TWEEDSAND BYPASSING

ENVIRONMENTAL MONITORING SUMMARY – MARCH 2021

1. SAND PUMPING & DREDGING

- 3,067 m^3 was pumped to Snapper Rocks East.
- 18,854 m^3 was pumped to Duranbah.
- 0 m^3 of sand was dredged.

Sand Delivery March 2021

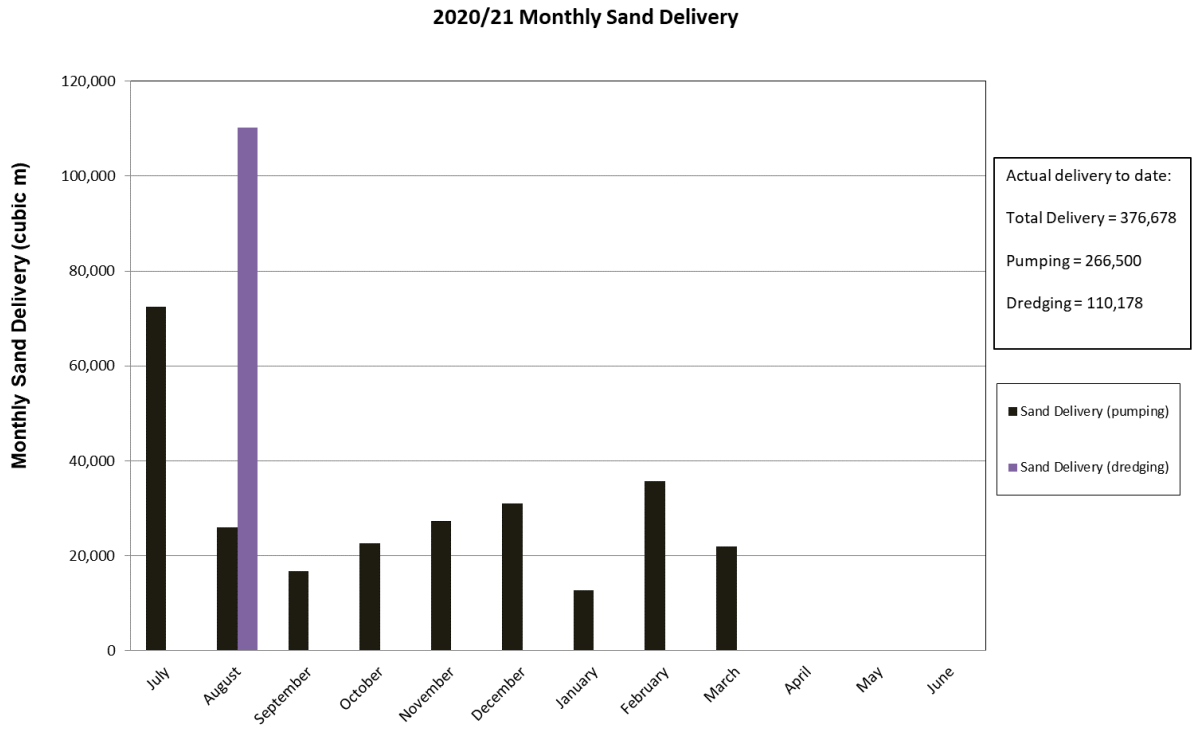
Pumped:	21,921 m^3
Dredged:	0 m^3
Total:	21,921 m^3

The number of days sand was pumped this month = 10

Stage II Sand Delivery May 2000 to date

Pumped:	10,146,761 m^3
Dredged*:	2,582,052 m^3
Total*:	12,728,813 m^3

* This Includes 22,870 m^3 of sand delivered by dredge to Palm Beach between June 2005 and September 2005

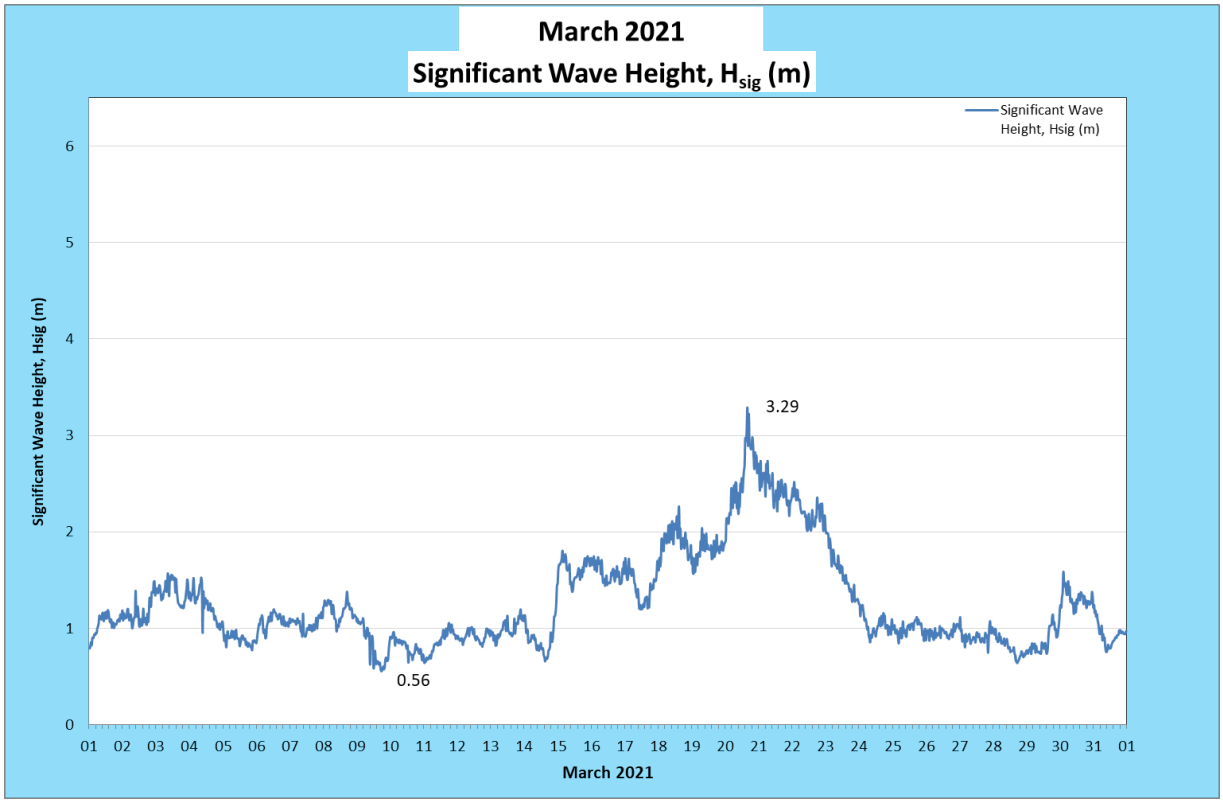


2. WAVE CONDITIONS

Significant wave heights (H_{sig}) were generally low to moderate with a swell event over 3m around the 20th March. Wave directions were generally from the SSE over the month.

- Minimum H_{sig}: 0.56 m on 9 March 2021
- Maximum H_{sig}: 3.29 m on 20 March 2021
- Number of days where H_{sig} <1 m at some point: 19
- Number of days where H_{sig} >2 m at some point: 6

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

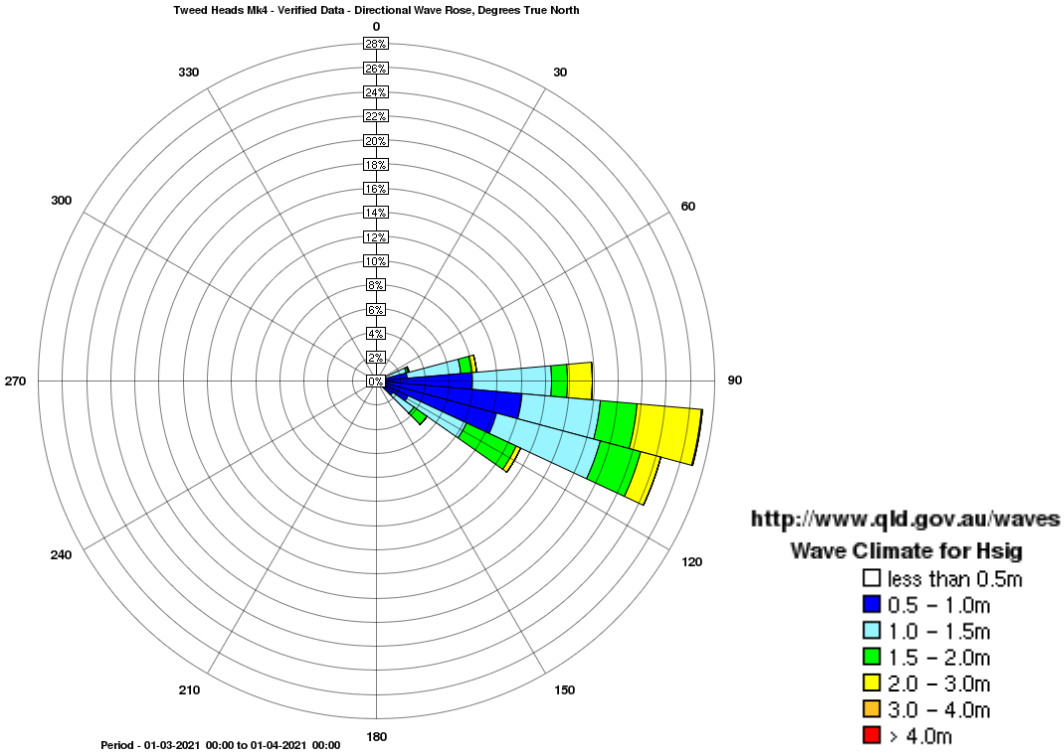


*(**Source:** Tweed Heads Waverider buoy; Queensland Government)*

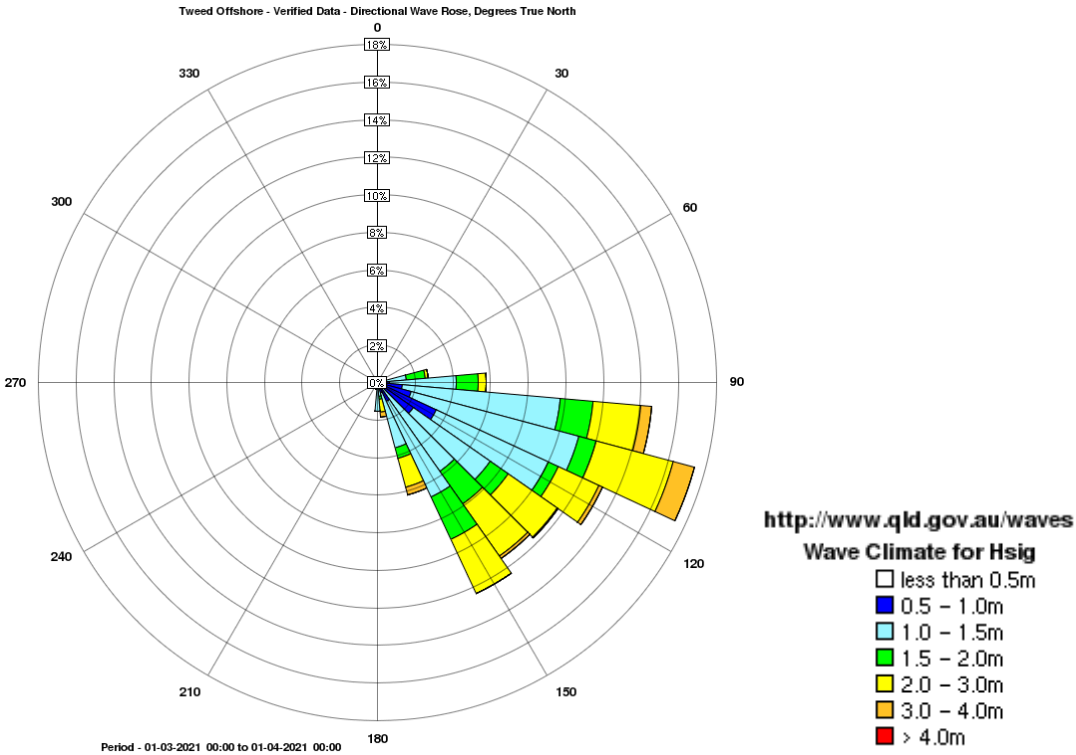
In January 2020 TSB commissioned the deployment of another Waverider buoy in the Tweed region. The Tweed Offshore Waverider buoy was deployed in approximately 60 m water depth to the east and adjacent to Kingscliff and Dreamtime Beaches. The purpose of the Tweed Offshore buoy is to observe and assess 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

NEARSHORE WAVE DIRECTION



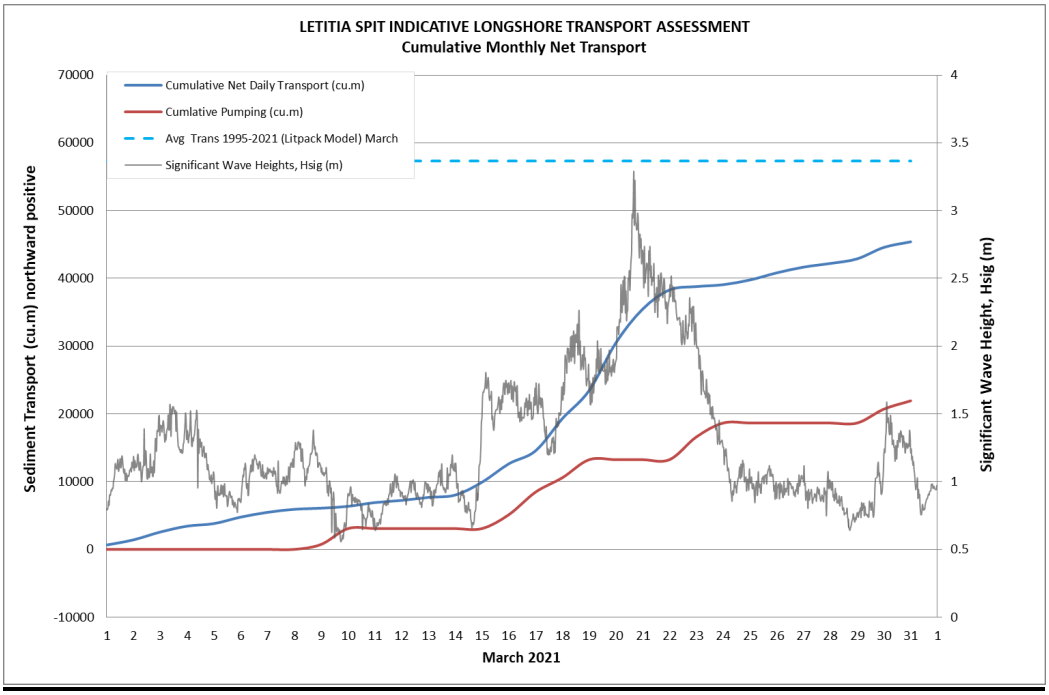
OFFSHORE WAVE DIRECTION

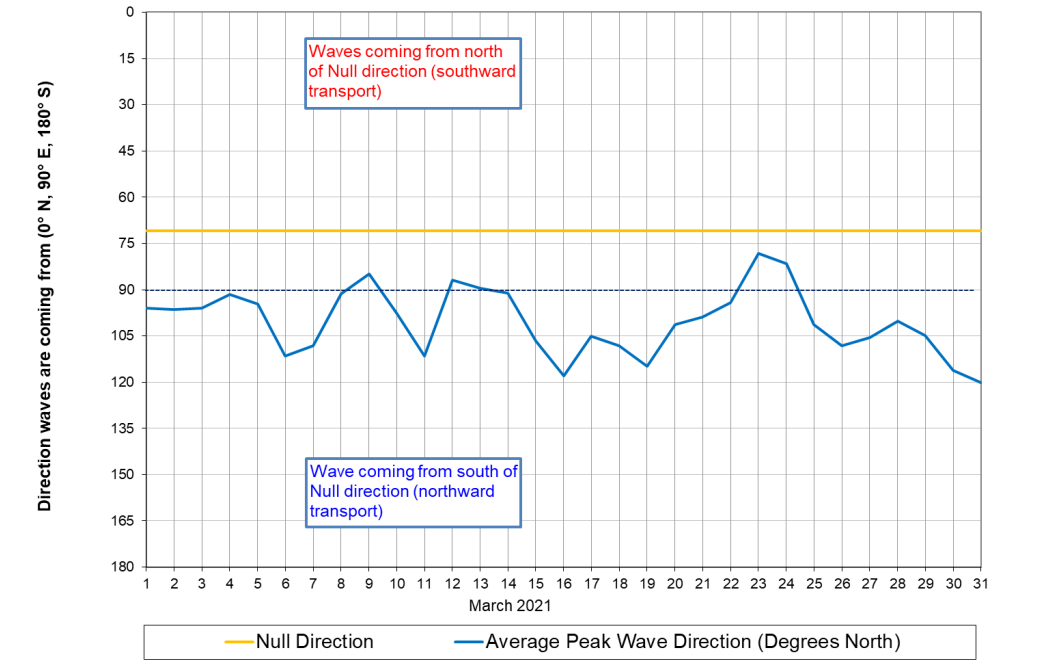


3. INDICATIVE LONGSHORE TRANSPORT

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).

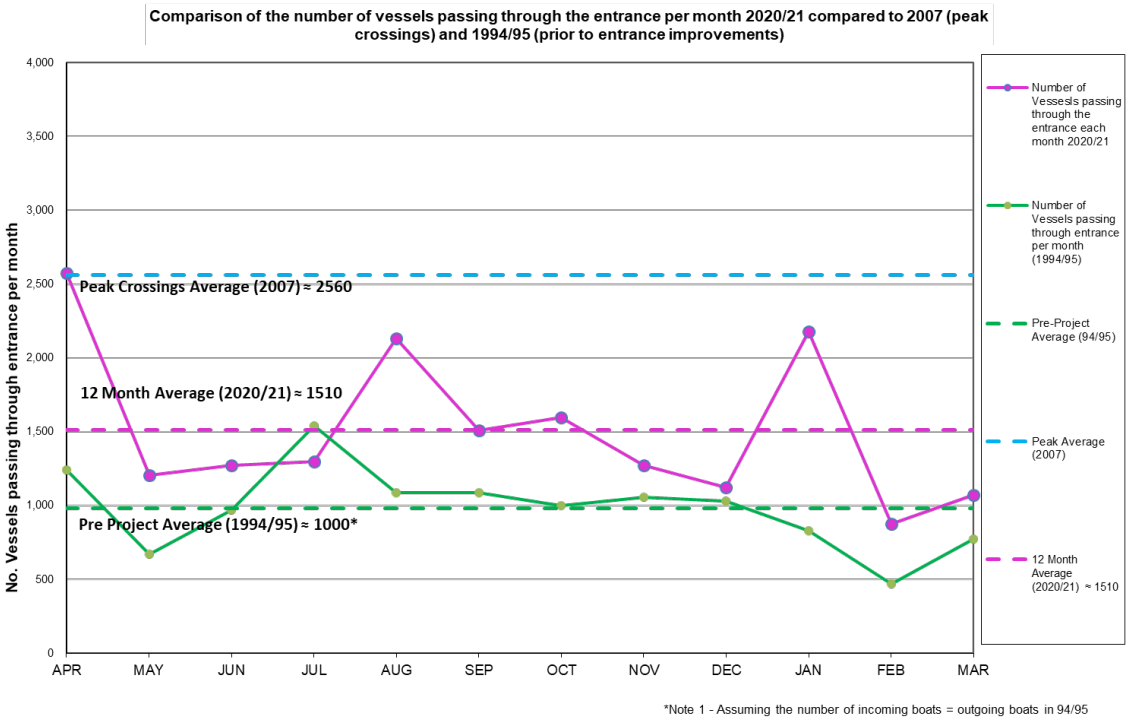
In March 2021 the estimated natural sand transport moving north towards the Tweed River entrance was calculated to be in the order of 45,000 cubic metres. This result is 79 per cent of the average estimated sand transport quantity of approximately 57,000 m^3 for the month of March.



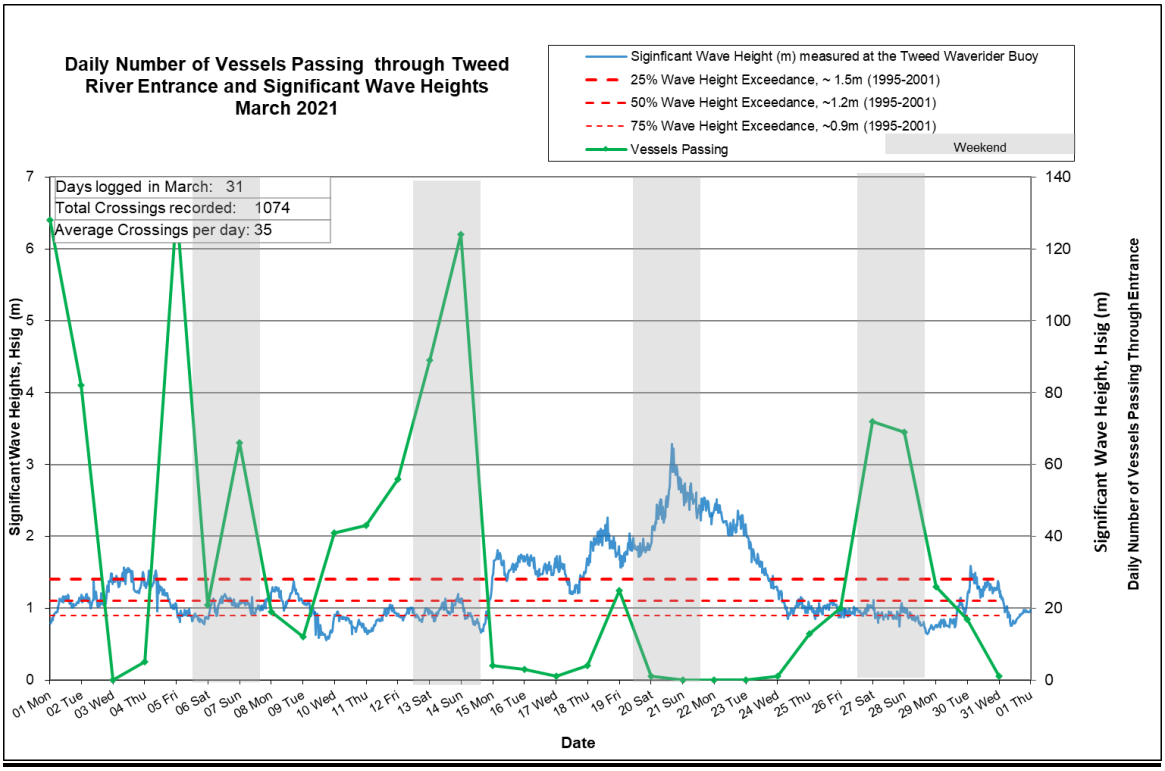


4. TWEED RIVER ENTRANCE USAGE

A total of 1,074 Tweed River entrance vessel crossings were recorded for the month (68 per cent of the March average (2002–2021)).



*Note 1 - Assuming the number of incoming boats = outgoing boats in 94/95



TWEEDSAND BYPASSING

Date March 2021	Navigation Rating Impassable < - - - - - > Good					Number of Crossings
	Impassable	Difficulty Encountered	Some Difficulty Encountered	Relatively Good Crossing	Good Conditions	
	1	2	3	4	5	
1						128
2						82
3						0
4						5
5						131
6						21
7						66
8						19
9						12
10						41
11						43
12						56
13						89
14						124
15						4
16						3
17						1
18						4
19						25
20						1
21						0
22						0
23						0
24						1
25						13
26						20
27						72
28						69
29						26
30						17
31						1
					Total:	1,074

Marine Rescue NSW - Monitoring Results (Not including trawlers)

Weekends

Source: *Marine Rescue NSW, Point Danger*