

# TWEED SAND BYPASSING

## ENVIRONMENTAL MONITORING SUMMARY – NOVEMBER 2020

### 1. SAND PUMPING & DREDGING

- 21,352 m<sup>3</sup> was pumped to Snapper Rocks East.
- 5,981 m<sup>3</sup> was pumped to Duranbah.
- 0 m<sup>3</sup> of sand was dredged.

#### Sand Delivery November 2020

Pumped: 27,333 m<sup>3</sup>

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

Total: 27,333 m<sup>3</sup>

The number of days sand was pumped this month = 16

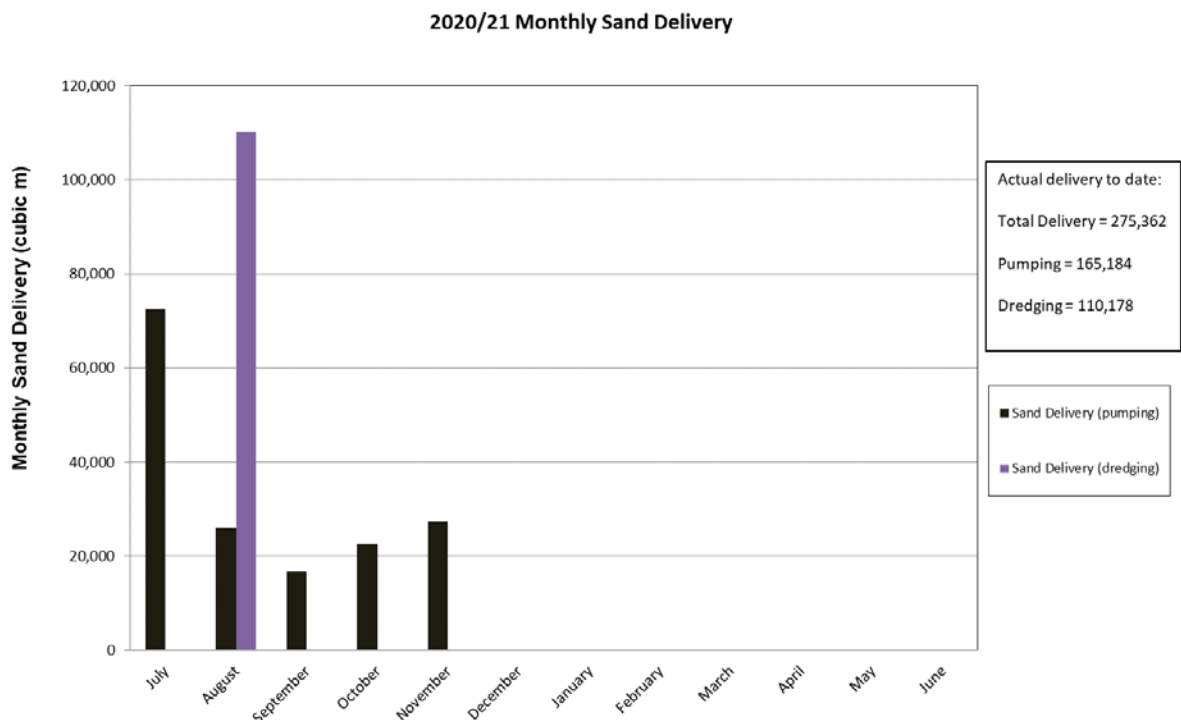
#### Stage II Sand Delivery May 2000 to date

Pumped: 10,045,445 m<sup>3</sup>

Dredged: 2,582,053 m<sup>3</sup> \*

Total: 12,627,497 m<sup>3</sup> \*

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



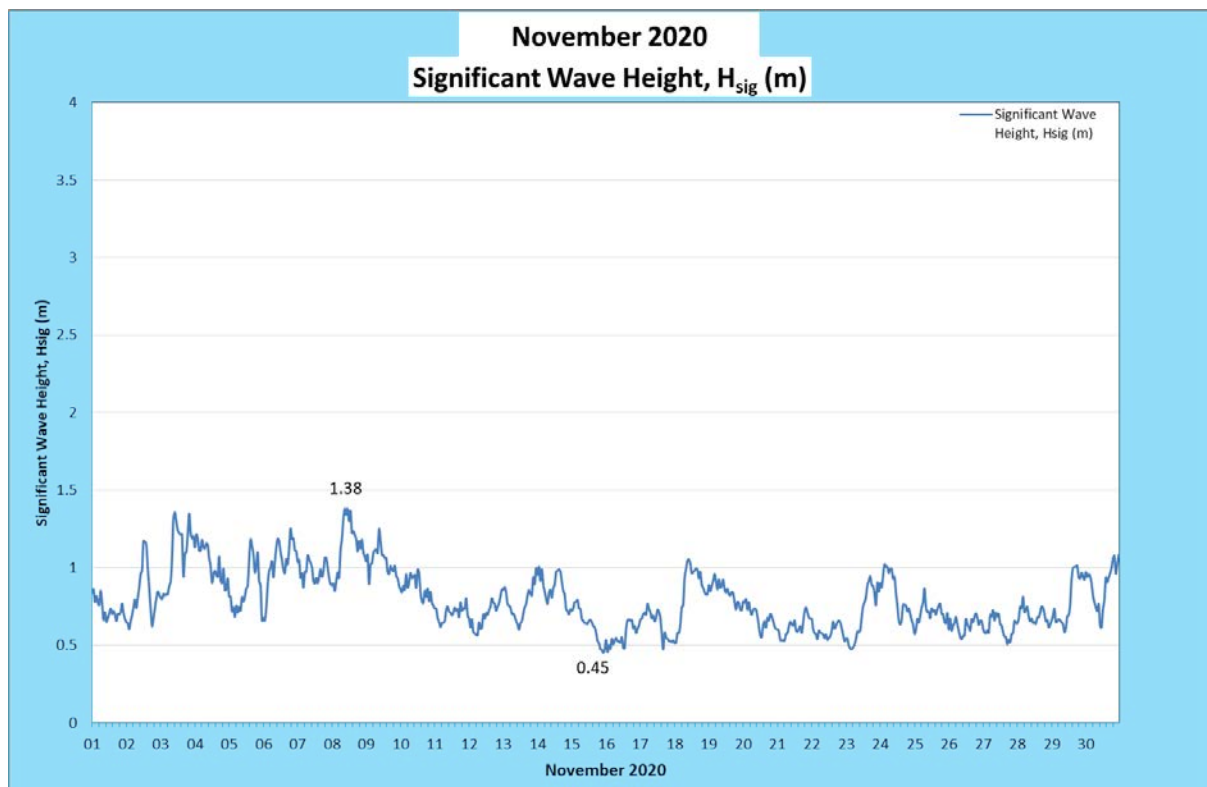
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## 2. WAVE CONDITIONS

Significant wave heights ( $H_{sig}$ ) were mostly calm (0.45 m to 1.38 m), with the peak  $H_{sig}$  occurring on the 15<sup>th</sup> of November 2020. Wave directions were predominantly from the ESE.

- Minimum  $H_{sig}$ : 0.45 m on 15<sup>th</sup> November 2020
- Maximum  $H_{sig}$ : 1.38m on 8<sup>th</sup> November 2020
- Number of days where  $H_{sig} < 1$  m at some point: 30
- Number of days where  $H_{sig} > 2$  m at some point: 0

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



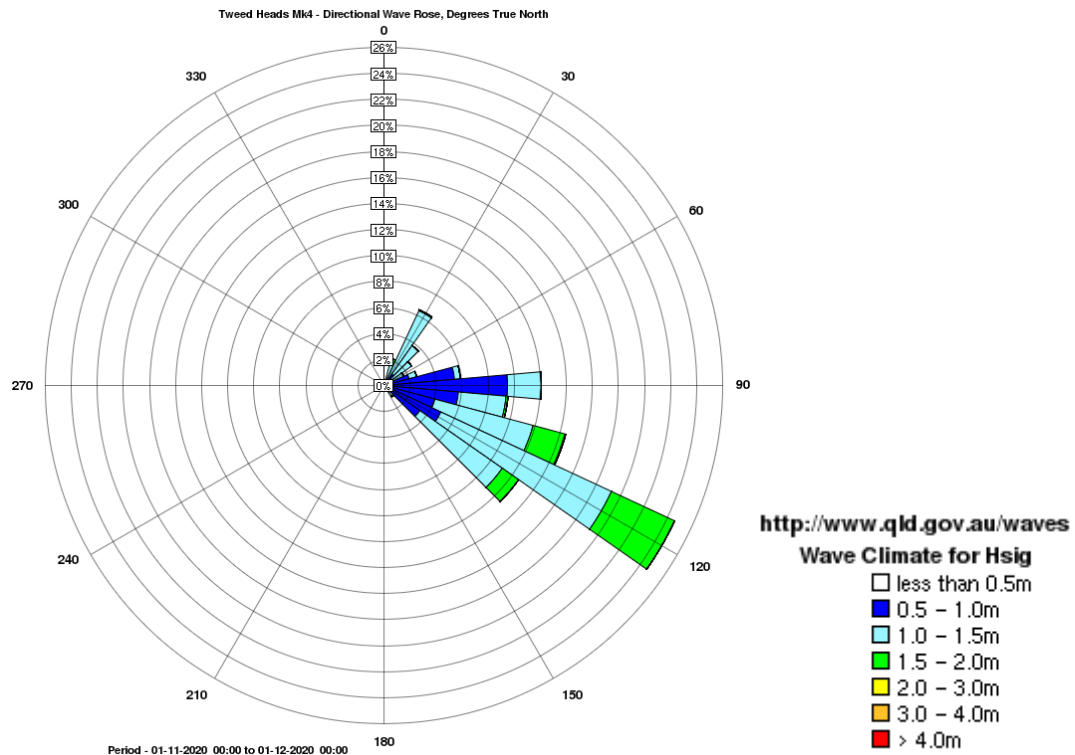
(Source: Tweed Heads Waverider buoy; Queensland Government)

In January 2020 TSB commissioned the deployment of another Waverider buoy in the Tweed region. 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.

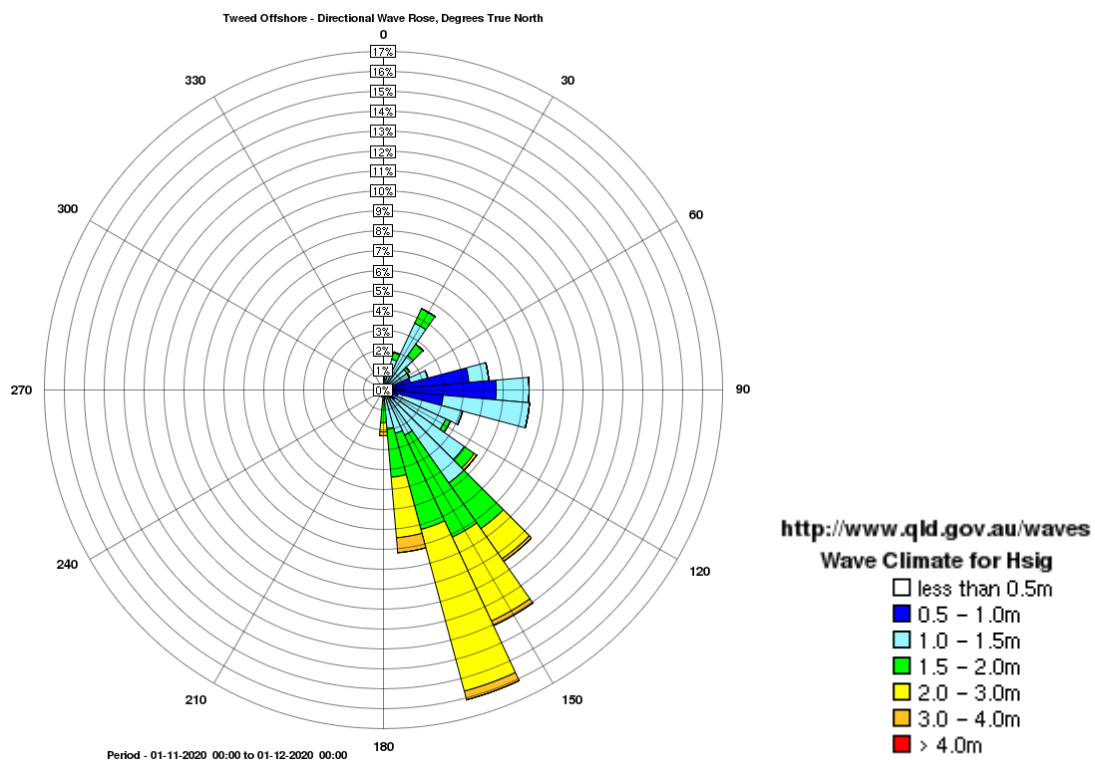
A link to data recorded by the Tweed Heads and Tweed Offshore Waverider buoys is available at: <http://www.qld.gov.au/waves>

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## NEARSHORE WAVE DIRECTION



## OFFSHORE WAVE DIRECTION



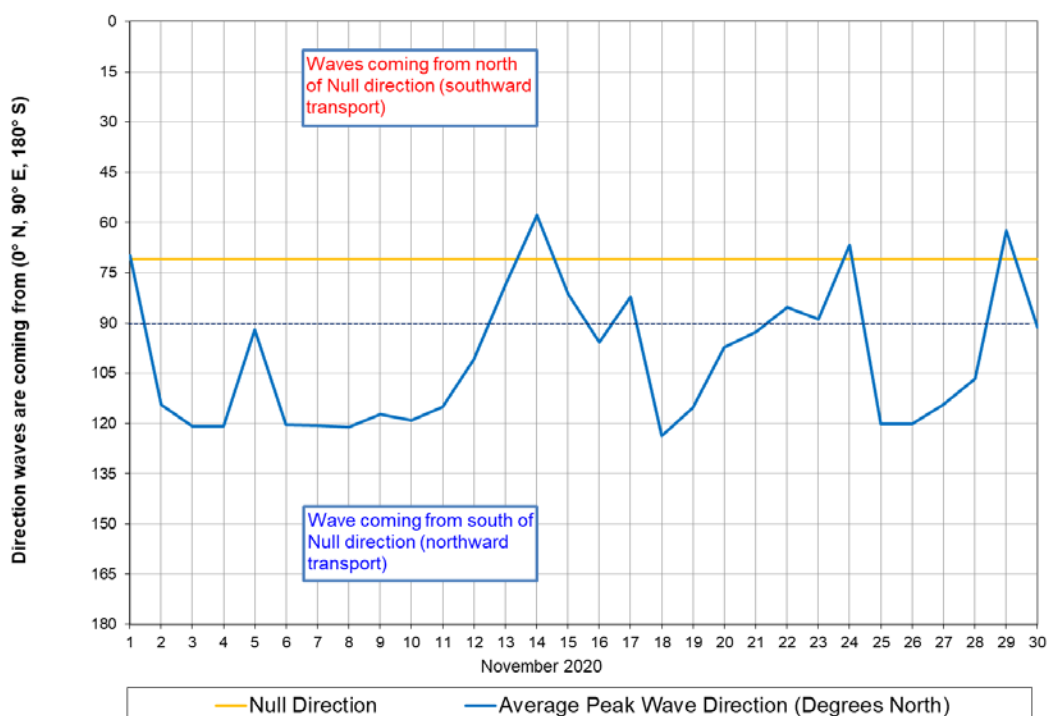
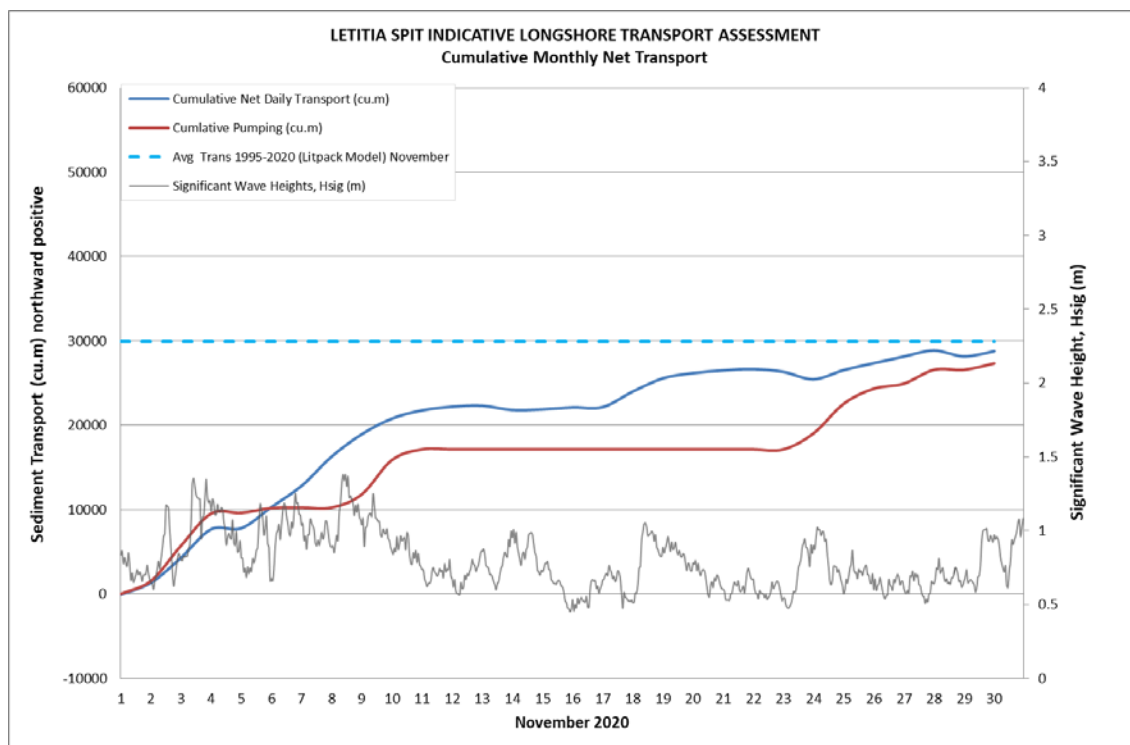
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## 3. INDICATIVE LONGSHORE TRANSPORT

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.

In November 2020 the estimated natural sand transport moving north towards the Tweed River entrance was calculated to be in the order of 29,000 m<sup>3</sup>. This result is 96% of the average estimated sand transport quantity of approximately 30,000 m<sup>3</sup> for the month of November.

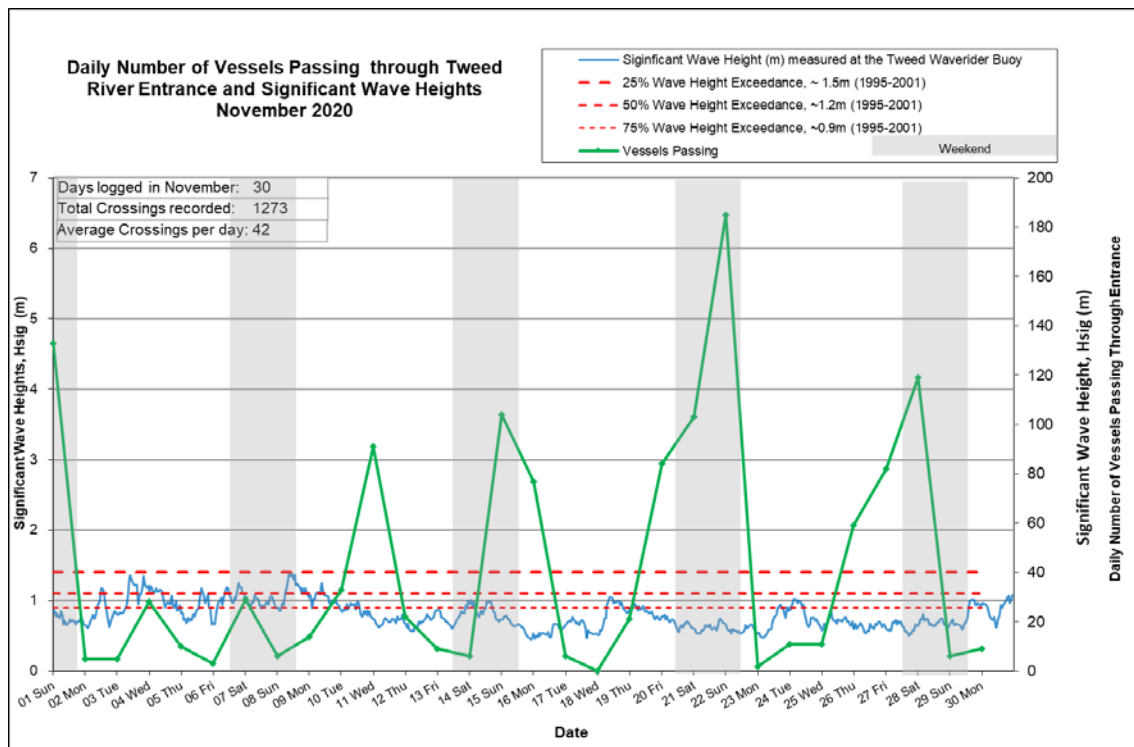
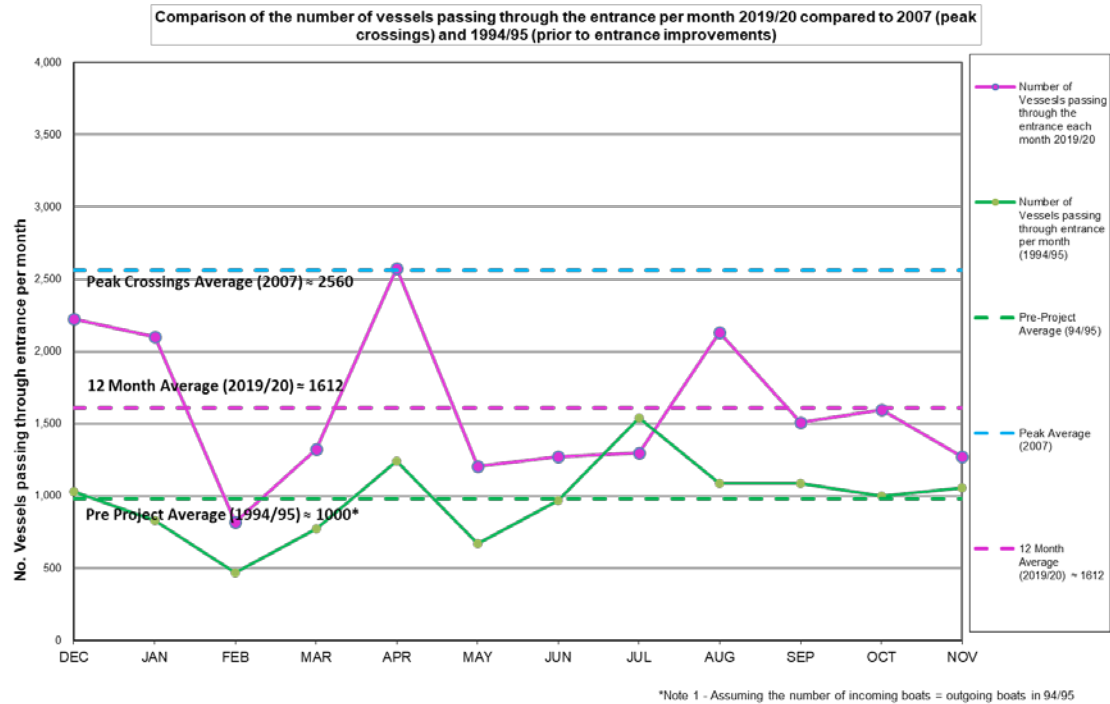


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## 4. TWEED RIVER ENTRANCE USAGE

A total of 1,273 Tweed River entrance vessel crossings were recorded for the month (106% of the November average (2002 – 2020)).



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Date November 2020	Navigation Rating					Number of Crossings
	Impassable < - - - - > Good					
	Impassable	Difficulty Encountered	Some Difficulty Encountered	Relatively Good Crossing	Good Conditions	
	1	2	3	4	5	
1						133
2						5
3						5
4						28
5						10
6						3
7						29
8						6
9						14
10						33
11						91
12						22
13						9
14						6
15						104
16						77
17						6
18						0
19						21
20						84
21						103
22						185
23						2
24						11
25						11
26						59
27						82
28						119
29						6
30						9
					Total:	1,273

Marine Rescue NSW - Monitoring Results (Not including trawlers)

 Weekends

**Source:** Marine Rescue NSW, Point Danger

\* Total does not include trawlers