

TWEED SAND BYPASSING

OVERVIEW

In April 2020:

- 30,744 m³ was pumped to Snapper Rocks East.
- 0 m³ of sand was dredged.
- Significant wave heights ranged from calm to moderate (0.26 m to 1.29 m), with a maximum significant wave height of 1.29 m on 30th April. Wave directions were predominantly from the ESE.
- 2,575 vessel crossings were recorded for the month (This is 106% of the March average (2002 – 2019)).
- The modelled estimated amount of sand moving north towards the Tweed River entrance by natural processes was in the order of 18,500 m³ (this is 31% of the March average of 59,000 m³).

1. SAND PUMPING & DREDGING

Sand Delivery April 2020

Pumped:	30,774 m ³
Dredged:	0 m ³
Total:	30,774 m ³

The number of days sand was pumped this month = 20

Sand Delivery January to April 2020

Pumped:	111,939 m ³
Dredged:	0 m ³
Total:	111,939 m ³

Stage II Sand Delivery May 2000 to March 2020

Pumped:	9,761,391 m ³
Dredged:	2,471,874 m ³ *
Total:	12,233,265 m ³ *

* This Includes 22,870 m³ of sand delivered by dredge to Palm Beach between November and November 2005

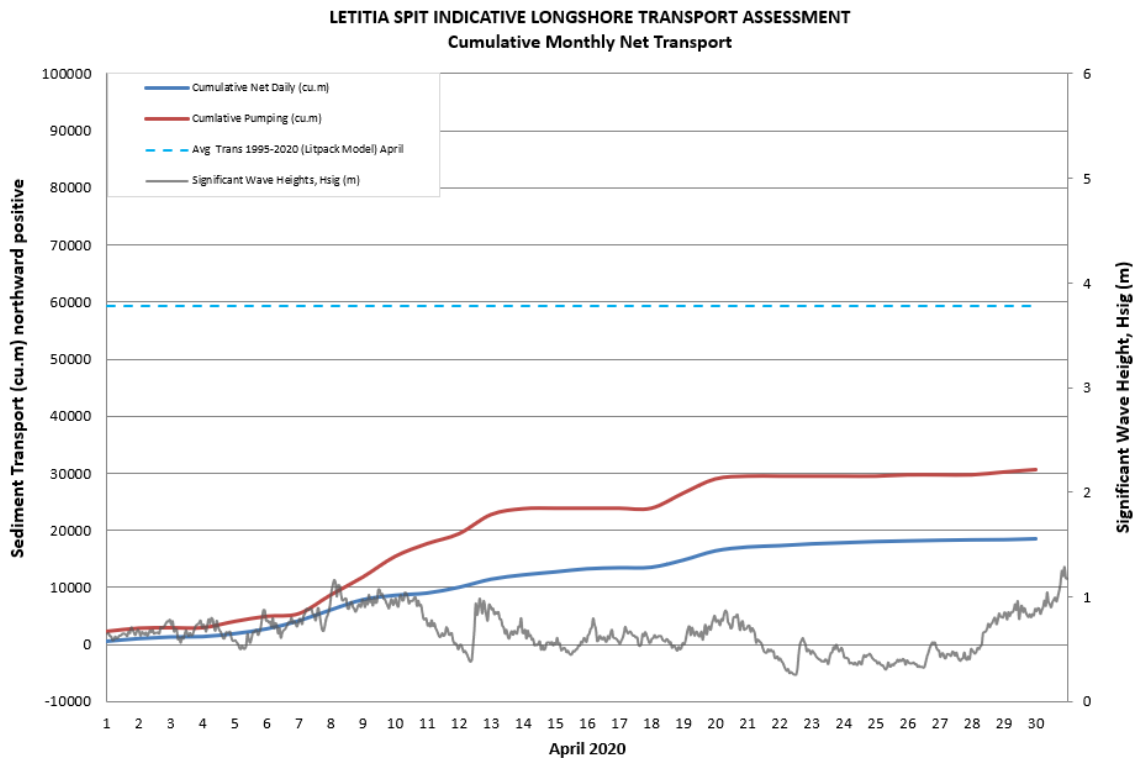
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2. INDICATIVE LONGSHORE TRANSPORT

The graph below is based on simplified sediment transport modelling and is indicative only.

In April 2020 the estimated natural sand transport moving north towards the Tweed River entrance was calculated to be 18,500 m³.

This result is 31% of the average estimated sand transport quantity of approximately 59,000 m³ for the month of April.



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3. TWEED RIVER ENTRANCE USAGE

Date April 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						27
2						66
3						38
4						9
5						103
6						61
7						22
8						7
9						10
10						86
11						21
12						33
13						122
14						85
15						101
16						63
17						9
18						134
19						207
20						106
21						110
22						165
23						112
24						202
25						248
26						199
27						131
28						46
29						50
30						2
					Total:	2,575

Marine Rescue NSW - Monitoring Results (Not including trawlers)

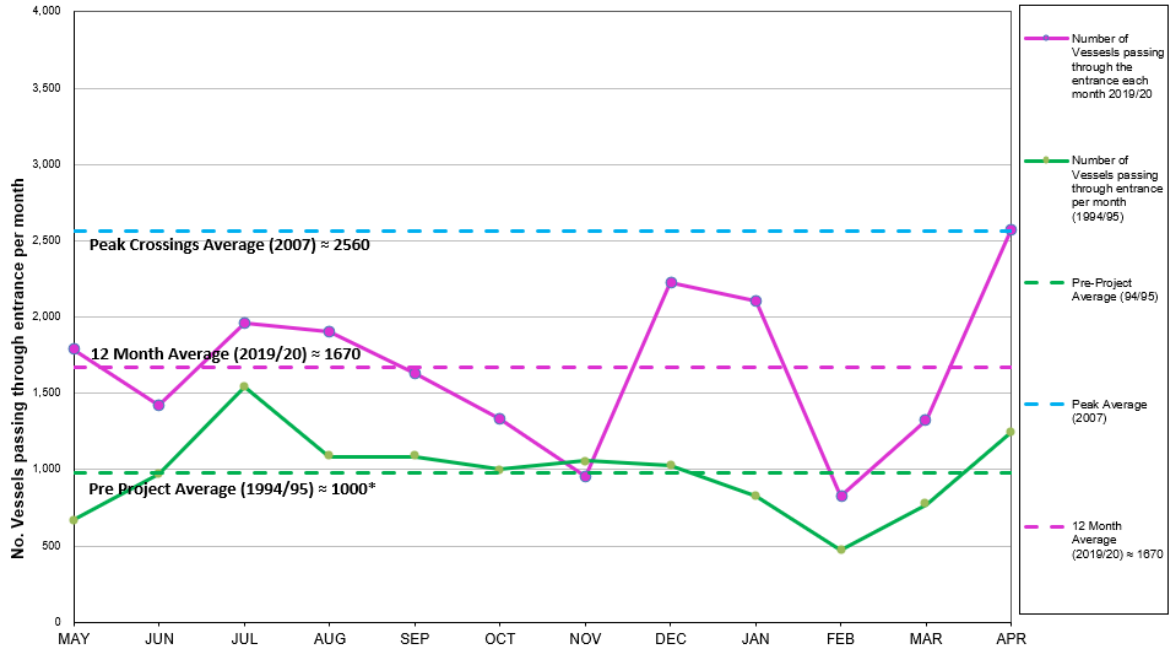
 Weekends

Source: Marine Rescue NSW, Point Danger

* Total does not include trawlers

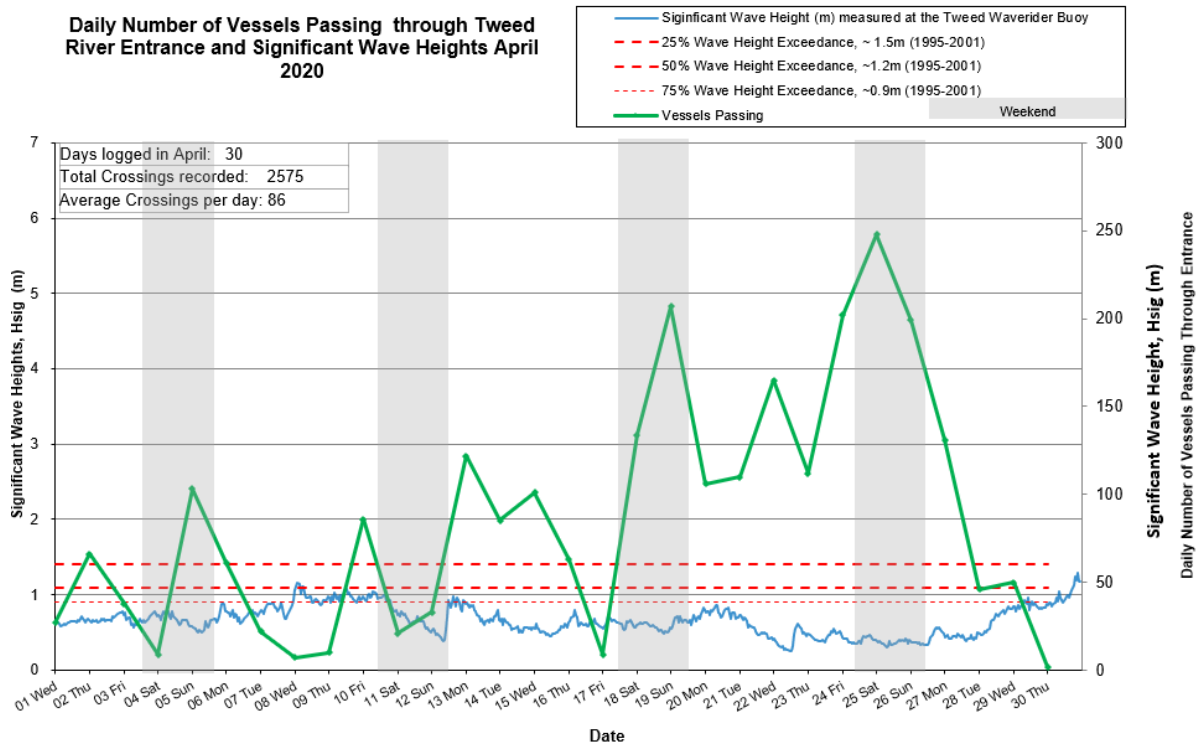
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Comparison of the number of vessels passing through the entrance per month 2019/20 compared to 2007 (peak crossings) and 1994/95 (prior to entrance improvements)



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

Daily Number of Vessels Passing through Tweed River Entrance and Significant Wave Heights April 2020



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4. WAVE CONDITIONS

Wave conditions over the month: Significant wave heights ranged mostly from calm to moderate (0.26 m to 1.29 m), with a peak significant wave height of 1.29 m on 30th April. Wave directions were predominantly from the ESE.

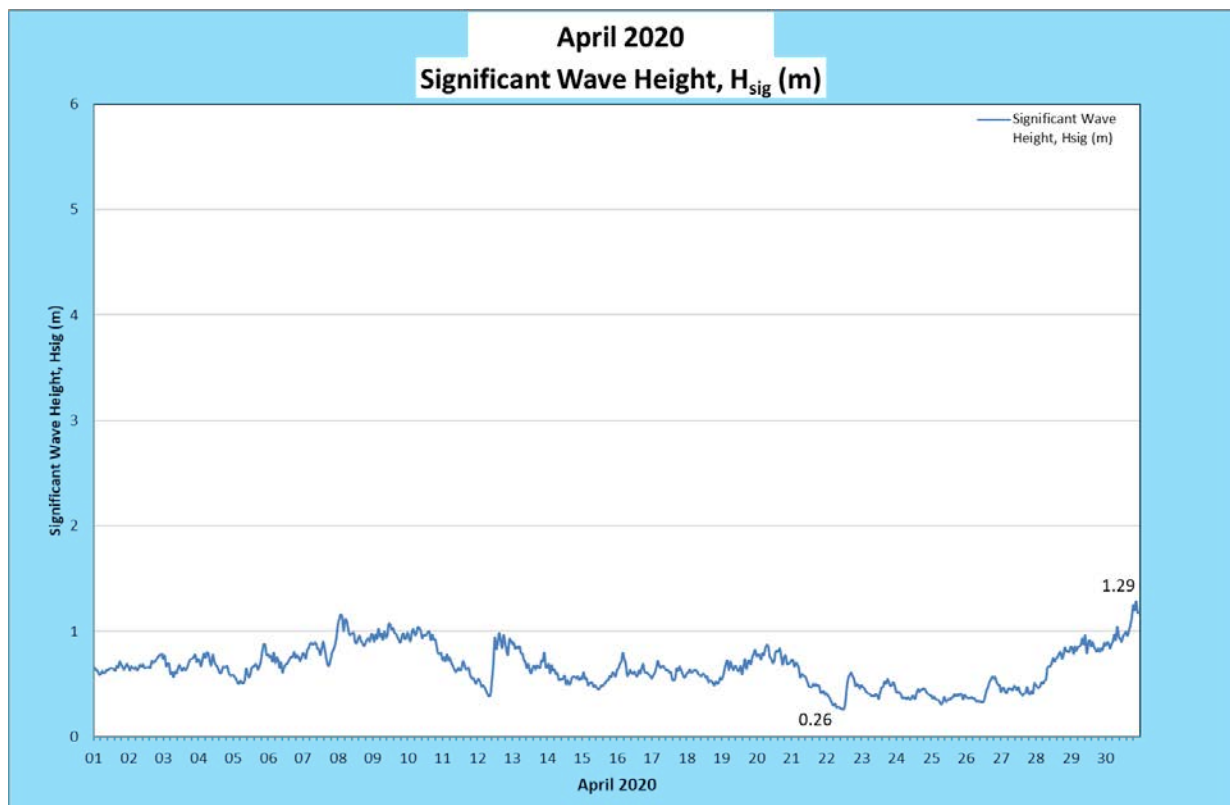
Monthly minimum significant wave height: 0.26 m on 22nd April

Monthly maximum significant wave height: 1.29 m on 30th April

Number of days on which waves were below 1.0 m at some point in the day: 30 days

Number of days on which waves were above 2.0 m at some point in the day: 0 days

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



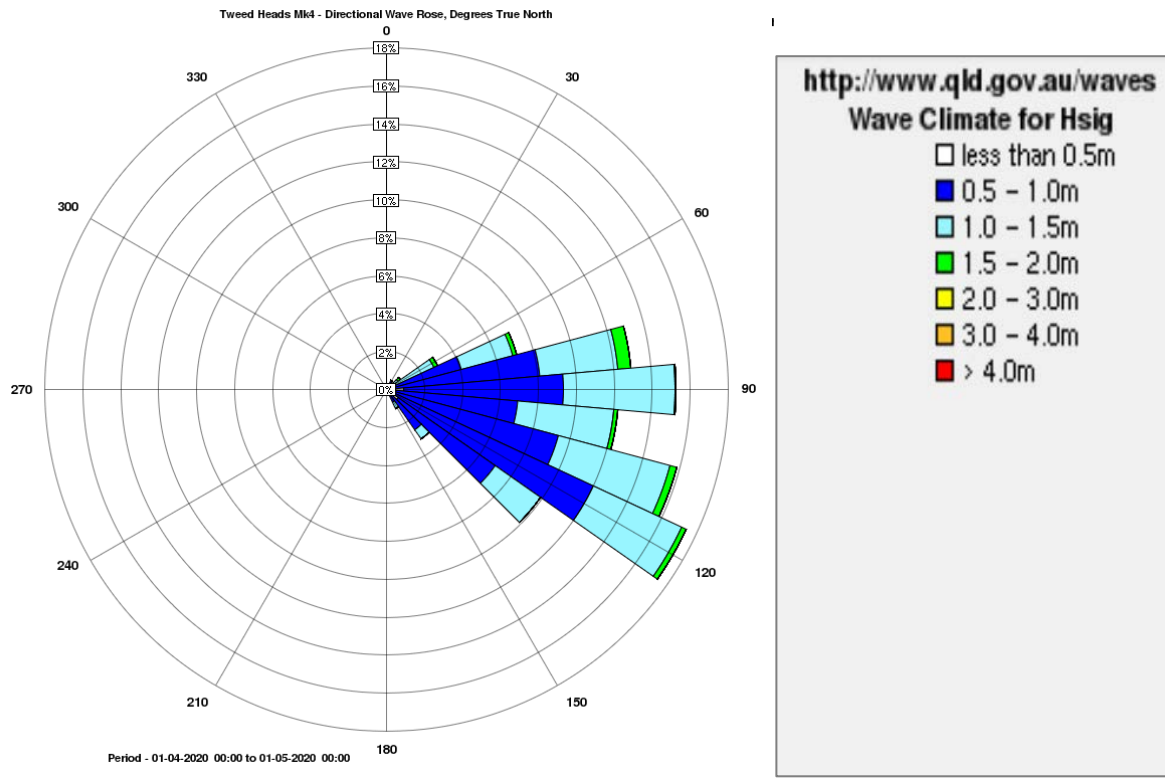
(Source: Tweed Heads Waverider buoy; Queensland Government)

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.

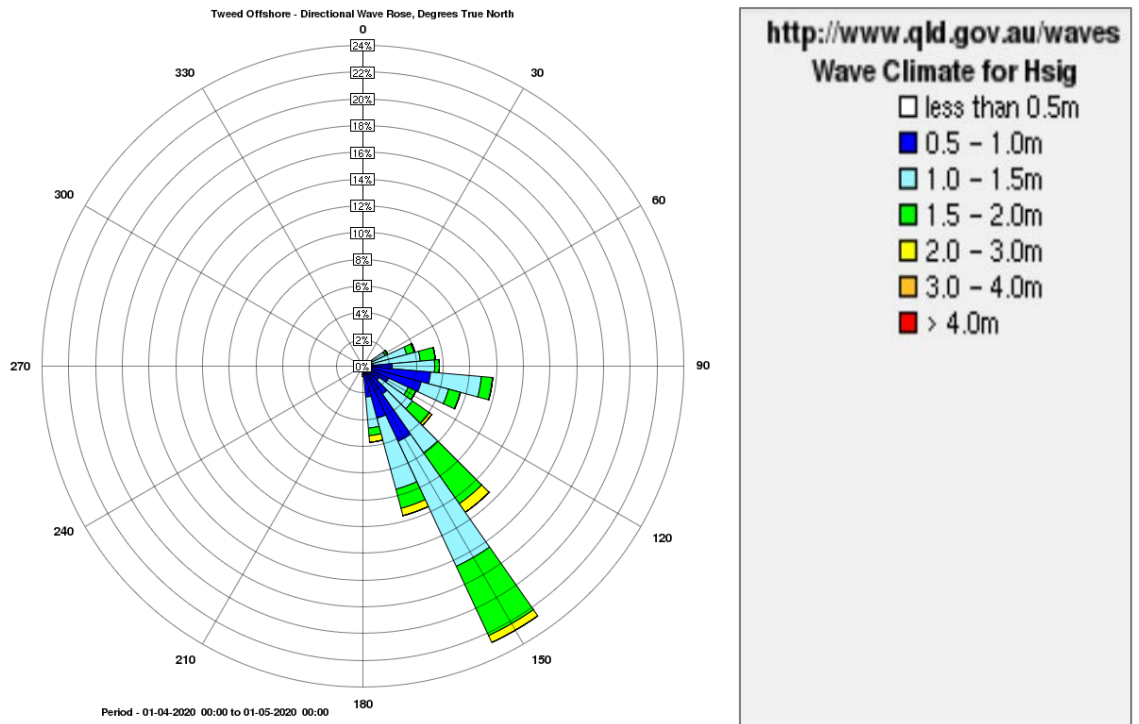
A link to data recorded by the Tweed Heads and Tweed Offshore Waverider buoys is available at: <http://www.qld.gov.au/waves>

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WAVE DIRECTION



(Source: Tweed Heads Waverider buoy; Queensland Government)



(Source: Tweed Offshore Waverider buoy; Queensland Government)