

# TWEED SAND BYPASSING

## OVERVIEW

In September 2019:

- 21,950 m<sup>3</sup> of sand was pumped to Snapper Rocks East.
- 0 m<sup>3</sup> of sand was dredged.
- Significant wave heights ranged from calm to moderate (0.35 m to 1.46 m), with a maximum significant wave height of 1.46 m on 10<sup>th</sup> September. Wave directions were predominantly from the SE.
- 1,630 vessel crossings were recorded for the month (This is 98% of the September average (2002 – 2019)).
- The modelled estimated amount of sand moving north towards the Tweed River entrance by natural processes was in the order of 43,000 m<sup>3</sup> (this is 154% of the September average of 27,855 m<sup>3</sup>).

## 1. SAND PUMPING & DREDGING

### **Sand Delivery September 2019**

Pumped:	21,950 m <sup>3</sup>
Dredged:	0 m <sup>3</sup>
Total:	21,950 m <sup>3</sup>

The number of days sand was pumped this month = 13

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

Pumped:	314,458 m <sup>3</sup>
Dredged:	151,360 m <sup>3</sup>
Total:	465,818 m <sup>3</sup>

### **Stage II Sand Delivery May 2000 to September 2019**

Pumped:	9,603,858 m <sup>3</sup>
Dredged:	2,471,874 m <sup>3</sup> *
Total:	12,075,732 m <sup>3</sup> *

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

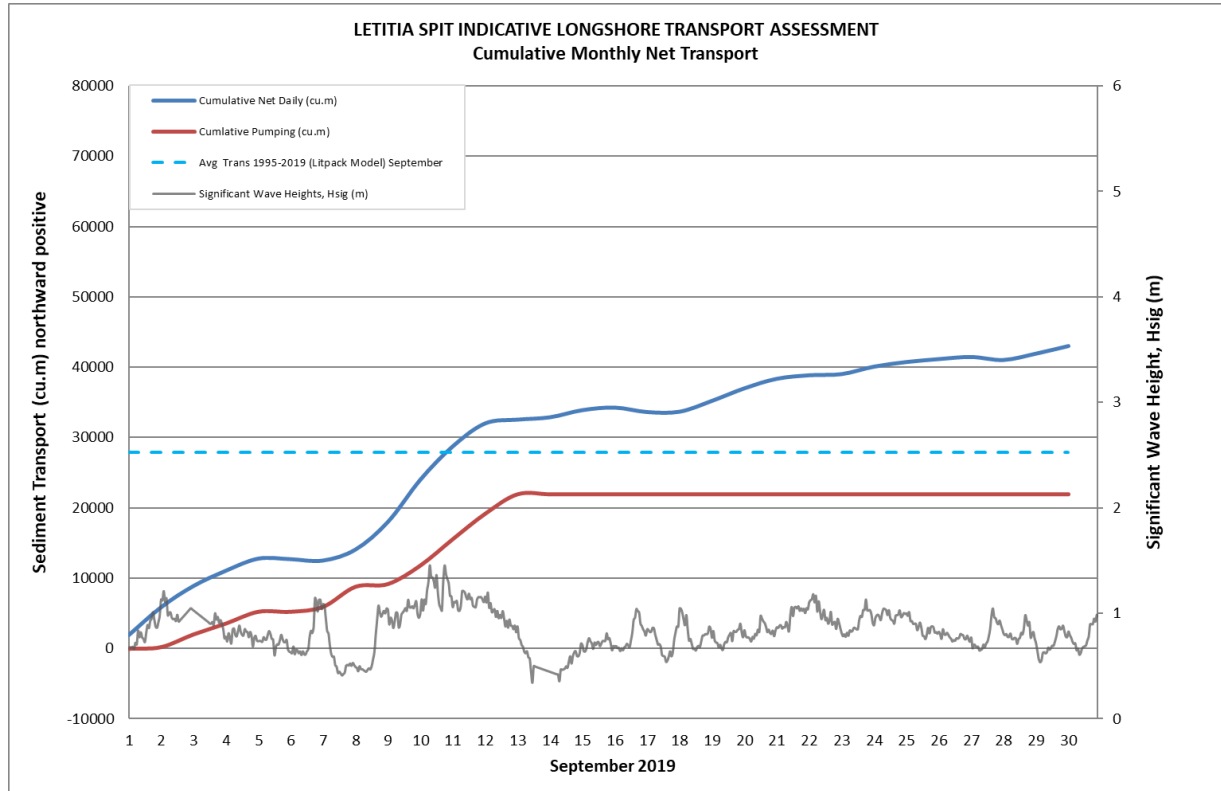
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## 2. INDICATIVE LONGSHORE TRANSPORT

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

In September 2019 the estimated natural sand transport moving north towards the Tweed River entrance was calculated to be 42,960 m<sup>3</sup>.

This result is 154% of the average estimated sand transport quantity of approximately 27,855 m<sup>3</sup> for the month of September.



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## 3. TWEED RIVER ENTRANCE USAGE

Marine Rescue NSW - Monitoring Results (Not including trawlers)

 Weekends

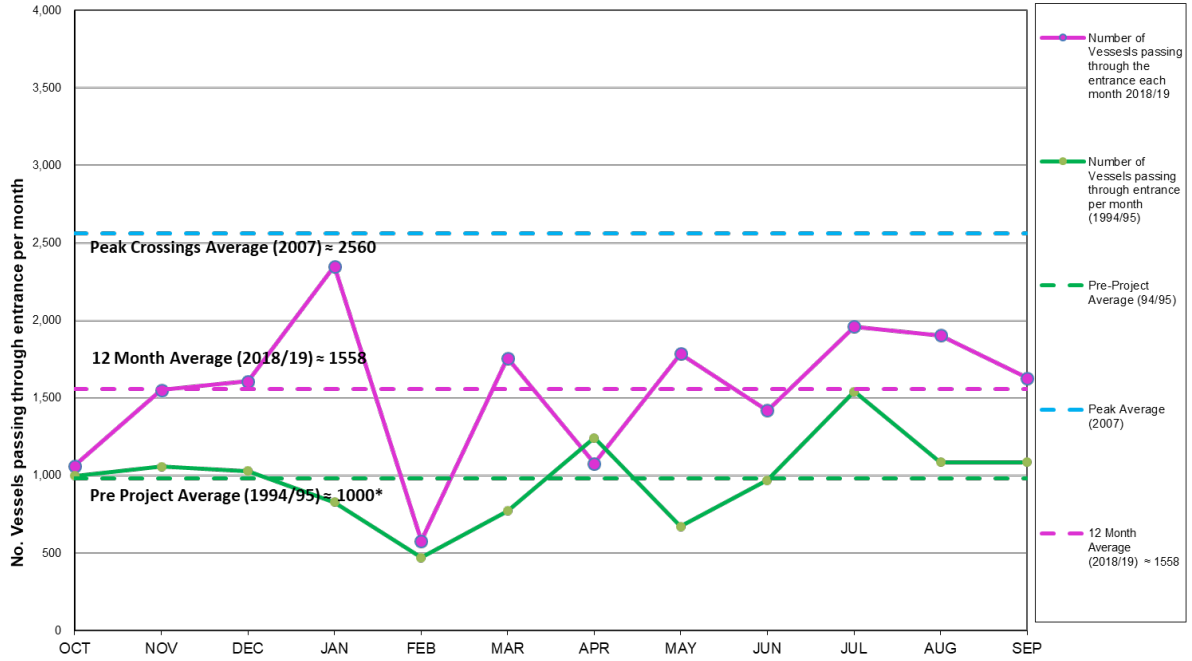
Date September 2019	Navigation Rating					Number of Crossings
	Impassable < - - - - > Good					
	Impassable	Difficulty Encountered	Some Difficulty Encountered	Relatively Good Crossing	Good Conditions	
	1	2	3	4	5	
1						36
2						38
3						37
4						101
5						76
6						48
7						74
8						157
9						5
10						2
11						2
12						34
13						45
14						205
15						122
16						27
17						27
18						22
19						61
20						104
21						64
22						25
23						12
24						8
25						76
26						29
27						13
28						15
29						123
30						42
					<b>Total:</b>	1630

Source: Marine Rescue NSW, Point Danger

\* Total does not include trawlers

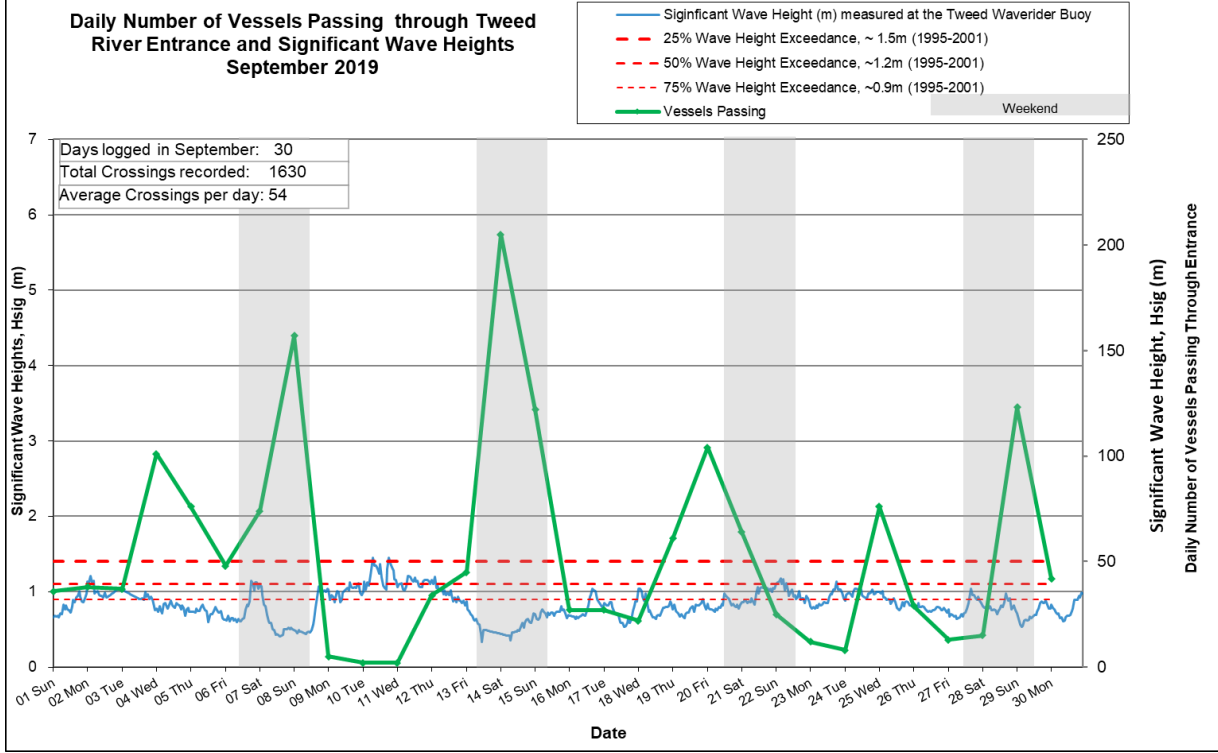
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Comparison of the number of vessels passing through the entrance per month 2018/19 compared to 2007 (peak crossings) and 1994/95 (prior to entrance improvements)



\*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 September 2019



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## 4. WAVE CONDITIONS

Wave conditions over the month: Significant wave heights ranged mostly from calm to moderate (0.35 m to 1.46 m), with a peak significant wave height of 1.46 m on 10<sup>th</sup> September. Wave directions were predominantly from the east and SE.

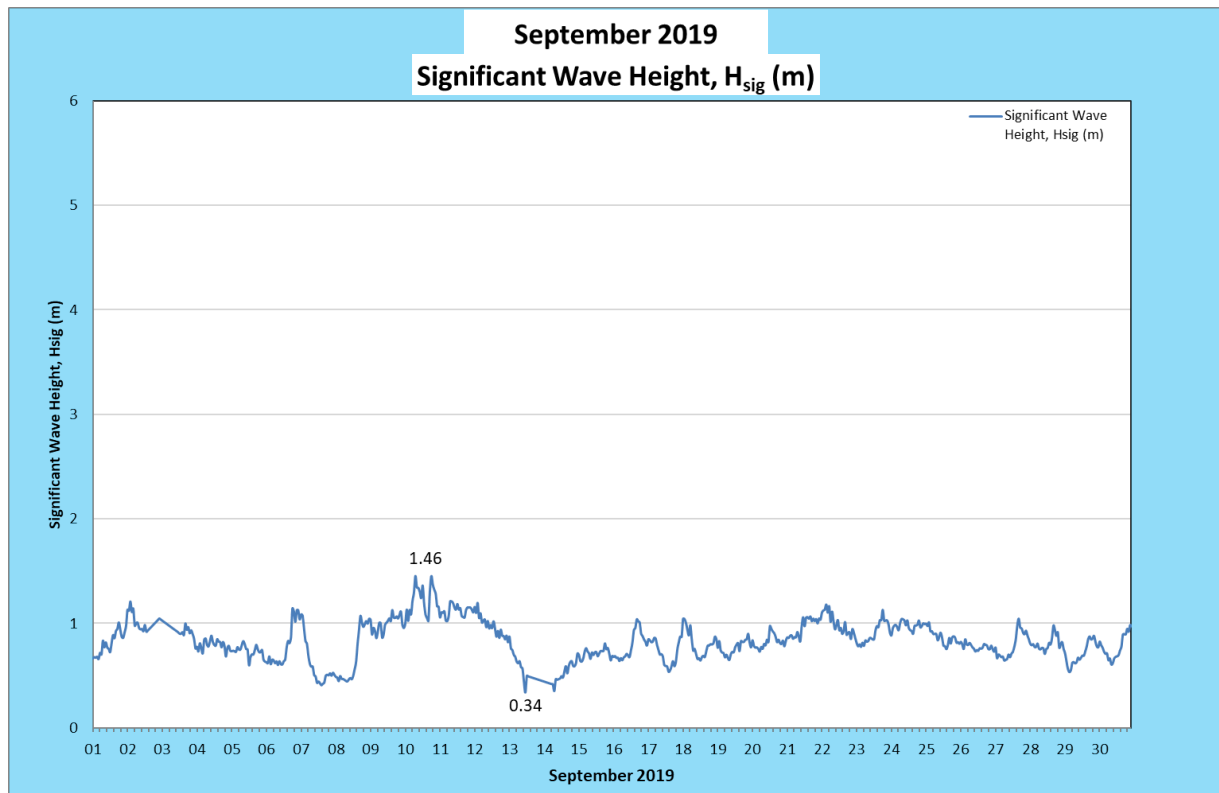
Monthly minimum significant wave height: 0.35 m on 13<sup>th</sup> September

Monthly maximum significant wave height: 1.46 m on 10<sup>th</sup> September

Number of days on which waves were below 1.0 m at some point in the day: 28 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

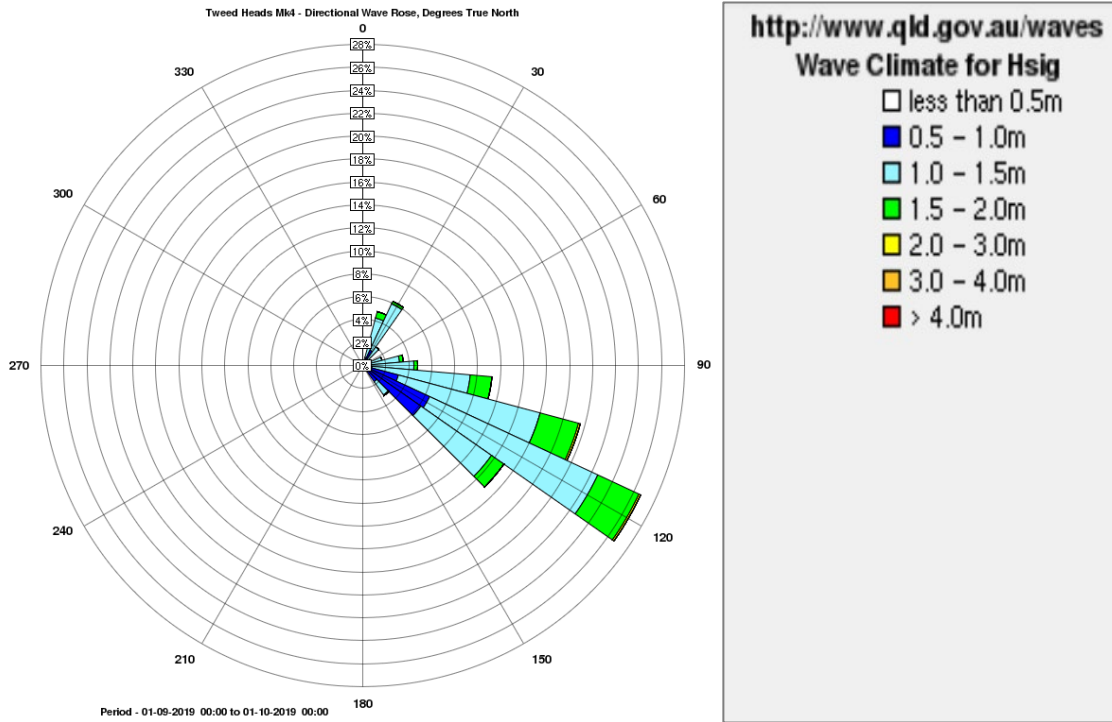


(Source: Tweed Heads Waverider Buoy; Queensland Government)

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 HeadsF Waverider Buoy; Queensland Government)