

# TWEED SAND BYPASSING

## OVERVIEW

In May 2020:

- 44,821 m<sup>3</sup> was pumped to Snapper Rocks East.
- 14,415 m<sup>3</sup> was pumped to Duranbah
- 0 m<sup>3</sup> of sand was dredged.
- Significant wave heights ranged from calm to moderate (0.37 m to 1.6 m), with a maximum significant wave height of 1.6 m on 15<sup>th</sup> May. Wave directions were predominantly from the ESE.
- 1,205 vessel crossings were recorded for the month (This is 106% of the May average (2002 – 2019)).
- The modelled estimated amount of sand moving north towards the Tweed River entrance by natural processes was in the order of 82,000 m<sup>3</sup> (this is 131% of the May average of 63,000 m<sup>3</sup>).

## 1. SAND PUMPING & DREDGING

### **Sand Delivery May 2020**

Pumped:	59,236 m <sup>3</sup>
Dredged:	0 m <sup>3</sup>
Total:	59,236 m <sup>3</sup>

The number of days sand was pumped this month = 22

### **Sand Delivery January to May 2020**

Pumped:	171,175 m <sup>3</sup>
Dredged:	0 m <sup>3</sup>
Total:	171,175 m <sup>3</sup>

### **Stage II Sand Delivery May 2000 to May 2020**

Pumped:	9,820,627 m <sup>3</sup>
Dredged:	2,471,874 m <sup>3</sup> *
Total:	12,292,501 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

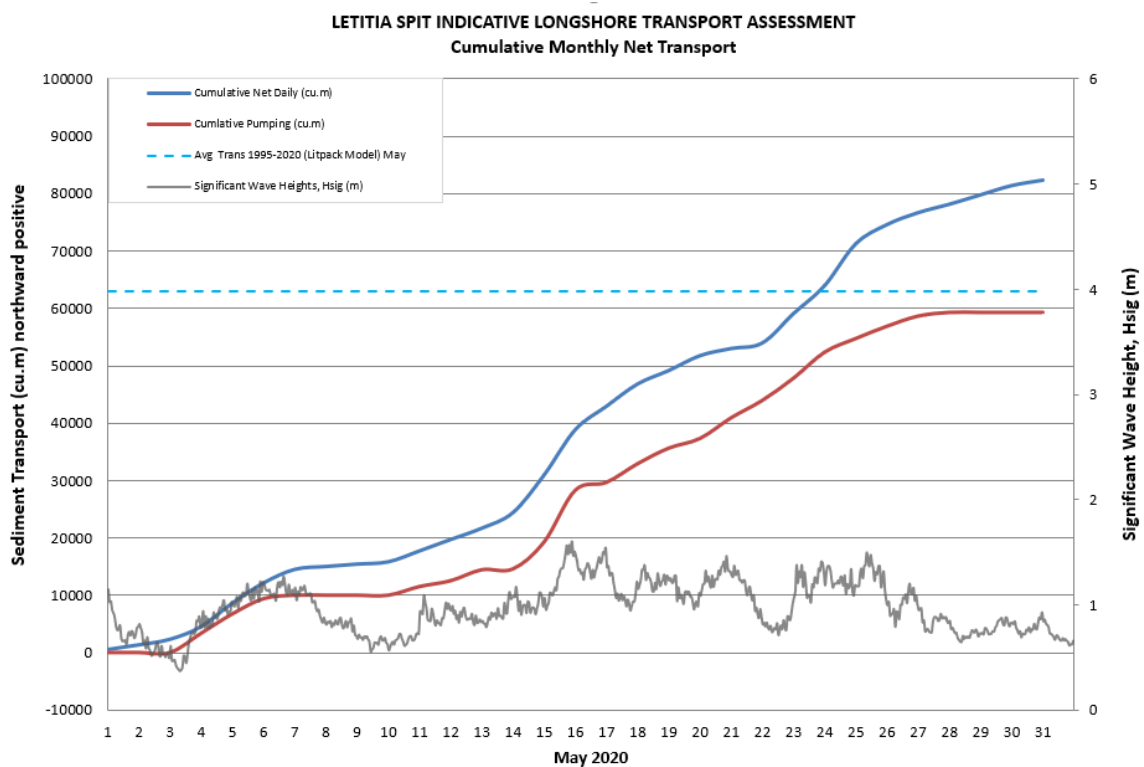
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## 2. INDICATIVE LONGSHORE TRANSPORT

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

In May 2020 the estimated natural sand transport moving north towards the Tweed River entrance was calculated to be 82,000 m<sup>3</sup>.

This result is 131% of the average estimated sand transport quantity of approximately 63,000 m<sup>3</sup> for the month of May.



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## 3. TWEED RIVER ENTRANCE USAGE

Date May 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						48	
2						67	
3						77	
4						11	
5						0	
6						5	
7						16	
8						113	
9						126	
10						57	
11						2	
12						1	
13						87	
14						32	
15						2	
16						0	
17						3	
18						2	
19						9	
20						36	
21						8	
22						56	
23						56	
24						17	
25						3	
26						21	
27						24	
28						87	
29						16	
30						24	
31						199	
						<b>Total:</b>	1,205

Marine Rescue NSW - Monitoring Results (Not including trawlers)

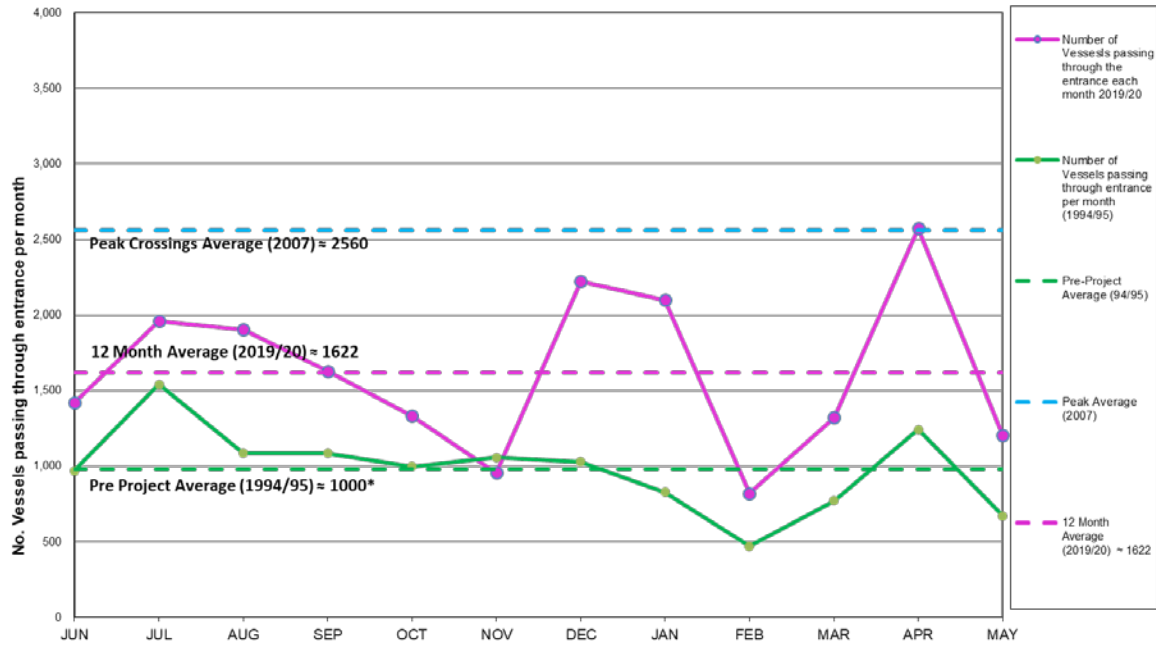
 Weekends

Source: Marine Rescue NSW, Point Danger

\* Total does not include trawlers

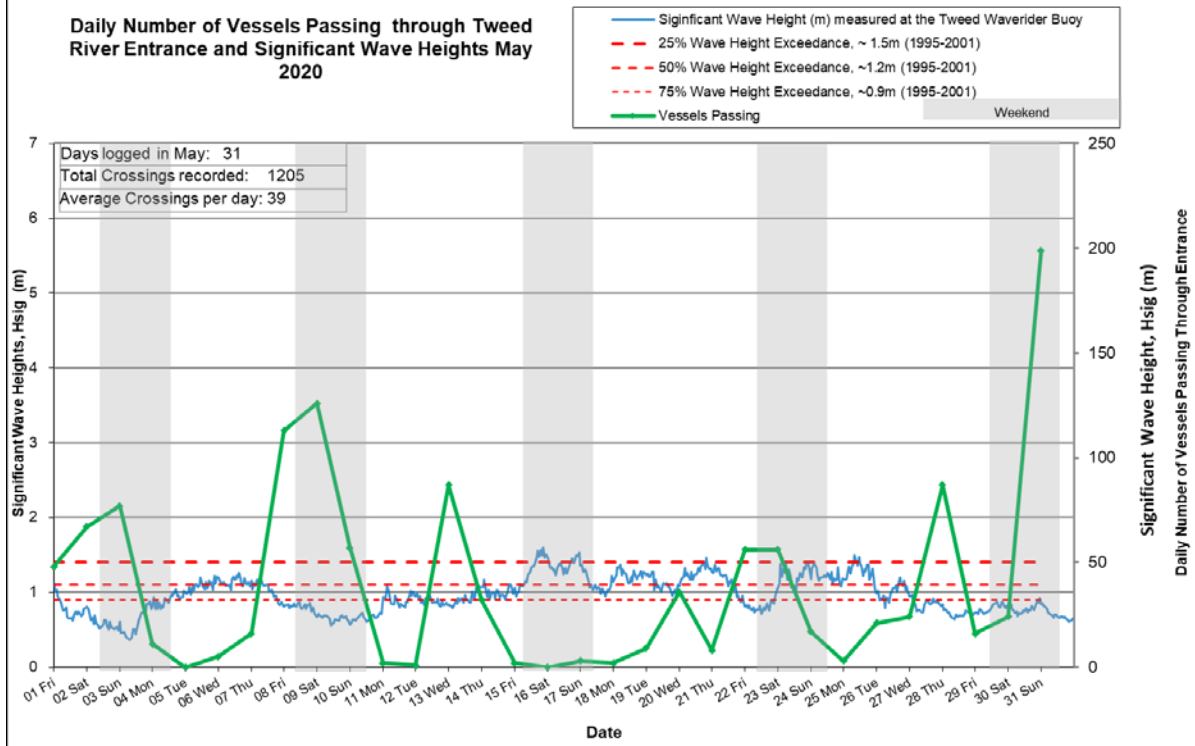
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Comparison of the number of vessels passing through the entrance per month 2019/20 compared to 2007 (peak crossings) and 1994/95 (prior to entrance improvements)



\*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 May 2020



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## 4. WAVE CONDITIONS

Wave conditions over the month: Significant wave heights ranged mostly from calm to moderate (0.37 m to 1.6 m), with a peak significant wave height of 1.6 m on 15<sup>th</sup> May. Wave directions were predominantly from the ESE.

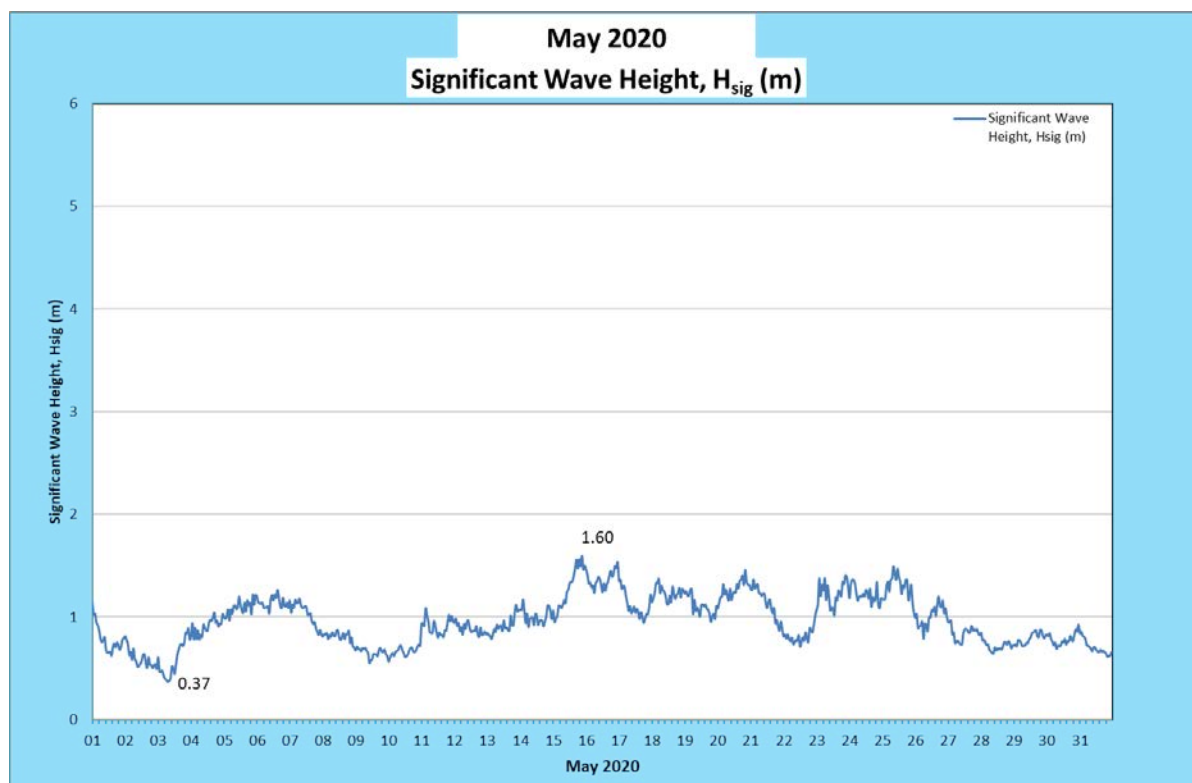
Monthly minimum significant wave height: 0.37 m on 3<sup>rd</sup> May

Monthly maximum significant wave height: 1.6 m on 15<sup>th</sup> May

Number of days on which waves were below 1.0 m at some point in the day: 24 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



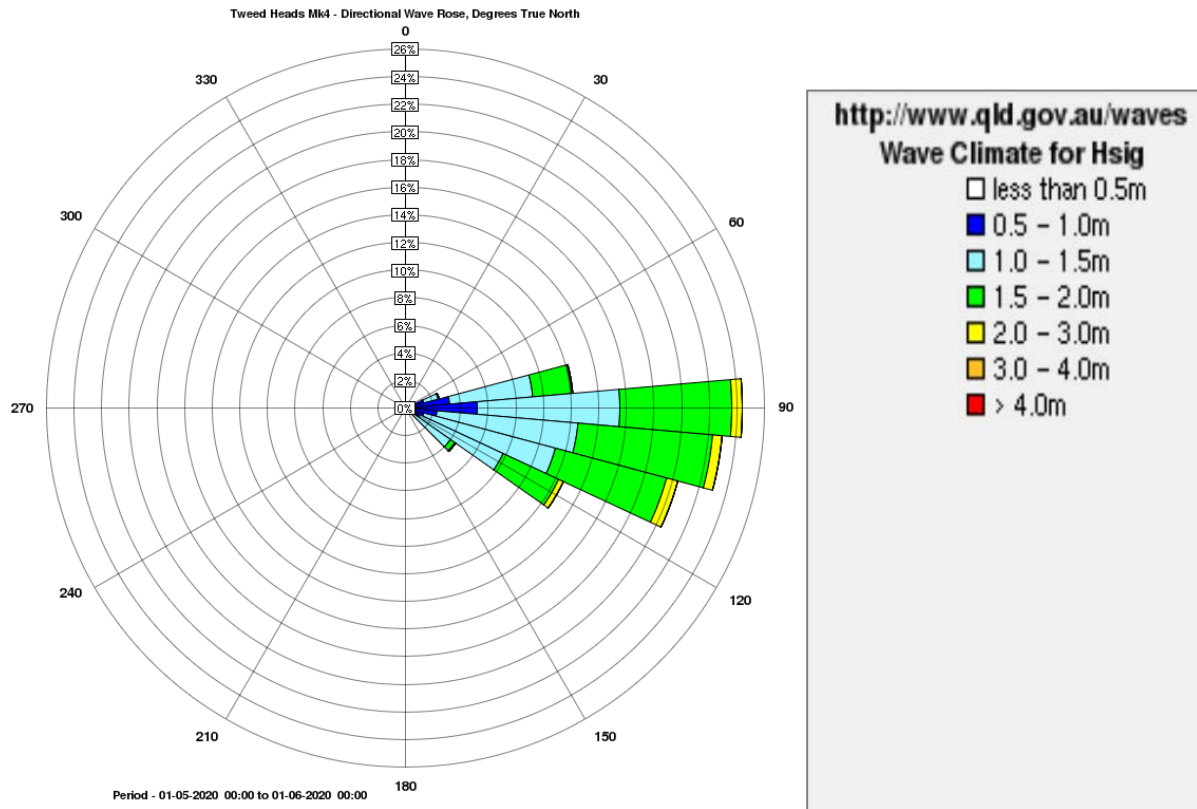
(Source: Tweed Heads Waverider buoy; Queensland Government)

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.

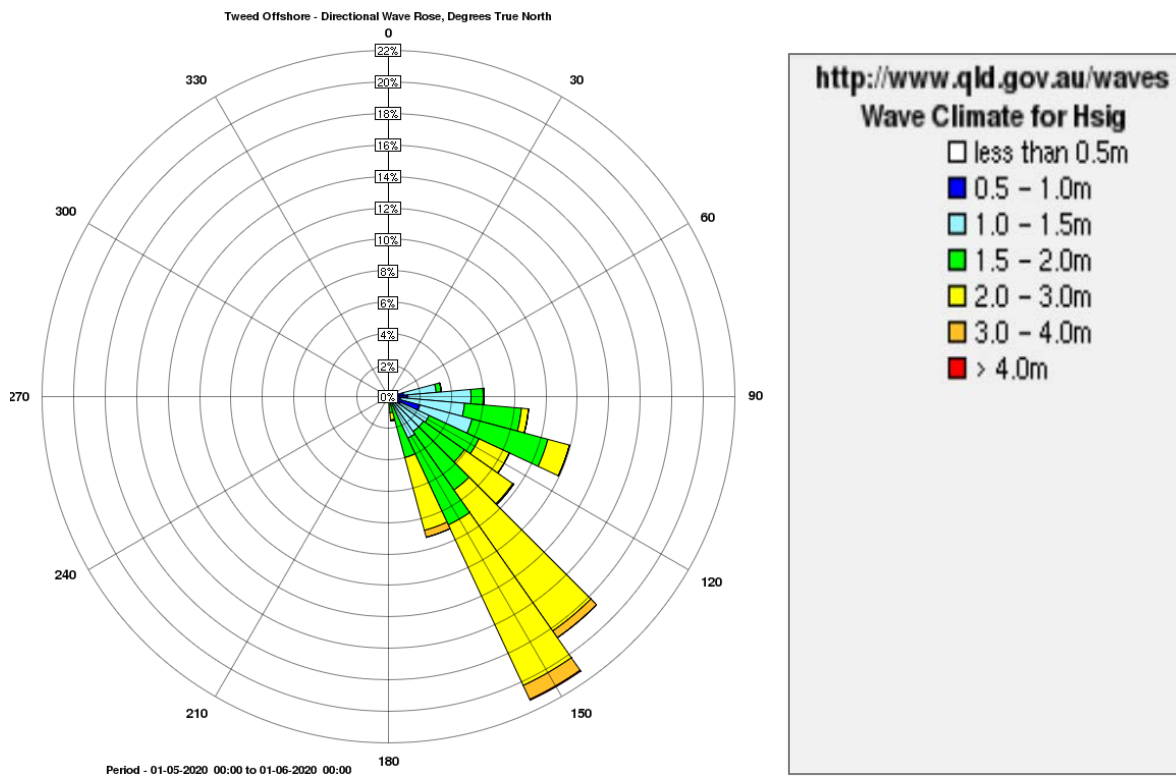
A link to data recorded by the Tweed Heads and Tweed Offshore Waverider buoys is available at: <http://www.qld.gov.au/waves>

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## WAVE DIRECTION



(Source: Tweed Heads Waverider buoy; Queensland Government)



(Source: Tweed Offshore Waverider buoy; Queensland Government)