

# TREBP ENVIRONMENTAL MONITORING SUMMARY

## November 2016

### OVERVIEW

In November 2016:

- 25,856 m<sup>3</sup> of sand was pumped to Snapper Rocks East.
- 0 m<sup>3</sup> of sand was pumped to Duranbah Beach.
- Wave heights ranged from calm to moderate (0.52 to 2.14 m), with a maximum significant wave height of 2.14 m on 23<sup>rd</sup> November. Wave directions varied from NE by N to SE by S but mostly from the SE by S.
- 1733 vessel crossings were recorded for the month (This is 105% of the November average).
- The estimated amount of sand moving north towards the Tweed River entrance by natural processes was in the order of 21,943 m<sup>3</sup> (this is 71% of the November average of 30,693 m<sup>3</sup>).

### 1. SAND PUMPING & DREDGING

#### **Sand Delivery November 2016**

Pumped:	25,856 m <sup>3</sup>
Dredged:	0 m <sup>3</sup>
Total:	25,856 m <sup>3</sup>

The number of days sand was pumped this month = 25

#### **Sand Delivery January 2016 to November 2016**

Pumped:	389,674 m <sup>3</sup>
Dredged:	41,938 m <sup>3</sup>
Total:	431,612 m <sup>3</sup>

#### **Stage II Sand Delivery April 2000 to November 2016**

Pumped:	8,492,739 m <sup>3</sup>
Dredged:	2,103,910 m <sup>3</sup> *
Total:	10,596,649 m <sup>3</sup> *

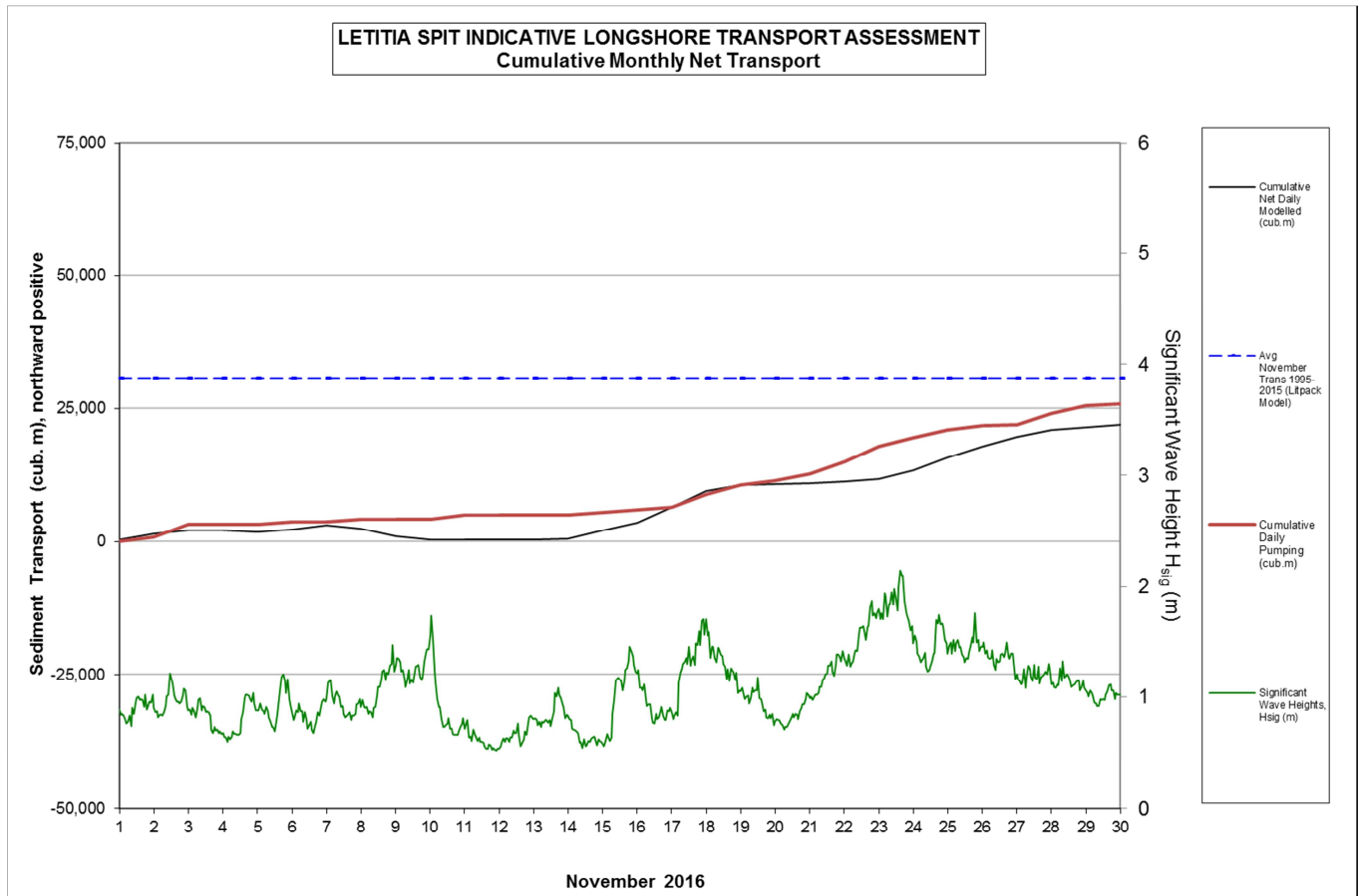
\* This Includes 22,870 m<sup>3</sup> of sand delivered by dredge to Palm Beach between June and September 2005

## 2. INDICATIVE LONGSHORE TRANSPORT

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

In November 2016 the estimated natural sand transport moving north towards the Tweed River entrance was calculated to be in the order of 22,000 m<sup>3</sup>.

This result is 71% of the average estimated sand transport quantity of approximately 30,000 m<sup>3</sup> for the month of November.



#### 4. TWEED RIVER ENTRANCE USAGE

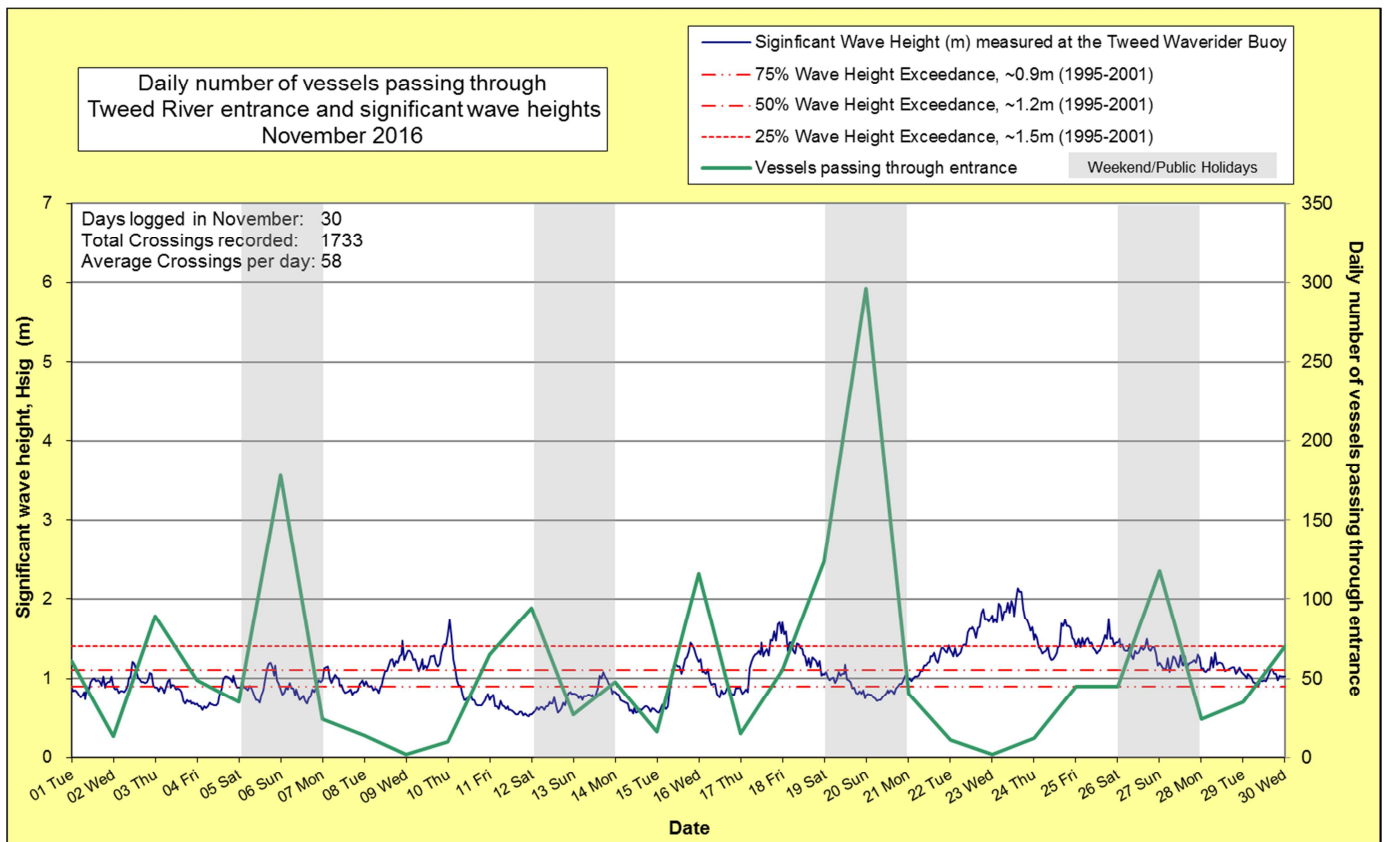
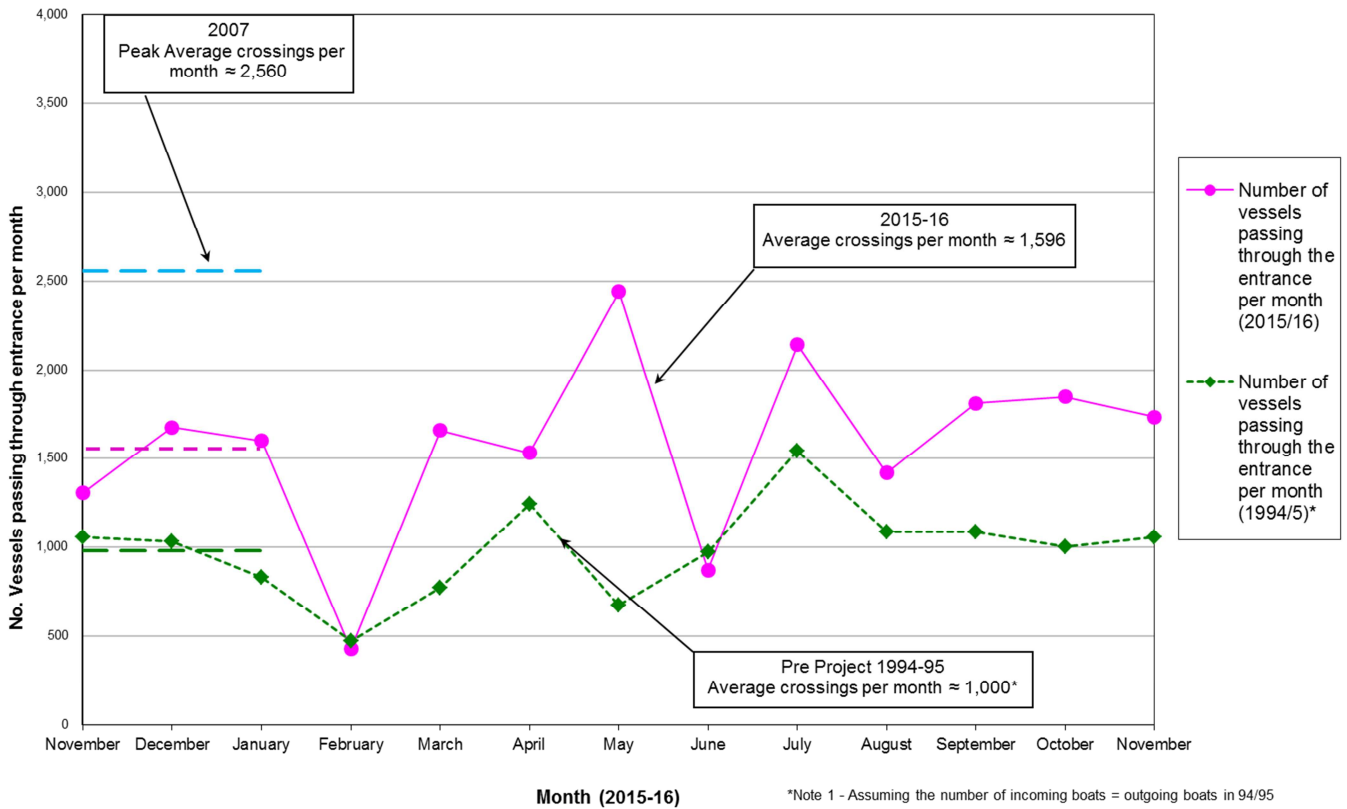
Marine Rescue NSW - Monitoring Results (Not including trawlers)

 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 <sup>st</sup>						61
2 <sup>nd</sup>						12
3 <sup>rd</sup>						89
4 <sup>th</sup>						49
5 <sup>th</sup>						35
6 <sup>th</sup>						178
7 <sup>th</sup>						24
8 <sup>th</sup>						14
9 <sup>th</sup>						2
10 <sup>th</sup>						10
11 <sup>th</sup>						65
12 <sup>th</sup>						94
13 <sup>th</sup>						27
14 <sup>th</sup>						48
15 <sup>th</sup>						16
16 <sup>th</sup>						116
17 <sup>th</sup>						15
18 <sup>th</sup>						55
19 <sup>th</sup>						124
20 <sup>th</sup>						296
21 <sup>st</sup>						40
22 <sup>nd</sup>						11
23 <sup>rd</sup>						2
24 <sup>th</sup>						12
25 <sup>th</sup>						45
26 <sup>th</sup>						45
27 <sup>th</sup>						118
28 <sup>th</sup>						24
29 <sup>th</sup>						35
30 <sup>th</sup>						70
Total						1733

Source: Marine Rescue NSW, Point Danger

Comparison of the number of vessels passing through the entrance per month  
2015/16 compared to 2007 (peak crossings) and 1994/95 (prior to entrance improvements)



## 5. WAVE CONDITIONS

Wave conditions over the month: Wave heights ranged mostly from calm to moderate (0.52 to 2.14 m), with a maximum significant wave height of 2.14 m on 23<sup>rd</sup> November. Wave directions varied from NE by N to SE by S but mostly from the SE by E.

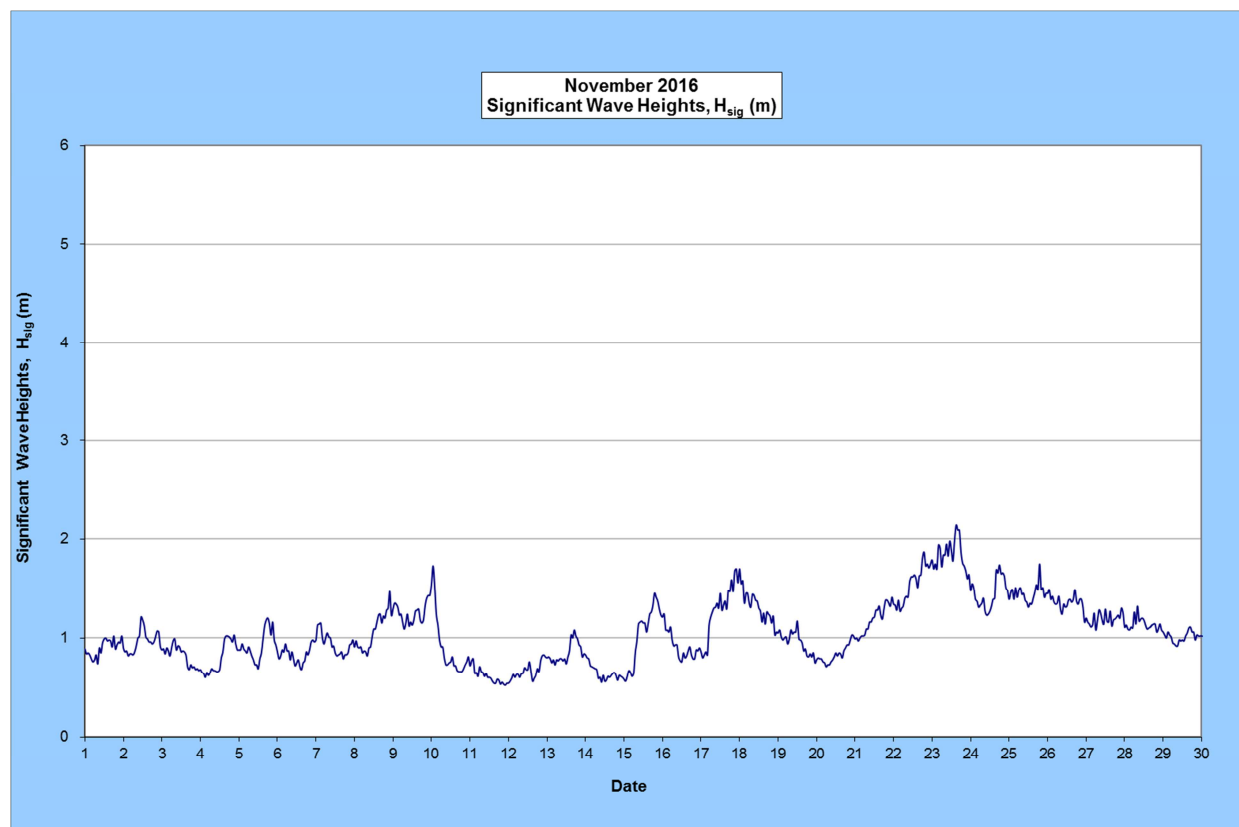
Monthly minimum significant wave height: 0.52 m on 11<sup>th</sup> November

Monthly maximum significant wave height: 2.14 m on 23<sup>rd</sup> November

Number of days on which waves were below 1.0 m at some point in the day: 21 days

Number of days on which waves were above 2.0 m at some point in the day: 1 day

**Note:** Significant wave height ( $H_{sig}$ ) is defined as the average height of the highest one-third of waves recorded over a period of typically 15 minutes.



(Source: Tweed Wave Buoy; Queensland Government)

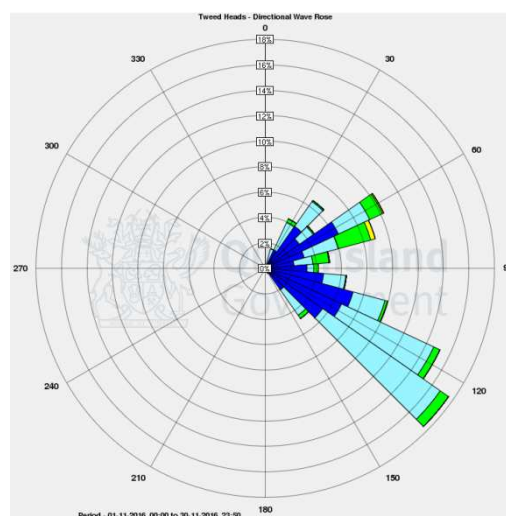
A link to data recorded by the Tweed Waverider Buoy is available at: <http://www.qld.gov.au/waves>

## 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