yalanji Training and Boat-based Surveys

Many thanks to Jabalbina Yalanji Aboriginal Corporation for supporting these surveys and training. Particular thanks to Eastern Kuku Yalanji Elders and Traditional Owners, and Jim Turnour (Chief Executive Officer) for interest to conduct dolphin and dugong surveys in Eastern Kuku Yalanji Sea Country.

Thanks to Rowan Shee (previous IPA Manager) for facilitating the training and arranging logistics. Thanks to the Jabalbina Yalanji Rangers for participating in the training and boat-based surveys.

Thanks to Murdoch University and the Murdoch University Cetacean Research Unit (MUCRU), particularly Dr. Alex Brown for collaborating this project.

Particular thanks to the Australian Government National Landcare Programme and James Cook University for providing the funding to conduct the training. Thanks also to the SeaWorld Research and Rescue Foundation for providing research to conduct additional surveys in Jabalbina Yalanji Sea Country.

This project was conducted under James Cook University (JCU) Human Ethics Permit Number H5984, JCU Animal Ethics Permit Number A2140, Department of Environment and Heritage Protection Permit Number WISP16007615 and Great Barrier Reef Marine Parks Authority Permit Number 37858.1.

Project Sponsors – Boat Surveys

Thanks to WWF – Australia and Tassal for providing the JCU vessel used to conduct surveys for this project, and other surveys along the north Queensland coast.

"Yalanjiwarra muruku junkurrjimaka bamangka bubuku"

Yalanji people stand strong together for our people and our land
### Executive Summary

#### Background

As part of the Murdoch/JCU project entitled - *Supporting Indigenous Capacity to Conduct Inshore Dolphin Research and Monitoring*, a training workshop and boat-based surveys were conducted with Jabalbina Yalanji Aboriginal Corporation from 3-6 October and 13 October 2016.

The objectives of this project are to:

1. further develop the capacity of Indigenous Ranger groups to survey marine wildlife on their Sea Country;
2. foster positive relationships between Traditional Owners, researchers and wildlife managers; and,
3. contribute valuable data to inform the conservation and management of tropical inshore dolphins in Australia

#### In-Class Training

In-class training was undertaken on 5 and 6 October, at the Jabalbina Ranger base in Mossman. This training consisted of presentations discussing:

- why inshore dolphins are a conservation priority (snubfin dolphins as a case study),
- aims, objectives and methods of the project,
- marine mammal identification,
- species distribution mapping exercise,
- survey protocols, data collection and equipment to be used during surveys
- data analysis (conducted on 6 October 2016)

#### Boat-based Surveys

**Survey Effort**

Four days of surveys were conducted throughout southern Eastern Kuku Yalanji Sea Country. From the start to end of each day, a total of **215km was travelled over 19 hours**. Of this effort, a total of **123km over 12 hours** was spent ‘on transect’ searching for dolphins, dugongs and other marine megafauna

**Dolphin Sightings**

One bottlenose and two humpback dolphin groups (7 and 6 individuals respectively) were sighted during surveys.

**Megafauna Sightings**

During surveys the following megafauna were sighted:

- 1 leopard shark
- 2 turtles – unknown species
- 1 green turtle
Photo-identification
A total of 1354 images were taken of the bottlenose and humpback dolphin groups.

- 5 bottlenose dolphins were identified.
- 6 humpback dolphins were identified.

Bottlenose dolphin examples

Humpback dolphin examples
Discussion

Training Component
- The training component was successful, and provided the rangers with new information about what dolphin species occur in their Sea Country, highlighted some of the threats to inshore dolphins, and provided an opportunity for IB to understand what areas of Sea Country may be important for dolphins and dugongs based on ranger knowledge.
- It was unfortunate that very poor weather prevented further boat-based surveys being conducted. However four surveys days were completed, providing a good opportunity to understand data collection techniques and observer protocols.
- Ranger feedback on the training and boat-based surveys has provided good ideas on how the ranger training manual can be tailored to suit ranger groups beginning inshore dolphin monitoring.

Dolphin Sightings
- Bottlenose and humpback dolphins were sighted during surveys in Eastern Kuku Yalanji Sea Country.
- Rangers did not recall ever sighting snubfin dolphins in Eastern Kuku Yalanji Sea Country. Based on habitat type, i.e. deep clear water close to shore, sandy-shore coastline with reefs, and lack of extensive mangrove habitats, it appears that Sea Country around Port Douglas is more conducive to humpback and bottlenose dolphins than snubfin dolphins.
- The humpback and bottlenose dolphin groups encountered were approachable to easy to photo-identify. This indicates that future photo-identification studies would be successful, given the apparent approachability of groups.

Megafauna Sightings
- No dugongs were sighted during these surveys, although a single dugong may have sighted near the Mowbray River mouth.
- Rather than a lack of dugongs in the area, dugongs may be afraid of boats because of hunting/high boat traffic, and therefore difficult to observe at-sea.
- Few turtles were sighted during surveys, which was surprising given the extensive reef habitat.

Future Survey Schedule
- Jabalbina Yalanji Aboriginal Corporation are planning to apply for funding for a vessel in the near future to assist with Sea Country monitoring and management initiatives.
- This vessel would also assist significantly with continued marine megafauna monitoring, particularly in regions north of Port Douglas where no inshore dolphin surveys have yet been conducted.
- JCU and Terrain NRM will apply for Citizen Science Project funding in 2017, where Jabalbina Yalanji Aboriginal Corporation will be included as a project partner. This project (if successful) would assist to continue marine megafauna monitoring throughout Eastern Kuku Yalanji Sea Country.
Background

Introduction – Jabalbina Yalaji Aboriginal Corporation

“In late 2007, following a thirteen year process of native title mediation, the Federal Court determined Native Title over Eastern Kuku Yalanji traditional lands in Far North Queensland. The native title determination included the settlement of 15 ‘Indigenous Land Use Agreements’ (ILUA’s), registered by the National Native Title Tribunal that reflect agreements between various land interests parties in the native title determination area. Subsequent to the determination Eastern Kuku Yalanji people established the Jabalbina Yalanji Aboriginal Corporation (Prescribed Body Corporate) and the Jabalbina Land Trust in 2007 to represent the interests of the native title holders.

The Determination Area covers approximately 144,000 hectares of unallocated state land and timber reserve in Far North Queensland, and includes 62 separate parcels of land, incorporating tropical rain forests, beaches, reefs and mountain ranges between Mossman in the south, the Annan River (south of Cooktown) in the north and the Great Dividing Range to the west. It also includes Eastern Kuku Yalanji communities of Wujal Wujal and Mossman, and the Daintree, Cape Tribulation, Black Mountain and Cedar Bay National Parks. The claimed parcels of land fall within the Wet Tropics Bioregion of international significance due to its outstanding natural and cultural values. The majority of the area is within the Daintree River catchment, and spans a number of other catchments including the Endeavour, Normanby, Mitchell and Mossman Rivers. All parcels of land included in the native title package vary widely in terms of their underlying tenure and consequential land management arrangements” (http://www.jabalbina.com.au/about-jabalbina).

Eastern Kuku Yalanji Bubu

Eastern Kuku Yalanji Bubu (country) runs along the East Coast of Far North Queensland and it includes land and sea between Port Douglas and just south of Cooktown (Figure 1).

Figure 1. Location map of Eastern Kuku Yalanji Country (left), showing the Indigenous Land Use Agreement region.
**Jabalbina Rangers**

The Jabalbina Yalanji Ranger Program is managed by Jabalbina under the guidance of Eastern Kuku Yalanji Elders and Traditional Owners. The ranger program currently has 11 full time rangers working at one three ranger bases throughout the Eastern Kuku Yalanji Native Title area. Rangers are based in Mossman, Ayton and Shipton’s Flat, with the main administrative office in Mossman.

The Jabalbina Yalanji Rangers manage land and sea within the Eastern Kuku Yalanji Indigenous Protected Area (IPA).

Jabalbina Rangers complete the following jobs:

- Weed control and vegetation management
- Fire management and revegetation
- Feral animal management
- Managing walking and vehicle tracks
- Clear, monitor and maintain sacred places in consultation with Elders
- Junior ranger camps and activities
- Assist with cultural heritage surveys and recordings
- Visitor management and patrols
- Work together on land and sea management with neighbours, scientists and staff from Queensland Parks and Wildlife Services and other government agencies
- Monitoring land and sea
- Participate in Eastern Kuku Yalanji Indigenous Protected Area meetings, cultural camps and educating the community, tourists and school children about the Eastern Kuku Yalanji IPA and Indigenous Land and Sea Ranger Program
- Clearing away rubbish and marine debris

**Introduction – Supporting Indigenous Capacity to Conduct Inshore Dolphin Research and Monitoring**

Three data deficient species of dolphin regularly occur in shallow, near-shore waters of Northern Australia: the Australian snubfin (*Orcaella heinsohni*), Australian humpback (*Sousa sahulensis*) and Indo-Pacific bottlenose (*Tursiops aduncus*) dolphins. Snubfin and humpback dolphins only occur off northern Australia and southern New Guinea; their apparently small numbers and fragmented distribution have raised concerns over their vulnerability to human activities, yet insufficient information exists to assess their status as threatened species or not.

The expansive and remote nature of the northern coast of Australia presents many challenges to the collection of data on inshore dolphins. Accessing many of these areas and surveying them in a cost-effective manner is dependent upon effective engagement with Traditional Owners. Positive collaborations with indigenous communities, including the provision of training, is considered essential for the conservation management of inshore dolphins nationally.

A number of Traditional Owners across northern Australia have a shared interest in inshore dolphins, including recognition of their value through healthy country plans. However, there are no established standardised guidelines for how to monitor dolphin status that may suit ranger group involvement. While acknowledging that priorities and resources will be somewhat group-specific, there is much value in developing a single reference document to guide training and data collection with indigenous ranger groups throughout Australia.
Project Aims and Objectives
This project aims to develop positive working relationships with indigenous groups and enhance their ability to collect data to inform the conservation management of inshore dolphins.

The objectives of this project are to:
1. further develop the capacity of Indigenous Ranger groups to survey marine wildlife on their Sea Country;
2. foster positive relationships between Traditional Owners, researchers and wildlife managers; and,
3. contribute valuable data to inform the conservation and management of tropical inshore dolphins in Australia

Project Activities
The two key activities are:
1. Provide hands-on training in dolphin survey techniques by running classroom workshops and field surveys with four selected indigenous ranger groups in WA, NT and QLD.
2. Based on the experiences of the workshops, develop a ranger-specific dolphin survey manual as a reference document to guide indigenous ranger groups that are interested to begin/continue research and monitoring of inshore dolphins in their Sea Country.

Jabalbina Yalanji Aboriginal Corporation was selected as one of the Queensland Corporations to participate in this project. The primary reasons for this selection were:
1. Jabalbina Yalanji Aboriginal Corporation had communicated a desire to participate in marine mammal surveys;
2. With an extensive Sea Country that had not previously been surveyed for inshore dolphins (although opportunistic reports of dolphins occurring around the Bloomfield River are known), the area was determined a high priority for inshore dolphin research.
3. Although Jabalbina Yalanji Aboriginal Corporation do not currently own a vessel, the Corporation has immediate plans to apply for a vessel to undertake Sea Country monitoring and management activities.

This report describes the training workshop and associated boat-based surveys conducted from 3-6 October and 13 October 2016.
Study Area

Eastern Kuku Yalanji Bubu (country) runs along the East Coast of Far North Queensland and it includes land and sea between Port Douglas and just south of Cooktown. Sea Country runs from the Mowbray River south of Port Douglas north to just south of Cooktown (Figure 2).

The study area for these surveys was from the Mowbray River north to the Daintree River (Figure 3)
Training and Boat-based Surveys

The training and boat-based surveys with Jabalbina Yalanji Aboriginal Corporation were conducted from 3-6 October and 13 October 2016. The in-class training was conducted on 5 and 6 October 2016, and boat-based surveys were conducted on 3-4, 6 and 13 October (6 October in morning).

Project Participants

Jabalbina Yalanji Aboriginal Corporation.
Rowan Shee
Rickie Burchill
Danica Solomon
Anthea Solomon
Terrance Solomon

James Cook University
Isabel Beasley
Mathew Golding

Inshore Dolphin Training

In-class training was held on 5 and 6 October (Figure 4). This training consisted of presentations discussing:

- why inshore dolphins are a conservation priority (snubfin dolphins as a case study),
- aims, objectives and methods of the project,
- marine mammal indentification,
- species distribution mapping exercise,
- survey protocols, data collection and equipment to be used during surveys
- data analysis (6 October 2016)

Figure 4. Jabalbina rangers working on Jabalbina database entry
Species Identification Exercise

The species identification component of the presentation aims to:

- introduce participants to the variety of dolphin species that can be found in northern Australia
- introduce participants to the three main species of inshore dolphins and dugong, and highlight identification features
- emphasise the importance of recording ‘don’t know’ if the species identification is uncertain
- assess identification ability and understanding of recording species as ‘don’t know’ if species identification is uncertain.

Fourteen slides were shown to participants. Participants were required to imagine that they were out on a survey, and were responsible to collect data on the species identification for storage into the Jabalbina Yalanji database. One of main points of this exercise was for participants to write ‘don’t know’ if they were not confident sure on species identification. In this assessment, all participants should be able to achieve a 100% correct identification, because the correct answer could be:

1. the correct species
2. don’t know

Species Distribution Mapping Exercise

The species distribution mapping exercise aimed to gain an understanding of what marine mammal species (including dugong) may be found in Eastern Kuku Yalanji Sea Country, and what regions may be most important.
Survey Protocols and Data Entry
The final component of the training related to survey protocols, data collection and equipment that would be used during the surveys. Data entry for these surveys utilised a purpose-made app. (supplied courtesy of Girringun Aboriginal Corporation and Environmental Systems Solutions), where the data could be collected in the field and then uploaded to a central database once back to internet reception (Figure 5). This app. Is described further in the Girringun Aboriginal Corporation survey report, available from <IPA@girringun.com.au>.

Figure 5. Jabalbina Ranger Anthea Solomon entering survey data into a tablet

Boat-based Surveys
Boat-based surveys were conducted on 3-4, 6 and 13 October 2016. Weather conditions were very unfavourable on 6 and 7 October, so surveys were only conducted early morning of 6 October, and were not conducted on 7 October.

Vessel Used
The vessel used for these surveys was ‘Warranaka’, a 5.8m Formosa centre console, which was donated to James Cook University by WWF-Australia and Tassal (Figure 6).

Figure 6. Survey vessel sponsored by WWF-Australia and Tassal
Transect Lines
Transect lines were pre-designed, and aimed to systematically cover Eastern Kuku Yalanji Sea Country from the Mowbray River north to the Daintree River. With good weather conditions these surveys lines should have been completed in two days. Transects were spaced 5km apart, and extended 10km from the coast (Figure 7). A total of 115km of transect lines were pre-designed for Eastern Kuku Yalanji Sea Country.

Figure 7. Pre-designed survey lines throughout Eastern Kuku Yalanji Sea Country

Data Collection
Methods for data collection followed standard inshore dolphin survey protocols. Key points are:

- the survey vessel travelled at 10-12km/hr (5-7kts/hr) while ‘on effort’;
- surveys were only conducted in Beaufort 1-3 conditions;
- while ‘on effort’ two observers searched on the left and right sides of the vessel, with one recorder position when enough personnel were available;
- observers rotated positions every 30 minutes to reduce observer fatigue;
- data sheets and GPS were used to collect survey information (total km travelled, total time, Beaufort state);
- a PDA with Fulcrum sequence was simultaneously used to collected effort and sighting information (Figure 8);
- when a dolphin group was sighted, effort ceased and the vessel approached the group to take photographs and record associated information (i.e. group size and composition). Once enough photographs were taken, or the group was lost, the vessel would return to the transect line and continue ‘on effort’ (Figure 9).
Figure 8. Data collection with hardcopy datasheets as well as PDA.

Figure 9. Photographing bottlenose dolphins
Survey Effort

Four days of surveys were conducted throughout southern Eastern Kuku Yalanji Sea Country. From the start to end of each day, a total of **215km was travelled over 19 hours**. Of this effort, a total of **123km over 12 hours** was spent ‘on transect’ searching for dolphins, dugongs and other marine megafauna (Table 1).

Table 1. Effort summary information from Eastern Kuku Yalanji Sea Country surveys conducted in October 2016

<table>
<thead>
<tr>
<th>Date</th>
<th>Location</th>
<th>Total KM Travelled</th>
<th>Total Time</th>
<th>Total Transect KM</th>
<th>Total Transect Time</th>
<th># Sightings</th>
</tr>
</thead>
<tbody>
<tr>
<td>03-Oct-16</td>
<td>Port Douglas</td>
<td>63.3</td>
<td>6:04</td>
<td>47.4</td>
<td>4:31</td>
<td>1</td>
</tr>
<tr>
<td>04-Oct-16</td>
<td>Port Douglas</td>
<td>69.8</td>
<td>5:18</td>
<td>37.9</td>
<td>3:35</td>
<td>1</td>
</tr>
<tr>
<td>06-Oct-16</td>
<td>Port Douglas</td>
<td>20.0</td>
<td>2:23</td>
<td>0.0</td>
<td>0.0</td>
<td>0</td>
</tr>
<tr>
<td>13-Oct-16</td>
<td>Port Douglas</td>
<td>62.7</td>
<td>5:39</td>
<td>37.9</td>
<td>4:01</td>
<td>1</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>215.8</td>
<td>19:24</td>
<td>123.2</td>
<td>12:07</td>
<td>3</td>
</tr>
</tbody>
</table>

Surveys on 3-4, 6 and 13 October 2016 covered all planned transect lines except the last survey block. Poor weather conditions prevented further surveys being undertaken (Figures 10-11).

Figure 10. Complete survey lines completed in Eastern Kuku Yalanji Sea Country
Beaufort Conditions During Surveys

Sea conditions were generally very good when surveys were conducted, with the majority of surveys undertaken in Beaufort 2 and Beaufort 3 conditions (Table 2; Figure 11).

Table 2. The number of kilometers surveyed in each Beaufort state throughout Eastern Kuku Yalanji Sea Country

<table>
<thead>
<tr>
<th>Beaufort</th>
<th>Kilometers surveyed</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>1</td>
<td>19.0</td>
</tr>
<tr>
<td>2</td>
<td>55.5</td>
</tr>
<tr>
<td>3</td>
<td>48.7</td>
</tr>
<tr>
<td>4</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>123.2</strong></td>
</tr>
</tbody>
</table>

Figure 11. Bar graph showing the number of kilometres travelled in each Beaufort State throughout Eastern Kuku Yalanji Sea Country

Dolphin Sightings

Three dolphin groups were sighted during surveys (Figure 12):

- 1 bottlenose dolphin group (total group size = 7)
- 2 humpback dolphin group (total group size = 6)
Relative Sighting Rates

The relative sighting rate for inshore dolphins in Eastern Kuku Yalanji Sea Country is shown in Table 3.

Table 3. Group and individual sighting rate for each dolphin species.

<table>
<thead>
<tr>
<th>Species</th>
<th>Total Transect KM</th>
<th>Groups/km surveyed</th>
<th>Individuals/km surveyed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bottlenose</td>
<td>123.2</td>
<td>0.008</td>
<td>0.06</td>
</tr>
<tr>
<td>Humpback</td>
<td>123.2</td>
<td>0.020</td>
<td>0.05</td>
</tr>
</tbody>
</table>

Bottlenose dolphins

One bottlenose dolphin group (total group size = 7) was sighted (Figure 13), consisting of:
- 5 adults
- 2 calves

No juveniles were sighted. This groups was sighted 15km offshore near Woody Island (Low Islands Reef), with the following environmental parameters collected at the sighting location (Table 4):

Table 4. Environmental parameters at the humpback dolphin sighting location.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Depth (m)</th>
<th>Temperature (°C)</th>
<th>Salinity (ppt)</th>
<th>Turbidity (NTU)</th>
<th>pH</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>20.7</td>
<td>28.4</td>
<td>36.1</td>
<td>0.0</td>
<td>8.4</td>
</tr>
</tbody>
</table>
Humpback dolphins

Two humpback dolphin groups (total group size = 7) were sighted (Figure 15), consisting of:

- 4 adults
- 1 juvenile
- 1 calf

A single adult humpback dolphin was sighted south of the Mowbray River mouth on 3 October 2016. A group of 6 individuals was sighted at the mouth of the Mowbray River, with the following environmental parameters collected at the sighting locations (Table 5):

Table 5. Environmental parameters at the humpback dolphin sighting locations

<table>
<thead>
<tr>
<th></th>
<th>Depth (m)</th>
<th>Temperature (°C)</th>
<th>Salinity (ppt)</th>
<th>Turbidity (NTU)</th>
<th>pH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
<td>7.5</td>
<td>28.6</td>
<td>36.3</td>
<td>0.0</td>
<td>8.4</td>
</tr>
<tr>
<td>SD</td>
<td>2.82</td>
<td>0.57</td>
<td>0.35</td>
<td>0.00</td>
<td>8.42</td>
</tr>
<tr>
<td>Range</td>
<td>5.5 – 9.5</td>
<td>28.2 – 28.6</td>
<td>36.3 – 36.5</td>
<td>0.0 – 0.0</td>
<td>8.4 – 8.5</td>
</tr>
</tbody>
</table>
Megafauna Sightings

During surveys the following megafauna were sighted (Figure 14):

- 1 leopard shark
- 2 turtles – unknown species
- 1 green turtle (Figure 15)

Figure 14. Megafauna sighted in Eastern Kuku Yalanji Sea Country

Figure 15. Green turtle sighted near the Mowbray River mouth
Photo-identification

A total of 1354 images were taken of the bottlenose and humpback dolphin groups.

- 5 bottlenose dolphins were identified (Figures 16-21).
- 6 humpback dolphins were identified (Figures 22-27).

Bottlenose dolphins

TADU23

Figure 16. TADU23_4 October 2016_Sighting 1

TADU24

Figure 17. TADU24 (with calf)_4 October 2016_Sighting 1

TADU25

Figure 18. TADU25 (with mum)_4 October 2016_Sighting 1

TADU26

Figure 19. TADU26 _4 October 2016_Sighting 1
**Figure 20. TADU27 _ 4 October 2016_Sighting 1**

**Figure 21. Unidentified bottlenose dolphin_4 October 2016_Sighting 1**

**Humpback dolphins**

**Figure 22. SSAH30_3 October 2016_Port Douglas_Sighting 1**
Figure 23. SSAH47_13 October 2016_Sighting 1

Figure 24. SSAH48_13 October 2016_Sighting 1

Figure 25. SSAH49_13 October 2016_Sighting 1

Figure 26. SSAH50_13 October 2016_Sighting 1
SSAH51

Figure 27. SSAH51_13 October 2016_Sighting 1
Discussion

Training Component

• The training component was successful, and provided the rangers with new information about what dolphin species occur in their Sea Country, highlighted some of the threats to inshore dolphins, and provided an opportunity for IB to understand what areas of Sea Country may be important for dolphins and dugongs based on ranger knowledge.
• It was unfortunate that very poor weather prevented the three days of boat-based surveys to be conducted as planned. However two surveys days were completed, providing a good opportunity to understand data collection techniques and observer protocols.
• Ranger feedback on the training and boat-based surveys has provided good feedback on how the ranger training manual can be tailored to suit ranger groups beginning inshore dolphin monitoring.

Dolphin Sightings

• Bottlenose and humpback dolphins were sighted during surveys in Eastern Kuku Yalanji Sea Country.
• Rangers did not recall ever sighting snubfin dolphins in Eastern Kuku Yalanji Sea Country. Based on habitat type, i.e. deep clear water close to shore, sandy-shore coastline with reefs, and lack of extensive mangrove habitats, it appears that Sea Country around Port Douglas is more conducive to humpback and bottlenose dolphins than snubfin dolphins.
• The humpback and bottlenose dolphin groups encountered were approachable to easy to photo-identify. This indicates that future photo-identification studies would be successful, given the apparent approachability of groups.

Megafauna Sightings

• No dugongs were sighted during these surveys, although a single dugong may have sighted near the Mowbray River mouth.
• Rather than a lack of dugongs in the area, dugongs may be afraid of boats because of hunting/high boat traffic, and therefore difficult to observe at-sea.
• Few turtles were sighted during surveys, which was surprising given the extensive reef habitat.

Future Survey Schedule

• Jabalbina Yalanji Aboriginal Corporation are planning to apply for funding for a vessel in the near future to assist with Sea Country monitoring and management initiatives.
• This vessel would also assist significantly with continued marine megafauna monitoring, particularly in regions north of Port Douglas where no inshore dolphin surveys have yet been conducted.
• JCU and Terrain NRM will apply for Citizen Science Project funding in 2017, where Jabalbina Yalanji Aboriginal Corporation will be included as a project partner. This project (if successful) would assist to continue marine megafauna monitoring throughout Eastern Kuku Yalanji Sea Country.