

# TWEED SAND BYPASSING

## OVERVIEW

In April 2019:

- 38,412 m<sup>3</sup> of sand was pumped to Snapper Rocks East.
- 0 m<sup>3</sup> of sand was dredged and placed at Snapper Rocks East.
- Significant wave heights ranged mostly from calm to moderate (0.70 m to 2.63 m), with a maximum significant wave height of 2.63 m on 20<sup>th</sup> April. Wave directions were predominantly from the east and ENE.
- 1,078 vessel crossings were recorded for the month (This is 69% of the April average (2002 – 2019)).
- The modelled estimated amount of sand moving north towards the Tweed River entrance by natural processes was in the order of 42,000 m<sup>3</sup> (this is 58% of the April average of 60,061 m<sup>3</sup>).

## 1. SAND PUMPING & DREDGING

### **Sand Delivery April 2019**

Pumped:	38,412 m <sup>3</sup>
Dredged:	0 m <sup>3</sup>
Total:	38,412 m <sup>3</sup>

The number of days sand was pumped this month = 21

### **Sand Delivery January 2019 to December 2019**

Pumped:	138,115 m <sup>3</sup>
Dredged:	0 m <sup>3</sup>
Total:	138,115 m <sup>3</sup>

### **Stage II Sand Delivery April 2000 to April 2019**

Pumped:	9,427,515 m <sup>3</sup>
Dredged:	2,320,514 m <sup>3</sup> *
Total:	11,748,029 m <sup>3</sup> *

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

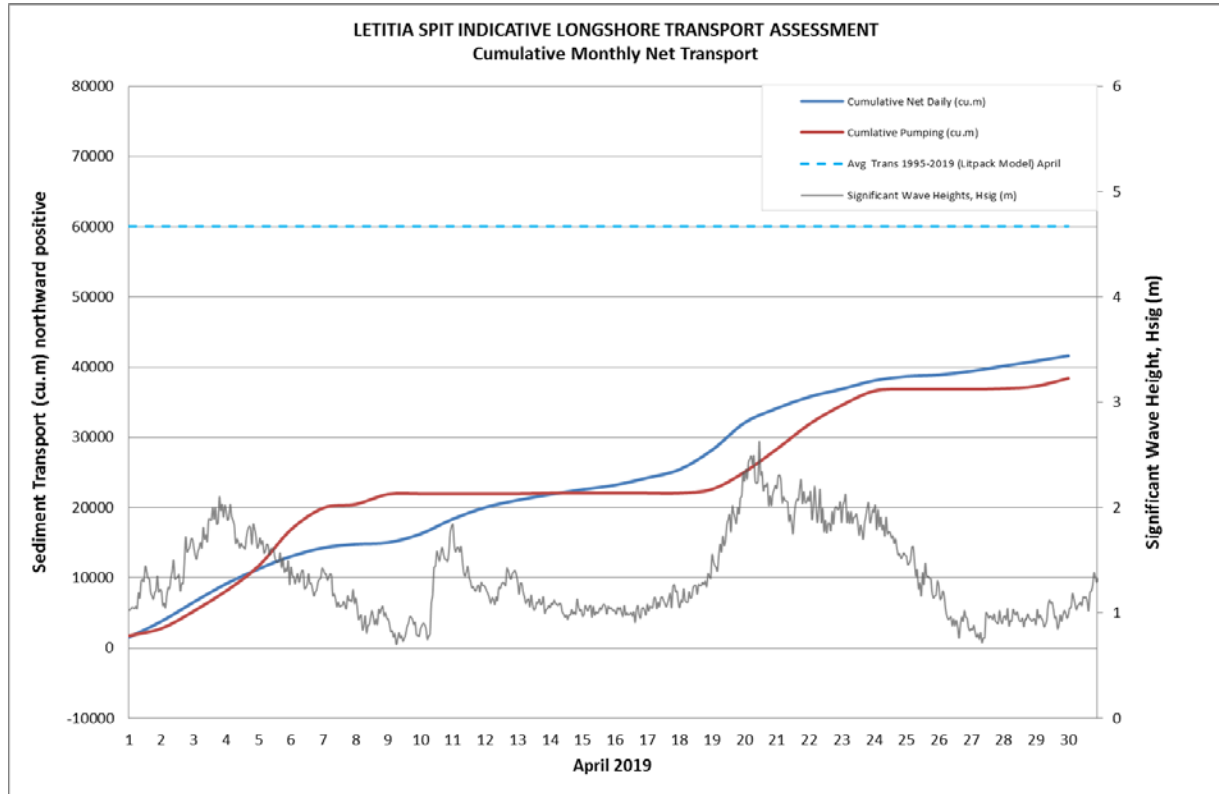
## 2. INDICATIVE LONGSHORE TRANSPORT

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

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In April 2019 the estimated natural sand transport moving north towards the Tweed River entrance was calculated to be 41,616 m<sup>3</sup>.


This result is 69% of the average estimated sand transport quantity of approximately 60,061 m<sup>3</sup> for the month of April.



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## 3. TWEED RIVER ENTRANCE USAGE

Marine Rescue NSW - Monitoring Results (Not including trawlers)

 Weekends

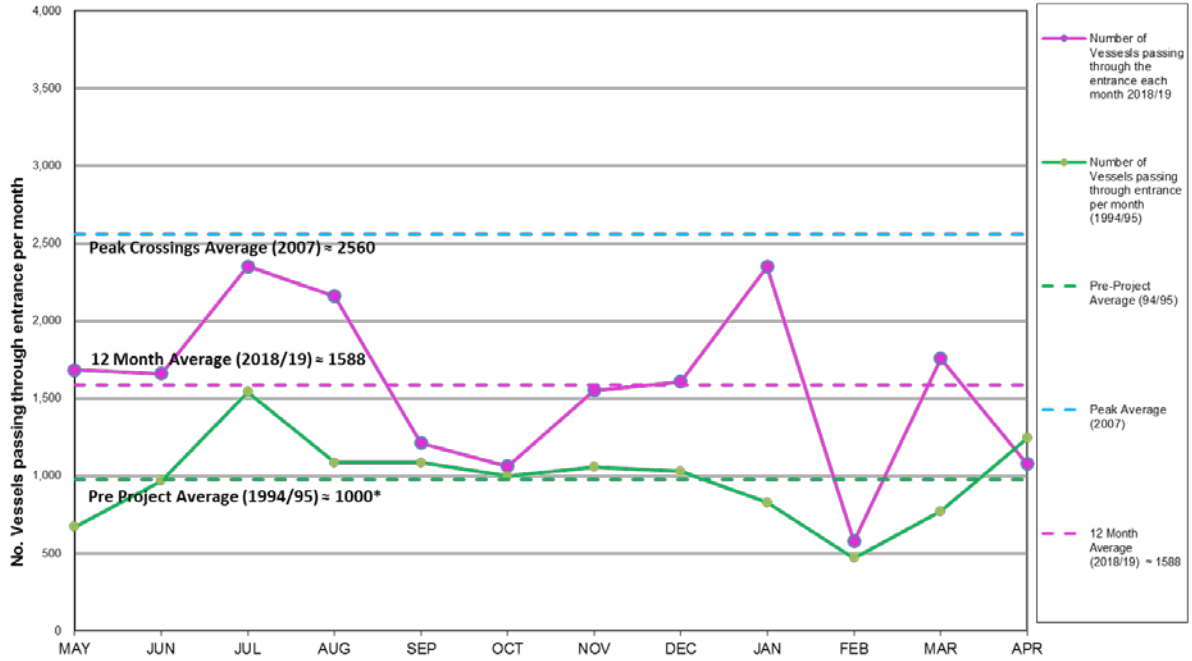
Date April 2019	Navigation Rating					Number of Crossings
	Impassable < - - - - > Good					
	Impassable	Difficulty Encountered	Some Difficulty Encountered	Relatively Good Crossing	Good Conditions	
	1	2	3	4	5	
1						17
2						5
3						5
4						0
5						8
6						67
7						160
8						67
9						30
10						11
11						4
12						25
13						46
14						86
15						40
16						22
17						31
18						19
19						28
20						4
21						1
22						2
23						2
24						1
25						105
26						112
27						39
28						109
29						26
30						6
					<b>Total:</b>	1078

Source: Marine Rescue NSW, Point Danger

\* Total does not include trawlers

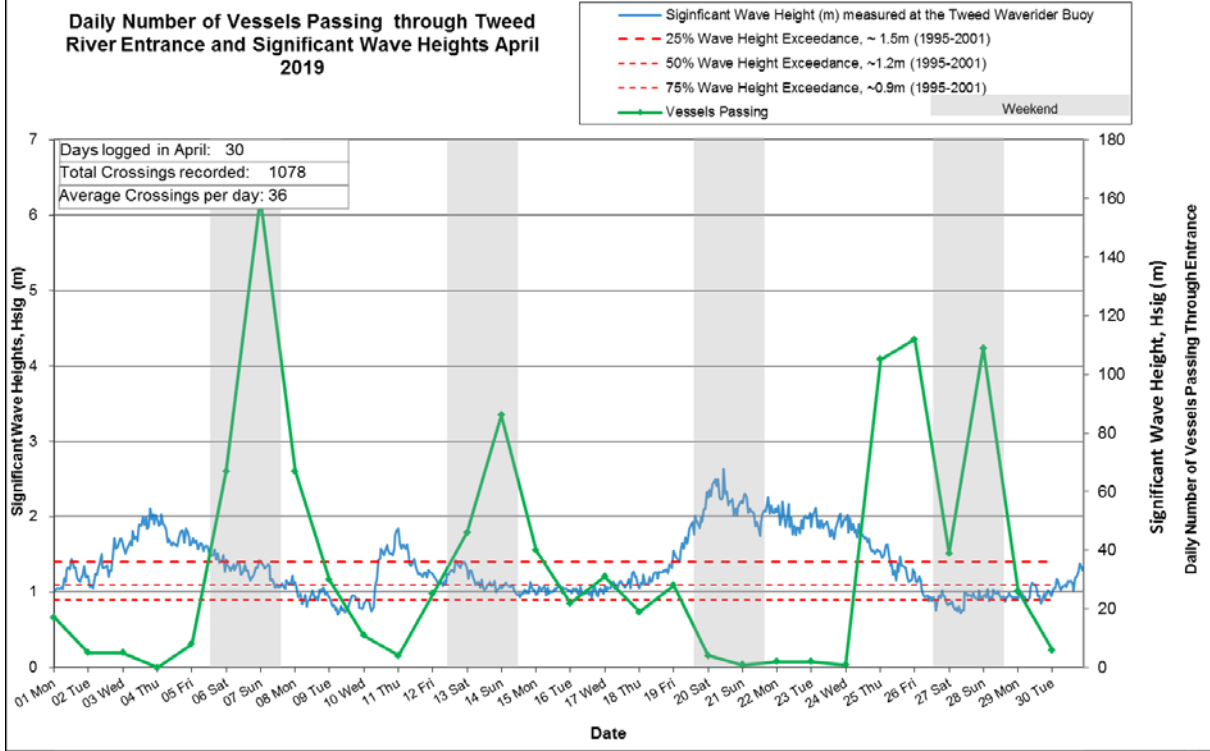
# TWEED SAND BYPASSING

Comparison of the number of vessels passing through the entrance per month 2018/19 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 2019



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## 4. WAVE CONDITIONS

Wave conditions over the month: Significant wave heights ranged mostly from calm to moderate (0.70 m to 2.63 m), with a peak significant wave height of 2.63 m on 20<sup>th</sup> April. Wave directions were predominantly from the east and ENE.

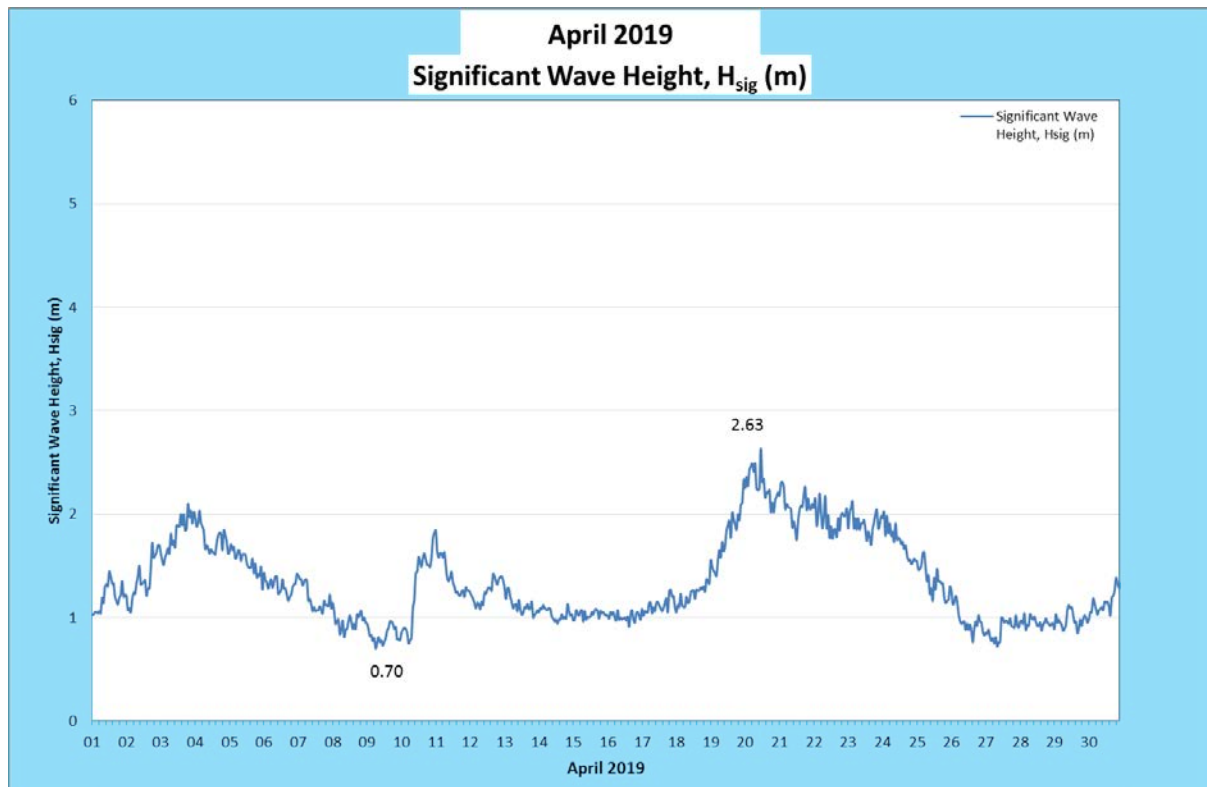
Monthly minimum significant wave height: 0.70 m on 9<sup>th</sup> April

Monthly maximum significant wave height: 2.63 m on 20<sup>th</sup> April

Number of days on which waves were below 1.0 m at some point in the day: 11 days

Number of days on which waves were above 2.0 m at some point in the day: 8 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

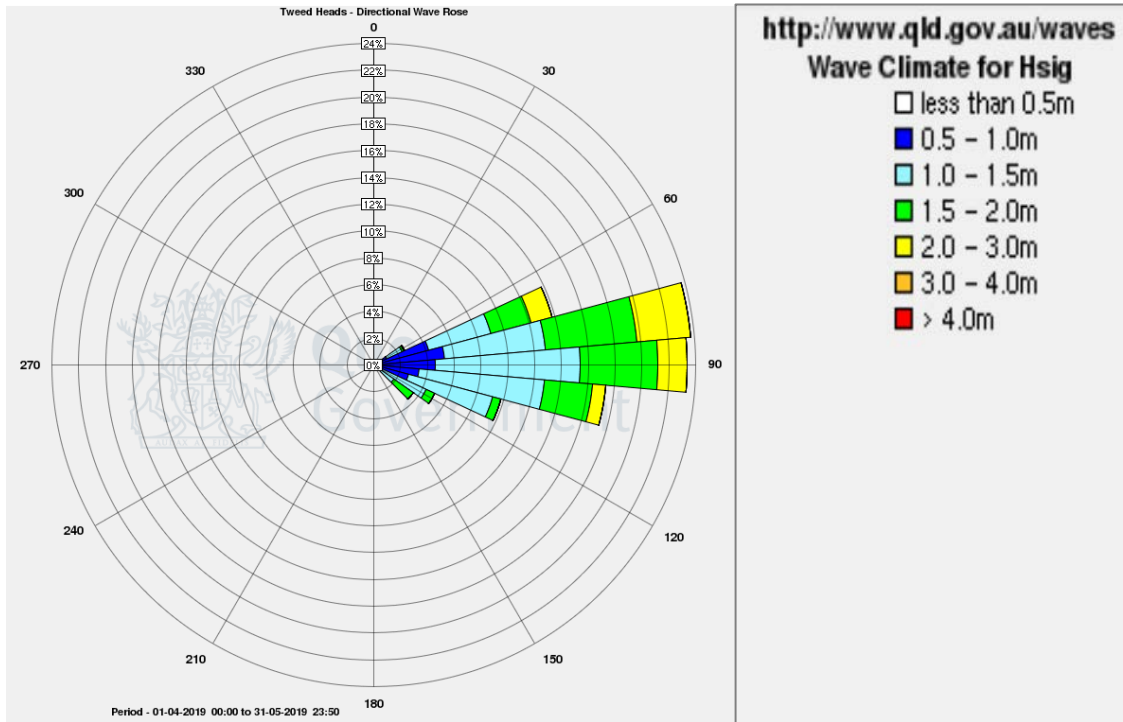


(Source: Tweed Heads Waverider Buoy; Queensland Government)

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

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## WAVE DIRECTION



(Source: Tweed Heads Waverider Buoy; Queensland Government)