

# TWEED SAND BYPASSING

## OVERVIEW

In February 2019:

- 49,143 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.
- 0 m<sup>3</sup> of sand was pumped to Duranbah Beach.
- 0 m<sup>3</sup> of sand was dredged and placed at Duranbah Beach.
- Significant wave heights ranged mostly from calm to moderate (0.84 m to 4.51 m), with a maximum significant wave height of 4.51 m on 24<sup>th</sup> February. Wave directions were predominantly from the east.
- 578 vessel crossings were recorded for the month (This is 40% of the February average (2002 – 2019)).
- The modelled estimated amount of sand moving north towards the Tweed River entrance by natural processes was in the order of 144,000 m<sup>3</sup> (this is 263% of the February average of 54,710 m<sup>3</sup>).

## 1. SAND PUMPING & DREDGING

### **Sand Delivery February 2019**

Pumped:	49,143 m <sup>3</sup>
Dredged:	0 m <sup>3</sup>
Total:	49,143 m <sup>3</sup>

The number of days sand was pumped this month = 18

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

Pumped:	73,658 m <sup>3</sup>
Dredged:	0 m <sup>3</sup>
Total:	73,658 m <sup>3</sup>

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

Pumped:	9,363,058 m <sup>3</sup>
Dredged:	2,320,514 m <sup>3</sup> *
Total:	11,683,572 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

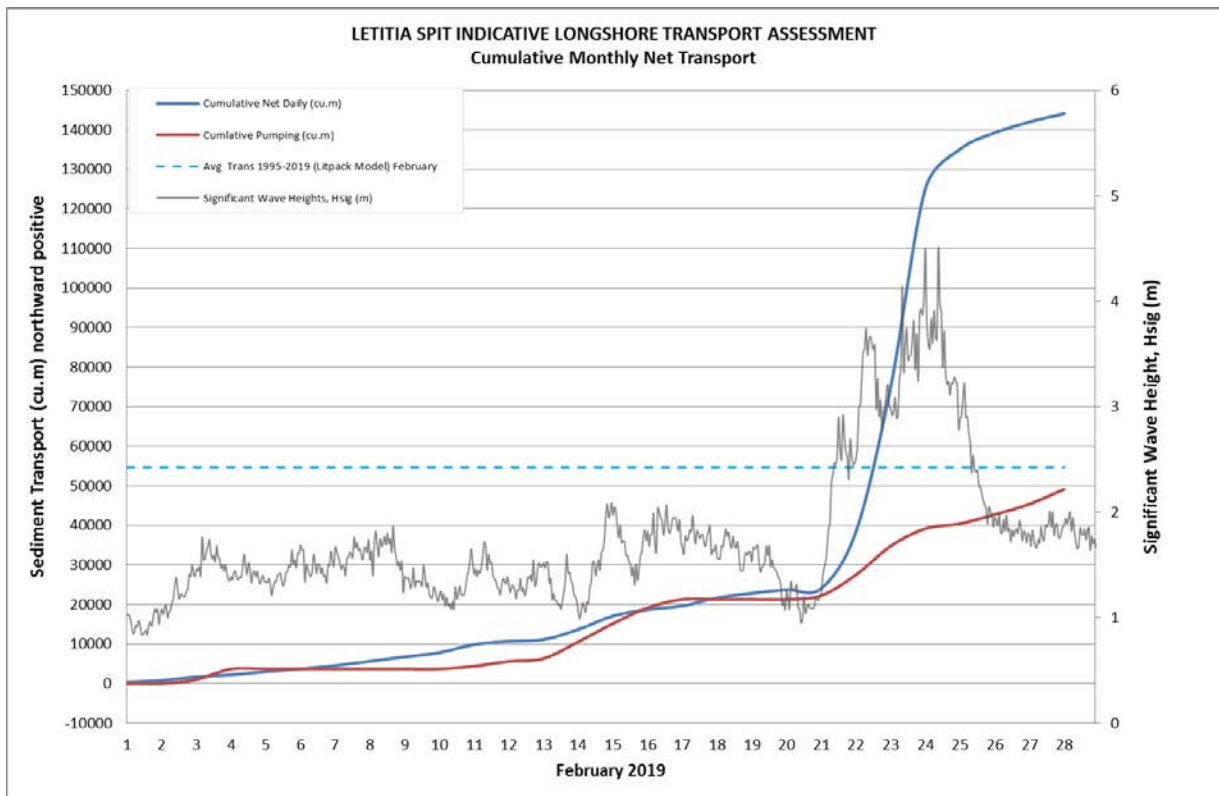
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## 2. INDICATIVE LONGSHORE TRANSPORT

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

In February 2019 the estimated natural sand transport moving north towards the Tweed River entrance was calculated to be 144,106 m<sup>3</sup>.

This result is 263% of the average estimated sand transport quantity of approximately 54,710 m<sup>3</sup> for the month of February.



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## 3. TWEED RIVER ENTRANCE USAGE

Marine Rescue NSW - Monitoring Results (Not including trawlers)

 Weekends

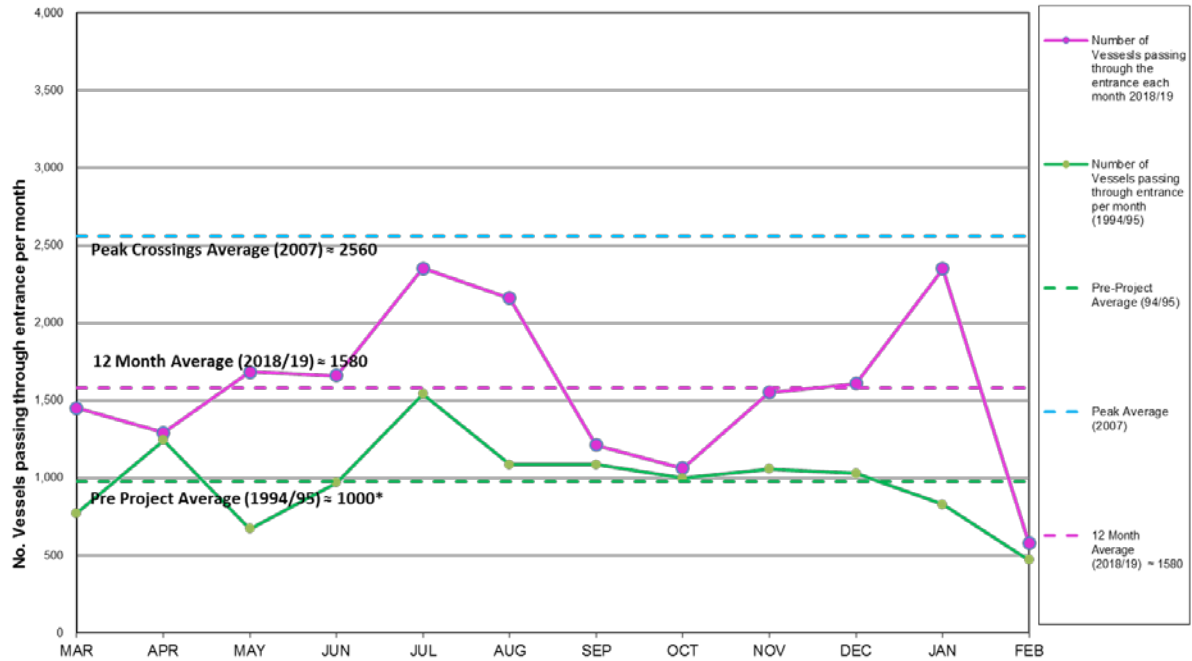
Date February 2019	Navigation Rating					Number of Crossings
	Impassable < - - - - > Good					
	Impassable	Difficulty Encountered	Some Difficulty Encountered	Relatively Good Crossing	Good Conditions	
	1	2	3	4	5	
1						114
2						74
3						48
4						22
5						9
6						13
7						11
8						20
9						77
10						66
11						34
12						11
13						1
14						12
15						0
16						0
17						2
18						8
19						36
20						5
21						2
22						0
23						0
24						0
25						0
26						4
27						6
28						3
					<b>Total:</b>	<b>578</b>

Source: Marine Rescue NSW, Point Danger

\* Total does not include trawlers

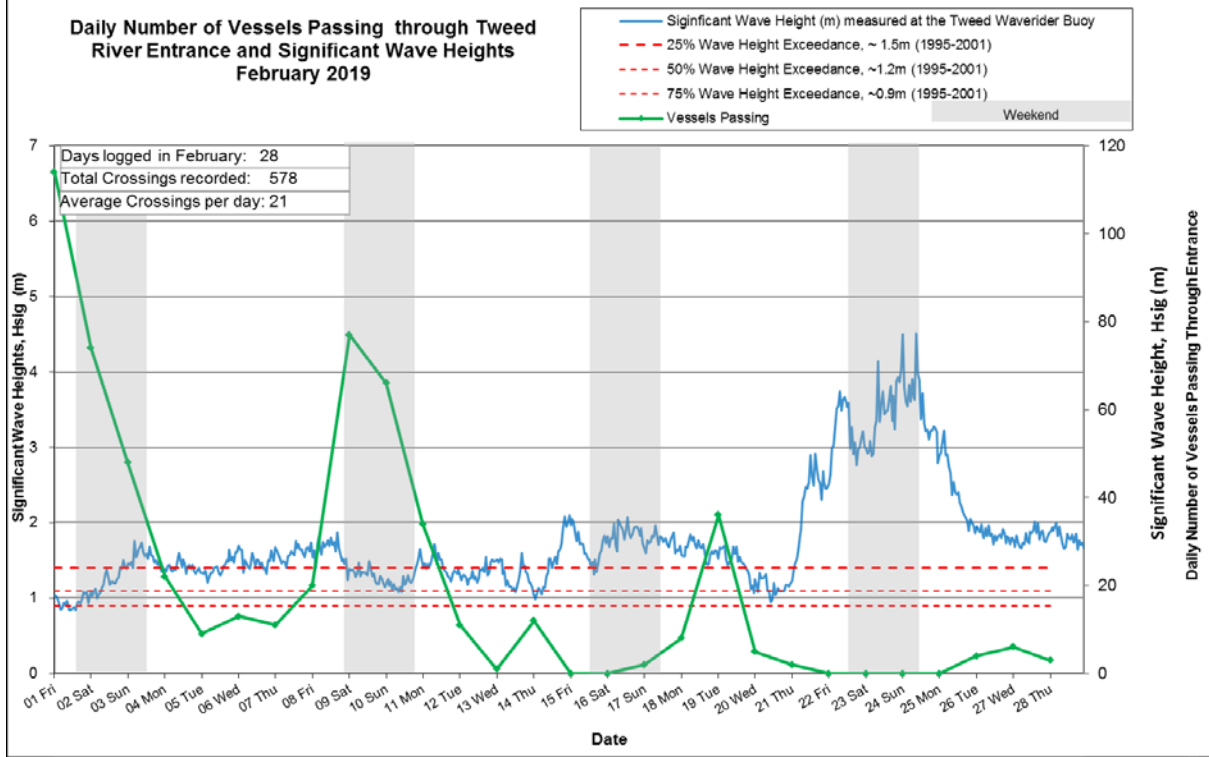
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Comparison of the number of vessels passing through the entrance per month 2018/19 compared to 2007 (peak crossings) and 1994/95 (prior to entrance improvements)



\*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 February 2019



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## 4. WAVE CONDITIONS

Wave conditions over the month: Significant wave heights ranged mostly from calm to moderate (0.84 m to 4.51 m), with a peak significant wave height of 4.51 m on 24<sup>th</sup> February. Wave directions were predominantly from the east.

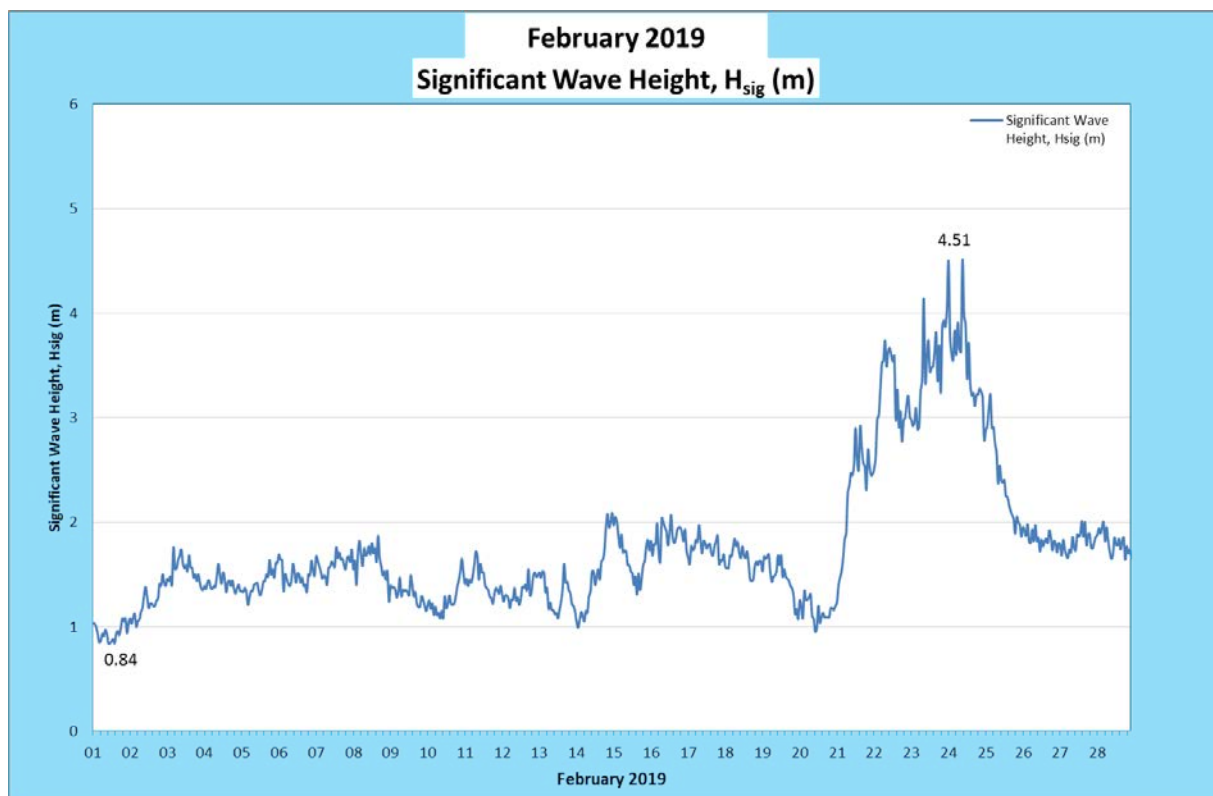
Monthly minimum significant wave height: 0.84 m on 1<sup>st</sup> February

Monthly maximum significant wave height: 4.51 m on 24<sup>th</sup> February

Number of days on which waves were below 1.0 m at some point in the day: 5 days

Number of days on which waves were above 2.0 m at some point in the day: 9 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

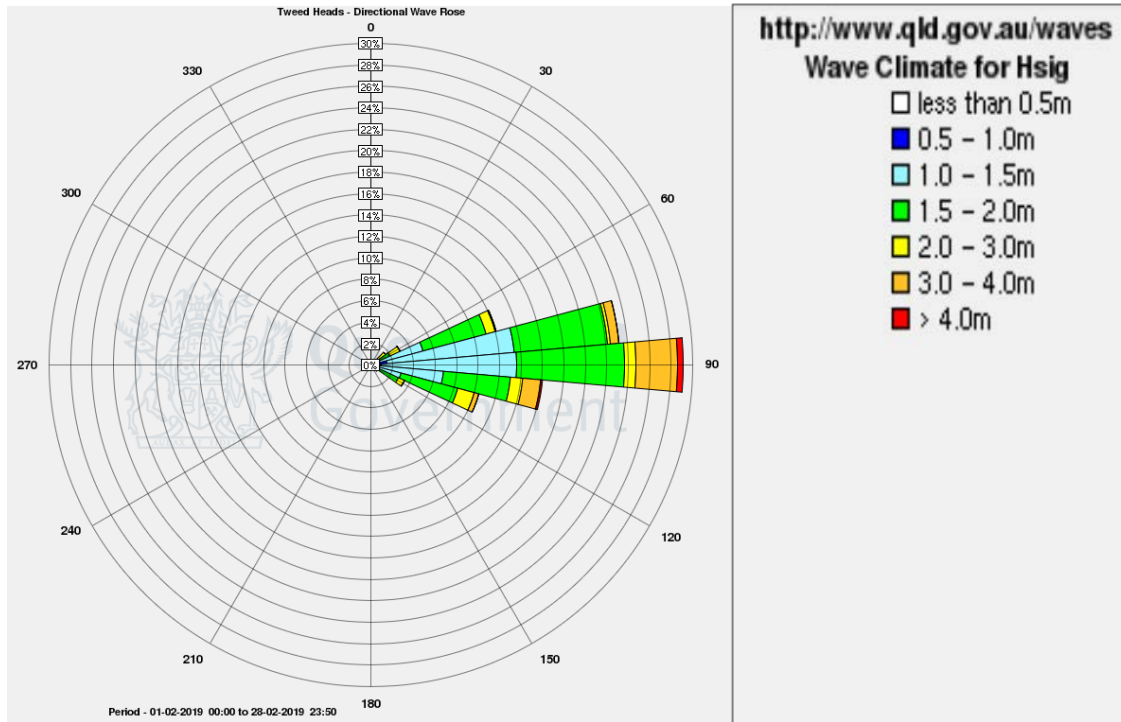


(Source: Tweed Heads Waverider Buoy; Queensland Government)

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)