

TWEED SAND BYPASSING

OVERVIEW

In February 2017:

- 18,726 m³ of sand was pumped to Snapper Rocks East.
- 12,443 m³ of sand was dredged and placed at Snapper Rocks East.
- 0 m³ of sand was pumped to Duranbah Beach.
- Wave heights ranged from calm to high (0.64 to 2.59 m), with a maximum significant wave height of 2.59 on 10th February. Wave directions varied from NNE to SE by E but mostly from the E by N
- 1420 vessel crossings were recorded for the month (This is 99% of the February average).
- The estimated amount of sand moving north towards the Tweed River entrance by natural processes was in the order of 20,547 m³ (this is 37% of the February average of 55,492 m³).

1. SAND PUMPING & DREDGING

Sand Delivery February 2017

Pumped:	18,726 m ³
Dredged:	12,443 m ³
Total:	31,169 m ³

The number of days sand was pumped this month = 18

Sand Delivery January 2017 to December 2017

Pumped:	34,200 m ³
Dredged:	12,443 m ³
Total:	46,643 m ³

Stage II Sand Delivery April 2000 to February 2017

Pumped:	8,556,829 m ³
Dredged:	2,116,353 m ³ *
Total:	10,673,182 m ³ *

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

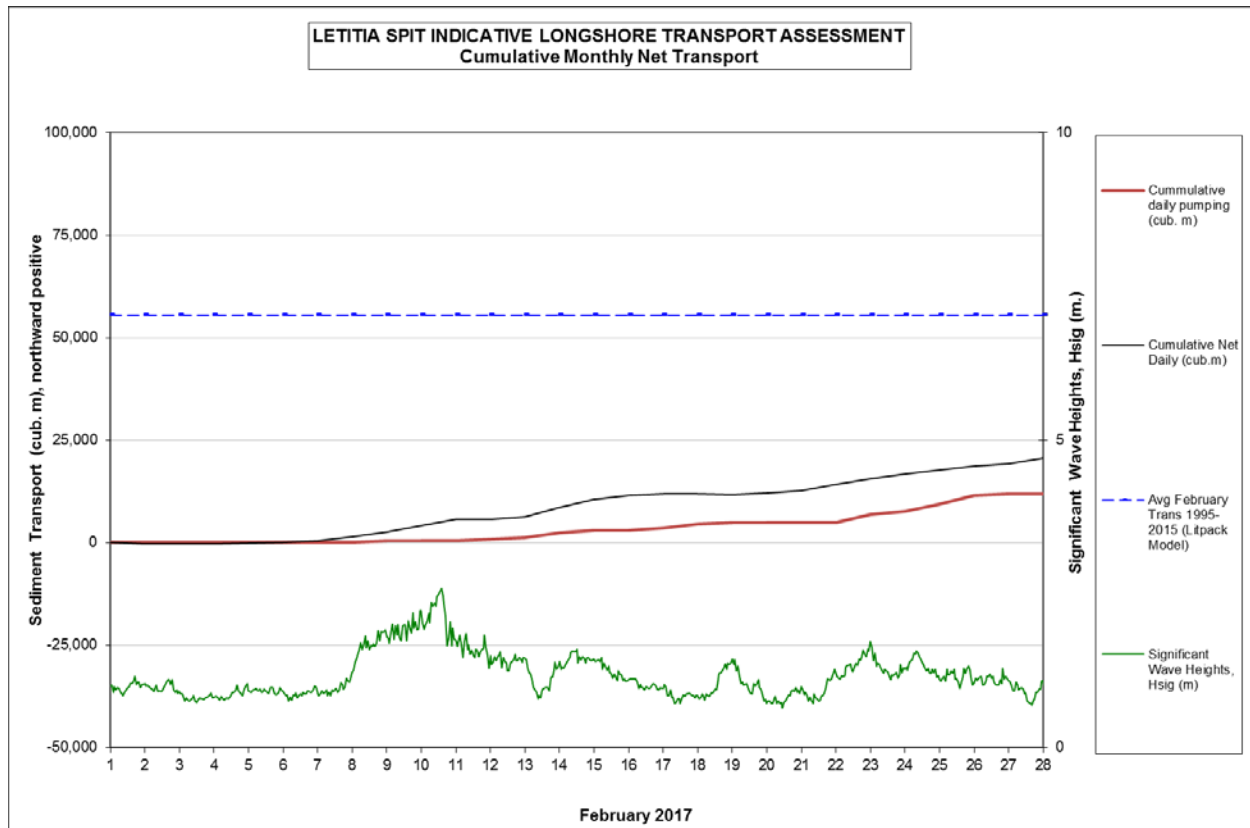
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2. INDICATIVE LONGSHORE TRANSPORT

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

In February 2017 the estimated natural sand transport moving north towards the Tweed River entrance was calculated to be in the order of 20,547 m³.

This result is 37% of the average estimated sand transport quantity of approximately 55,492 m³ for the month of February.



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3. TWEED RIVER ENTRANCE USAGE

Marine Rescue NSW - Monitoring Results (Not including trawlers)

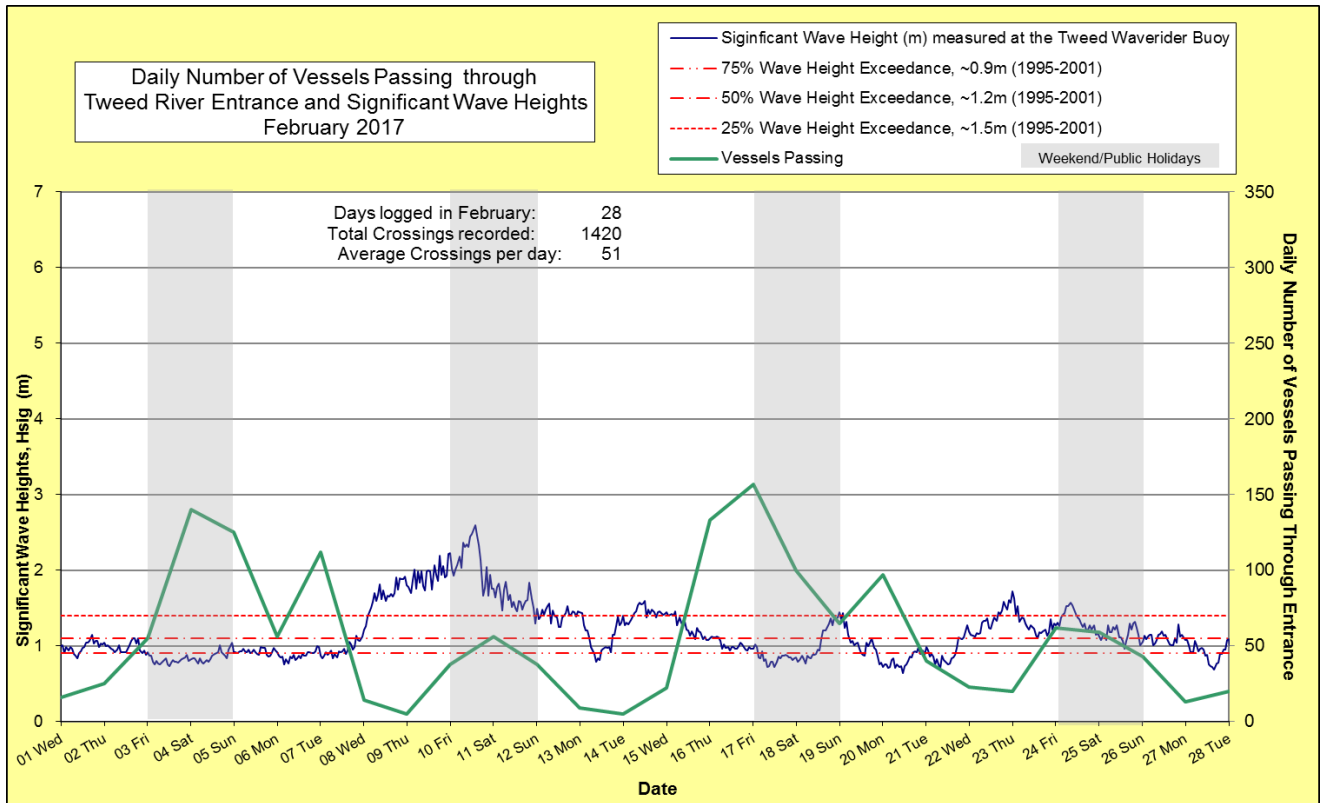
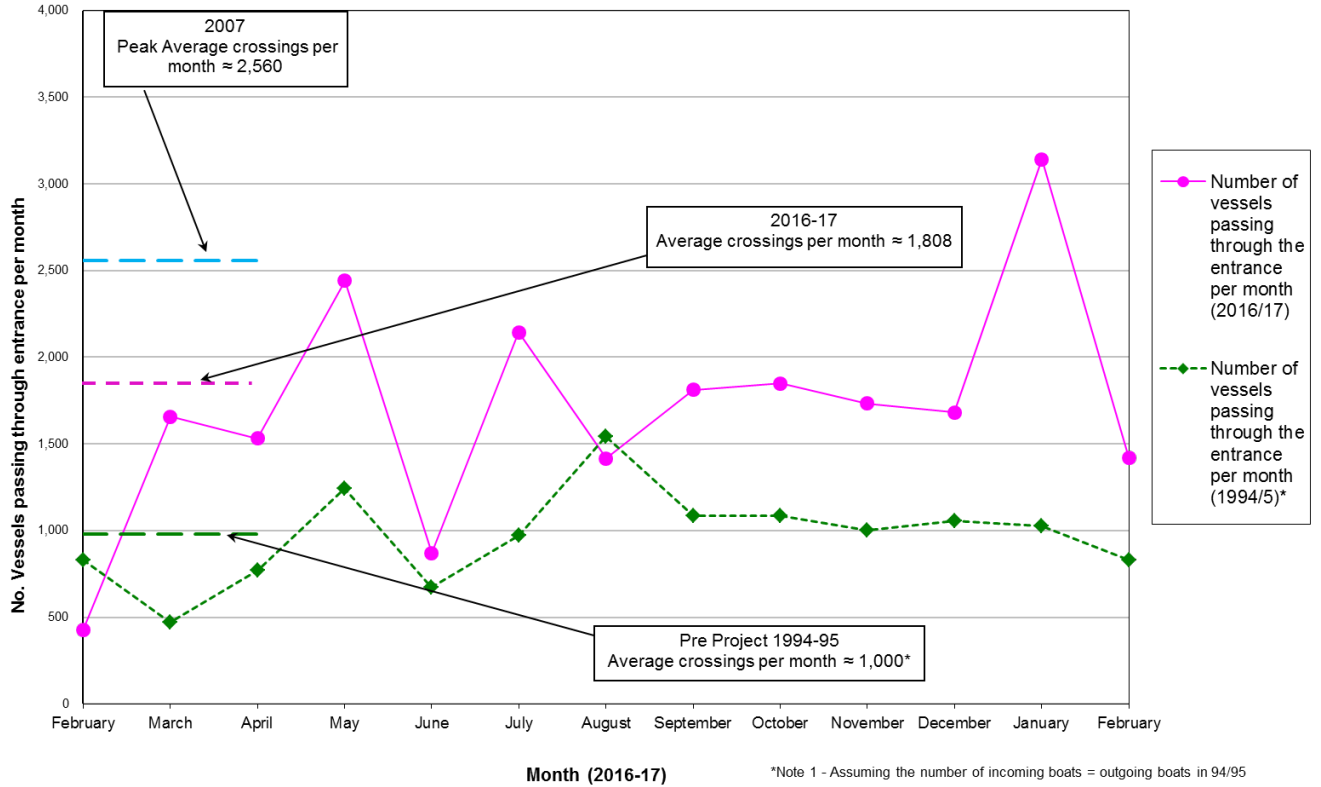
 Weekends and public holidays

Date	Navigation Rating Impassable-----Good					Number of Boats
	Impassable (1)	Difficulty Encountered (2)	Some Difficulty Encountered (3)	Relatively Good Crossing (4)	Good Conditions (5)	
1 st						16
2 nd						23
3 rd						50
4 th						133
5 th						117
6 th						45
7 th						103
8 th						8
9 th						2
10 th						35
11 th						52
12 th						37
13 th						9
14 th						4
15 th						20
16 th						126
17 th						144
18 th						95
19 th						62
20 th						86
21 st						37
22 nd						18
23 rd						18
24 th						58
25 th						57
26 th						42
27 th						10
28 th						13
Total						1420

Source: Marine Rescue NSW, Point Danger

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Comparison of the number of vessels passing through the entrance per month 2016/17 compared to 2007 (peak crossings) and 1994/95 (prior to entrance improvements)



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4. WAVE CONDITIONS

Wave conditions over the month: Wave heights ranged mostly from calm to high (0.64 to 2.59 m), with a maximum significant wave height of 2.59 m on 10th February. Wave directions varied from NNE to SE by E but mostly from the E by N.

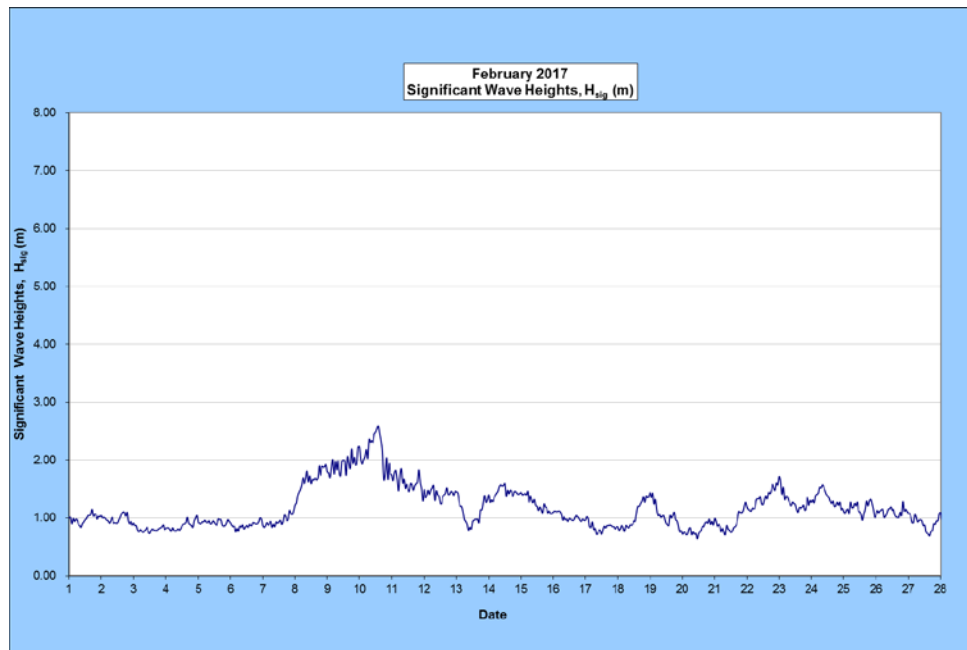
Monthly minimum significant wave height: 0.64 m on 20th February

Monthly maximum significant wave height: 2.59 m on 10th February

Number of days on which waves were below 1.0 m at some point in the day: 17 days

Number of days on which waves were above 2.0 m at some point in the day: 2 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 Wave Buoy; Queensland Government)

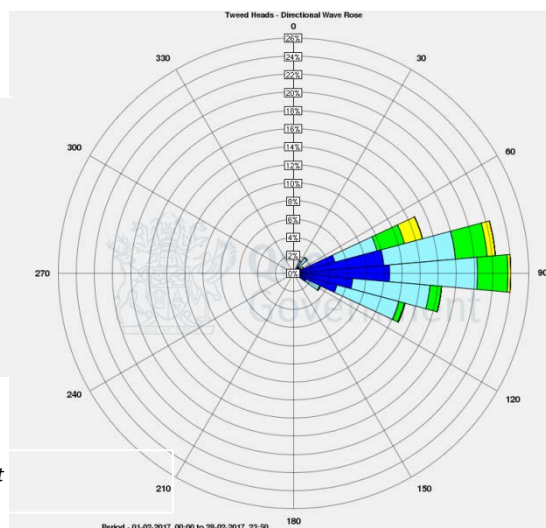
A link to data recorded by the Tweed Waverider Buoy is available at: <http://www.qld.gov.au/waves>

WAVE DIRECTION

<http://www.qld.gov.au/waves>

Wave Climate for H_{sig}

- less than 0.5m
- 0.5 - 1.0m
- 1.0 - 1.5m
- 1.5 - 2.0m
- 2.0 - 3.0m
- 3.0 - 4.0m
- > 4.0m



Source: Queensland Government