

# TWEED SAND BYPASSING

## ENVIRONMENTAL MONITORING SUMMARY – OCTOBER 2022

### 1. SAND PUMPING & DREDGING

- 77,432 m<sup>3</sup> was pumped to Snapper Rocks East.
- 13,033 m<sup>3</sup> of sand was dredged with 2,777 m<sup>3</sup> placed at Snapper Rocks East and 10,256 m<sup>3</sup> placed at Duranbah

#### **Sand Delivery October 2022**

Pumped: 77,432 m<sup>3</sup>

Dredged: 13,033 m<sup>3</sup>

Total: 90,465 m<sup>3</sup>

The number of days sand was pumped this month = 26

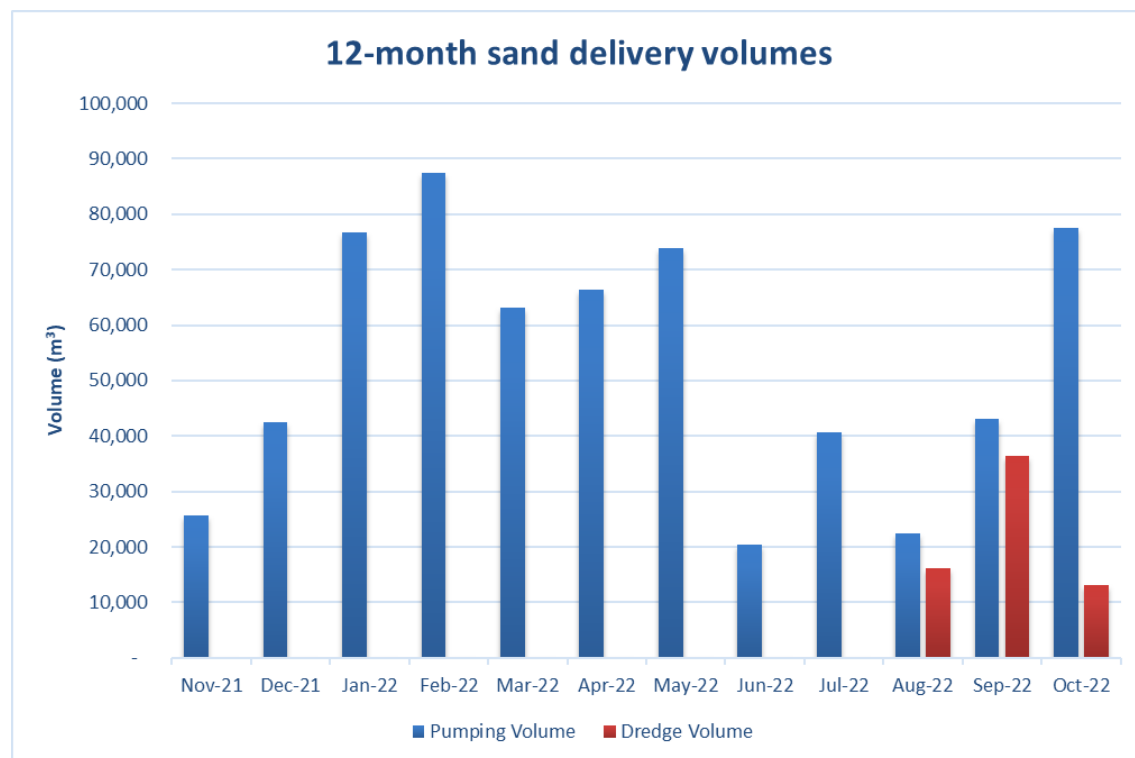
#### **Sand Delivery May 2000 to date**

Pumped: 11,003,675 m<sup>3</sup>

Dredged\*: 2,780,935 m<sup>3</sup>

Total\*: 13,784,610 m<sup>3</sup>

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



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## 2. WAVE CONDITIONS

In late October a sub-tropical low moved from the central Qld coast and tracked south. Wave heights peaked just under 4 m and during the event wave direction was between ENE and east. Outside of this event October wave heights were generally in the 1-2m range and ESE.

- Minimum  $H_{sig}$ : 0.63 m on 30 October 2022
- Maximum  $H_{sig}$ : 3.90 m on 23 October 2022
- Number of days where  $H_{sig} < 1$  m at some point: 7
- Number of days where  $H_{sig} > 2$  m at some point: 13

**Note:**  $H_{sig}$  is defined as the average of the highest one-third of waves recorded over a period of approximately 30 minutes



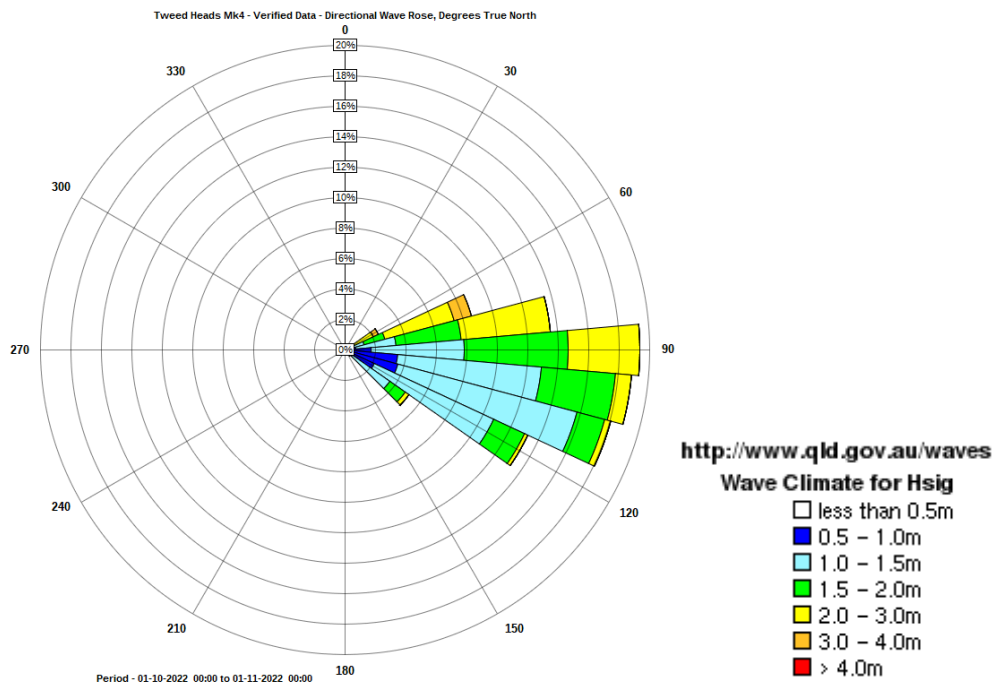
(Source: Tweed Heads Waverider buoy; Queensland Government)

In January 2020 TSB commissioned the deployment of another Waverider buoy in the Tweed region. The Tweed Offshore Waverider buoy was deployed in approximately 60 m water depth to the east and adjacent to Kingscliff and Dreamtime Beaches. The purpose of the Tweed Offshore buoy is to observe and assess changes in wave climate at the Tweed Heads buoy due to the presence of the Danger Reefs and Cook Island.

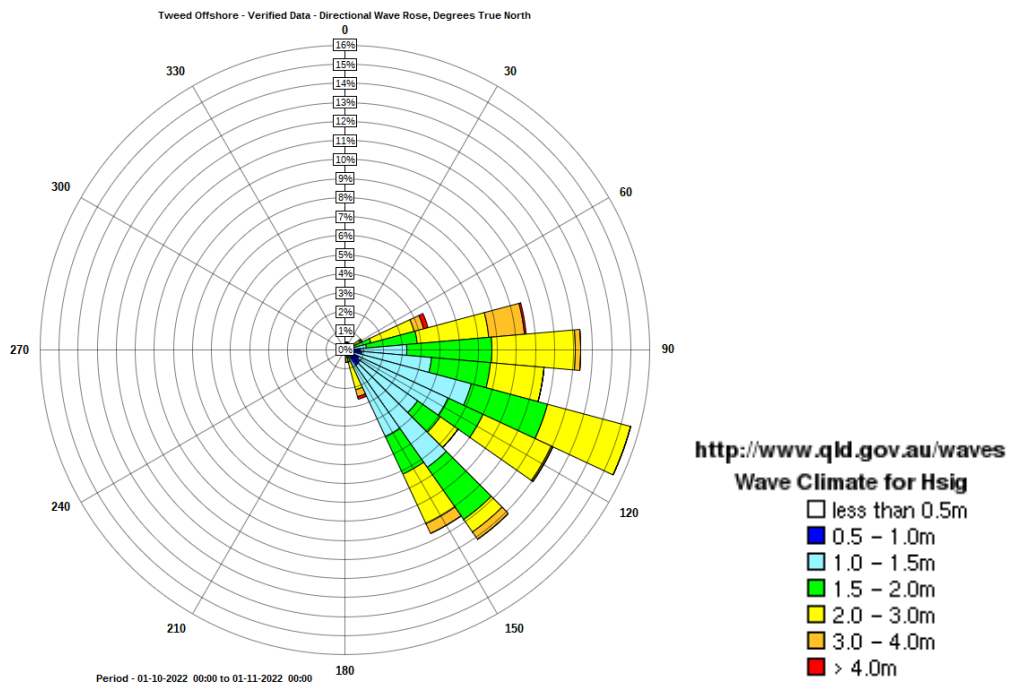
A link to data recorded by the Tweed Heads and Tweed Offshore Waverider buoys is available at: <http://www.qld.gov.au/waves>

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## NEARSHORE WAVE DIRECTION



## OFFSHORE WAVE DIRECTION

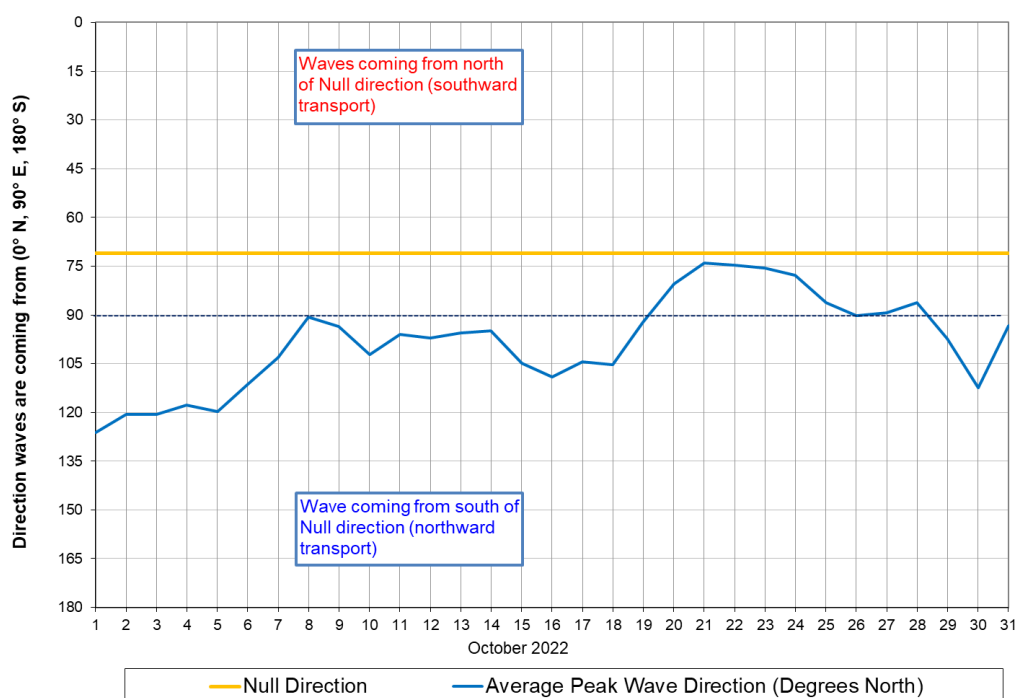
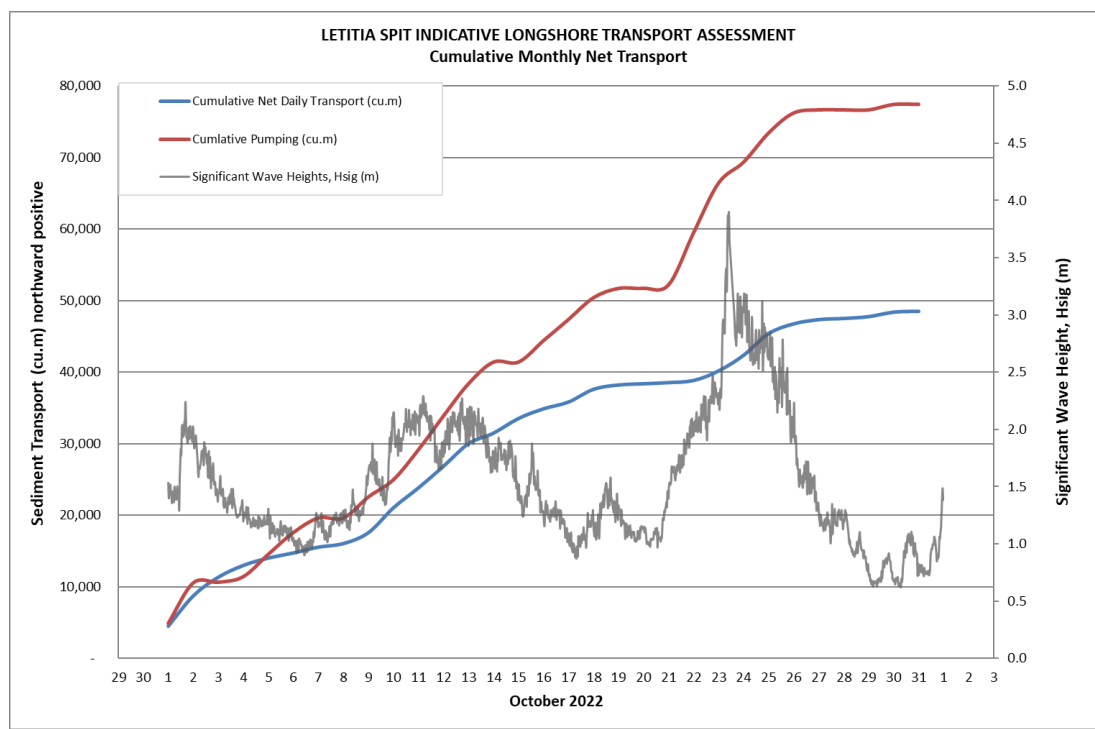


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## 3. INDICATIVE LONGSHORE TRANSPORT

The first graph below is based on simplified sediment transport modelling and is indicative only. The second graph indicates the wave direction in relation to the shoreline null direction (a wave direction coming from south of this line generally results in northward transport of sand).

In October 2022 the estimated natural sand transport moving north towards the Tweed River entrance was calculated to be in the order of 48,000 m<sup>3</sup>. This result is 158 per cent of the average estimated sand transport quantity of approx. 31,000 m<sup>3</sup> for October.



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## 4. BEACH AND SURF AMENITY OBSERVATIONS

Duranbah beach held up well following the easterly swell considering some scarping was evident along the length of the beach and rocks at the northern end were more exposed. The north facing beaches at Greenmount and Kirra did recede but should quickly recover as sand supply has been relatively high due to recent conditions.



Surf conditions were generally good during October with quality sand banks at Duranbah and Snapper Rocks. Snapper Rocks suffered erosion behind the rocks following the late October swell.





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*Duranbah – 2 October 2022*



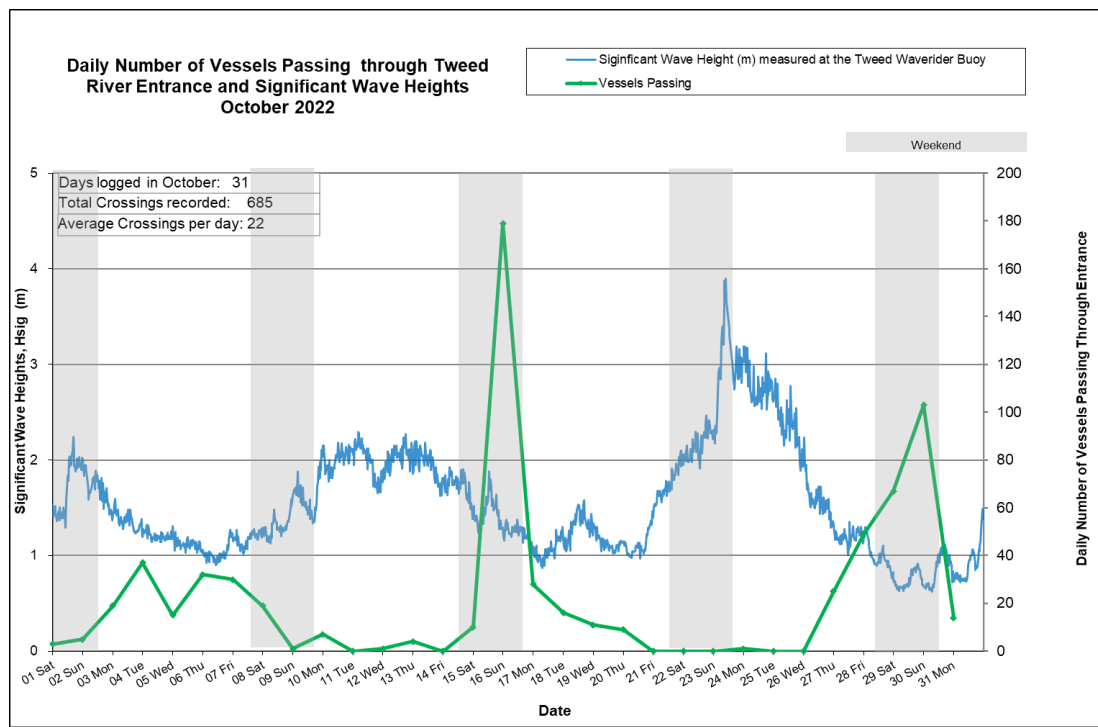
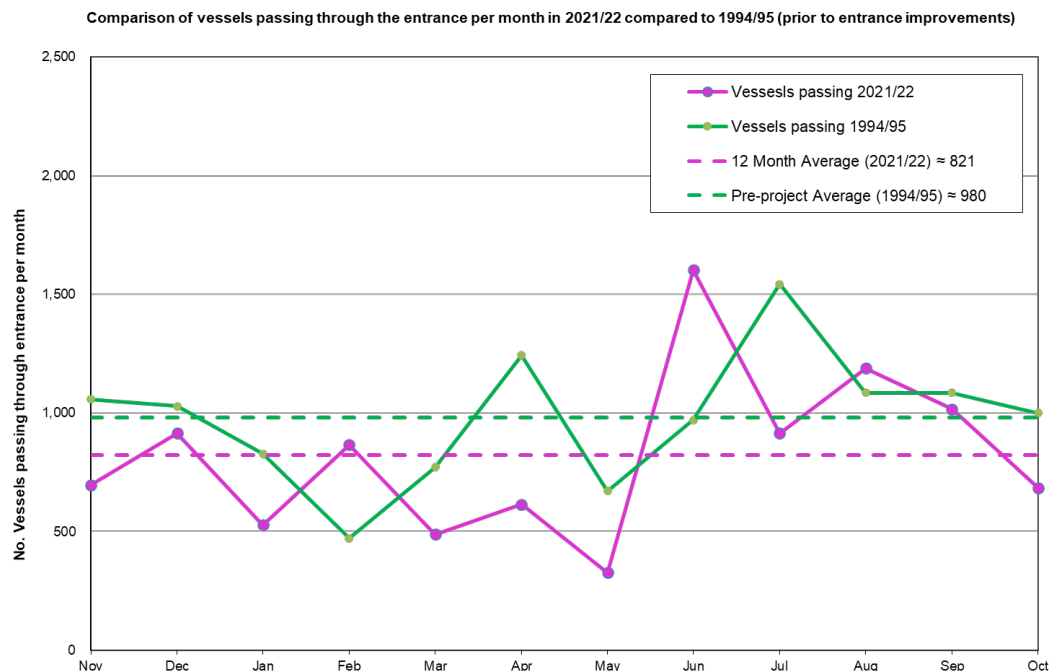
*Snapper Rocks –11 October 2022*



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## 5. TWEED RIVER ENTRANCE USAGE

A total of 685 Tweed River entrance vessel crossings were recorded for the month (43 per cent of the October average (2002–2022)).



# TWEED SAND BYPASSING

Date October 2022	Navigation Rating					Number of Crossings
	Impassable < - - - - > Good					
	Impassable	Difficulty Encountered	Some Difficulty Encountered	Relatively Good Crossing	Good Conditions	
	1	2	3	4	5	
1						3
2						5
3						19
4						37
5						15
6						32
7						30
8						19
9						1
10						7
11						0
12						1
13						4
14						0
15						10
16						179
17						28
18						16
19						11
20						9
21						0
22						0
23						0
24						1
25						0
26						0
27						25
28						49
29						67
30						103
31						14
					Total:	685

Marine Rescue NSW - Monitoring Results (Not including trawlers)

 Weekends

*Source: Marine Rescue NSW, Point Danger*