

# Island Watch Summary Report February-March 2022



## **Mitchell Baskys**

Marine and Island Parks Branch, Parks Australia

## Contents

<a href="#">Method</a> .....	2
<a href="#">Note on bird observations</a> .....	2
<a href="#">Island and Cay Assessment Summaries</a> .....	3
<a href="#">Frederick Reefs</a> .....	3
<a href="#">Observation Cay</a> .....	3
<a href="#">Lighthouse Cay</a> .....	3
<a href="#">Kenn Reefs</a> .....	4
<a href="#">Boulder Cay</a> .....	4
<a href="#">Mellish Reef</a> .....	5
<a href="#">Heralds Beacon Islet</a> .....	5
<a href="#">Unnamed Cay (New)</a> .....	7
<a href="#">North Cay</a> .....	8
<a href="#">Marion Reef</a> .....	9
<a href="#">Brodie Cay</a> .....	9
<a href="#">Carola Cay</a> .....	10
<a href="#">Lihou Reef</a> .....	12
<a href="#">Georgina Cay</a> .....	12
<a href="#">Anne Cay</a> .....	13
<a href="#">Lorna Cay</a> .....	14
<a href="#">Diamond Islets</a> .....	16
<a href="#">East Diamond Islet</a> .....	16
<a href="#">Herald Cays</a> .....	18
<a href="#">North East Cay</a> .....	18
<a href="#">South West Cay</a> .....	19
<a href="#">Flinders Reefs</a> .....	20
<a href="#">Northwest of South Flinders (New)</a> .....	20
<a href="#">Main Cay</a> .....	20
<a href="#">Turtle track summary</a> .....	21
<a href="#">Seabird summary</a> .....	22
<a href="#">Appendix A – Anne Cay Visitors Logbook</a> .....	25

## Method

Parks Australia staff conducted rapid island health assessments using the Queensland Parks and Wildlife Service & Partnerships Island Watch Tool on 16 Coral Sea Marine Park Island cays in February-March 2022. The island health assessment was conducted as part of a larger James Cook University led Coral Sea Coral Reef Health Monitoring Project.

The Island Watch Tool is a simple assessment tool intended as an early warning system for the detection of pest incursions and other threats or changes to natural values. The Island Watch Tool and protocol was sourced from Hemson et al. (2019).

## Note on bird observations

Where possible bird counts were undertaken using the same method as previous IWA assessments. A single image of the entire cay or significant portion of the cay was taken, and all individuals counted. For the most part this method is a relatively efficient method of calculating estimates of numbers on small islets and cays. On larger and vegetated cays this method is less useful because of the increased densities and the prevailing terrain. In these cases, imagery was still captured, a portion of the individuals in the image counted within a given number of pixels, and this number used to estimate total numbers across the whole image.

In both cases presence/absence information is still collected for all islets and cays visited.



Figure 1. Example bird count images. (L) Herald Beacon Islet Mellish Reef, (R) Unnamed Cay Mellish Reef. Note accurate counts are more easily captured for smaller cays

## Island and Cay Assessment Summaries

### Frederick Reefs

#### Observation Cay

11/02/2022 – AM

Observation Cay was unable to be sighted during low tide. Its location was cross checked with vessel crew and determined the cay likely only breaks the surface on extreme low tides, if at all.

#### Lighthouse Cay

11/02/2022 – 11:30



Lighthouse cay runs north-south from the lighthouse weather station. The cay gently slopes from the tide mark up to 2m maximum height and drops steeply back to the water line on the southern end. The cay is 39m across at its widest point, the widest point is also coincidental with the centre of the 2m contour. The maximum elevation is maintained at this height for the majority the 2m, sloping sharply on the eastern and western edges within 2m of the tidemark. A smaller secondary cay is visible a maximum of 15cm above the water line directly abutting the lighthouse structure on the NE side. The larger portion of the cay is separated from the lighthouse by a 10m channel approximately 4m deep. A signal pole can be found on the southern end of the large cay. The cay is a mixture of coral sand and coarse coral debris, predominantly 5-10cm in size. Anecdotal evidence suggests both parts of the cay did not break the surface 7 months ago.



## Kenn Reefs

### Boulder Cay

12/02/2022 – 8:30



Boulder is a teardrop shaped coral sand cay 78m in length and 33m across at its widest point rising to a maximum elevation of 1.5m. There was evidence of ongoing turtle nesting and hatching, with a number of disturbed and recently hatched nests. The disturbed nests were most likely a result of other turtles uncovering existing nests. The cay has some limited use by seabirds as a passing roost, with no evidence of current or past nesting.

## Mellish Reef

Heralds Beacon Islet

14/02/2022 – 6:45



Heralds Beacon is a vegetated island that runs north-south. It is an elongate crescent (L) with a bulbous southern end. Vegetation is concentrated on the southern end and thins outwards and towards the north. It is fringed on the east and west by rocky reef that stretches onto the beach during low tides. Maximum elevation was 3m above the tide mark. Traditional pacing of distance was not possible; however the island's circumference was measured as 1.8km. The cay is a mixture of coral sand, rubble, pumice, and fine soil. Soil in the vegetated portion of the island is mixed sand soil with little coral rubble. Three distinct plants were noted and photographed for identification. There was no evidence of current or historic turtle nesting.

Approximately 50kg of marine debris, including the tracking buoy for a long line fishing rig was recovered from the islet.

High numbers of Noddy's, Sooty Terns and Boobies suggest the cay is important for breeding seabirds, and there were large groups of crèched Noddy and Tern chicks. Aggregations of fledged Booby juveniles were also common. Numbers were not possible to directly quantify, however are estimated in the tens of thousands.





*Figure 2. Vegetation - Herald Beacon Islet, Mellish Reef*



Unnamed Cay (New)  
14/02/2022 – 16:45



A second smaller cay has formed south of Herald Beacon Islet. It is a crescent shaped (L) sand cay 67.5m long and 22.5m wide. It sees some use as a roost for birds from the nearby Herald Beacon Islet, however, is not being used for nesting. On extreme high tides it is likely overtopped, however it has approximately 10cm of dry sand on top before hitting moist sand suggesting the average tides do not overtop the island.



## North Cay

16/02/2022 – 15:57



Small crescent shaped (L) cay 88m long and 19m wide that rises a maximum of 1m above sea level. This cay is overtopped on the high tide and doesn't retain any dry sand, with a 1cm likely sun-dried top layer. The eastern end is dominated by fossilized coral rubble, and the cay is fringed by patchy rocky reef on the northern and southern sides. The cay has the remnants of a long liner on the northern side, a cross shaped object protrudes from the reef top, likely the remains of the engine block or a mast. The island has some evidence as a minor bird roost when above the water.

## Marion Reef

Brodie Cay

18/02/2022 – 9:30



A large elongated oval 168m long and 52m wide that rises to a maximum elevation of 2m above sea level. The cay is unlikely to be overtopped on high tides, with evidence of consolidating sediment at higher elevations. The cay is unvegetated, however central portions display similar coloration to other vegetated cays, suggesting nutrient rich soil may be accumulating. Coral chunks, 15-35cm are prevalent.

The cay is heavily used by marine turtles and sea birds for nesting, Green and Boobies respectively. Eight green turtle tracks were recorded during the IWA, and there were 5 active Brown Boobie nests with eggs, and three unfledged Masked Boobie chicks.

There was minor marine debris. For consideration in future collection if still present, a rusted gas cylinder. There was no evidence of its contents or current volume, particular care should be taken in handling if a decision to collect is made.



Carola Cay  
19/02/2022 – 7:15





A large S-shaped cay 420m long and 45 wide, Carola rises to a maximum elevation of 2.5m above sea level. There is a BoM weather observation station on the northern end of the cay. The cay is a mix of coral rubble, coral sand, and fine white sand. Similar to Brodie, the cay is heavily used for turtle and seabird nesting (Green and Boobie). There is significant cratering suggesting ongoing turtle nesting, with 2 tracks recorded as part of the IWA. Some remnant turtle eggs were also sighted. Three trailing cays sit off the southern end of Carola, separated by deep channels. The trailing cays are overtopped on high tides and serve as resting places for seabirds on low tides. Seabird estimated counts include the trailing cays.

Lihou Reef  
Georgina Cay  
20/02/2022 – 6:45



Georgina is a vegetated s-shaped cay approximately 1.5km in length and 112m across. It rises to a maximum elevation 3.5m above the high tide mark. There are no obvious weed or pest species. There are remnants of a structure located centrally on the cay near the old signposts. The posts for the Lihou Reefs and Cays reserve are intact, and the sign was partially buried nearby. There was significant ongoing turtle nesting, including the recorded tracks, and evidence of longer-term nesting. A number of trails may also extend into nesting habitat within the vegetation, however they become too indistinct to allow proper tracking. Turtle nesting was predominantly limited to the sandy eastern and western edges. Anecdotal reports suggest the cay is extending westerly. The cay supports a range of nesting seabirds, including Boobies, Noddy's and Terns. Marine debris had accumulated, and a small collection was run that included thongs and a large jerry can. Large items were left on the cay included the remains of a chest freezer.

Anne Cay  
20/02/2022 – 14:17



Anne cay is a vegetated cay approximately 3.5km in circumference. The cay supports significant turtle and seabird nesting, including lesser frigate birds. Two separate wooden signs identify the cay as within the old Lihou nature reserve, however both cross spars have detached and remain on the ground with the uprights. A visitors' book is located with the eastern most signpost. Since the July 2021 Island voyage one set of visitors have signed the log and left behind a postcard image of their sailing vessel.



Lorna Cay  
21/02/2022 – 7:45



Lorna is an elongate teardrop 5.2km in circumference running NE to SW. Anecdotal information

suggests the cay has extended to the SW, away from the vegetated portion. The cay has significant seabird and turtle nesting. High seabird and turtle nesting. Seabird nesting is restricted to the vegetated portion of the island inly, with no boobie nests on the sand as has been seen on other cays. Turtle nesting extends up to, and in some places into the vegetation. Successful nesting has been confirmed for Lorna, with hatchlings found on the beach (dead), and nests with recent hatching disturbance. Fixed vegetation quadrat marks were in place and haven't caused any apparent disturbance to seabird populations. The posts see use as roosts.



Diamond Islets  
East Diamond Islet  
22/02/2022 – 7:08





Vegetated island 4km in circumference roughly triangular with an extended sand tail on the northern tip. East Diamond has a small fringing *Argusia argentea* shrubland. There is a lighthouse and weather observation tower on the western edge of the vegetated portion of the cay. The wreckage of a blue poly-boat can also be found on the NW side of the islet, it currently has a mature *Argusia* shrub growing in its bow. The windward (S to NE side of the island) is dominated by a rocky headland. Fringing coral sand beaches are used heavily by green turtles for breeding. Significant cratering, and the recorded trails and nests indicate ongoing breeding. East Diamond was the first cay to actively confirm a green turtle departing the cay after having successfully nested. Dead hatchlings suggest recent (1-2 days) hatchings.

## Herald Cays

North East Cay

23/03/2022 – 6:55



North East Cay is a densely forested *Pisonia* cay, with no easy penetrating paths inward from the fringing coral sand beach. It is 4.26km in circumference. There were no pest or human use indicators, and the high-density outer forest would present large difficulties to penetration. The coral sand beaches have significant, and ongoing evidence of turtle nesting and hatching, including recent and overnight hatching runs. Two green turtle hatchlings were recorded leaving the cay and hatchling tracks were recorded departing four older nests. The waters around the cay also had significant predatory fish activity that is likely driven by ongoing hatching activity. The S and W sides of the cay are limestone shard piles with no sand. Similar seabird nesting as on other vegetated cays was noted, including lesser frigate birds, three species of Boobies, noody's and Terns. A single Red-tailed tropicbird was also sighted nesting on the western edge.

South West Cay  
23/03/2022 – 12:44



South west Cay is an elongate oval 2.47km in circumference with patchy and fringing *Argusia argentea* open shrubland. The eastern edge of the fringing open shrubland is preceded by a layer of dead shrubs used as perches by the resident seabirds, other cays surveyed as part of this trip did not have similar deadwood fringes. The Western edge of the cay consists of limestone shards and rocky reef with no fringing coral sand beaches. A sign is located on the eastern side of the cay, the visitors book holder was empty and installed upside down. A carved-out jerry can filled with debris was recovered form under the sign. There was evidence of ongoing turtle nesting, however some tracks may have been missed due to changing tides. A Red-Tailed Tropicbird was found nesting under limestone shards on the eastern edge. Note: the rollers installed above Carola cay solar panels may be ideal for our signage based on the lack of success evident on the overturned lip metal signs and the survival of wooden post signs.



## Flinders Reefs

Northwest of South Flinders (New)

24/02/2022 - AM

Minor sand cay breaking surface in the vicinity of the acoustic receiver at China Wall (XXX and XXX). Maximum elevation of 30cm above waterline, the cay is likely overtopped. Maximum of 5m in diameter.

Main Cay

25/02/2022 – 9:31



Flinders Main cay was previously surveyed under the IWA protocol in October 2021. As of 25 Feb 2022, the cay is crescent shaped (R) running NE to approximately W with a circumference of XX. The cay rises to a maximum elevation above the water line of XX. A small portion on the western end remains above the high tide mark to a maximum of approximately 35cm. There is BoM weather observation station within 15m of the NE most point, however the cay continues to not connect with the weather station. Since October, when the cay was an elongate S, the cay has shifted approximately 20m north of the identified location. It still has evidence of ongoing turtle nesting, however this time no nests or nest remnants were detected. Seven body pits of varying ages were identified on the cay, with no overnight turtle tracks. There was a significant increase in the number of seabirds present on the cay compared to October, including Red-Footed Boobies not previously identified at this location. The Boobies were identified on the BoM station and there is potential they were present in October, however no easy access to the vicinity of the station was possible in 2021.

## Turtle track summary

Turtle tracks were recorded under the Queensland Beach Monitoring method following a low tide. Only fresh tracks, identified by their position relative to the low tide mark, sand colouration and sharpness of the track were counted. A total of 87 fresh tracks were recorded during the survey period over nine days. Evidence of historic nesting was recorded for 10 of the 14 days visited during this survey period. Flinders Reef Main Cay showed evidence of recent, but not fresh nesting activity during the IWA processes.

Recent hatching activities were identified on Lorna Cay, East Diamond Islet and North East Cay (Lihou, Diamond Islets and Herald Islets respectively).

The total numbers outlined below are indicative only and don't include density assessments to understand the relationship between cay size and nesting numbers. They also only represent a single assessment on a single day which may over or under estimate nesting effort for any given location.

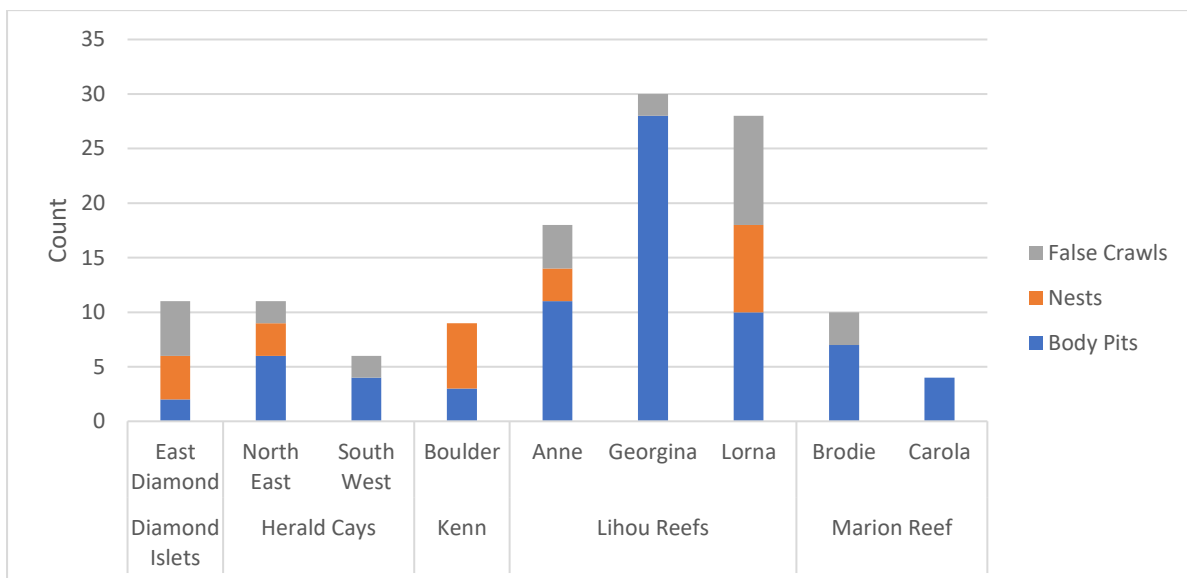


Figure 3. Total turtle nesting tracks recorded during February-March voyage. False crawl - Exit and return to water with no body pit or nest, Body Pit - Excavation and abandonment without laying or covering over, Nest - Excavation followed by covering

## Seabird summary

Thirteen different seabirds were identified during the voyage, this number may be slightly higher given the similarities between the noddy terns that can occur in the CSMP. Because of this Noddys have been aggregated into a single category. An estimated total of over 72,000 seabirds were noted during the assessment of 14 islets and cays across the southern, central and northern coral sea.

Totals for reef groups, cays and species are provided in the table below.

Reef Group	Islet/Cay	ID	Count
Diamond Islets	<b>Total</b>		<b>3501</b>
	East Diamond Islet	<b>Total</b>	<b>3501</b>
		Brown Booby	500
		Lesser Frigatebird	300
		Masked Booby	500
		Noddy	1000
		Red-footed Booby	200
		Red-tailed Tropicbird	1
Sooty Tern	1000		
Flinders	<b>Total</b>		<b>562</b>
	Main Cay	<b>Total</b>	<b>562</b>
		Brown Booby	15
		Crested Tern	15
		Masked Booby	15
		Noddy	500
		Red-footed Booby	15
Sooty Tern	2		
Fredericks Reefs	<b>Total</b>		<b>92</b>
	Lighthouse Cay	<b>Total</b>	<b>92</b>
		Brown Booby	85
		Great Frigatebird	2
Noddy	5		
Herald Islets	<b>Total</b>		<b>5001</b>
	North East	<b>Total</b>	<b>2501</b>
		Brown Booby	100
		Lesser Frigatebird	200
		Masked Booby	100
		Noddy	1000
		Red-footed Booby	100
		Red-tailed Tropicbird	1
		Sooty Tern	1000
	South West	<b>Total</b>	<b>2500</b>
		Brown Booby	100
		Lesser Frigatebird	200
		Masked Booby	100
Noddy		1000	



Reef Group	Islet/Cay	ID	Count
		Red-footed Booby	100
		Sooty Tern	1000
<b>Kenn Reefs</b>	<b>Total</b>		<b>90</b>
	<b>Boulder</b>	<b>Total</b>	<b>90</b>
		Brown Booby	80
		Noddy	10
<b>Lihou Reefs</b>	<b>Total</b>		<b>26383</b>
	<b>Anne Cay</b>	<b>Total</b>	<b>2702</b>
		Black-Naped Tern	102
		Brown Booby	200
		Lesser Frigatebird	200
		Masked Booby	200
		Noddy	1000
		Sooty Tern	1000
	<b>Georgina Cay</b>	<b>Total</b>	<b>676</b>
		Brown Booby	100
		Masked Booby	50
		Noddy	500
		Sooty Tern	25
		Wandering Tattler	1
	<b>Lorna Cay</b>	<b>Total</b>	<b>23005</b>
		Black-Naped Tern	1000
		Brown Booby	1000
		Masked Booby	1000
		Noddy	10000
		Red-footed Booby	5
		Sooty Tern	10000
	<b>Marion Reef</b>	<b>Total</b>	
<b>Brodie Cay</b>		<b>Total</b>	<b>260</b>
		Brown Booby	220
		Masked Booby	40
<b>Carola Cay</b>		<b>Total</b>	<b>1821</b>
		Brown Booby	500
		Masked Booby	100
		Noddy	1200
		Red-footed Booby	12
		Sandpiper	9
	<b>Mellish Reef</b>	<b>Total</b>	
<b>Heralds Beacon Islet</b>		<b>Total</b>	<b>35000</b>
		Brown Booby	5000
		Masked Booby	5000
		Noddy	10000
		Red-footed Booby	5000

Reef Group	Islet/Cay	ID	Count
		Sooty Tern	10000
	North Cay	<b>Total</b>	<b>3</b>
		Noddy	3
	Unnamed Cay (50m south of Herald Beacon Islet)	<b>Total</b>	<b>265</b>
		Brown Booby	25
		Masked Booby	20
		Noddy	200
		Sooty Tern	20
		<b>Grand Total</b>	<b>72978</b>

Appendix A – Anne Cay Visitors Logbook





