

# TWEED SAND BYPASSING

## ENVIRONMENTAL MONITORING SUMMARY – APRIL 2021

### 1. SAND PUMPING & DREDGING

- 6,934 m<sup>3</sup> was pumped to Snapper Rocks East.
- 8,257 m<sup>3</sup> was pumped to Duranbah.
- 0 m<sup>3</sup> of sand was dredged.

#### Sand Delivery April 2021

Pumped: 15,191 m<sup>3</sup>

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

Total: 15,191 m<sup>3</sup>

The number of days sand was pumped this month = 14

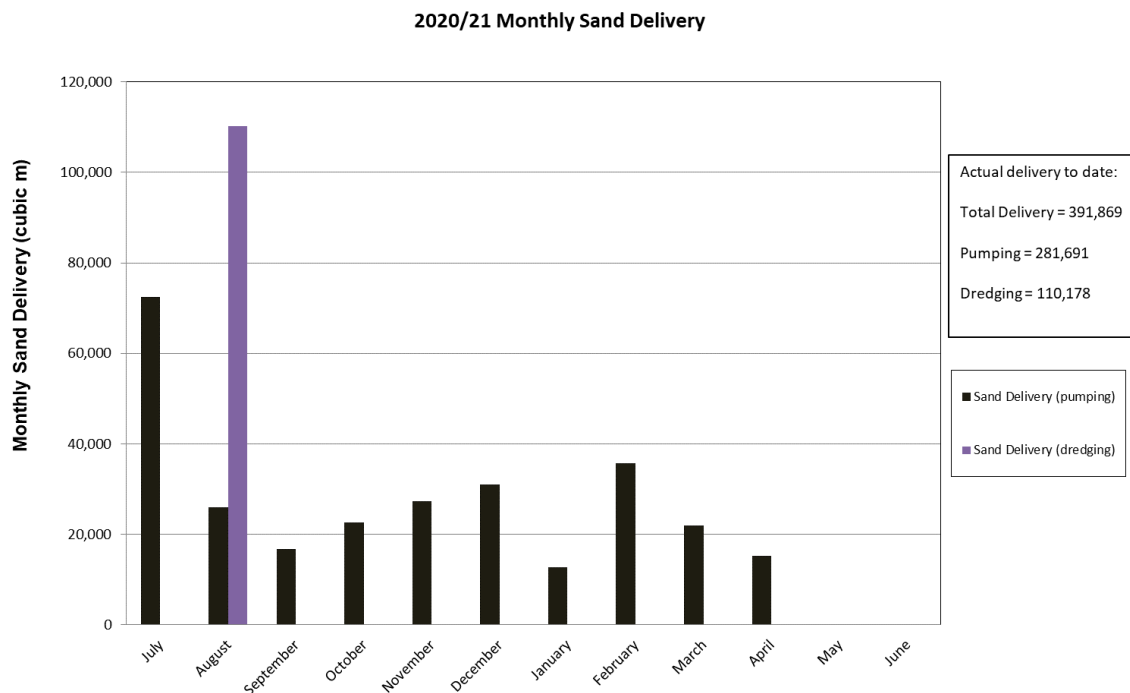
#### Stage II Sand Delivery May 2000 to date

Pumped: 10,161,952 m<sup>3</sup>

Dredged\*: 2,582,052 m<sup>3</sup>

Total\*: 12,744,004 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



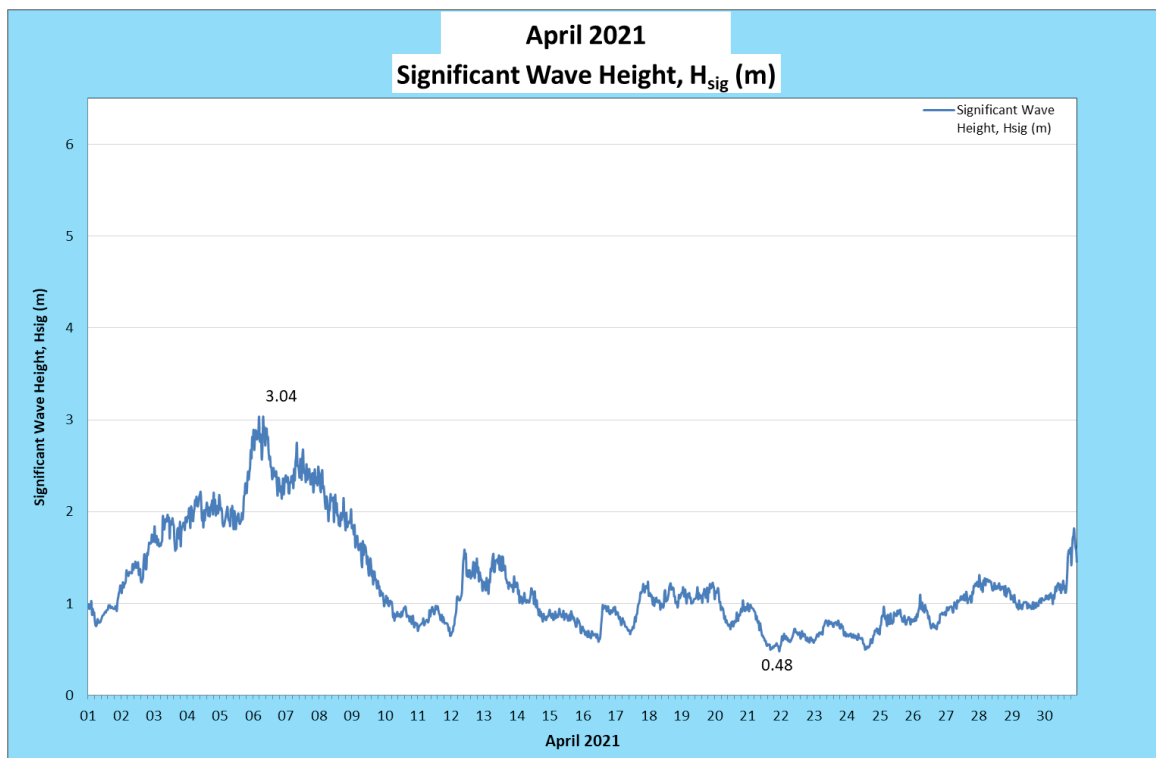
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## 2. WAVE CONDITIONS

Significant wave heights ( $H_{sig}$ ) were generally low to moderate and a swell event between the 5<sup>th</sup> and 8<sup>th</sup> that peaked at 3.04m. Wave directions were generally from the south-east over the month.

- Minimum  $H_{sig}$ : 0.48 m on 21 April 2021
- Maximum  $H_{sig}$ : 3.04 m on 6 April 2021
- Number of days where  $H_{sig} < 1$  m at some point: 20
- Number of days where  $H_{sig} > 2$  m at some point: 5

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



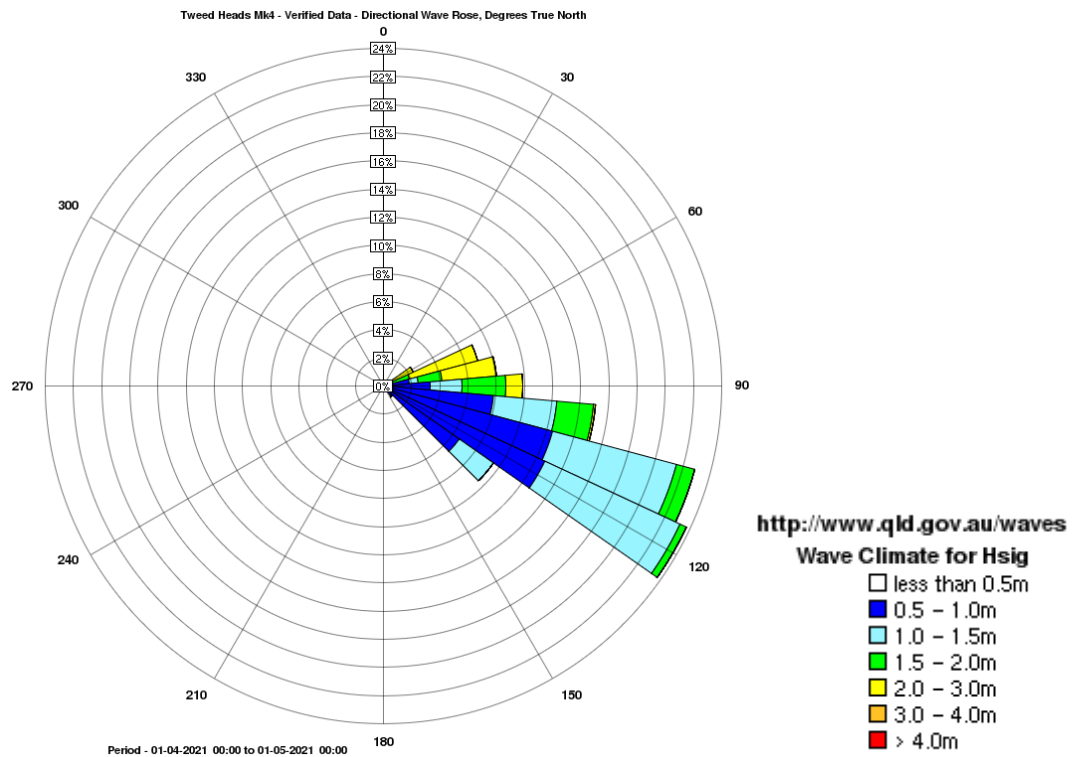
(Source: Tweed Heads Waverider buoy; Queensland Government)

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.

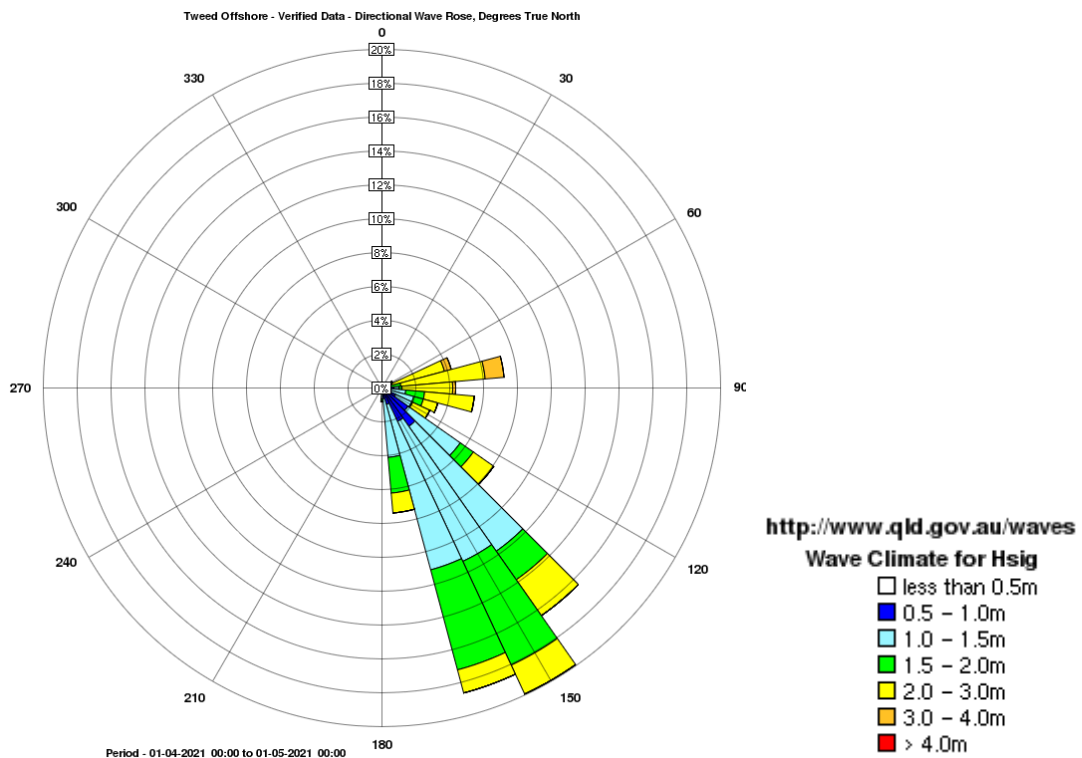
A link to data recorded by the Tweed Heads and Tweed Offshore Waverider buoys is available at: <http://www.qld.gov.au/waves>

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## NEARSHORE WAVE DIRECTION



## OFFSHORE WAVE DIRECTION

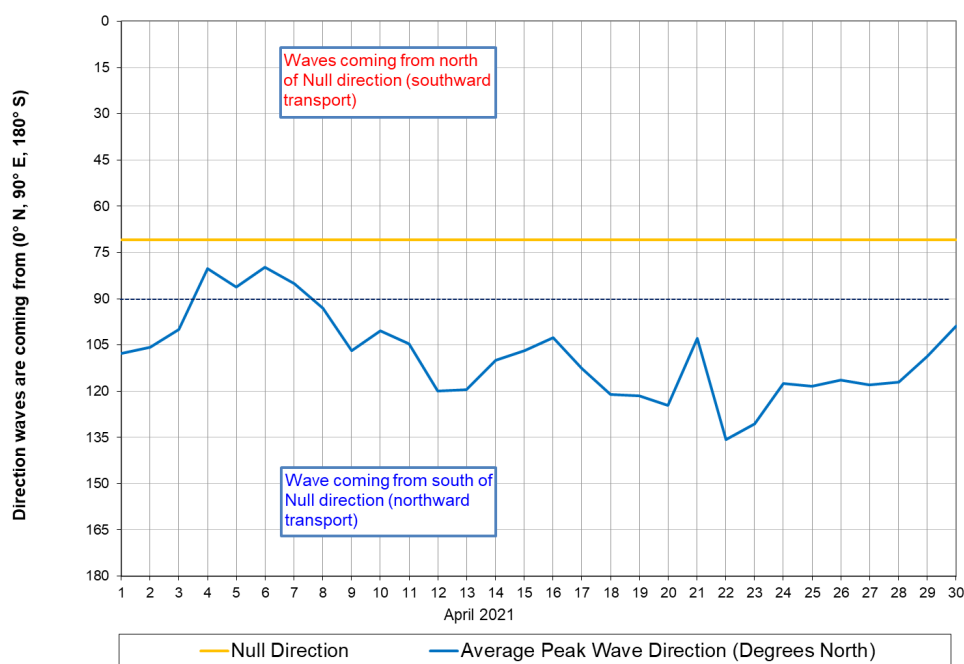
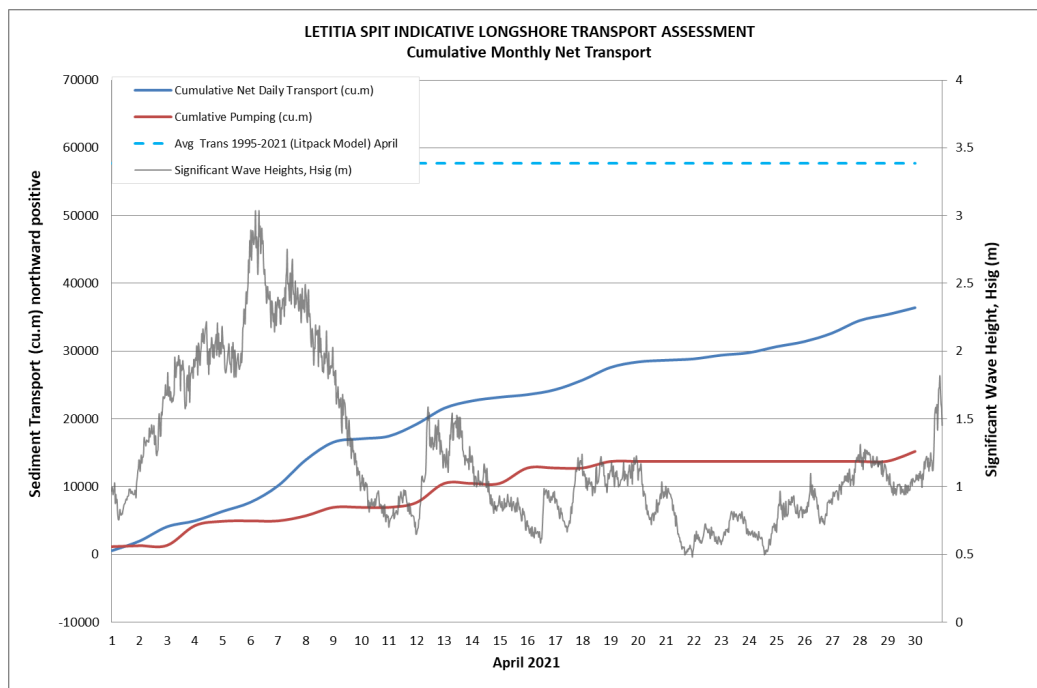


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## 3. INDICATIVE LONGSHORE TRANSPORT

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 April 2021 the estimated natural sand transport moving north towards the Tweed River entrance was calculated to be in the order of 36,000 cubic metres. This result is 63 per cent of the average estimated sand transport quantity of approximately 58,000 m<sup>3</sup> for the month of April.

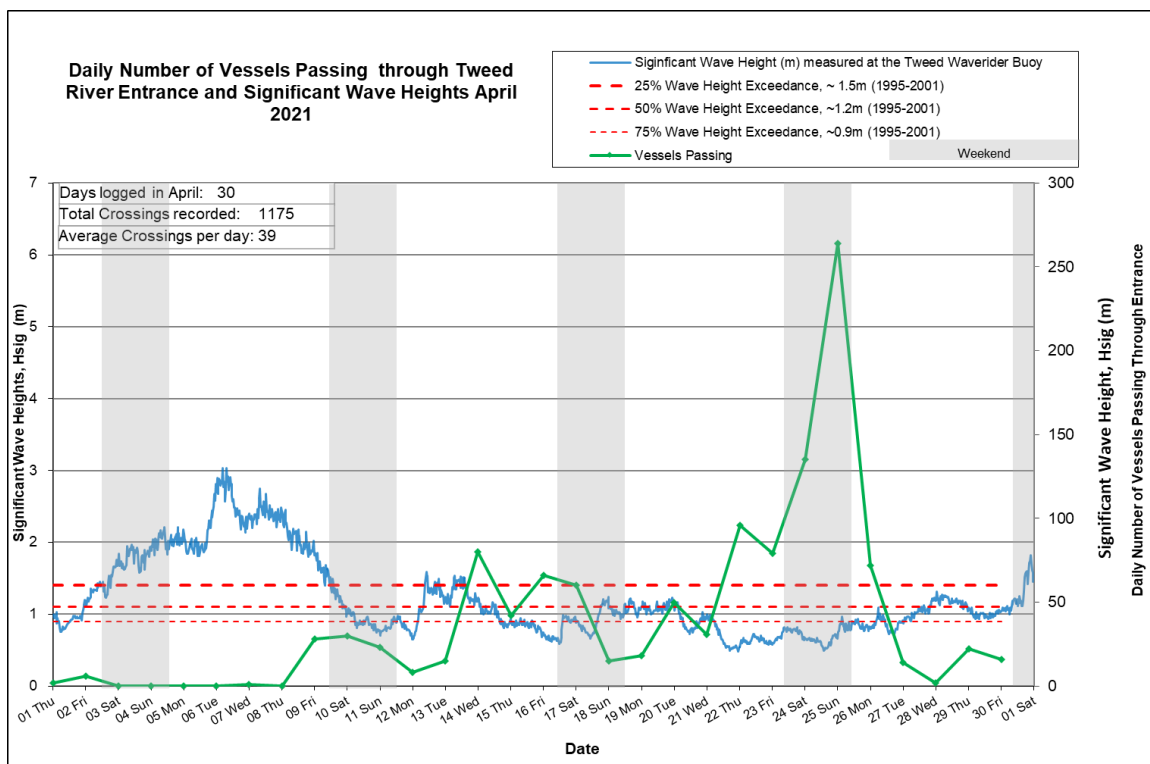
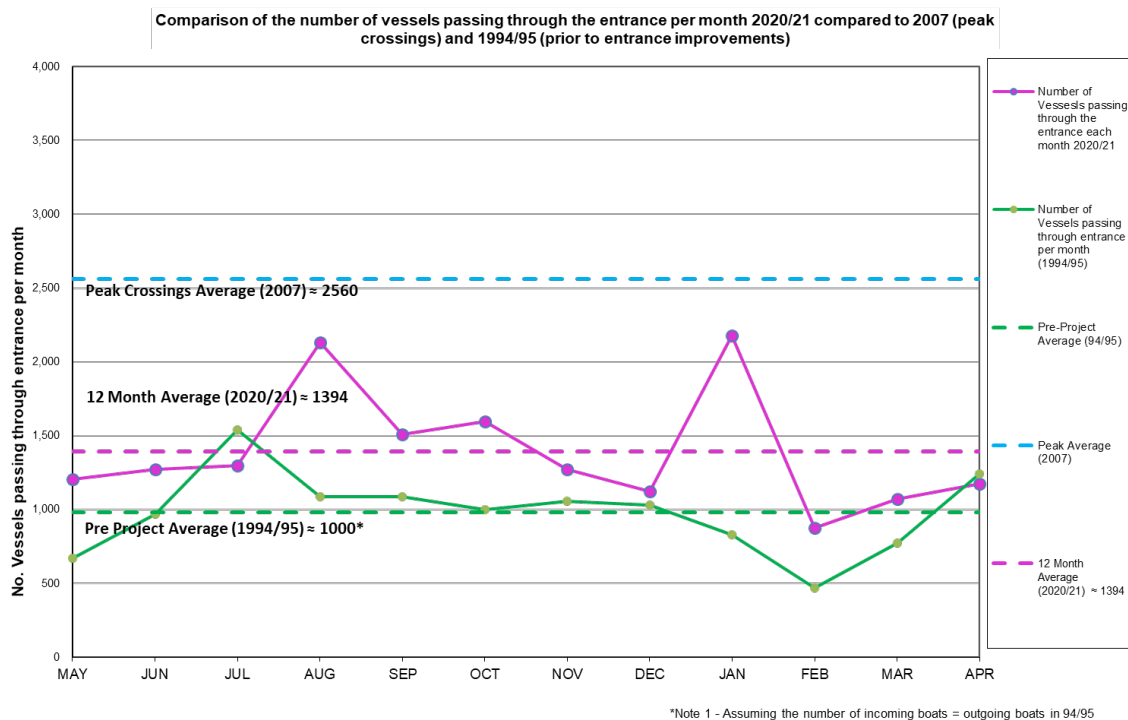


April 2021

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## 4. TWEED RIVER ENTRANCE USAGE

A total of 1,175 Tweed River entrance vessel crossings were recorded for the month (65 per cent of the April average (2002–2021)).



April 2021

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Date April 2021	Navigation Rating					Number of Crossings
	Impassable < - - - - - > Good					
	Impassable	Difficulty Encountered	Some Difficulty Encountered	Relatively Good Crossing	Good Conditions	
	1	2	3	4	5	
1						2
2						6
3						0
4						0
5						0
6						0
7						1
8						0
9						28
10						30
11						23
12						8
13						15
14						80
15						42
16						66
17						60
18						15
19						18
20						50
21						31
22						96
23						79
24						135
25						264
26						72
27						14
28						2
29						22
30						16
					Total:	1,175

Marine Rescue NSW - Monitoring Results (Not including trawlers)

 Weekends

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