

# TWEED SAND BYPASSING

## OVERVIEW

In April 2017:

- 49,875 m<sup>3</sup> of sand was pumped to Snapper Rocks East.
- 5,409 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.
- 12,839 m<sup>3</sup> of sand was dredged and placed at Duranbah Beach.
- Wave heights ranged from calm to high (0.53 m to 2.73 m), with a maximum significant wave height of 2.73 m on 3<sup>rd</sup> April. Wave directions varied from NE by E to SE by S but mostly from the ESE.
- 1113 vessel crossings were recorded for the month (This is 58% of the April average).
- The estimated amount of sand moving north towards the Tweed River entrance by natural processes was in the order of 91,077 m<sup>3</sup> (this is 153% of the April average of 59,369 m<sup>3</sup>).

## 1. SAND PUMPING & DREDGING

### **Sand Delivery April 2017**

Pumped:	49,875 m <sup>3</sup>
Dredged:	18,249 m <sup>3</sup>
Total:	68,124 m <sup>3</sup>

The number of days sand was pumped this month = 29

### **Sand Delivery January 2017 to December 2017**

Pumped:	142,472 m <sup>3</sup>
Dredged:	57,124 m <sup>3</sup>
Total:	199,596 m <sup>3</sup>

### **Stage II Sand Delivery April 2000 to April 2017**

Pumped:	8,665,101 m <sup>3</sup>
Dredged:	2,161,034 m <sup>3</sup> *
Total:	10,826,135 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

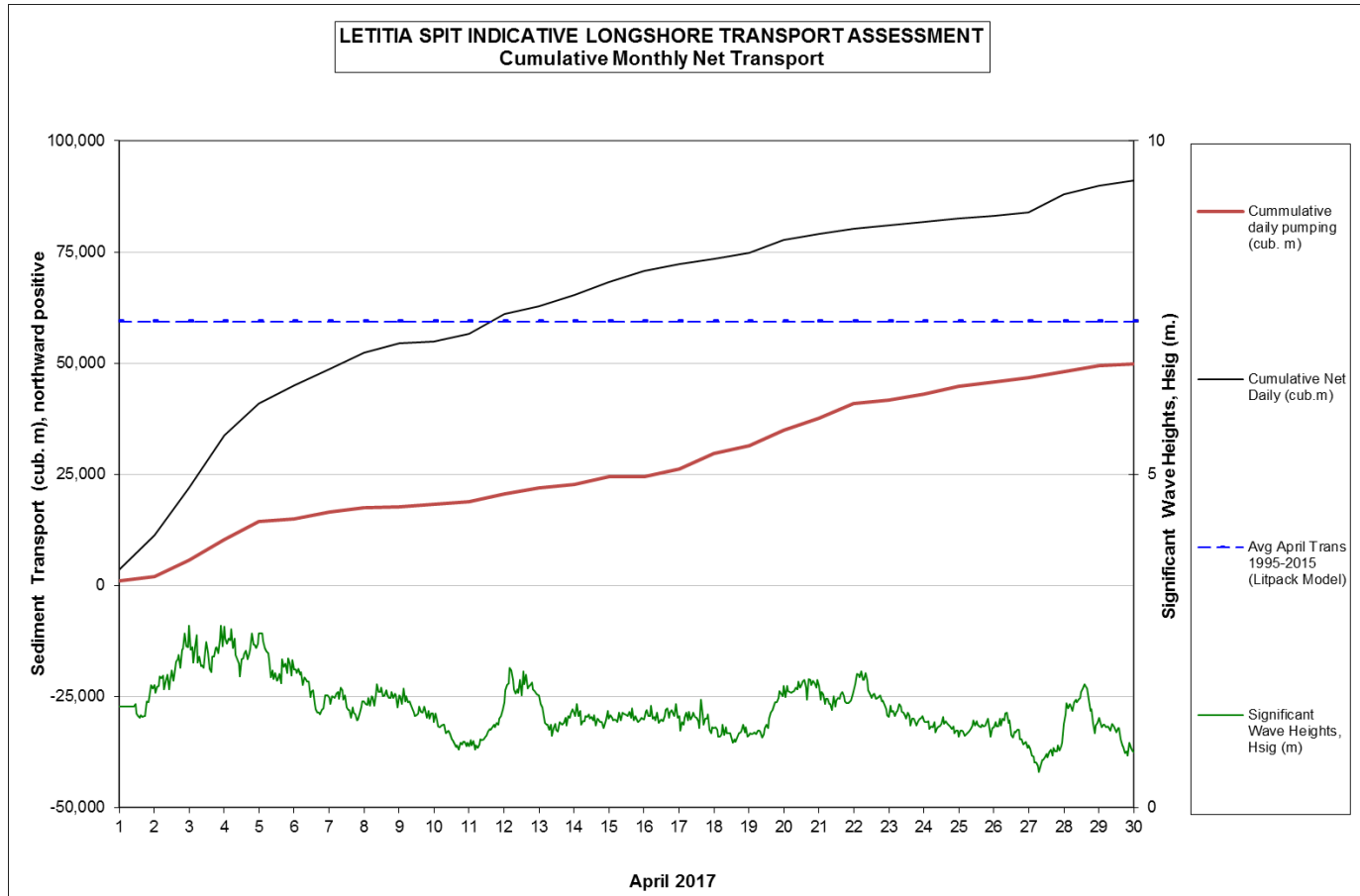
# TWEED SAND BYPASSING

## 2. INDICATIVE LONGSHORE TRANSPORT

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

In April 2017 the estimated natural sand transport moving north towards the Tweed River entrance was calculated to be in the order of 91,077 m<sup>3</sup>.

This result is 153% of the average estimated sand transport quantity of approximately 59,369 m<sup>3</sup> for the month of April.



# TWEED SAND BYPASSING

## 3. TWEED RIVER ENTRANCE USAGE

Marine Rescue NSW - Monitoring Results (Not including trawlers)

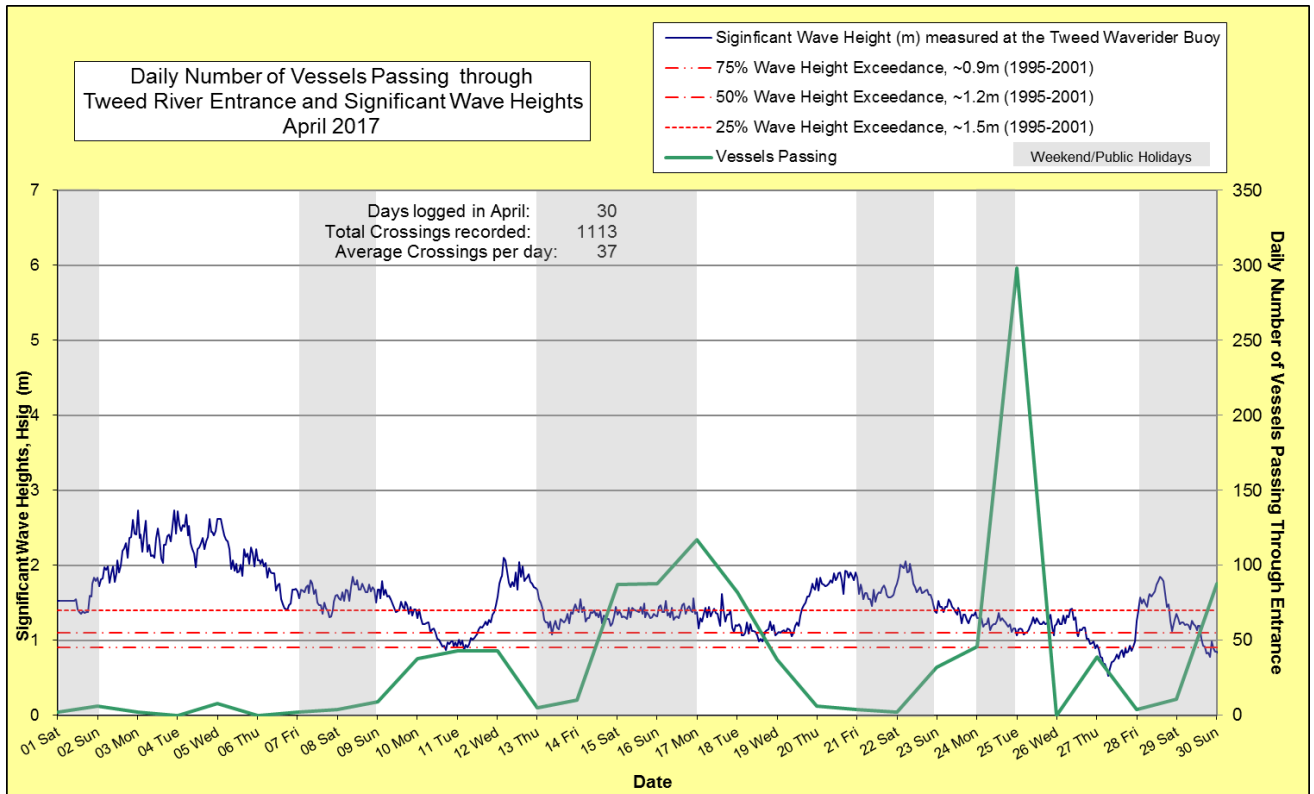
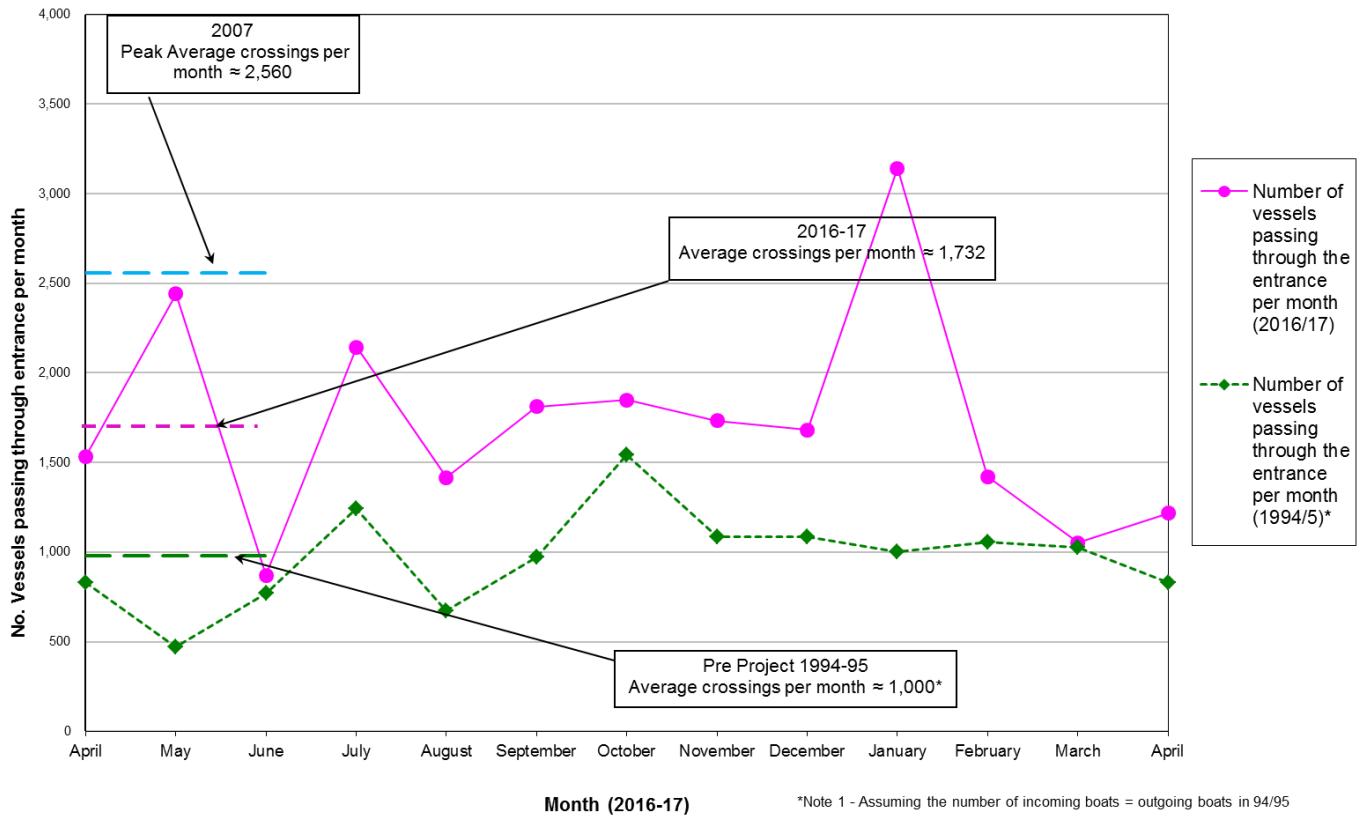
 Weekends and public holidays

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 <sup>st</sup>						2
2 <sup>nd</sup>						6
3 <sup>rd</sup>						2
4 <sup>th</sup>						0
5 <sup>th</sup>						8
6 <sup>th</sup>						0
7 <sup>th</sup>						2
8 <sup>th</sup>						4
9 <sup>th</sup>						9
10 <sup>th</sup>						38
11 <sup>th</sup>						43
12 <sup>th</sup>						43
13 <sup>th</sup>						5
14 <sup>th</sup>						10
15 <sup>th</sup>						87
16 <sup>th</sup>						88
17 <sup>th</sup>						117
18 <sup>th</sup>						82
19 <sup>th</sup>						37
20 <sup>th</sup>						6
21 <sup>st</sup>						4
22 <sup>nd</sup>						2
23 <sup>rd</sup>						32
24 <sup>th</sup>						46
25 <sup>th</sup>						298
26 <sup>th</sup>						0
27 <sup>th</sup>						39
28 <sup>th</sup>						4
29 <sup>th</sup>						11
30 <sup>th</sup>						88
					<b>Total</b>	<b>1113</b>

Source: Marine Rescue NSW, Point Danger

# TWEED SAND BYPASSING

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)



# TWEED SAND BYPASSING

## 4. WAVE CONDITIONS

Wave conditions over the month: Wave heights ranged mostly from calm to high (0.53 to 2.73 m), with a maximum significant wave height of 2.73 m on 3<sup>rd</sup> April. Wave directions varied from NE by E to SE by S but mostly from the ESE.

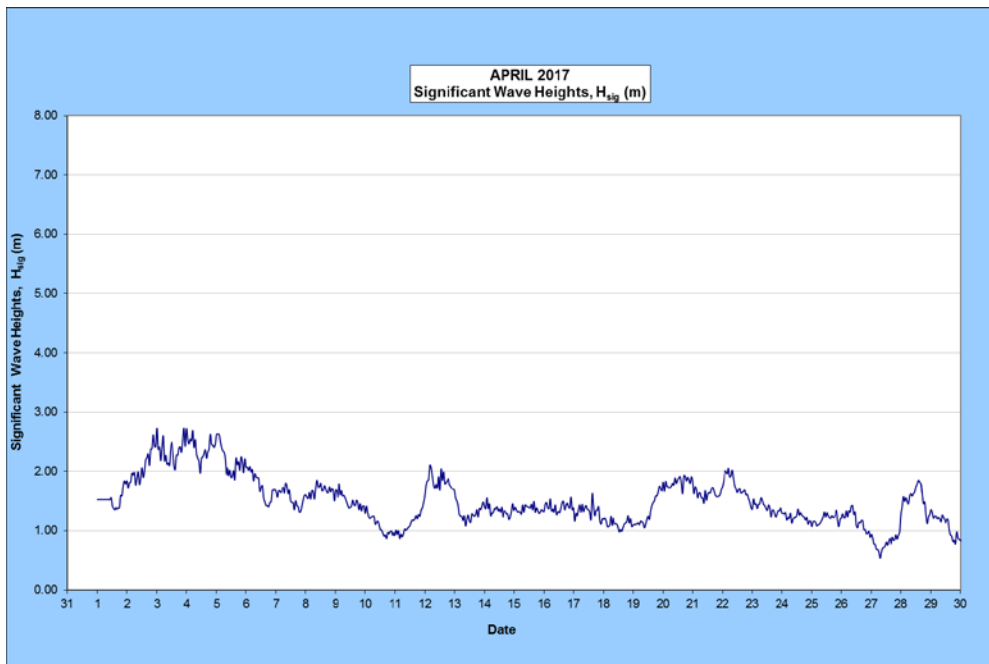
Monthly minimum significant wave height: 0.53 m on 27<sup>th</sup> April

Monthly maximum significant wave height: 2.73 m on 3<sup>rd</sup> April

Number of days on which waves were below 1.0 m at some point in the day: 7 days

Number of days on which waves were above 2.0 m at some point in the day: 7 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)

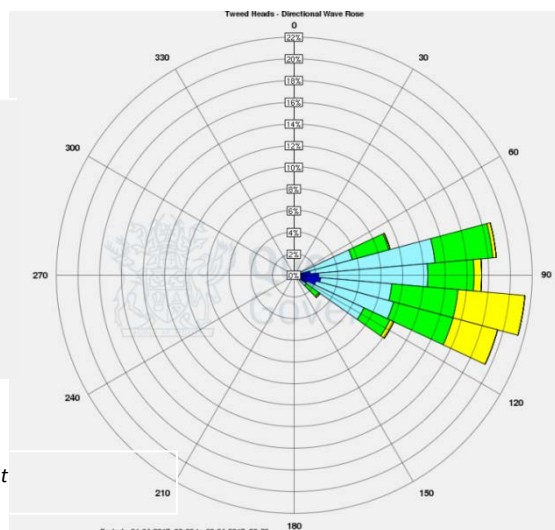
A link to data recorded by the Tweed Waverider Buoy is available at: <http://www.qld.gov.au/waves>

## 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