

TWEED SAND BYPASSING

ENVIRONMENTAL MONITORING SUMMARY – OCTOBER 2023

1. SAND PUMPING & DREDGING

- 39,147 m³ was pumped to Snapper Rocks East.
- 9,259 m³ of sand was dredged with placement at Dreamtime (236 m³) and Bilinga (9,023 m³).

Sand Delivery October 2023

Pumped: 39,147 m³

Dredged: 9,259 m³

Total: 48,406 m³

The number of days sand was pumped this month = 21

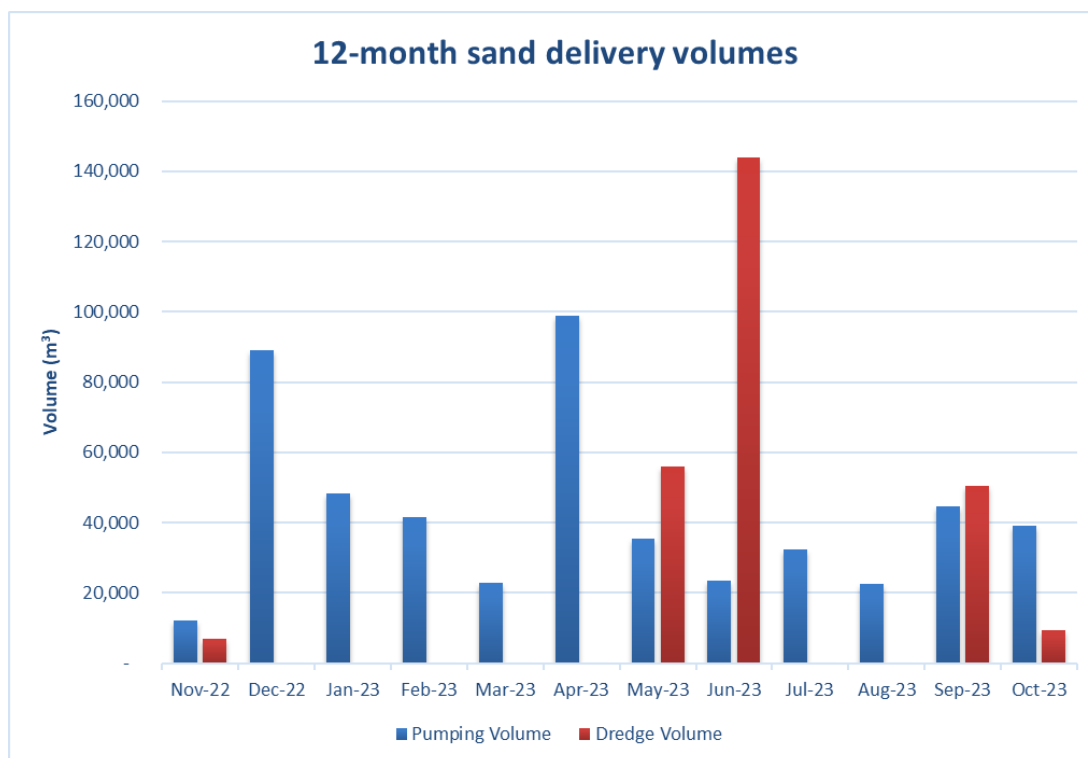
Sand Delivery May 2000 to October 2023

Pumped: 11,514,029 m³

Dredged*: 3,047,294 m³

Total*: 14,561,323 m³

* This Includes 22,870 m³ of sand delivered by dredge to Palm Beach between July 2005 and September 2005



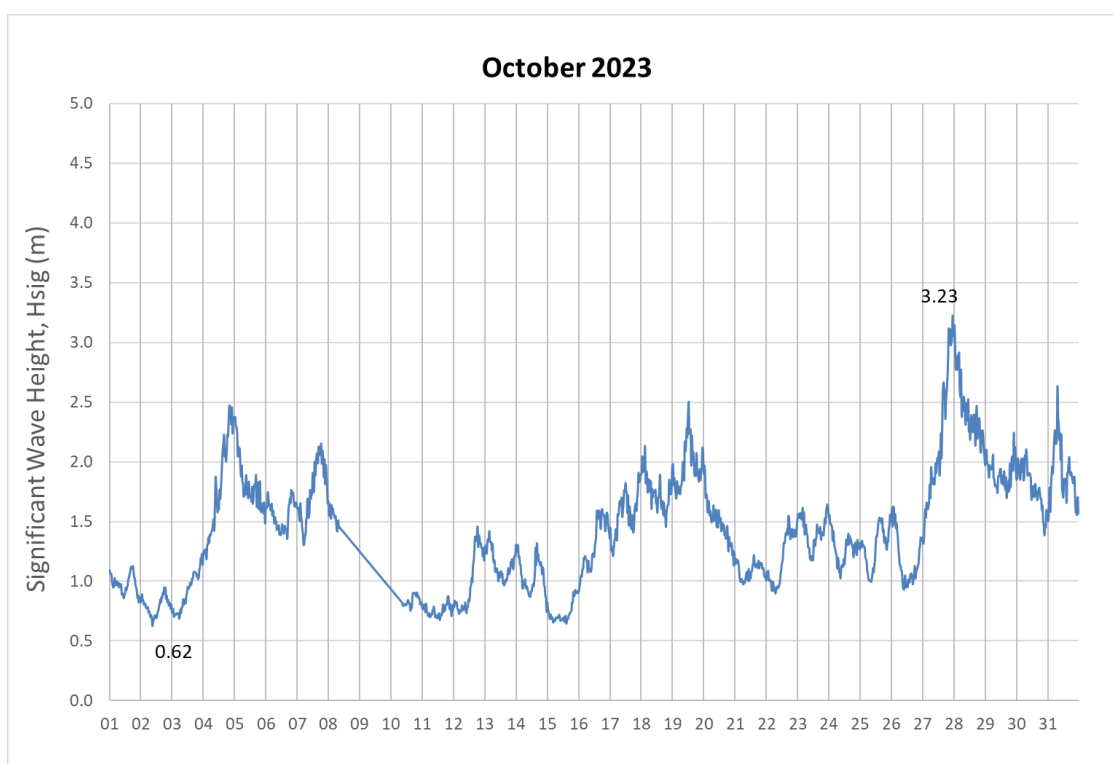
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2. WAVE CONDITIONS

October saw variable conditions throughout the month starting with NE waves up to approx. 2.5 m in height. Conditions eased ranging from SE to ENE and back again with another pulse of wave energy mid-month. The maximum wave height for the month was observed in the last week of October, the swell was generated from the SE by a sub-tropical low and produced the highest sediment transport rates for the month.

- Minimum H_{sig} : 0.62 m on 02 October 2023
- Maximum H_{sig} : 3.23 m on 23 October 2023
- Number of days where $H_{sig} < 1$ m at some point: 15
- Number of days where $H_{sig} > 2$ m at some point: 10

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

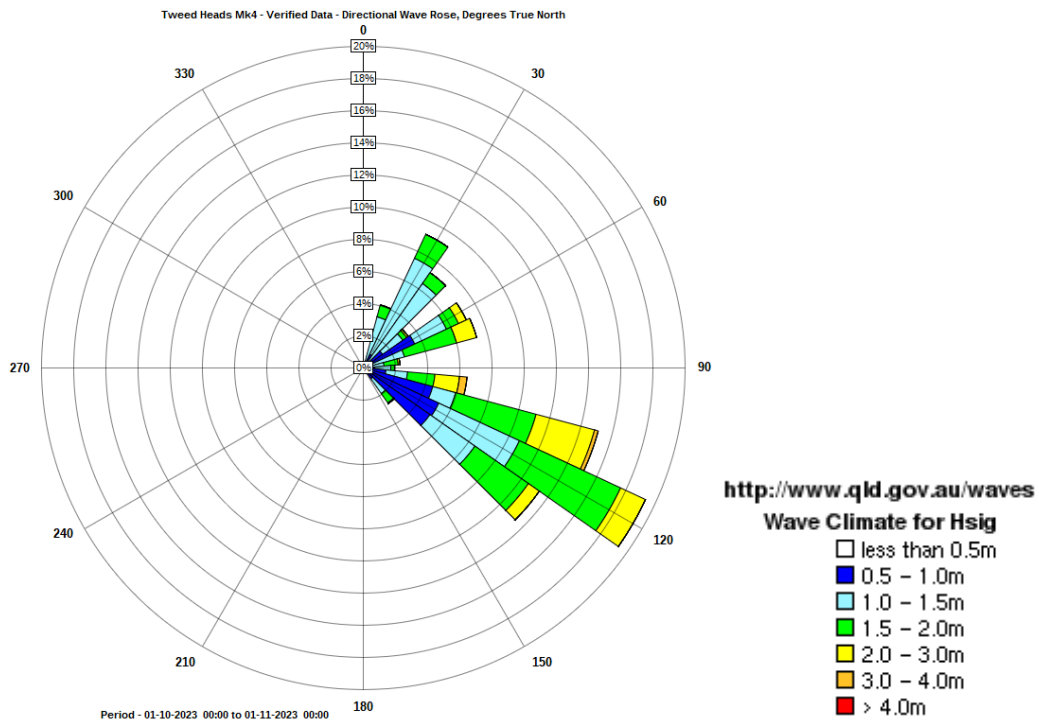


(Source: Tweed Heads Waverider buoy; Queensland Government)

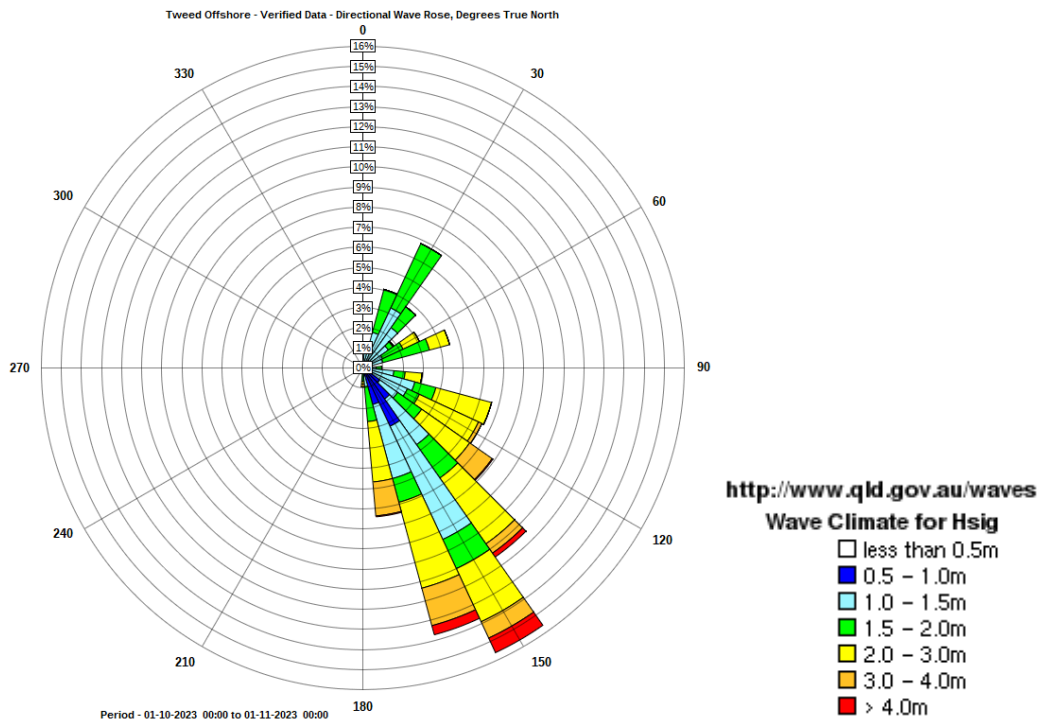
A link to data recorded by the Tweed Heads and Tweed Offshore Waverider buoys is available at:
<http://www.qld.gov.au/waves>

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NEARSHORE WAVE DIRECTION



OFFSHORE WAVE DIRECTION

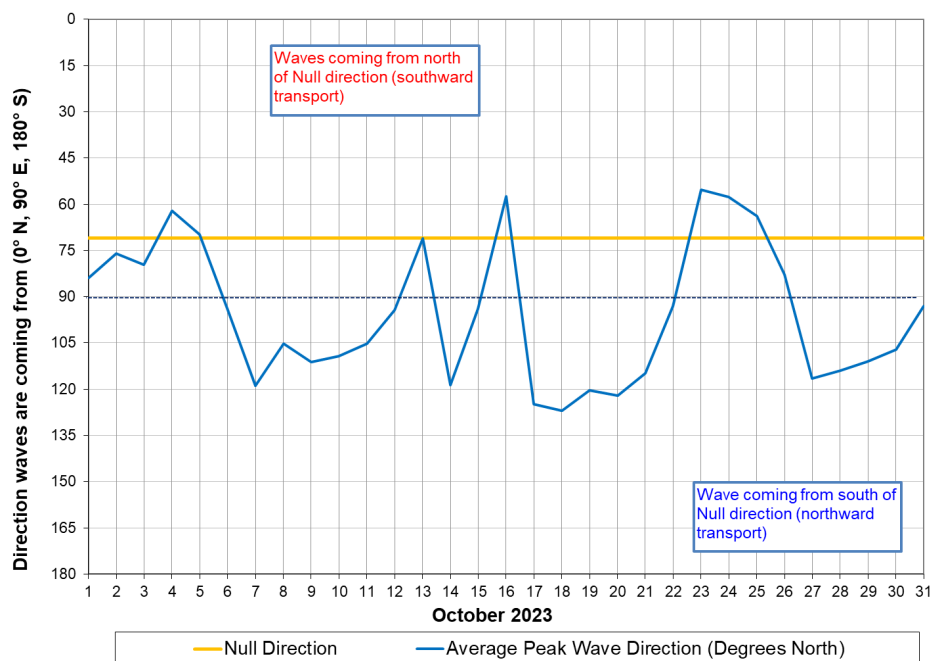
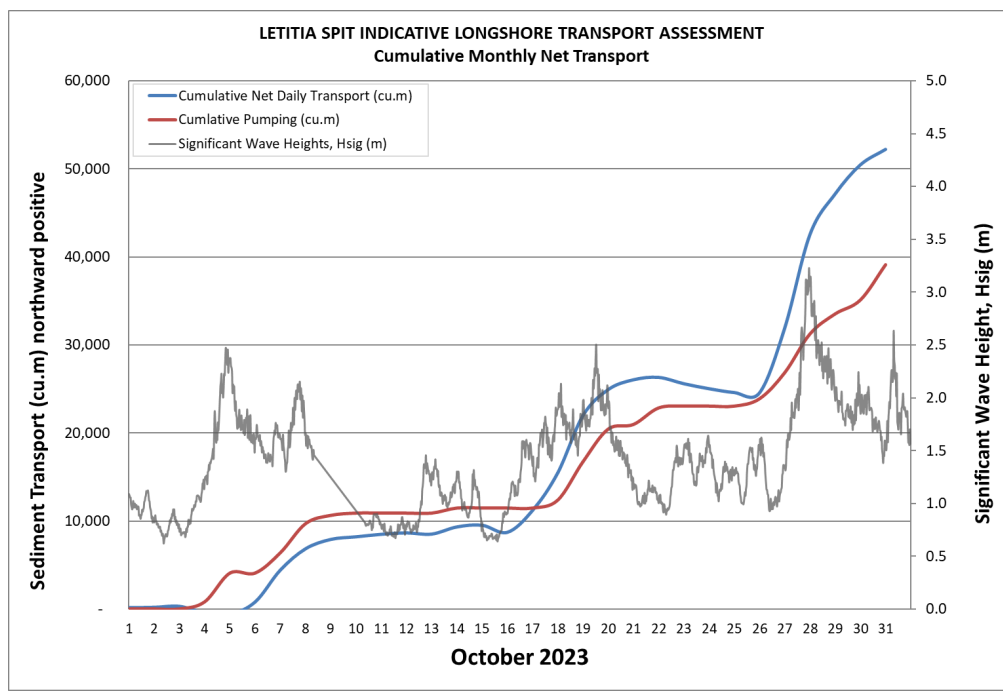


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3. INDICATIVE LONGSHORE TRANSPORT

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 2023 the estimated natural sand transport moving north towards the Tweed River entrance was calculated to be in the order of 52,000 . This result is 166 per cent of the average estimated sand transport quantity of approx. 31,000 m³ for October.



OFFICIAL

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4. BEACH AND SURF AMENITY OBSERVATIONS

October saw variable conditions throughout the month with SE and NE swell directions and moderate wave heights. The sediment transport rate was also relatively high compared to the October average. The NE conditions have moved sand from out from the Rainbow Bay beach compartment (see images below), around Greenmount, and through to Coolangatta Beach which is now relatively wide.



Rainbow Bay 21 October



Rainbow Bay 01 November

With the swell only reaching over 2.5 m Hsig on 3 occasions during the month of October, Duranbah provided the most consistent waves for this period. The points still produced some quality waves, however, this was limited to the few days of larger swell.



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Rainbow Bay – 28 October 2023

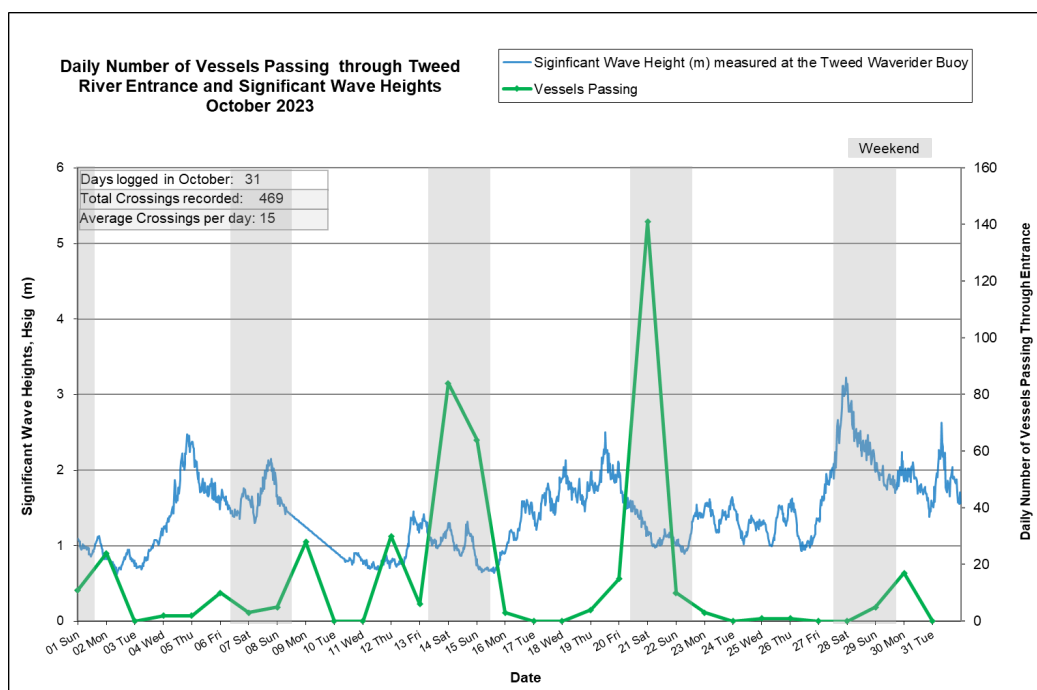
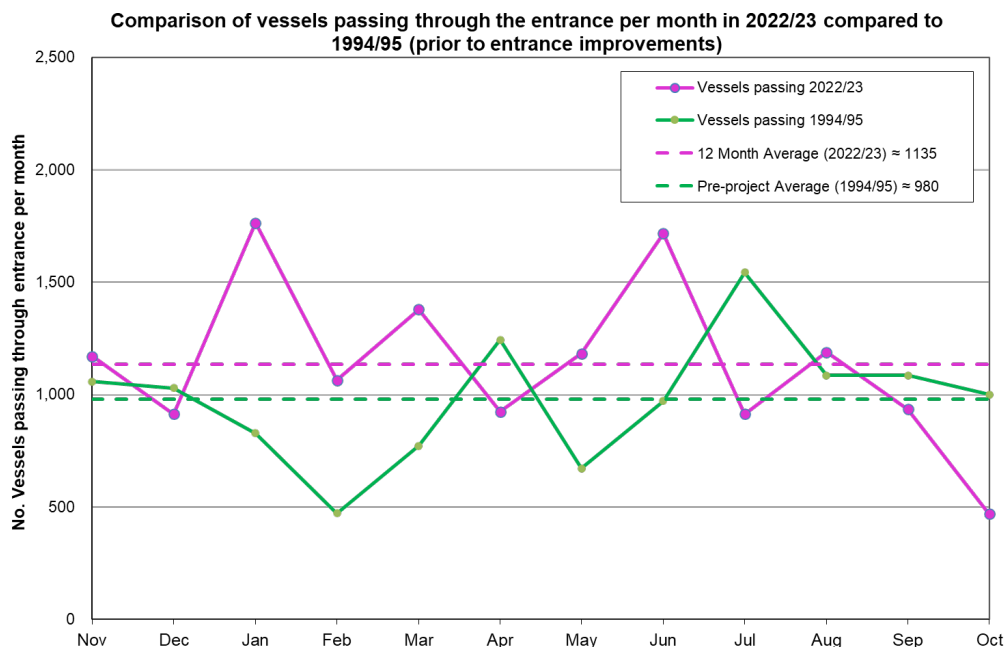


Rainbow Bay – 29 October 2023

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5. TWEED RIVER ENTRANCE USAGE

A total of 469 Tweed River entrance vessel crossings were recorded for the month (31 per cent of the October average (2002–2023)).



TWEED SAND BYPASSING

Date October 2023	Navigation Rating					Number of Crossings
	Impassable < - - - - - > Good					
	Impassable	Difficulty Encountered	Some Difficulty Encountered	Relatively Good Crossing	Good Conditions	
	1	2	3	4	5	
1						11
2						24
3						0
4						2
5						2
6						10
7						3
8						5
9						28
10						0
11						0
12						30
13						6
14						84
15						64
16						3
17						0
18						0
19						4
20						15
21						141
22						10
23						3
24						0
25						1
26						1
27						0
28						0
29						5
30						17
31						0
					Total:	469

Marine Rescue NSW - Monitoring Results (Not including trawlers)

 Weekends

Source: Marine Rescue NSW, Point Danger