

# TWEED SAND BYPASSING

## ENVIRONMENTAL MONITORING SUMMARY – MARCH 2022

### 1. SAND PUMPING & DREDGING

- 63,092 m<sup>3</sup> was pumped to Snapper Rocks East.
- 0 m<sup>3</sup> of sand was dredged

#### **Sand Delivery March 2022**

Pumped: 63,092 m<sup>3</sup>

Dredged: 0 m<sup>3</sup>

Total: 63,092 m<sup>3</sup>

The number of days sand was pumped this month = 26

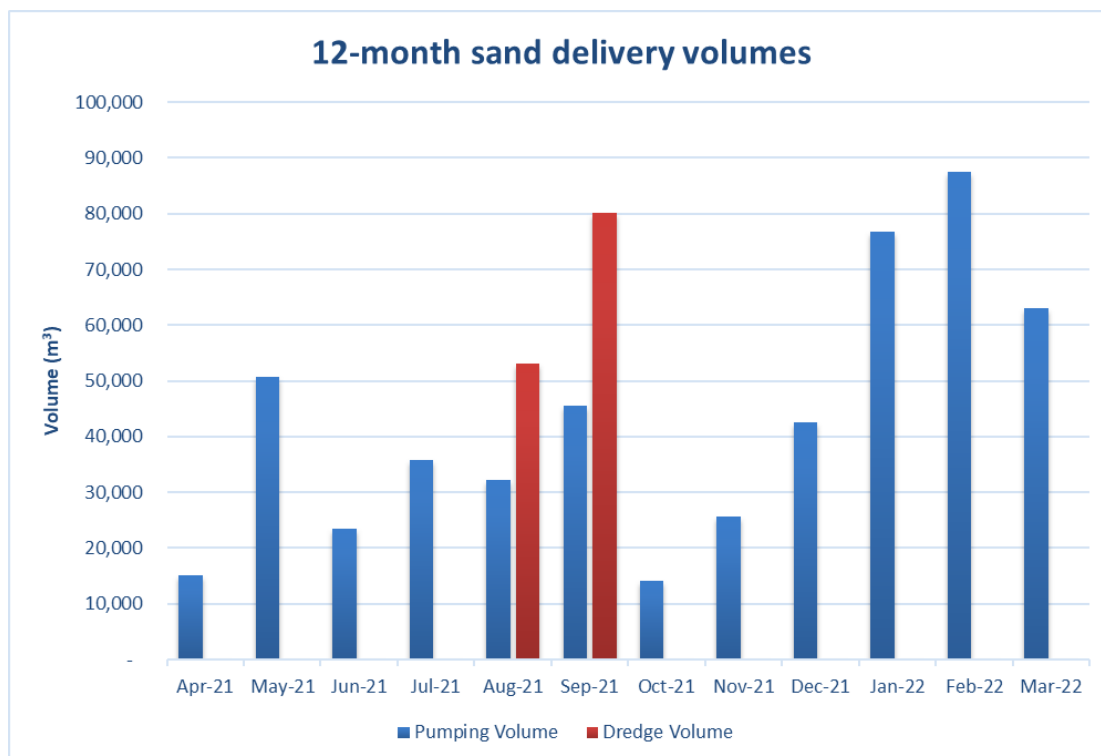
#### **Sand Delivery May 2000 to date**

Pumped: 10,659,459 m<sup>3</sup>

Dredged\*: 2,715,369 m<sup>3</sup>

Total\*: 13,374,827 m<sup>3</sup>

\* This Includes 22,870 m<sup>3</sup> of sand delivered by dredge to Palm Beach between June 2005 and September 2005



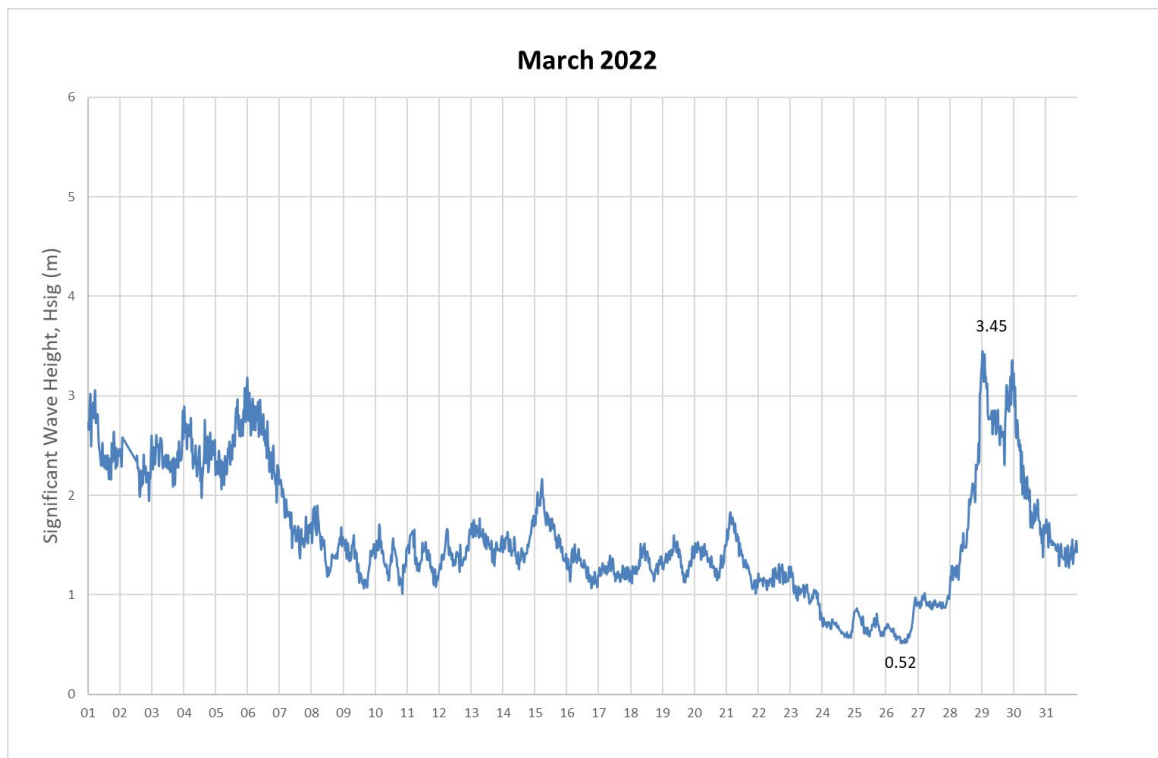
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## 2. WAVE CONDITIONS

Sustained swell that was experienced at the end of February continued for a week into March with wave heights over 2 m from the east. Wave heights were relatively low for the remainder of the month until a significant wave event commencing on the 28<sup>th</sup>. Wave heights reached over 3 m primarily from the east and ENE.

- Minimum  $H_{sig}$ : 0.52 m on 26 March 2022
- Maximum  $H_{sig}$ : 3.45 m on 29 March 2022
- Number of days where  $H_{sig} < 1$  m at some point: 5
- Number of days where  $H_{sig} > 2$  m at some point: 11

**Note:**  $H_{sig}$  is defined as the average of the highest one-third of waves recorded over a period of approximately 30 minutes



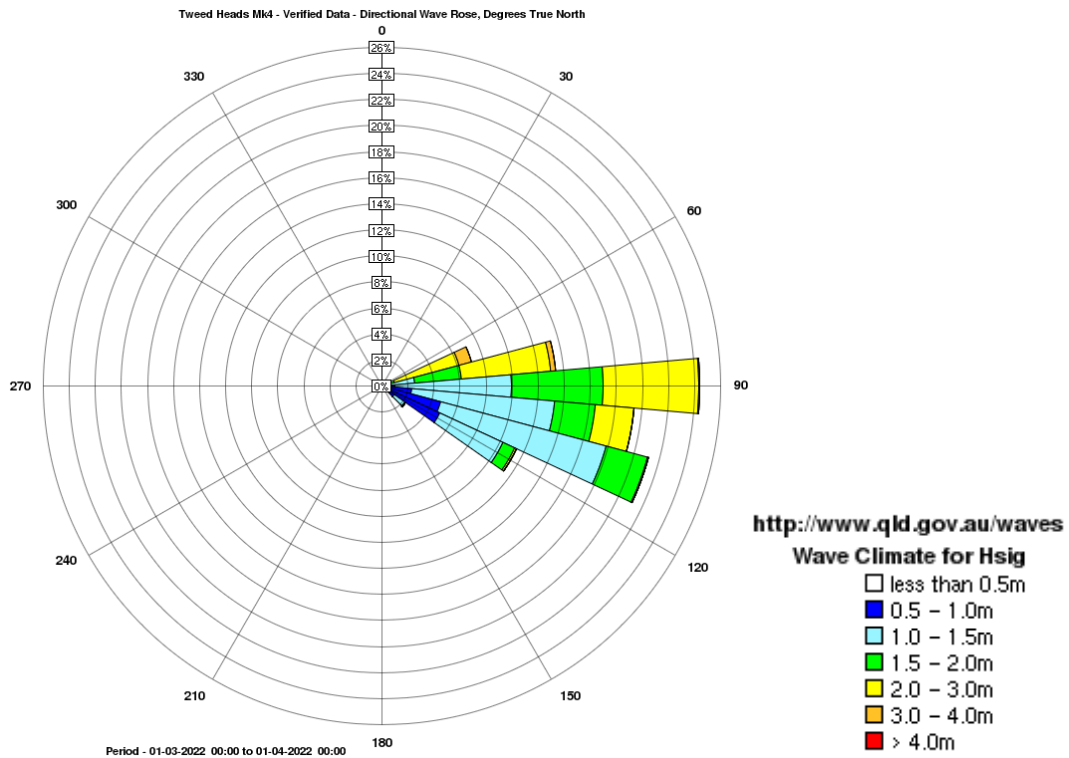
(Source: Tweed Heads Waverider buoy; Queensland Government)

In January 2020 TSB commissioned the deployment of another Waverider buoy in the Tweed region. The Tweed Offshore Waverider buoy was deployed in approximately 60 m water depth to the east and adjacent to Kingscliff and Dreamtime Beaches. The purpose of the Tweed Offshore buoy is to observe and assess changes in wave climate at the Tweed Heads buoy due to the presence of the Danger Reefs and Cook Island.

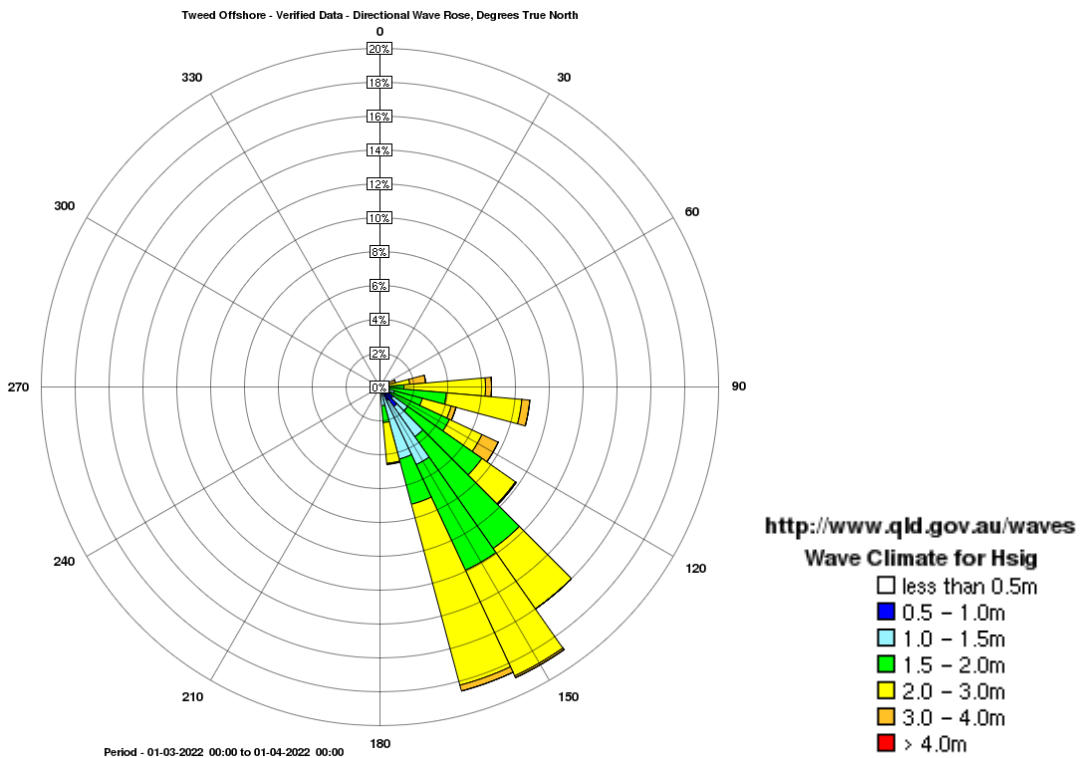
A link to data recorded by the Tweed Heads and Tweed Offshore Waverider buoys is available at: <http://www.qld.gov.au/waves>

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## NEARSHORE WAVE DIRECTION



## OFFSHORE WAVE DIRECTION



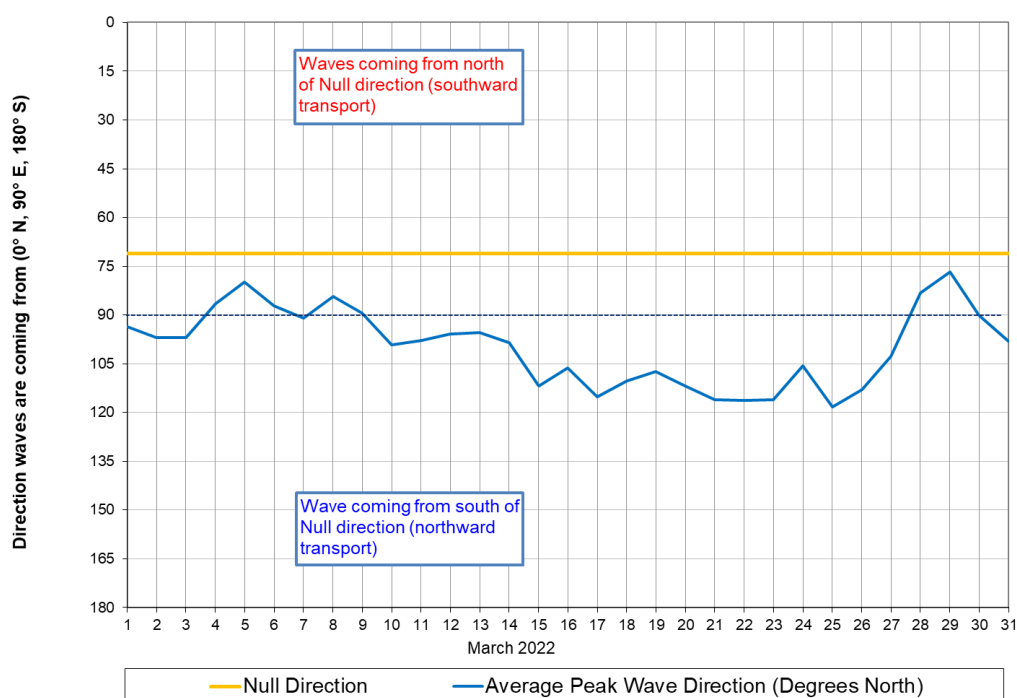
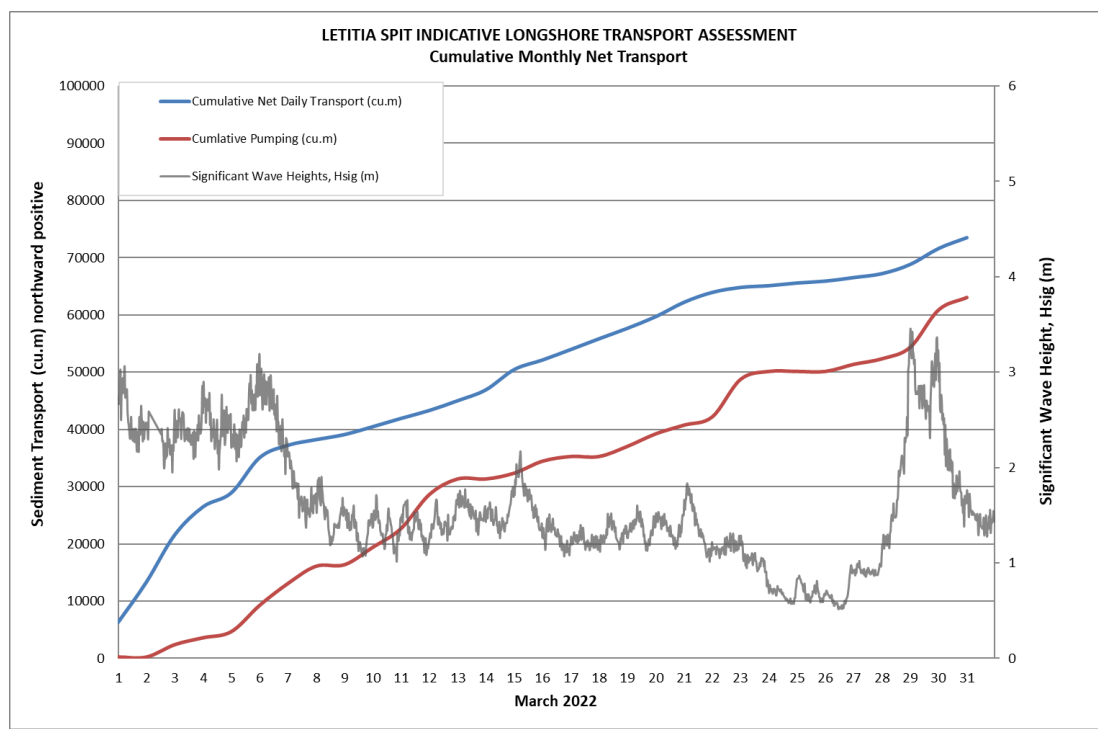
OFFICIAL  
March 2022

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## 3. INDICATIVE LONGSHORE TRANSPORT

The first graph below is based on simplified sediment transport modelling and is indicative only. The second graph indicates the wave direction in relation to the shoreline null direction (a wave direction coming from south of this line generally results in northward transport of sand).

In March 2022 the estimated natural sand transport moving north towards the Tweed River entrance was calculated to be in the order of 73,500 m<sup>3</sup>. This result is 128 per cent of the average estimated sand transport quantity of approx. 57,000 m<sup>3</sup> for March.



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## 4. BEACH AND SURF AMENITY OBSERVATIONS

As of mid-March, beaches were generally in a healthy state based on beach widths observed from Fingal through to Kirra. Duranbah upper beach held up well following the recent nourishment campaign with some scarping observed.



Consistently large swell continued in early March producing exceptional surfing conditions again at Snapper Rocks, Rainbow Bay, Greenmount and Kirra. A major flood event across the region impacted water quality at local beaches.



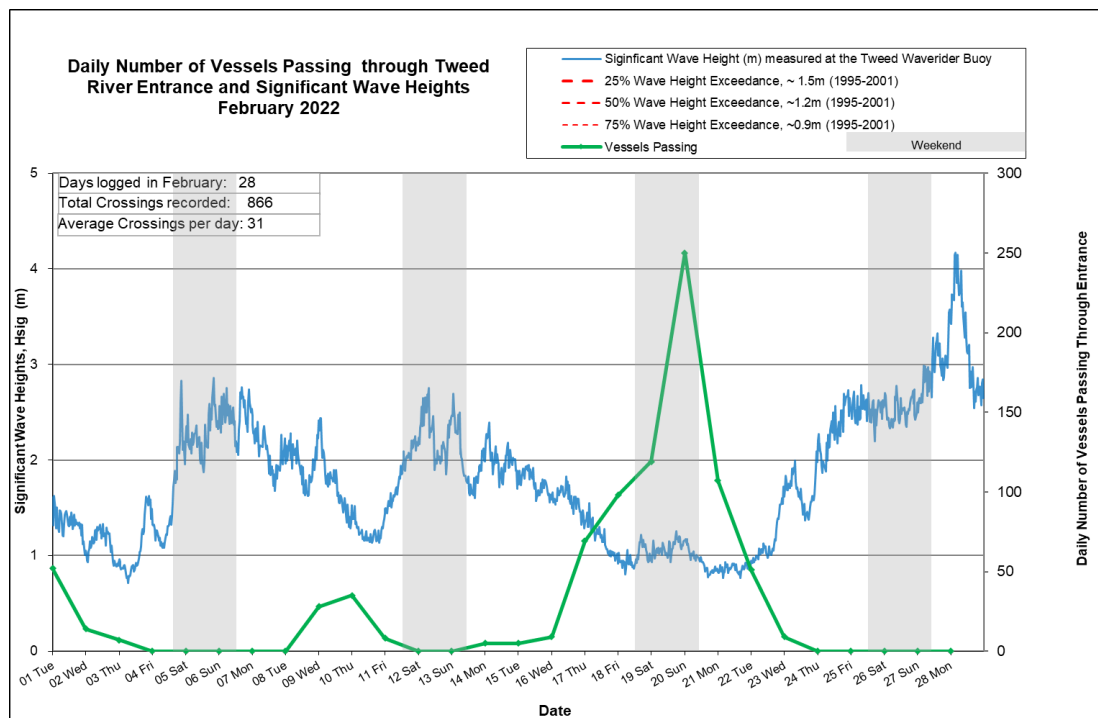
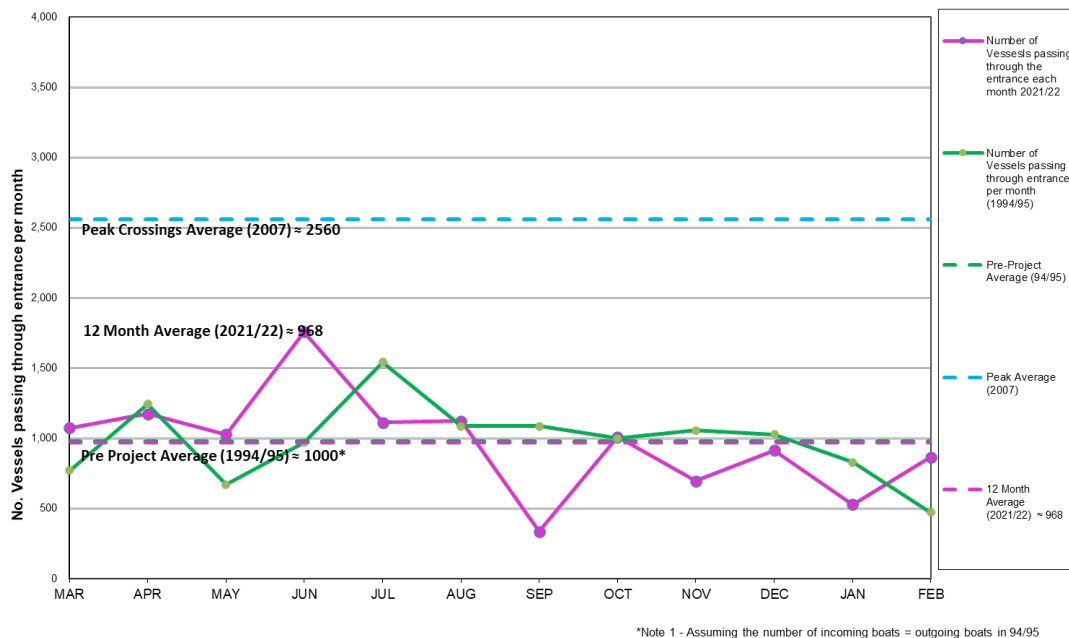


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## 5. TWEED RIVER ENTRANCE USAGE

A total of 489 Tweed River entrance vessel crossings were recorded for the month (32 per cent of the March average (2002–2022)).

Comparison of the number of vessels passing through the entrance per month 2021/22 compared to 2007 (peak crossings) and 1994/95 (prior to entrance improvements)



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Date February 2022	Navigation Rating					Number of Crossings
	Impassable < - - - - - > Good					
	Impassable	Difficulty Encountered	Some Difficulty Encountered	Relatively Good Crossing	Good Conditions	
	1	2	3	4	5	
1						52
2						14
3						7
4						0
5						0
6						0
7						0
8						0
9						28
10						35
11						8
12						0
13						0
14						5
15						5
16						9
17						69
18						98
19						119
20						250
21						107
22						51
23						9
24						0
25						0
26						0
27						0
28						0
					Total:	866

Marine Rescue NSW - Monitoring Results (Not including trawlers)

 Weekends

*Source: Marine Rescue NSW, Point Danger*