

TRESBP ENVIRONMENTAL MONITORING SUMMARY

DECEMBER 2013

OVERVIEW

In December, 2013:

- 21,569 m³ of sand was pumped to the Snapper Rocks East primary outlet.
- There was one media article relating to a proposed ocean terminal complex in the project area with a minor reference to the sand pumping.
- Significant wave heights were mostly calm to average for the month (0.5 m to 1.5 m) with peak significant wave heights up to 1.6 m. Wave direction ranged from NE to SE but was mostly from the ENE to the ESE.
- 2,404 vessel crossings were recorded for the month (this is about 12% greater than the December average).
- The estimated amount of sand moving north towards the Tweed River Entrance by natural processes was in the order of 21,000 m³ (this is about 75% of the December average of about 28,000 m³).

1. SAND PUMPING & DREDGING

Sand Delivery December 2013

Pumped:	21,569 m ³
Dredged:	0 m ³
Total:	21,569 m ³

Sand Delivery January to December 2013

Pumped:	319,883 m ³
Dredged:	0 m ³
Total:	319,883 m ³

Sand Delivery January to December 2012

Pumped:	405,601 m ³
Dredged:	0 m ³
Total:	405,601 m ³

Stage II Sand Delivery May 2000 to December 2013

Pumped:	7,084,882 m ³
Dredged:	2,039,104 m ³
Total:	9,123,986 m ³

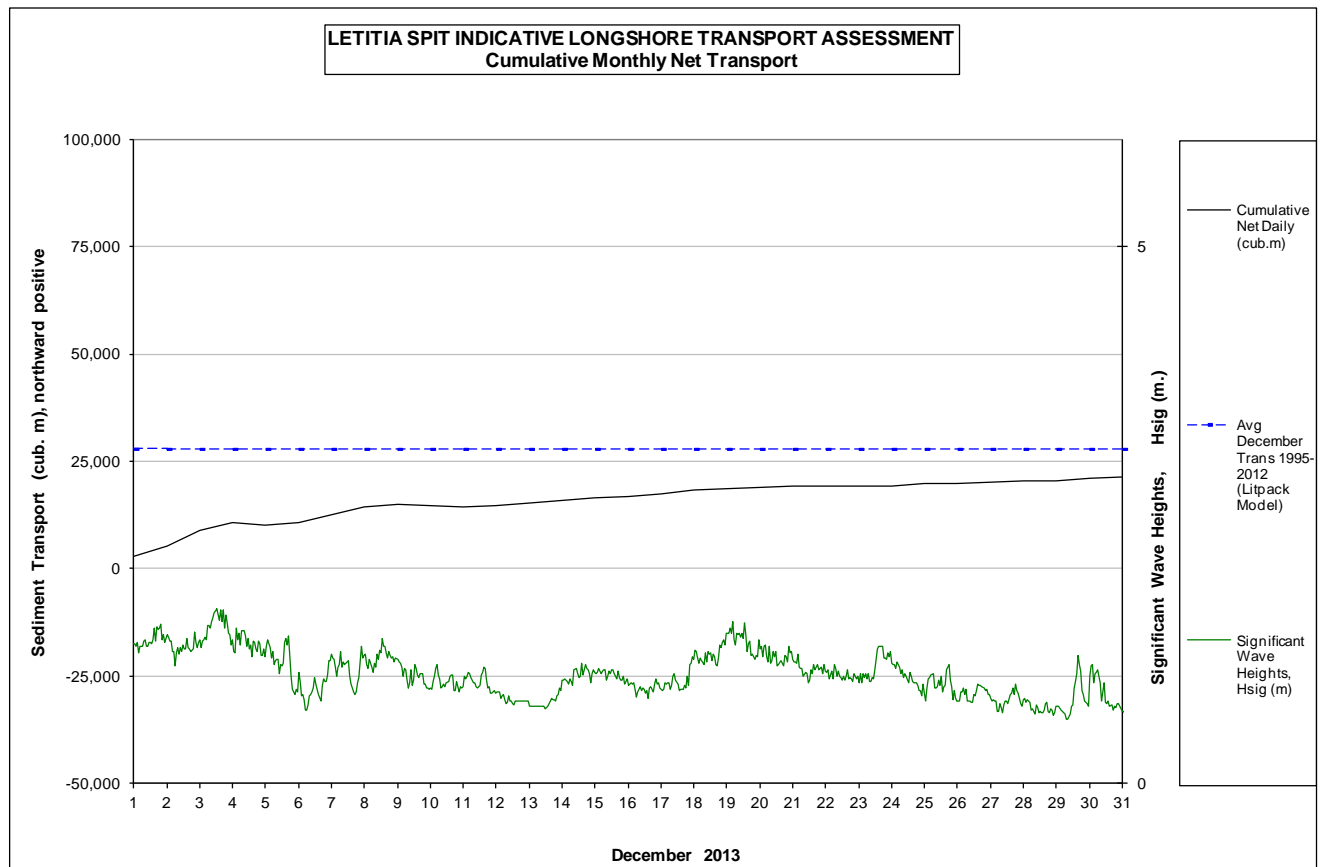


2. INDICATIVE LONGSHORE TRANSPORT

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


In December 2013 the estimated natural sand transport (moving North towards the Tweed River entrance) was calculated to be in the order of 21,000 m³.

This result is about 75% of the average estimated sand transport quantity of approximately 28,000 m³ for the month of December.



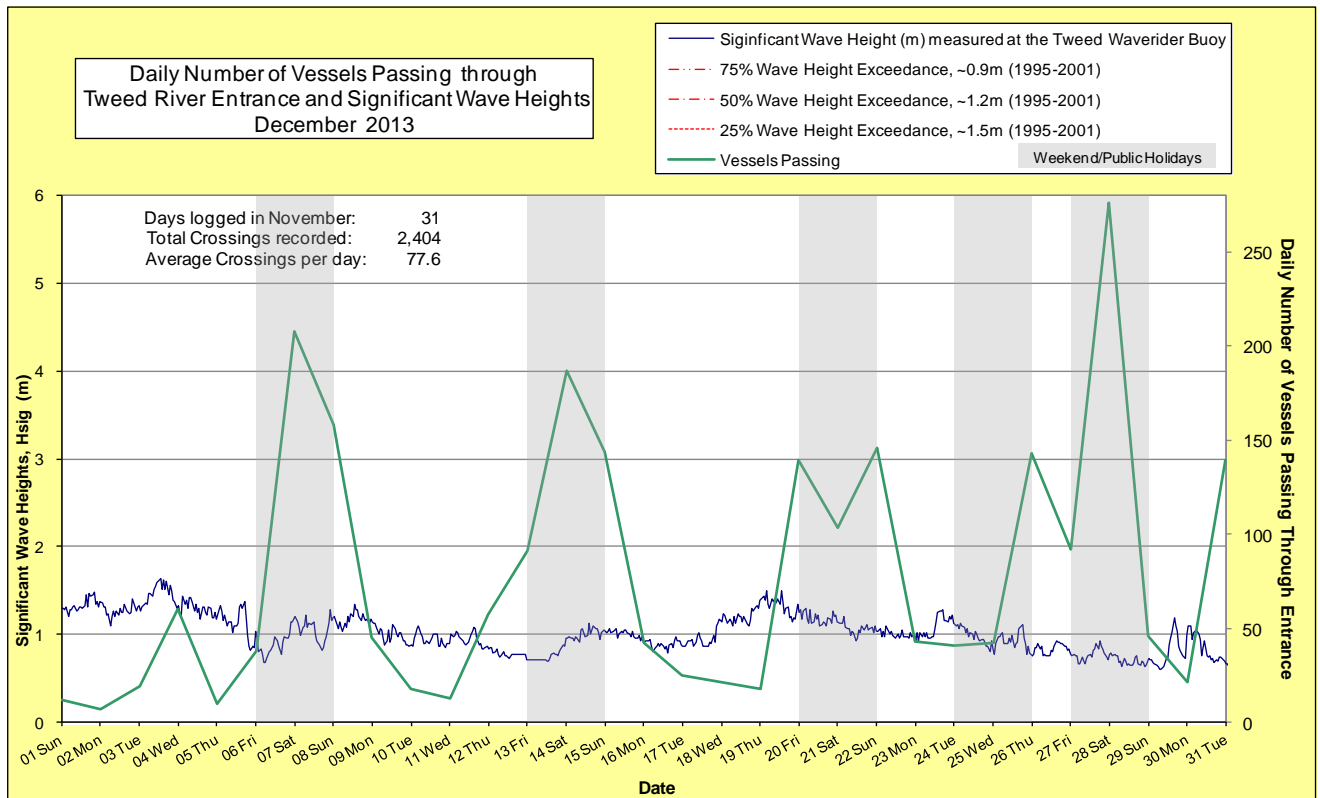
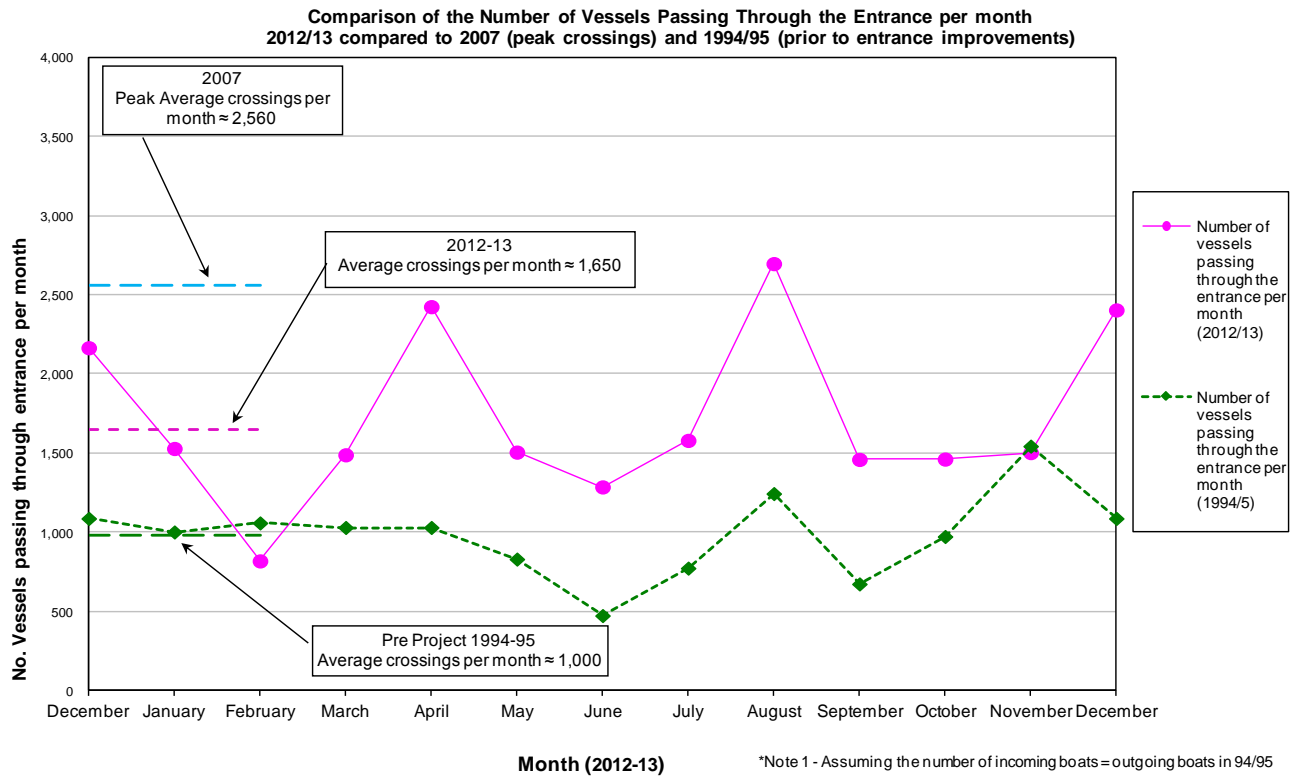
3. MEDIA COVERAGE

There was one media article relating to the project area on 30 December (www.news.com.au). The article related to a proposal for an ocean shipping terminal and associated development at North Kirra/Bilinga. There was a minor reference to the sand pumping.

4. TWEED RIVER ENTRANCE CONDITIONS**MARINE RESCUE NSW - MONITORING RESULTS**
 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						12
2 nd						7
3 rd						19
4 th						60
5 th						10
6 th						38
7 th						208
8 th						158
9 th						45
10 th						18
11 th						13
12 th						57
13 th						91
14 th						187
15 th						144
16 th						42
17 th						25
18 th						21
19 th						18
20 th						139
21 st						103
22 nd						146
23 rd						43
24 th						41
25 th						42
26 th						143
27 th						92
28 th						276
29 th						46
30 th						21
31 st						139
Total						2,404

Source: Marine Rescue NSW, Point Danger



5. WAVE CONDITIONS

Wave Conditions over the month: Significant wave heights were mostly calm to average for the month (0.5 m to 1.5 m) with peak significant wave heights up to 1.6 m. Wave direction ranged from NE to SE but was mostly from the ENE to the ESE.

Major sea events: Nil.

Monthly minimum significant wave height: 0.6 m on 31st December.

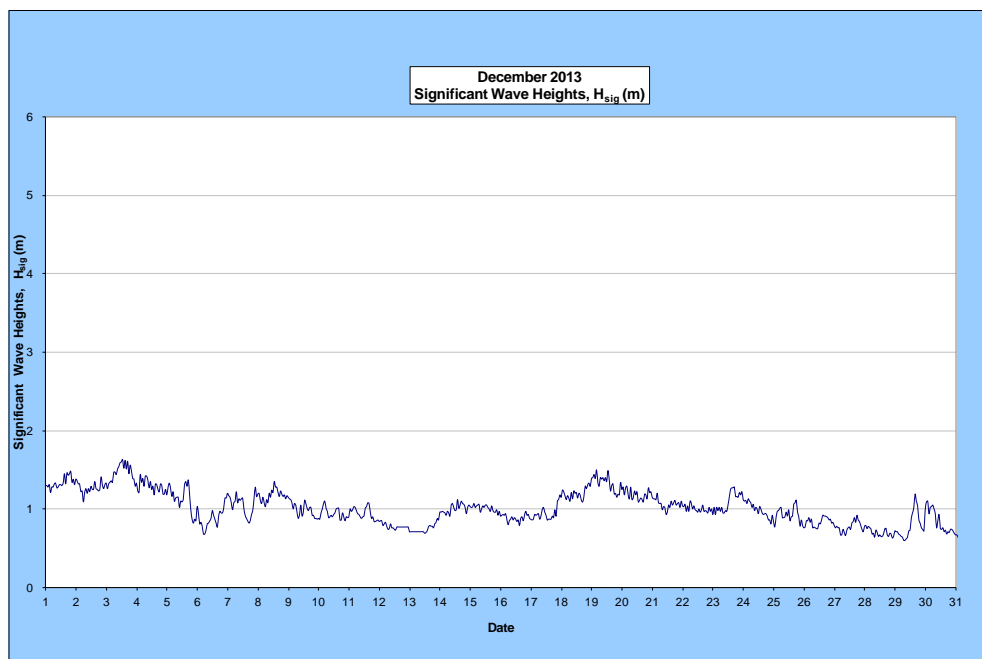
Monthly peak significant wave height: 1.63 m on 3rd December.

Number of days on which waves were below 1.0 m: 20 days

Number of days on which waves were above 2.0 m: 0 days

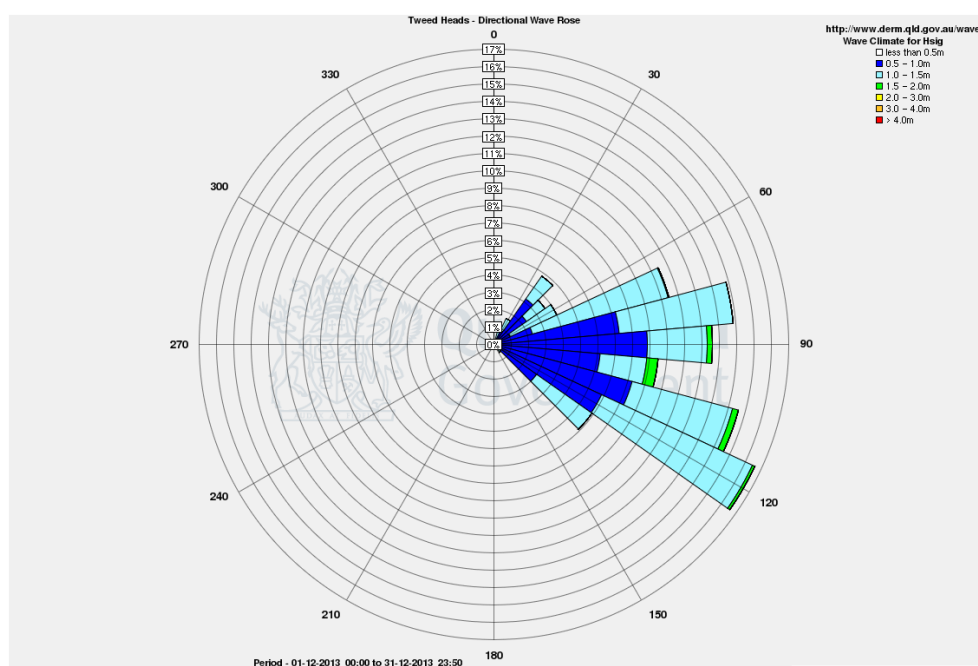
Note: Significant wave heights or H_{sig} is the average of the highest one third of recorded waves.

(Source: Tweed & Brisbane Wave Buoy; Queensland Government)



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

WAVE DIRECTION



Source: Queensland Government

END