



## Looking for Palangal (dolphins) and Balangal (dugongs) in Girringun Sea Country

Isabel Beasley, Mathew Golding and Girringun Rangers  
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## Acknowledgements

Many thanks to Girringun Aboriginal Corporation, Girringun Traditional Owners, Girringun TUMRA Co-ordinator and Girringun Rangers for their much appreciated support of this project.

Thanks also to Helene Marsh, Mark Hamann, Helen Penrose and Arturo Izurieta for initial project development through NERP funding.

This project is conducted under James Cook University (JCU) Human Ethics Permit Number H4451, JCU Animal Ethics Permit Number A1750, Department of Environment and Heritage Protection Permit Number WISP11956112 and Great Barrier Reef Marine Parks Authority Permit Number 35496.

Initial project activities (i.e. development of a Research Partnership Agreement, mapping workshop and ranger training) were funded through the National Environment Research Program Tropical Ecosystems Hub. Continuing independent ranger surveys are funded through Girringun Aboriginal Corporation.

Boat surveys described in this report were funded through the Australian Marine Mammal Centre, as part of Dr. Isabel Beasley's postdoctoral research program. The boat used for these surveys was sponsored by Tassal and WWF-Australia.

Many thanks to Drs. Susan Sobotzick and Alana Grech for assisting with information from the JCU dugong aerial surveys, and Dr. Guido Parra for information on previous dolphin sightings in Girringun Sea Country.

## Project Sponsors – Boat Surveys



## Project Sponsors – Project Development



## Executive Summary

### Background

#### Looking for Dolphins and Dugongs in Giringun Sea Country

In July 2013, James Cook University began a collaborative project with Giringun Aboriginal Corporation to investigate the status of dolphins and dugongs in Giringun Sea Country' through a project called '*Looking for Palangal (dolphins) and Balangal (dugongs) in Giringun Sea Country*'.

This project has currently undertaken the following activities:

- Development of a Research Partnership Agreement
- Four day ranger training on dolphin identification and survey methods
- Cultural mapping workshop with Traditional Owners
- Rangers conducting independent marine mammal surveys

This report outlines the results of the fifth component of this project

- Dedicated photo-identification studies conducted by JCU in collaboration with Giringun Rangers

The Giringun Ranger Unit was established in January 2010. Since their establishment, rangers have recorded 28 marine mammal groups (Fig. 2), consisting of:

- 8 humpback dolphin groups
- 3 bottlenose dolphin groups
- 1 snubfin dolphin group
- 6 unknown dolphin species groups
- 8 dugong groups
- 2 humpback whale groups

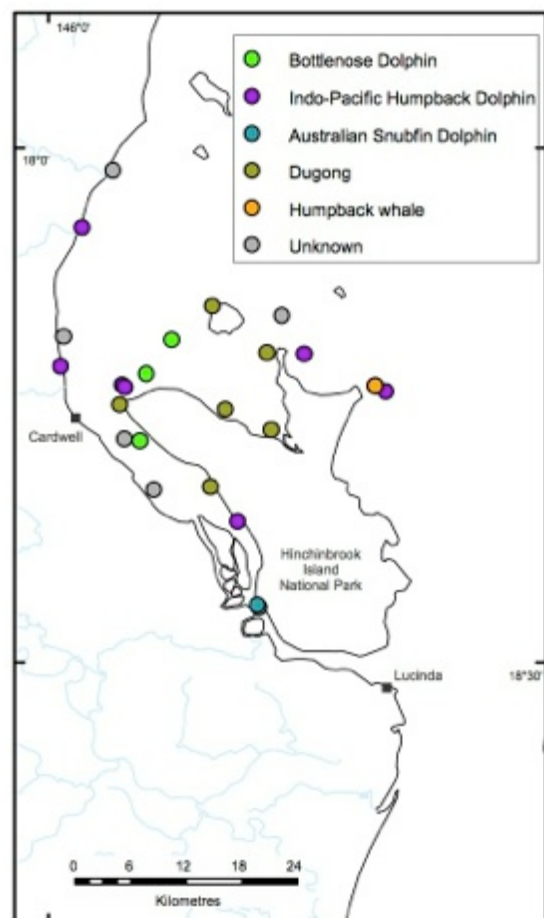
Based on previous data collected in Giringun Sea Country, it appears that the three inshore dolphins,

- (Australian snubfin dolphin
- Indo-Pacific humpback dolphin
- inshore bottlenose dolphin)
- and dugong

are known to occur in Giringun Sea Country, with occasional sightings of humpback whales during their migration northwards through the GBR.

**Marine mammal groups observed by  
Giringun Rangers since 2010  
(information provided courtesy of Giringun Rangers)**

**Giringun Ranger Sighting Data**



### Survey Methods

From 16 February – 5 March, boat-based inshore dolphin surveys were undertaken in Girringun Sea Country.

### Survey Results - Sightings

A total of 1551 km (120.5 hrs) was spent conducting surveys (including transit to survey lines), which resulted in a total of 804.2 km (76.2 hrs) on transect searching for dolphins and dugongs.

A total of 20 groups of dolphins (total group size = 62) were sighted:

- 9 humpback dolphin groups (total group size = 24)
- 9 bottlenose dolphin groups (total group size = 33)
- 2 unknown dolphin groups (total group size = 5)
- No snubfin dolphins were sighted.
- Only one dugong was sighted in Missionary Bay

### Survey Results – Photo-identification

A total of 2646 images were taken during the survey period for photo-identification studies. These images resulted in 34 individuals being photo-identified, consisting of:

- 12 humpback dolphins
- 22 bottlenose dolphins

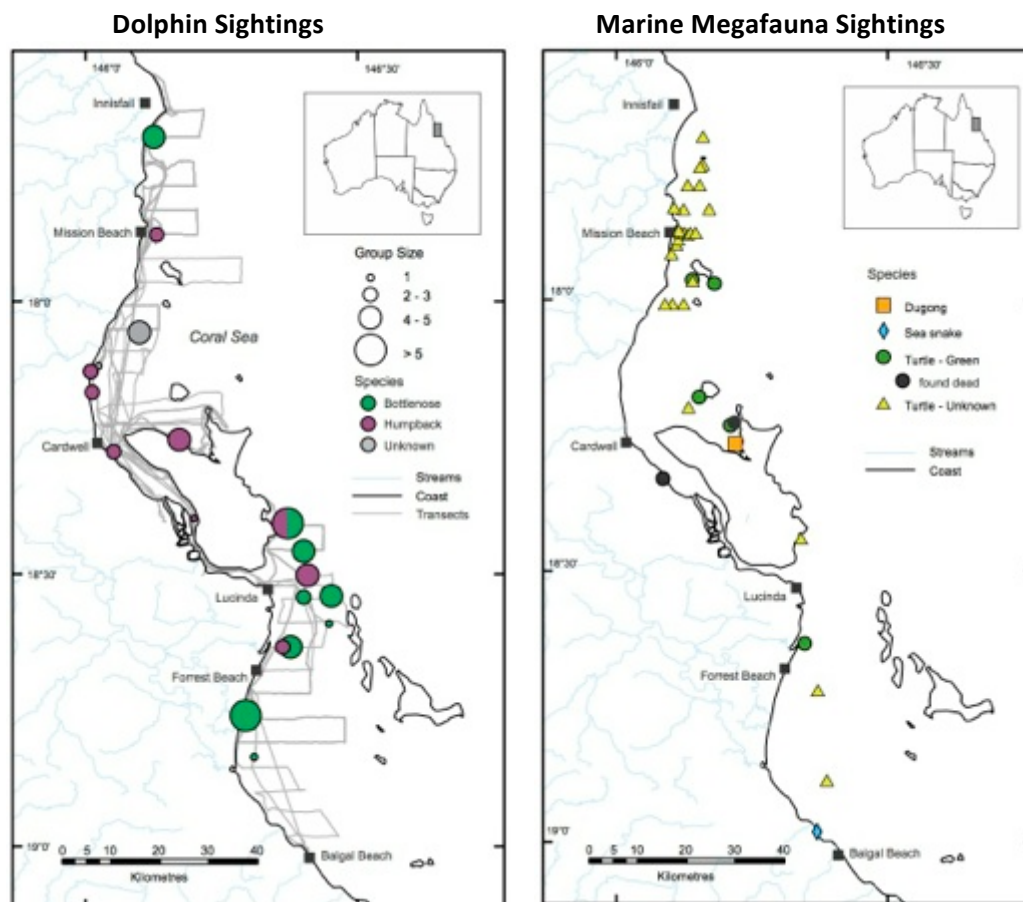


Figure i. Inshore dolphins sighted during surveys (left). Marine megafauna sighted during inshore dolphin surveys (right).



**Figure ii. An example of a photo-identified individual SCHI10 – photographed in Missionary Bay on 22 February 2013 (Photo – Isabel Beasley)**

### **Discussion**

These surveys were the first to cover all of Girringun Sea Country to assess the status of inshore dolphins and dugongs:

- These surveys found similar numbers of bottlenose and humpback dolphins throughout Girringun Sea Country.
- No snubfin dolphins were sighted, which was a surprising result considering snubfin dolphins have previously been observed in the region by Parra.
- Only one dugong was sighted, despite very good survey conditions.
- Photo-identification proved successful, and will be continued during future surveys to investigate abundance and movements.
- Humpback dolphins to be found in shallower water (i.e. 9.5m, range = 1.6-21.6m) than bottlenose dolphins (i.e. 15.3m, range = 7.4-23.9m)
- The data collected by Girringun Rangers during regular sea patrols has proved very important, with one re-capture obtained from photographs taken by Girringun Rangers.

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## Background

In July 2013, James Cook University began a collaborative project with Girringun Aboriginal Corporation to investigate the status of dolphins and dugongs in Girringun Sea Country' through a project called '*Looking for Palangal (dolphins) and Balangal (dugongs) in Girringun Sea Country*'.

This project has currently undertaken the following activities:

- Development of a Research Partnership Agreement
- Four day ranger training on dolphin identification and survey methods
- Cultural mapping workshop with Traditional Owners

This report outlines the results of the fifth component of this project

- Dedicated photo-identification studies conducted by JCU in collaboration with Girringun Rangers

Girringun Aboriginal Corporation is based in Cardwell, north Queensland (Fig. 1) and represents the interests of traditional owners from nine clan groups: Bandjin, Djiru, Girramay, Gugu Badhun, Gulnay, Jirrbal, Nywaigi, Warrgamay and Warungnu.



**Figure 1. Location of Cardwell, north Queensland, which is approximately 165km north of Townsville and 340km south of Cairns**

In December 2005, Girringun traditional owners signed the first Traditional Use of Marine Resource Agreement (TUMRA) in Australia for the management of traditional hunting of protected species in the greater Hinchinbrook Island area. Implementation of the agreement is steered by the Girringun TUMRA Steering Committee.

Under the TUMRA, Girringun community members agreed to a moratorium on dugong hunting, and a limited take of marine turtle, with hunting being limited to specified hunting areas.

In the interests of the conservation and sustainability of traditional hunting for dugong and the various marine turtle species, Girringun has become involved in the research efforts to gather data on the habitat areas, including the locations, extent and monitoring of seagrass beds, seagrass species, and the numbers and general locations of turtles and dugongs, particularly within the dugong protection area (DPA) around Hinchinbrook and Goold Islands.

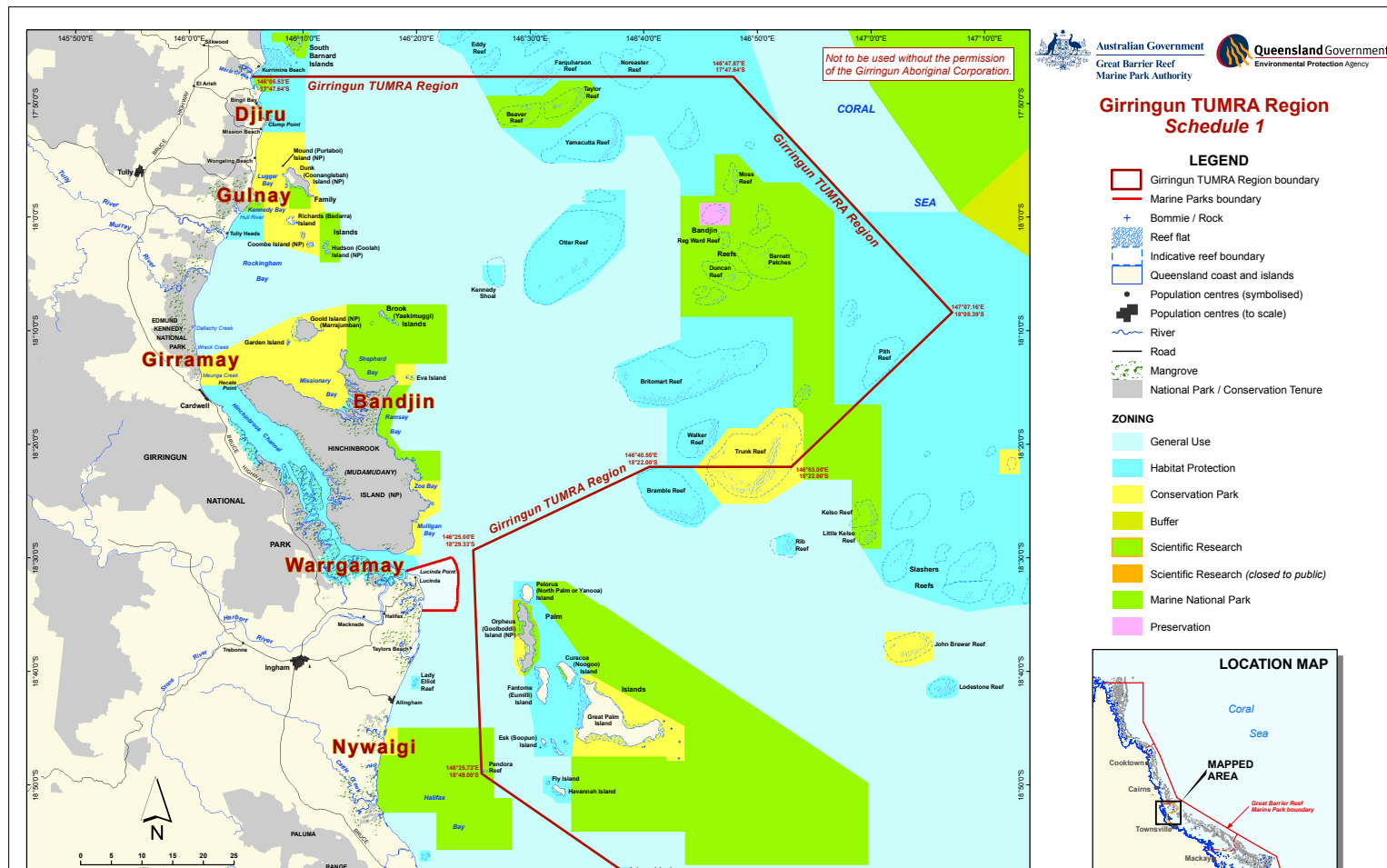
This research project provides new information on the status and occurrence of dolphins in Girringun Sea Country, and contributes to the objectives of Girringun research towards conservation and sustainability of dugong and turtle populations.

### **Girringun TUMRA Region**

The Girringun TUMRA region includes the coastal waters of Girringun Sea Country, from Rollington Creek (just north of Balgal Beach) north to Kurramine Beach (just south of Innisfail) (Fig. 2).



# JCU & Giringun Dolphin and Dugong Surveys\_February/March 2013



## Previous Marine Mammal Studies in Girringun Sea Country

### Girringun Ranger Sea Patrols

The Girringun Ranger Unit was established in January 2010. Since establishment, rangers have recorded 28 marine mammal groups (Fig. 3), consisting of:

- 8 humpback dolphin groups (one with unknown position information)
- 3 bottlenose dolphin groups
- 1 snubfin dolphin group
- 6 unknown dolphin species groups
- 8 dugong groups
- 2 humpback whale groups

### Girringun Ranger Sighting Data

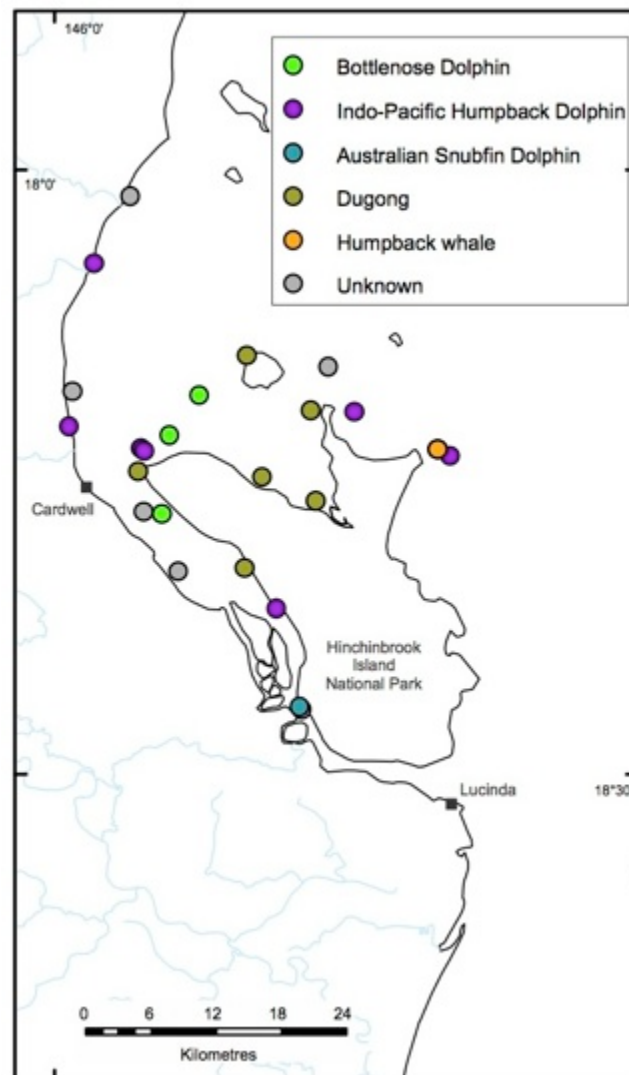


Figure 3. Marine mammal groups observed by Girringun Rangers since 2010 (information courtesy of Girringun Rangers)

Photographs were obtained of some dolphin groups confirming species identifications (Figs. 4-8).

#### **01 December 2010 – Humpback Dolphins**



**Figure 4. Humpback dolphins sighted near Hinchinbrook Island (photo courtesy of Girringun Rangers)**

#### **6 February 2012 – Humpback Dolphins**



**Figure 5. Identifiable humpback dolphin sighted on 6 February 2012 (photo courtesy of Girringun Rangers)**



**Figure 6. Identifiable humpback dolphin sighted on 6 February 2012 (photo courtesy of Girringun Rangers)**



**Figure 7. Identifiable humpback dolphin sighted on 6 February 2012 (photo courtesy of Girringun Rangers)**



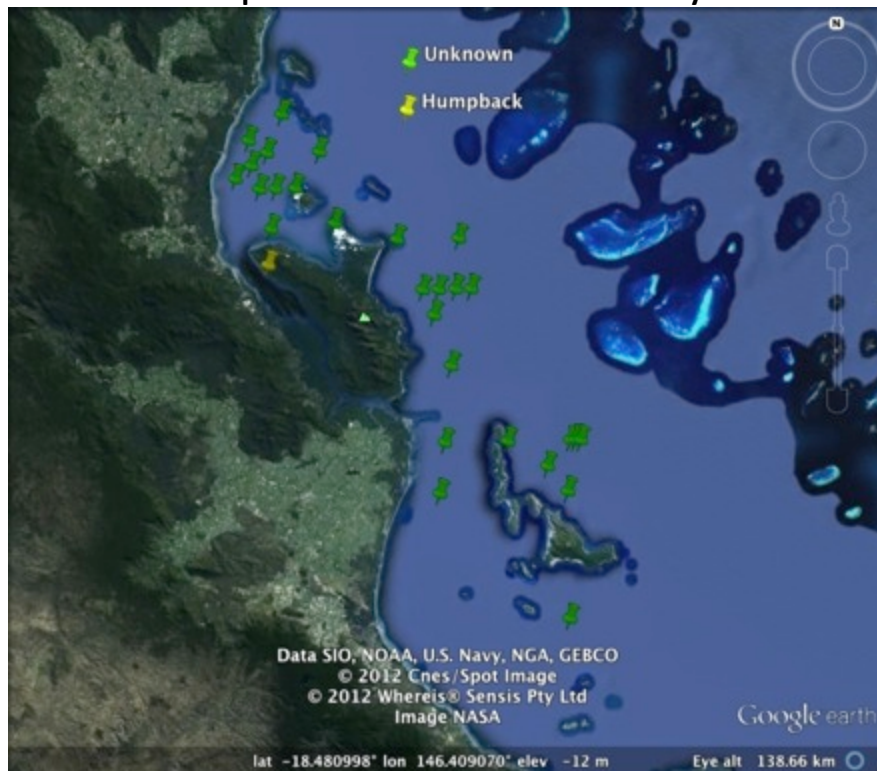
**Figure 8. Humpback dolphin calf sighted on 6 February 2012 (photo courtesy of Girringun Rangers)**

## James Cook University Aerial Surveys

James Cook University has conducted aerial surveys along the north Australian coast for the past 20 years. Surveys have been conducted along the northern GBR coast in 1992, 1994, 2005, and 2011.

Dolphin sightings obtained as part of these dugong surveys from 1992-2005 are shown in Fig. 9, where the majority of sightings are 'unknown' groups, apart from one humpback dolphin group sighted near the northwestern tip of Hinchinbrook Island.

### Dolphins Observed from Aerial Surveys



**Figure 9. Sightings of dolphins observed during dugong aerial surveys conducted in 1992, 1994 and 2005. Data obtained thanks to Alana Grech and Susan Sobotzick**

Survey lines that were transited along the southern GBR in November 2011 are shown in Fig. 10, as described in Sobotzick et al (2012). According to Sobotzick et al (2012), the estimated size of the dugong population in the Southern GBR region in November 2011 was  $481 \pm 43$ , which are the lowest estimates since surveys began in the 1980s. Only four of the 21 blocks provided sufficient sightings for population size estimations in 2011: S5 (Shoalwater Bay), C6 (Upstart Bay), C10 and C11 (Hinchinbrook area).

Dugong population size estimates for the Hinchinbrook regions ranged from:

- 144-168 individuals (Block C10)
- 106-112 individuals (Block C11)



### Estimated dugong density based on JCU aerial surveys

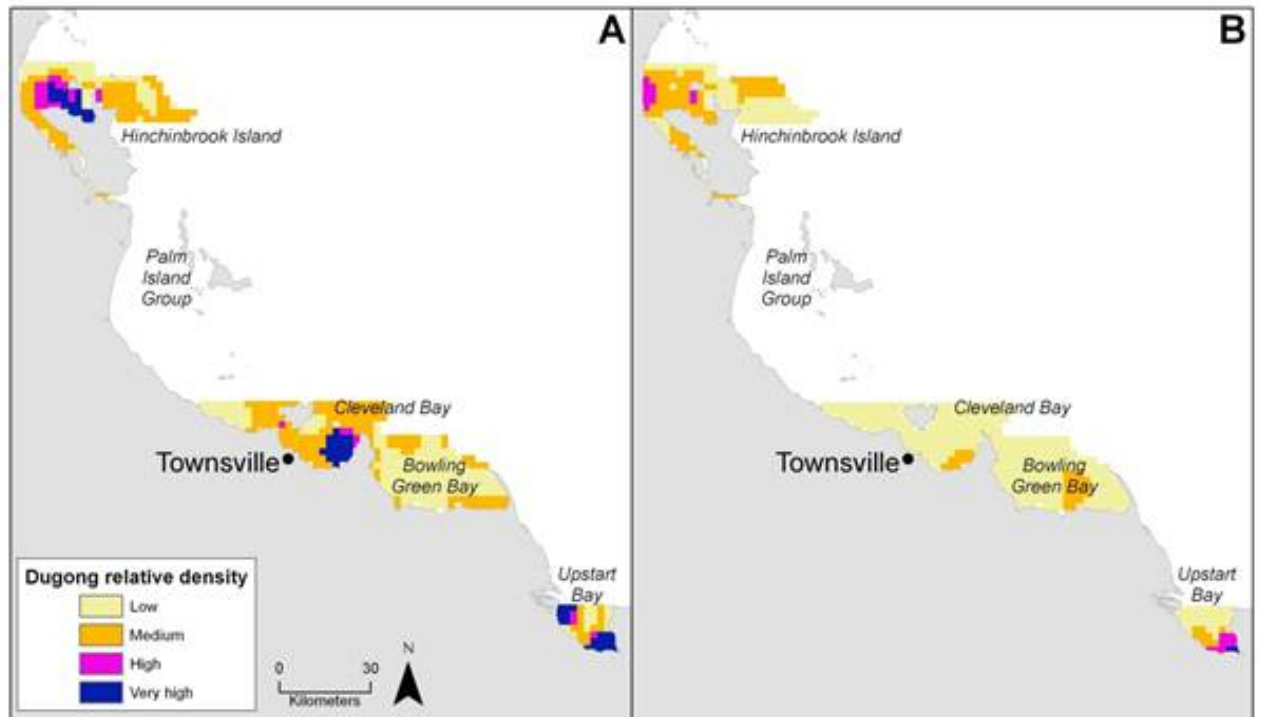


Figure 10. Estimated dugong distribution based on aerial surveys conducted by JCU in 2005 (left) and 2011 (right) (map created by Alana Grech).



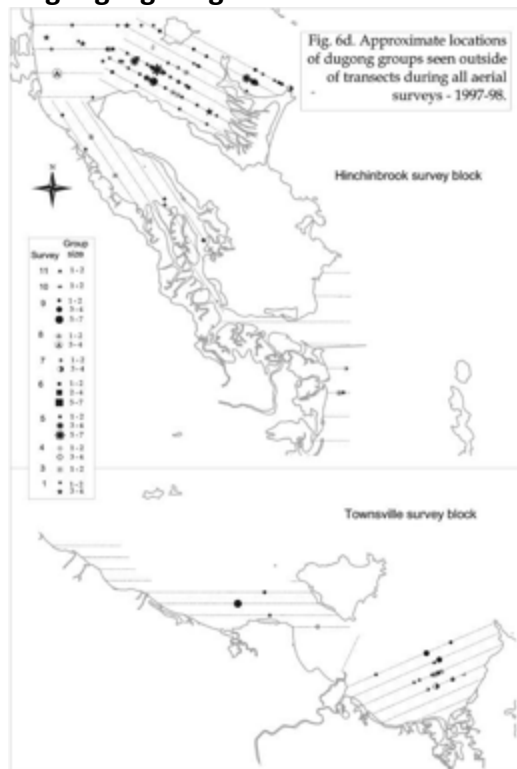
## Inshore Dolphin and Dugong Aerial Surveys Conducted by Dr. Tony Preen (JCU)

From March 1997 – April 1998, Dr. Tony Preen (JCU) conducted aerial surveys for inshore dolphins and dugongs around the Townsville to Hinchinbrook region, and also conducted satellite tracking on xxx dugongs (Preen 2000). This study was funded by the Commonwealth Government to determine marine mammal occurrence in relation to the Port Hinchinbrook development, and provided very important information on dugongs and turtles (Fig. 11) and dolphins (Figs. 12-13), being:

- the first detailed, year-round study of dugong distribution, abundance and movement patterns in the region using repeated aerial surveys, satellite tracking, historical aerial surveys and other approaches to obtain independent data on habitat use.
- the first summary of inshore dolphin occurrence and habitat use for the Townsville to Hinchinbrook region.

The report is very detailed, and provides an excellent summary of the status of dolphins and dugongs in the Townsville-Hinchinbrook region (Report available from <http://elibrary.gbrmpa.gov.au/jspui/bitstream/11017/348/1/Dugongs-boats-dolphins-turtles-Townsville-Cardwell-region-Hinchinbrook-DPA.pdf>). Future studies would no doubt benefit from replicating the Preen (2000) study design, to compare pre- to post- port development.

### Dugong Sighting Locations 97-98



### Turtle Sighting Locations 97-98



Figure 11. Locations of dugong (left) and turtles (right) observed during aerial surveys (Preen 2000)

### Humpback Dolphin Sighting Locations (1997-98)

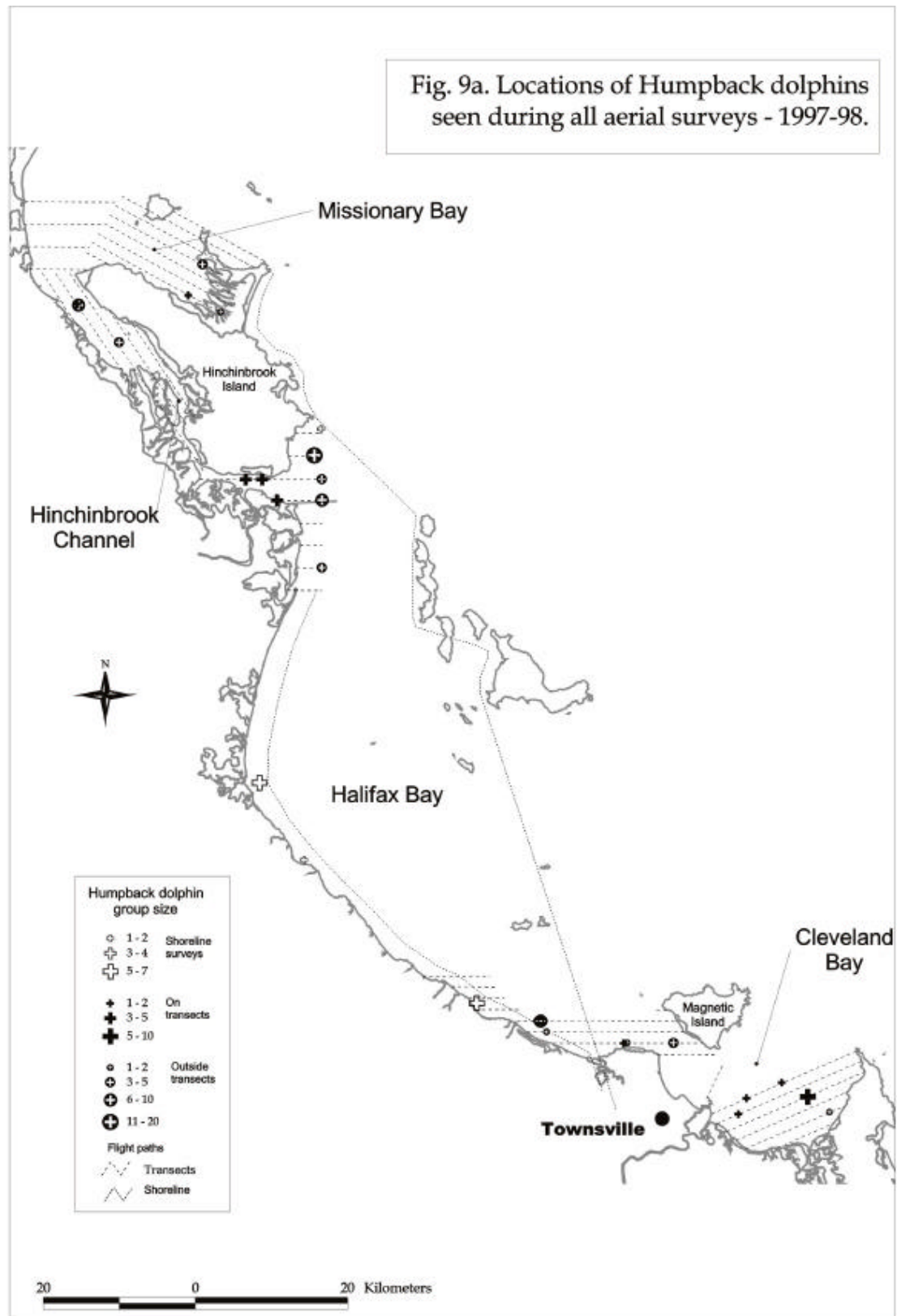


Figure 12. Locations of humpback dolphins observed during aerial surveys (Preen 2000)

### Snubfin Dolphin (ca. Irrawaddy Dolphin) Sighting Locations (1997-98)

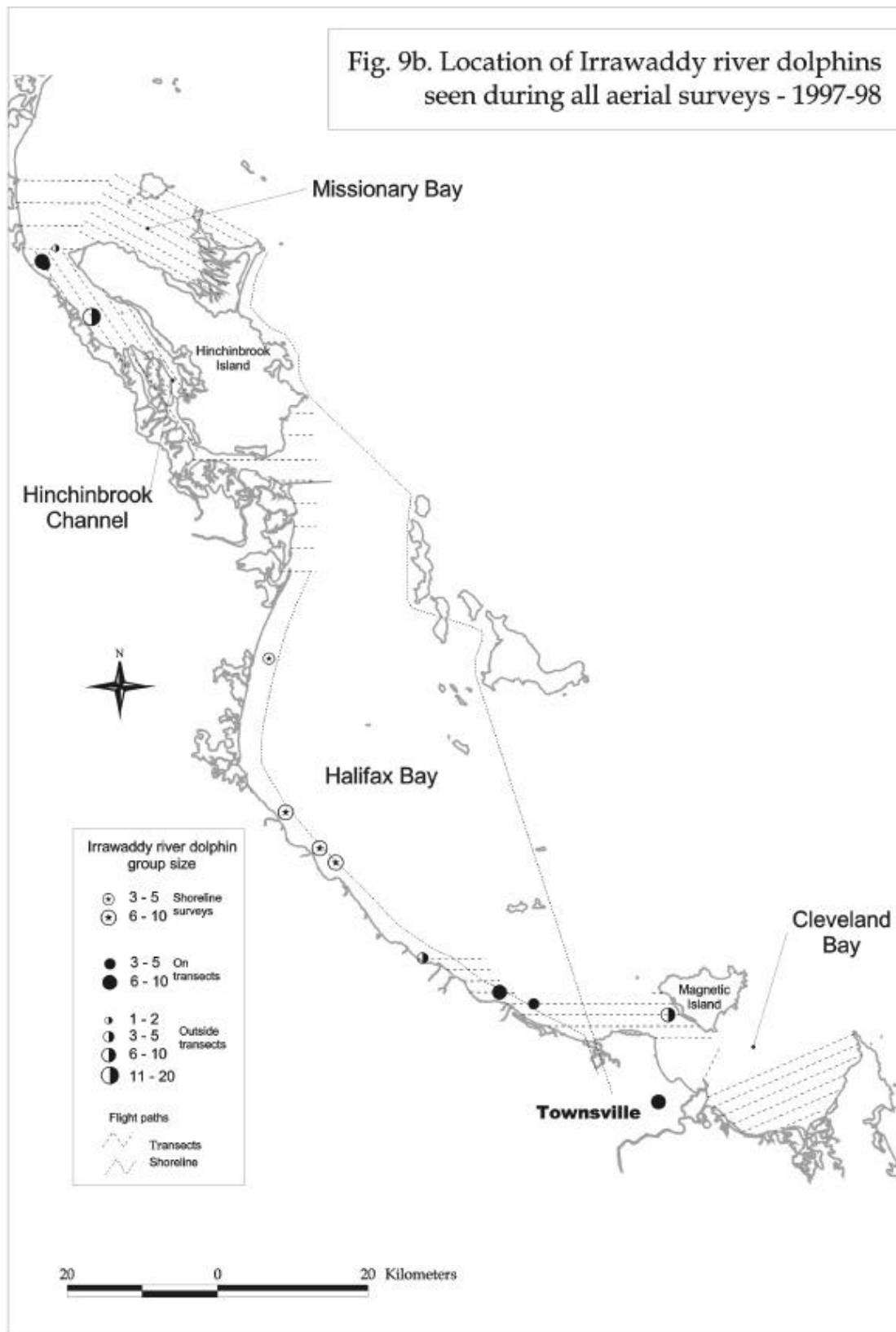


Figure 13. Locations of snubfin dolphins observed during aerial surveys (Preen 2000)

## Dolphin Boat-based Surveys Conducted by Dr. Guido Parra (JCU)

From 1999-2003, Dr. Guido Parra from James Cook University conducted boat surveys to investigate the status of inshore dolphins for his PhD (Parra et al. 2002, Parra 2005). Although his work was primarily focused in Cleveland Bay near Townsville, he also conducted some surveys in other areas along the northern Great Barrier Reef coastline, including Girringun Sea Country.

During surveys in Girringun Sea Country, a total of 61 dolphin groups were observed (Fig. 14), consisting of:

- 49 humpback dolphin groups
- 2 bottlenose dolphin groups
- 10 snubfin dolphin groups

### Dolphins Sightings Observed by Dr. Guido Parra

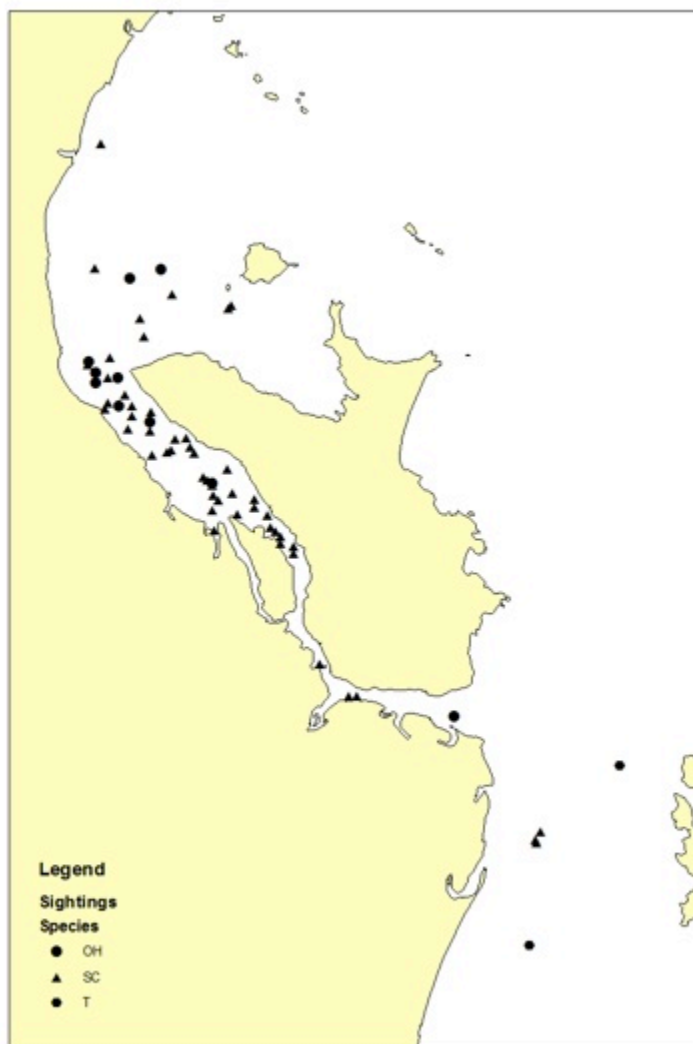


Figure 14. Sightings of dolphins observed during Dr. Guido Parra's boat-based surveys. Data and map kindly contributed by Dr. Guido Parra

There is currently no information available on months that dolphins were sighted, however, this information will hopefully become available in the near future to assist with survey design and planning.

One of the snubfin dolphin individuals that Dr. Parra photographed in Girringun Sea Country was used on the cover of the journal 'Marine Mammal Science' (Fig. 15), when the description of the Australian snubfin dolphin as a new species was published (Beasley et al 2005).



**Figure 15. Australian snubfin dolphin sighted in Girringun Sea Country. Photo provided courtesy of Dr. Guido Parra**

Based on previous data collected, it appears that three inshore dolphins and the dugong are known to occur in Girringun Sea Country, with occasional sightings of humpback whales during their migration north to northern GBR waters (i.e. March – August). A summary of the characteristics of the three inshore dolphins and dugong are provided below.

## Australian Snubfin Dolphin, *Orcaella heinsohni*

**National EPBC Status:**

**Migratory Species and Marine**

**Northern Territory Status:**

**Data Deficient**

**Face:** Blunt, no snout

**Fin:** Small and rounded  
Set  $\frac{3}{4}$  back on body

**Colour:** Dark to light brown

**Adult Length:** 2 m (up to 2.75 m)

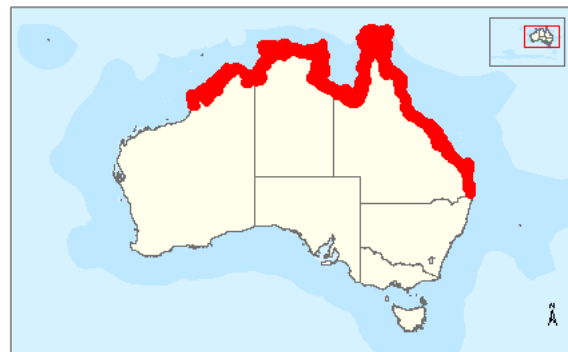
**Newborn Length:** 1 m

**Behaviour:** Very shy  
Difficult to approach

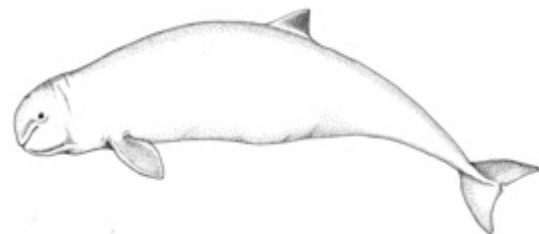
**Habitat:** Snubfin dolphins occur in coastal waters within 10 km of the coastline in less than 15 m water depth. Often found close to river and creek mouths in turbid water.

### Australian Distribution:

Snubfins regularly occur in coastal waters from central Queensland north through the Northern Territory and south to Broome. The species may occur in Papua New Guinea but this has not been confirmed.



Map courtesy of <http://www.environment.gov.au>



Photographs and graphic by (clockwise from top left) Isabel Beasley, George Heinsohn, Owen Li and Guido Parra.



## Indo-Pacific Humpback Dolphin, *Sousa chinensis*

**National EPBC Status:**

**Migratory Species and Marine**

**Northern Territory Status:**

**Data Deficient**

**Face:** Long, pointed snout

**Fin:** Medium-sized and triangular  
Set  $\frac{3}{4}$  back on body

**Colour:** Pale grey with pink patches  
on head and dorsal fin

**Adult Length:** 2.5-2.7 m  
(up to 3.2 m)

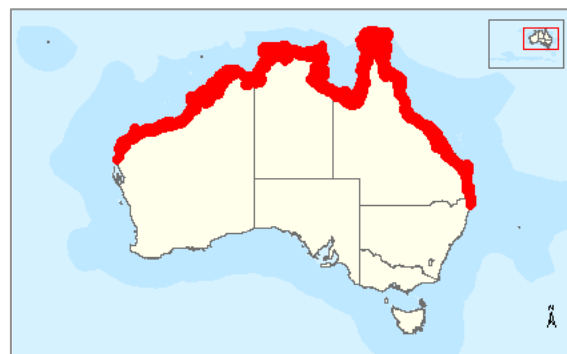
**Newborn Length:** 1.0-1.2 m

**Behaviour:** Variable behaviour ranging  
from shy to approachable, but  
vary rarely bow-rides, if ever.

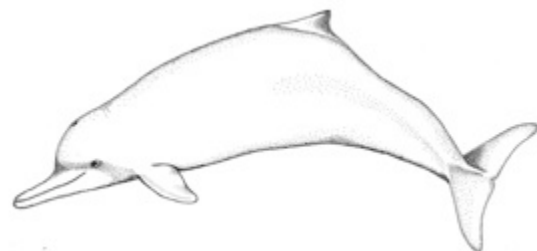
**Habitat:** Humpback dolphins occur in coastal waters within 20 km of the coastline, in less than 20 m water depth. Often found near river and creek mouths, in estuarine habitats, but also occasionally found in deep (20+ m) clear waters.

### Australian Distribution:

Humpback dolphins regularly occur in coastal waters from central Queensland north through the Northern Territory and south to northern Shark Bay in Western Australia.



Map courtesy of <http://www.environment.gov.au>



Photographs by Isabel Beasely. Graphic by Owen Li.

## Inshore Bottlenose Dolphin, *Tursiops aduncus*

**National EPBC Status:**

**Migratory Species and Marine**

**Northern Territory Status:**

**Not Evaluated**

**Face:** Medium length, pointed snout

**Australian Distribution:**

**Fin:** High, curved dorsal fin  
Set ½ back on body

Widely distributed in Australian coastal waters. There is little known of inshore dolphins occurring in Northern Australia.

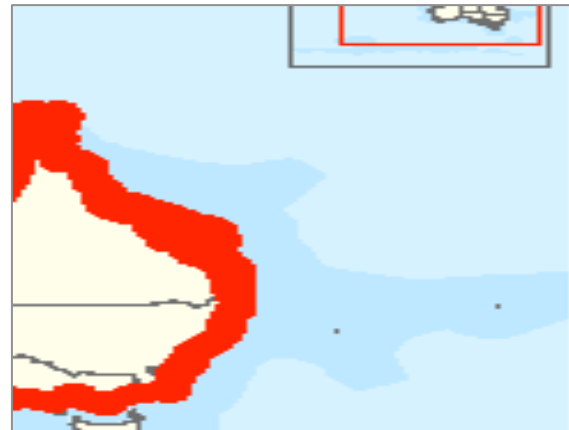
**Colour:** Uniform steel grey / blue  
with white belly

**Adult Length:** 2.7-3.0 m  
(up to 3.2 m)

**Newborn Length:** 1.2 m

**Behaviour:** Very approachable, often  
bow-rides, exhibits a lot of  
aerial activity

**Habitat:** Widely distributed in coastal  
waters of Australia, often up  
to 15-20 km from the coast in  
waters up to 20 m depth.



Map courtesy of <http://www.environment.gov.au>



Photographs by Isabel Beasely

Graphic courtesy of Roger Hall  
[www.inkart.net](http://www.inkart.net)

## Dugong, *Dugong dugon*

**National EPBC Status:**

**Migratory Species and Marine**

**Northern Territory Status:**

**Protected Species**

**Face:** Rounded, blunt snout

**Fin:** No dorsal fin

**Colour:** Light brown to tan

**Adult Length:** 2.7 m  
(up to 3.0 m)

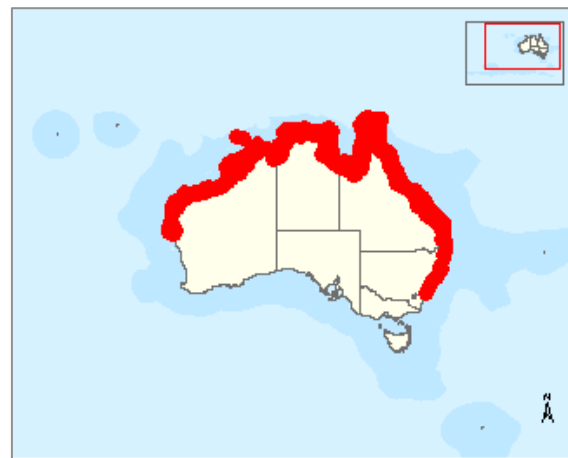
**Newborn Length:** 1.0-1.2 m

**Behaviour:** Shy with very quick surfacings, can be seen in herds of 50-100 individuals

**Habitat:** Dugongs generally live in warm shallow waters where their primary food source seagrass occurs. Found in water from 2-40 m depth.

### Australian Distribution:

Dugongs regularly occur from northern New South Wales through Queensland, the Northern Territory and south to near Perth in Western Australia.



Map courtesy of <http://www.environment.gov.au>



Photographs by Guido Parra (top left, top right) and Isabel Beasley (bottom left).  
Graphic by Owen Li.

## Study Area

The study area for boat-based surveys included the coastal waters of Girringun Sea Country, from Rollington Creek (just north of Balgal Beach) north to Kurramine Beach (just south of Innisfail).

## Survey Lines

The study area was partitioned into three zones, totaling 764km of transect lines;

- northern zone – 279km (Kurramine Beach south to Cardwell) (Fig. 16)
- Hinchinbrook Island – 167km (Fig. 17)
- southern zone – 318km (Lucinda south to Balgal Beach) (Fig. 18)

Survey lines ran east/west along the coastline, with two sets of lines out to 10km from the coast, followed by one set of lines out to 20km from the coast. Survey lines also ran around the Hinchinbrook coast, approximately 500m from the shore.

### Northern Section (Kurramine Beach south to Cardwell)

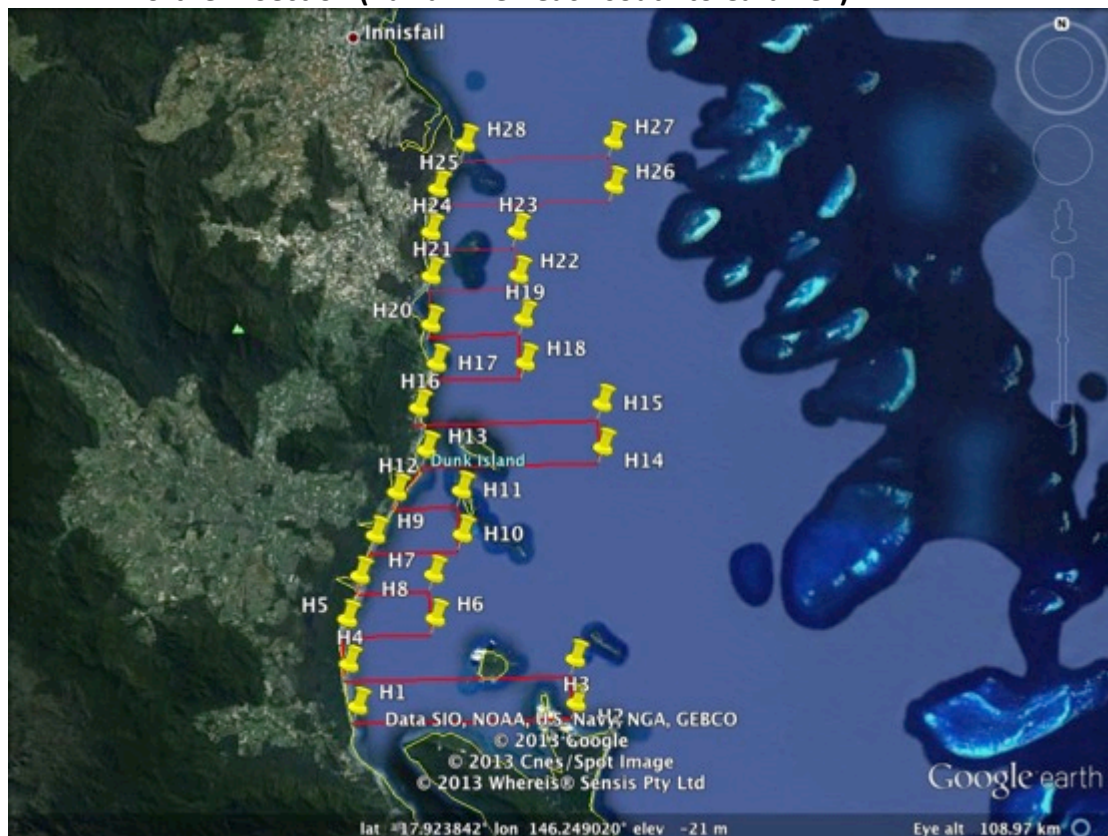


Figure 16. Northern survey section (map created by Isabel Beasley – Google Earth)



### Hinchinbrook Island Survey Section

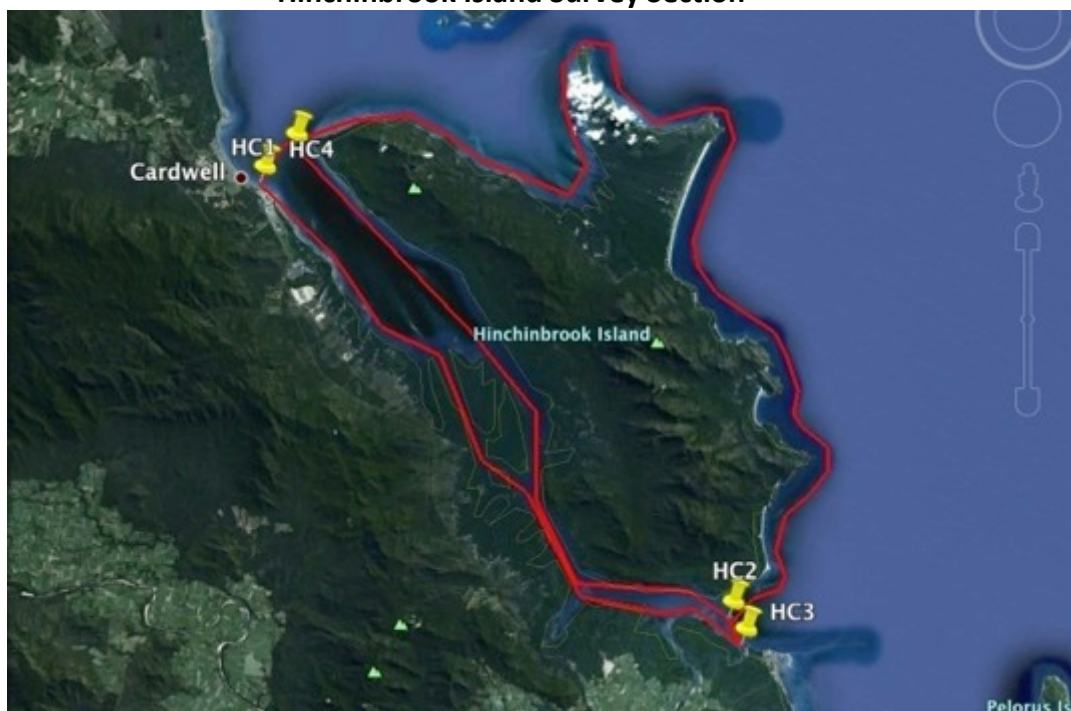


Figure 17. Hinchinbrook survey section (map created by Isabel Beasley – Google Earth)

### Southern Zone (Lucinda south to Balgal Beach)

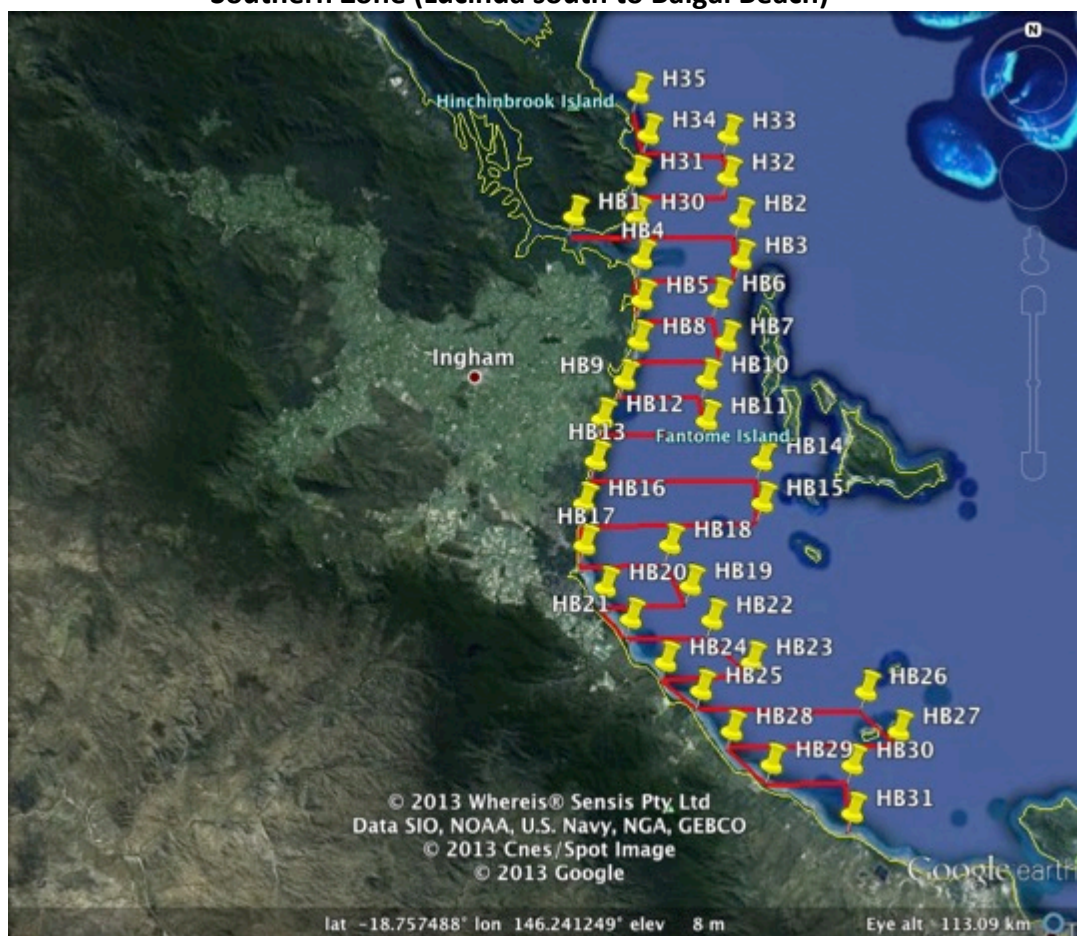


Figure 18. Southern survey section (map created by Isabel Beasley – Google Earth)

## Survey Schedule

A total of 15 days of survey were conducted from 15 February – 04 March 2013.

15 February 2013	- Townsville to Cardwell
16 February 2013	- Surveys around Hinchinbrook
17 February 2013	- Surveys around Hinchinbrook
18 February 2013	- Surveys down Hinchinbrook channel (+ABC media)
19 February 2013	- Surveys from Lucinda south
20 February 2013	- Surveys from Lucinda south
21 February 2013	- Surveys north of Hinchinbrook (with Girringun Rangers)
22 February 2013	- Surveys in Missionary Bay (with Girringun Rangers)
23 February 2013	- Mission Beach surveys
24 February 2013	- Mission Beach surveys
25 February 2013	- Surveys on the east side of Hinchinbrook
26 February 2013	- No surveys
27 February 2013	- No surveys
28 February 2013	- No surveys
01 March 2013	- No surveys
02 March 2013	- Surveys from Forrest Beach south
03 March 2013	- Surveys from Forrest Beach south
04 March 2013	- Balgal Beach
05 March 2013	- Back to Townsville

## Methods

JCU boat-based surveys were undertaken from a 5.8m centre console aluminium plate boat. The boat traveled along transects at 10-12km/hr, with two observers searching continuously for marine megafauna. One observer would sit on the boat's roof, which afforded a height of 4m above the water surface.

Once a dolphin or dugong group was sighted, the observer who saw the group would call out important pieces of information:

- reticle of the group from the horizon or land-mass
- estimated distance of the group from the boat
- angle of the bow of boat to group

The boat would then approach the group, and at the location of the sighting record information on position (latitude and longitude), depth and salinity.

Photographs would then be attempted on the group, while recording group size, age composition, predominate behavior, and any unusual markings. Once enough photographs had been taken, or the group was lost, the surveys along the transect would continue.



## Survey Results

### Effort

A total of 1551 km (120.5 hrs) was spent conducting surveys (including transit to survey lines), which resulted in a total of 804.2 km (76.2 hrs) on transect searching for dolphins.

Surveys were conducted in mostly good Beaufort conditions, ranging from Beaufort 0 to low 3. If surveys were conducted in any Beaufort 4 conditions, that line was repeated as soon as practical (Table 1).

**Table 1. Kilometers searched in each Beaufort state**

Beaufort	KM searched
0	6.3
1	160.7
2	329.0
3	305.7
4	2.5
<b>TOTAL</b>	<b>804.2</b>

### Dolphin Sightings

A total of 20 groups of dolphins (total group size = 62) were sighted:

- 9 humpback dolphin groups (total group size = 24)
- 9 bottlenose dolphin groups (total group size = 33)
- 2 unknown dolphin groups (total group size = 5)

No snubfin dolphins were sighted.

#### ***Humpback Dolphins***

A total of 9 humpback dolphin groups were sighted (total group size = 24), consisting of 18 adults and 6 juveniles (no calves or neonates were sighted). Average group size was 3 (group size range = 1-5).

Humpback dolphins were sighted in an average water depth of 9.5m (range = 1.6-21.6m) and an average temperature of 29.8°C (27.9-30.8°C).

#### ***Bottlenose Dolphins***

A total of 9 bottlenose dolphin groups were sighted (total group size = 29), consisting of 22 adults, 6 juveniles and 1 calf. Average group size was 4 (group size range = 1-7).

Bottlenose dolphins were sighted in an average water depth of 15.3m (range = 7.4-23.9m) and an average temperature of 29.3°C (28.2-30.2 °C).

Figure 19 shows the transect lines covered during the 15 days of surveys, as well as the locations that species were sighted.

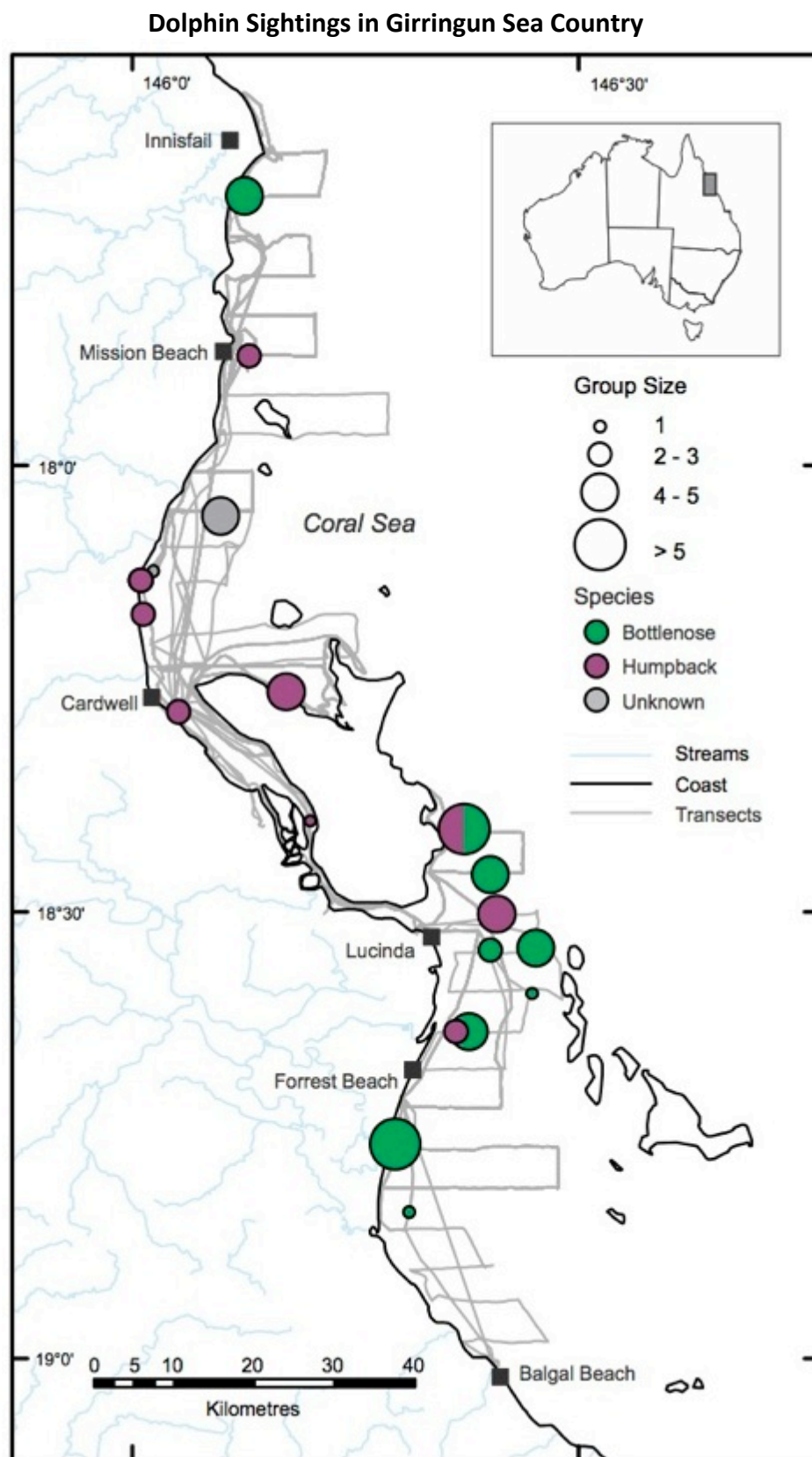


Figure 19. Boat surveys lines (light grey), with sightings separated by species and numbers sighted (map created by Adella Edwards)

## Photo-identification

A total of 2646 images were taken during the survey period for photo-identification studies.

These images resulted in 33 individuals being photo-identified, consisting of:

- 12 humpback dolphins
- 21 bottlenose dolphins

This was the first survey session for Girringun Sea Country, so no re-captures could be documented compared to previous surveys. However, one re-capture was obtained during these surveys, and one re-capture between these surveys and previous information obtained from Girringun Rangers.

SCH10 was photo-identified on 22 February 2013 in Missionary Bay with four other individuals (total group size = 5, 4 adults and 1 juvenile). SCH10 was previously photo-identified by Girringun Rangers on 6 February 2012 near the north-west tip of Hinchinbrook Island (Figs. 20 & 21).



**Figure 20. SCH10 – photographed by Girringun Rangers on 6 February 2012 near Hinchinbrook Island (Photo – Girringun Rangers)**



**Figure 21. SCH10 – photographed in Missionary Bay on 22 February 2013 (Photo – Isabel Beasley)**

## Other Megafauna Sighted

A total of 35 records of additional megafauna were observed during surveys (Fig. 22)

- 1 dugong (observed in Missionary Bay on 22 February 2013)
- 6 green turtles (1 already dead and 1 that died a few hours after discovery)
- 25 unknown turtles
- 1 sea snake

### Marine Megafauna Sightings in Girringun Sea Country

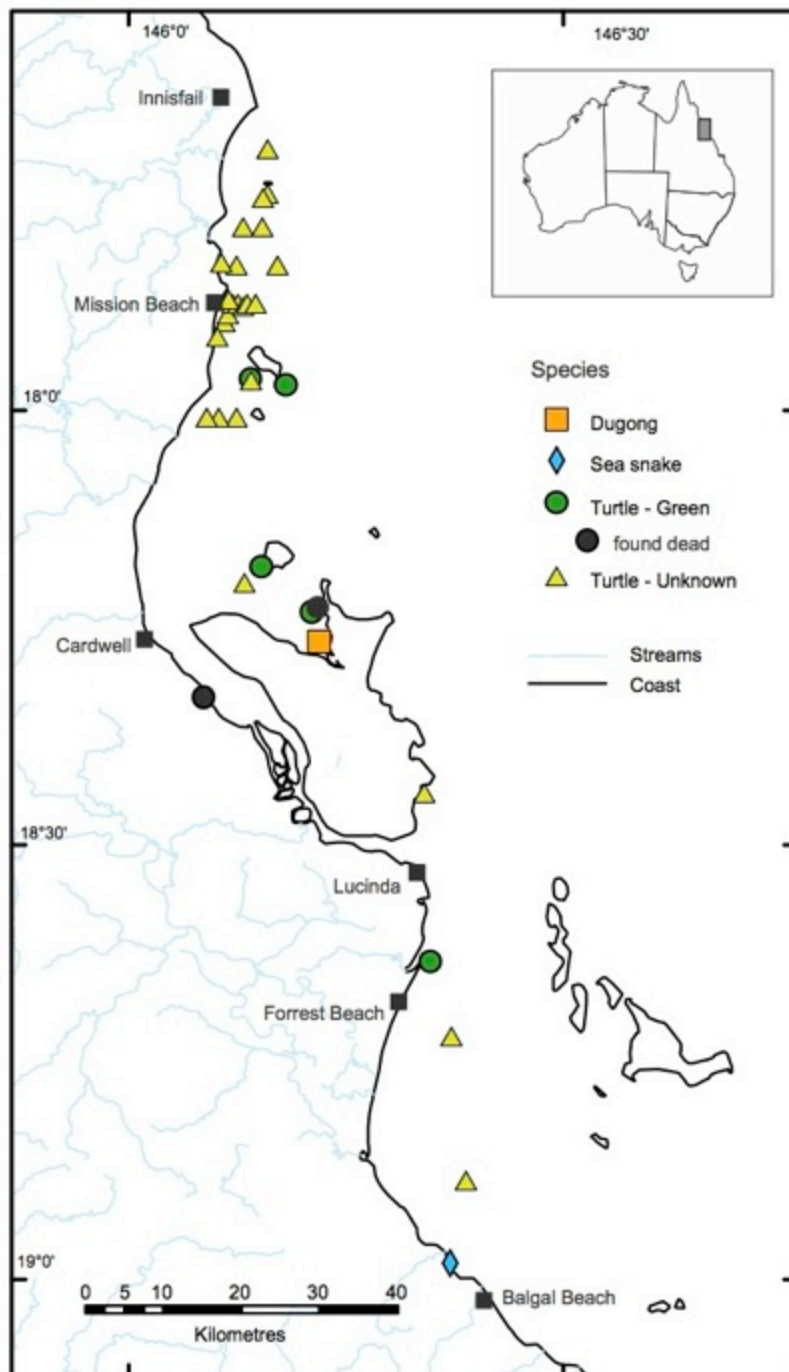


Figure 22. Marine megafauna sighted during boat surveys (map created by Adella Edwards)

One dead green turtle was encountered on 18 February down the Hinchinbrook Channel (-18.32967, 146.08627) (Fig. 23). The turtle was obviously hit by a boat, however, it was unclear whether this was pre, or post- mortem. Cardwell Marine Parks were contacted and photographs and details emailed through to the Townsville Parks and Wildlife office



**Figure 23. Ventral (left) and dorsal (right) views of dead green turtle sighted down the Hinchinbrook channel on 18 February 2013 (photos – Mathew Golding)**

The second green turtle was found alive and floating in Shephards Bay (-18.23216, 146.2107) on 27 February. This turtle was brought aboard and taken to Port Hinchinbrook, however died on-route to the port. Cardwell Marine Parks were contacted and an officer collected the carcass once it arrived to Port Hinchinbrook.

## Discussion

These surveys were the first to cover all of Girringun Sea Country to assess the status of inshore dolphins. Some of the main points resulting from the surveys are presented below:

- These surveys found similar numbers of bottlenose and humpback dolphins throughout Girringun Sea Country.
- No snubfin dolphins were sighted, which was a surprising result considering snubfin dolphins have previously been observed in the region by Dr. Guido Parra.
- Only one dugong was sighted, despite very good survey conditions.
- Photo-identification proved successful, and will be continued during future surveys to investigate abundance and movements.
- Depth and temperature were the main environmental parameters collected during surveys, where there appeared to be a preference for humpback dolphins to be found in shallower water (i.e. 9.5m, range = 1.6-21.6m) than bottlenose dolphins (i.e. 15.3m, range = 7.4-23.9m)
- The assistance of Girringun Rangers was very important for the successful completion of these surveys. The data collected by Girringun Rangers during regular sea patrols has also proved very important, with one re-capture obtained from photographs taken by Girringun Rangers.

## Future Activities

- There is limited baseline data to compare present-day distribution and abundance of inshore dolphins, particularly snubfin dolphins. It will therefore be important to try and obtain information on dates that previous sightings were observed, to compare with current-day occurrence.
- At least one more complete survey of Girringun Sea Country will be undertaken in the next six months, preferably during a month that snubfins have previously been recorded to occur in the area.
- JCU researchers will continue to work closely with Girringun Rangers to build capacity to undertake inshore dolphin surveys independently.



## Project Images



Figure 24. New dolphin research boat being transported to Cardwell (Photo – Mathew Golding)



Figure 25. Media day with new boat and Girringun Aboriginal Corporation. From left – Phil Rist, xxxx, Abe xxxx, and ABC cameraman (Photo – Isabel Beasley)



**Figure 26. John xxx and Cheryl Grant conducting dolphin observations during the ranger training in August 2012 (Photo – Helen Penrose)**



**Figure 27. Penny Ivey and Chris Muriata conducting dolphin observations during the ranger training in August 2012 (Photo – Helen Penrose)**





**Figure 28. Girringun Rangers preparing to undertake surveys during the ranger training in August 2012 (Photo – Shane Preston)**



**Figure 29. Isabel Beasley taking photographs of bottlenose dolphins in Girringun Sea Country (Photo – Mathew Golding)**



**Figure 30. Isabel Beasley taking photographs of humpback dolphins in Girringun Sea Country (Photo – Mathew Golding)**



**Figure 31. Mathew Golding skippering the boat during surveys in Girringun Sea Country (Photo – Isabel Beasley)**



**Figure 32. Humpback dolphin calf sighted by Girringun Rangers on 6 February 2012**

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