TWEEDSAND BYPASSING

OVERVIEW

In May 2017:

- 26,800 m^3 of sand was pumped to Snapper Rocks East.
- 20,113 m^3 of sand was dredged and placed at Snapper Rocks East.
- 12,013 m^3 of sand was pumped to Duranbah Beach.
- 16,117 m^3 of sand was dredged and placed at Duranbah Beach.
- Wave heights ranged from calm to moderate (0.59 m to 2.40 m) with a maximum significant wave height of 2.40 m on 9th May. Wave directions varied from NE by E to SE but mostly from the E.
- 1712 vessel crossings were recorded for the month (This is 85% of the May average).
- The estimated amount of sand moving north towards the Tweed River entrance by natural processes was in the order of 42,672 m^3 (this is 64% of the May average of 66,976 m^3).

1. SAND PUMPING & DREDGING

Sand Delivery May 2017

Pumped:	38,813 m^3
Dredged:	36,231 m^3
Total:	75,044 m^3

The number of days sand was pumped this month = 26

Sand Delivery January 2017 to December 2017

Pumped:	181,285 m^3
Dredged:	93,355 m^3
Total:	274,640 m^3

Stage II Sand Delivery April 2000 to May 2017

Pumped:	8,703,914 m^3
Dredged:	2,197,265 m^3 *
Total:	10,901,179 m^3 *

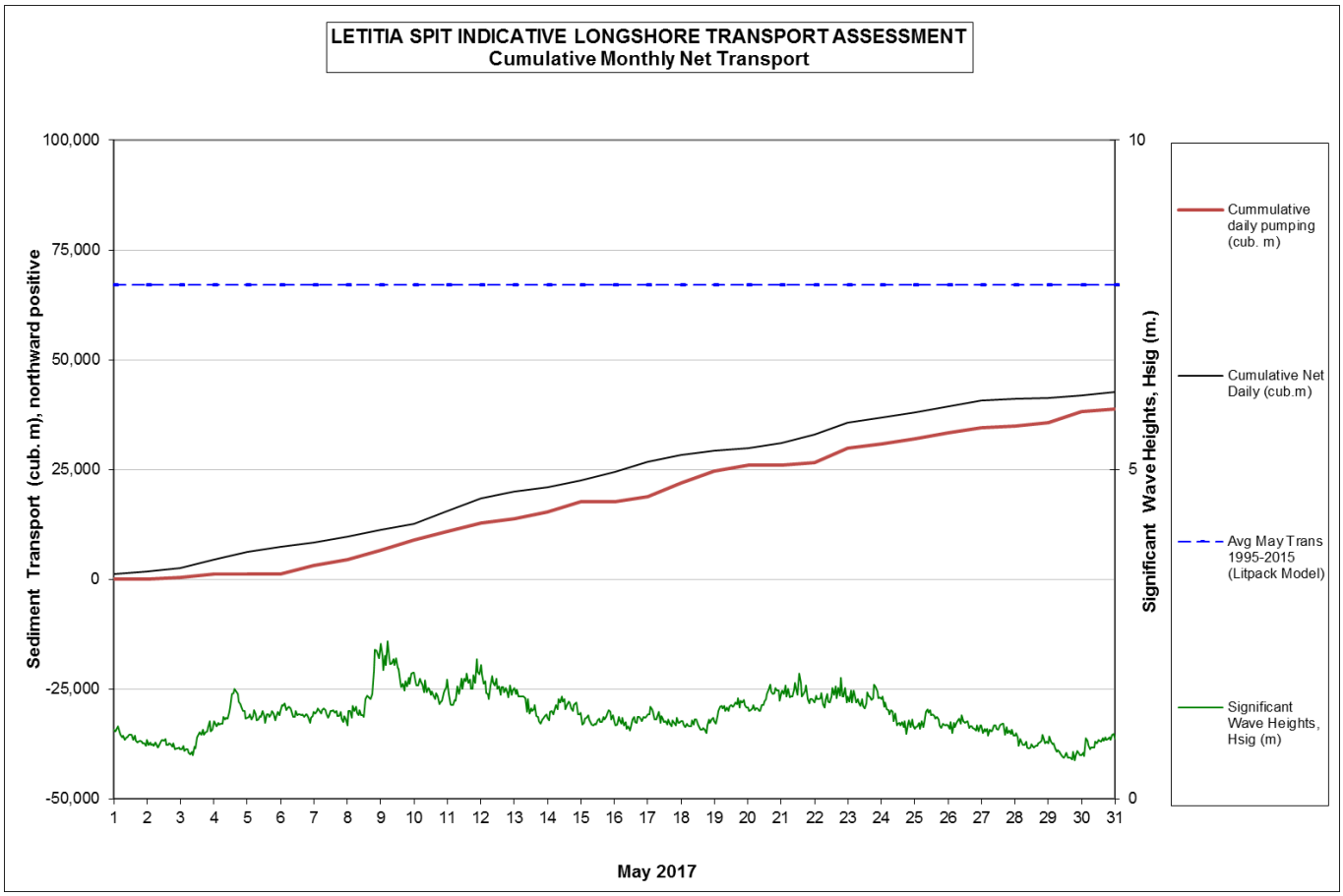
* This Includes 22,870 m^3 of sand delivered by dredge to Palm Beach between June and September 2005

2. INDICATIVE LONGSHORE TRANSPORT

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

In May 2017 the estimated natural sand transport moving north towards the Tweed River entrance was calculated to be in the order of 42,672 m^3.

This result is 64% of the average estimated sand transport quantity of approximately 66,976 m^3 for the month of May.



3. TWEED RIVER ENTRANCE USAGE

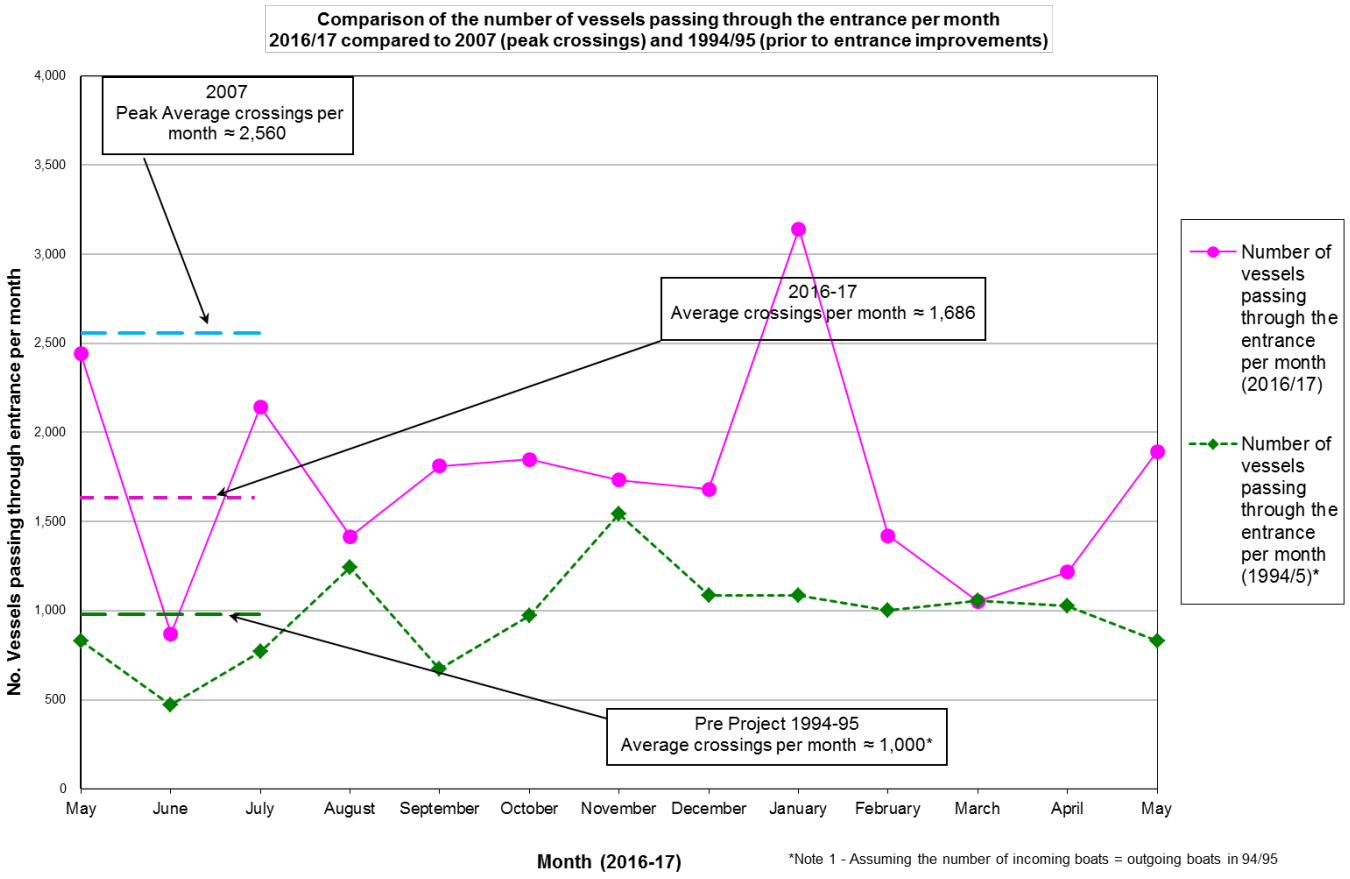
Marine Rescue NSW - Monitoring Results (Not including trawlers)

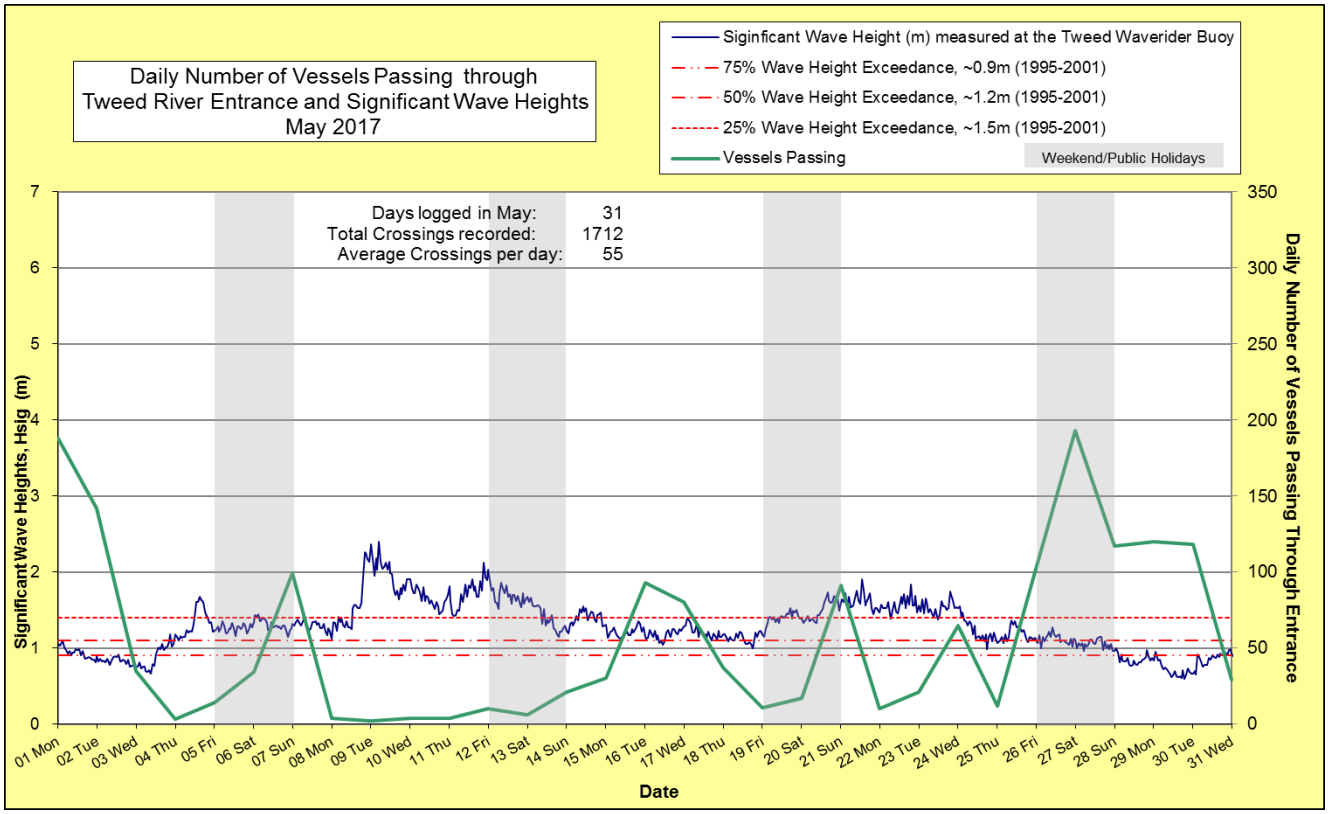
Weekends and public holidays

Date	Navigation Rating Impassable----------Good					Number of Boats
	Impassable (1)	Difficulty Encountered (2)	Some Difficulty Encountered (3)	Relatively Good Crossing (4)	Good Conditions (5)	
1st						188
2nd						142
3rd						35
4th						3
5th						14
6th						34
7th						99
8th						4
9th						2
10th						4
11th						4
12th						10
13th						6
14th						21
15th						30
16th						93
17th						80
18th						37
19th						11
20th						17
21st						91
22nd						10
23rd						21
24th						65
25th						12
26th						102
27th						193
28th						117
29th						120
30th						118
31st						29
					Total	1712

Source: *Marine Rescue NSW, Point Danger*

TWEEDSAND BYPASSING





4. WAVE CONDITIONS

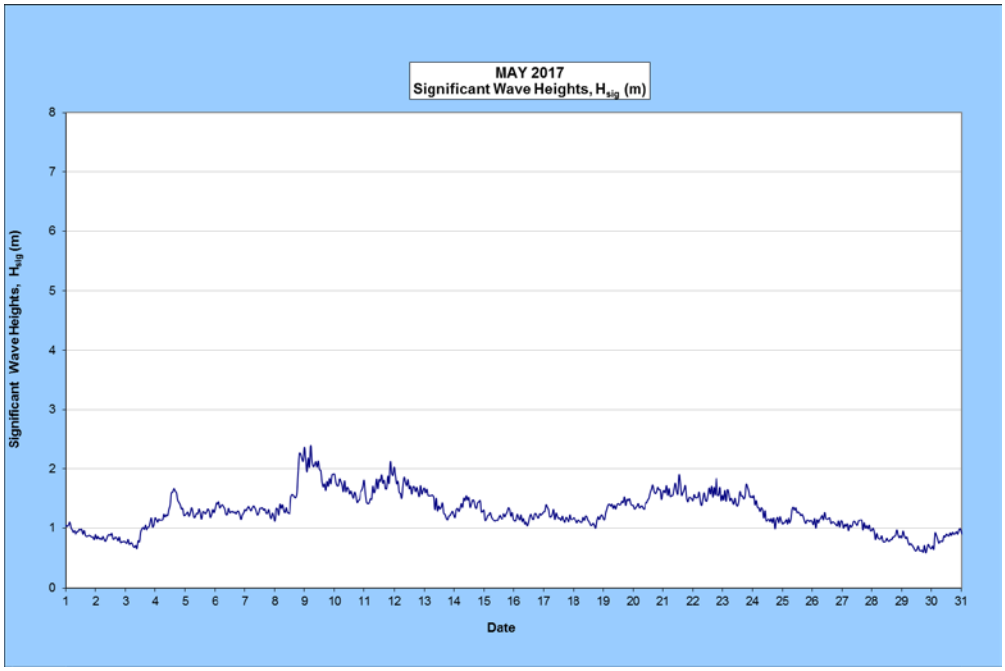
Wave conditions over the month: Wave heights ranged mostly from calm to moderate (0.59 to 2.40 m), with a maximum significant wave height of 2.40 m on 9th May. Wave directions varied from NE by E to SE but mostly from the E.

Monthly minimum significant wave height: 0.59 m on 29th May
Monthly maximum significant wave height: 2.40 m on 9th May

Number of days on which waves were below 1.0 m at some point in the day: 9 days

Number of days on which waves were above 2.0 m at some point in the day: 4 days

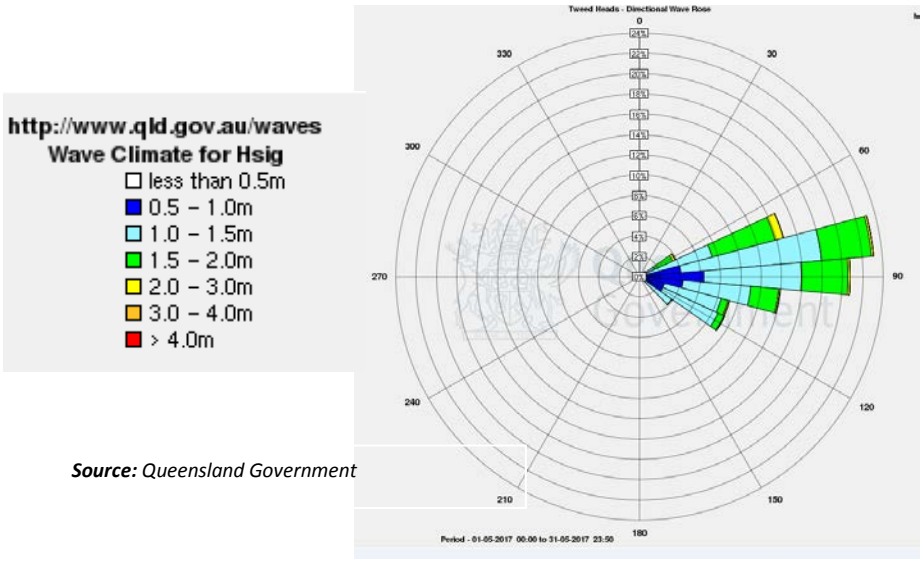
Note: Significant wave height (H_{sig}) is defined as the average of the highest one-third of waves recorded over a period of approximately 30 minutes.



*(**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



Source: *Queensland Government*