

TWEED SAND BYPASSING

ENVIRONMENTAL MONITORING SUMMARY – SEPTEMBER 2023

1. SAND PUMPING & DREDGING

- 46,525 m³ was pumped to Snapper Rocks East.
- 50,504 m³ of sand was dredged with placement at Snapper Rocks (8,958 m³), Dreamtime (10,739 m³) and Bilinga (30,807 m³).

Sand Delivery September 2023

Pumped: 46,525 m³

Dredged: 50,504 m³

Total: 97,029 m³

The number of days sand was pumped this month = 20

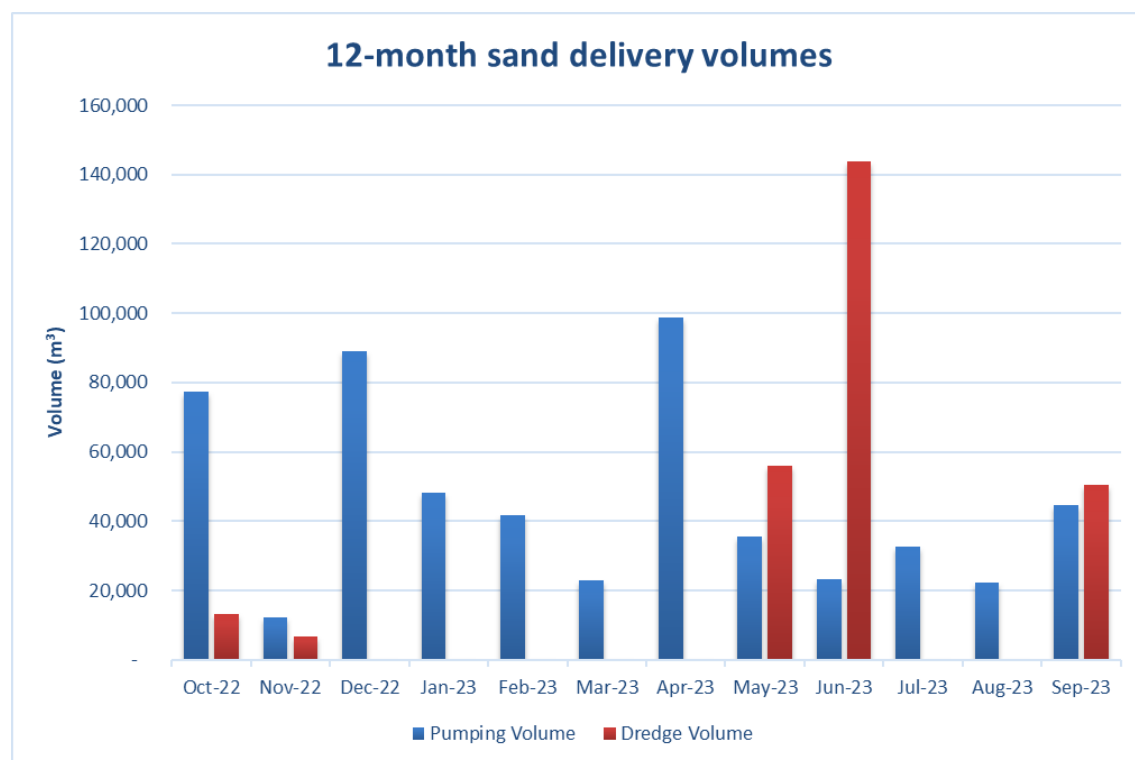
Sand Delivery May 2000 to September 2023

Pumped: 11,476,720 m³

Dredged*: 3,038,035 m³

Total*: 14,514,755 m³

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



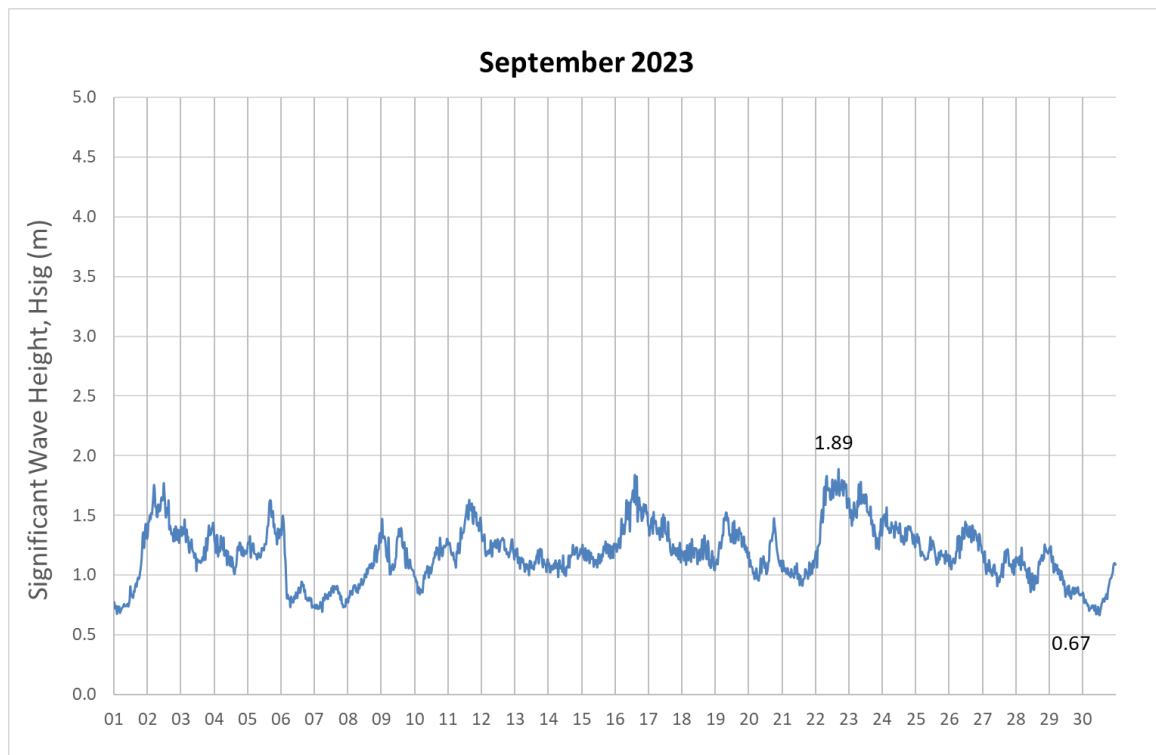
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2. WAVE CONDITIONS

Through September easterly and ENE wave energy dominated with some southerly pulses observed. Overall wave heights were low to moderate with no significant swell events experienced.

- Minimum H_{sig} : 0.67 m on 30 September 2023
- Maximum H_{sig} : 1.89 m on 22 September 2023
- Number of days where $H_{sig} < 1$ m at some point: 13
- Number of days where $H_{sig} > 2$ m at some point: 0

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

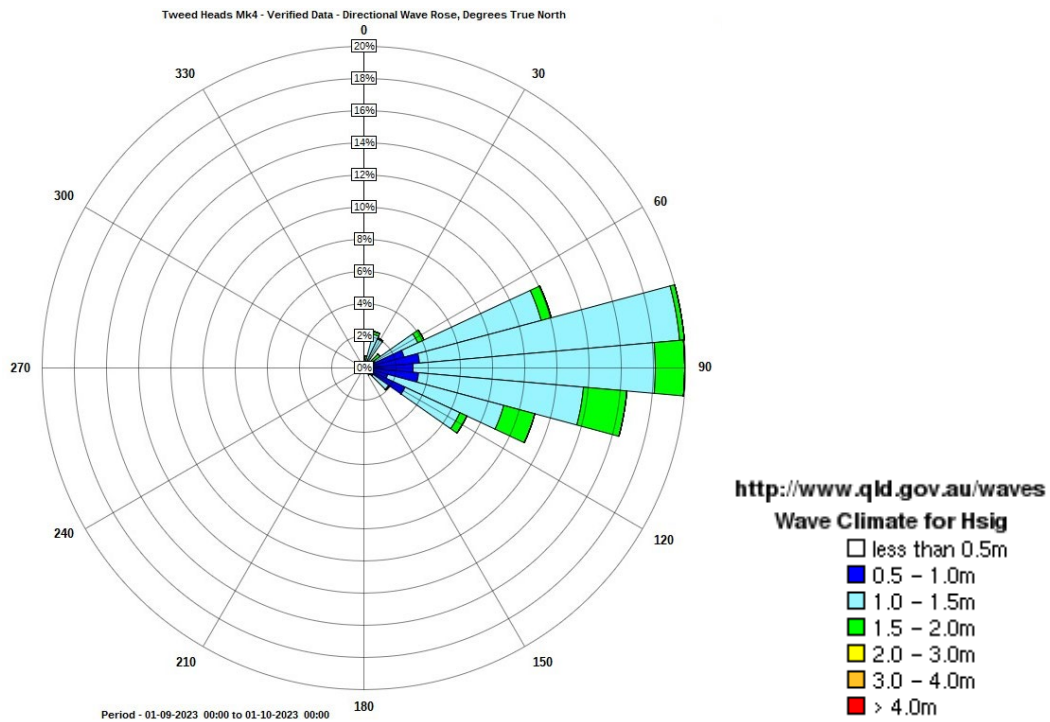


(Source: Tweed Heads Waverider buoy; Queensland Government)

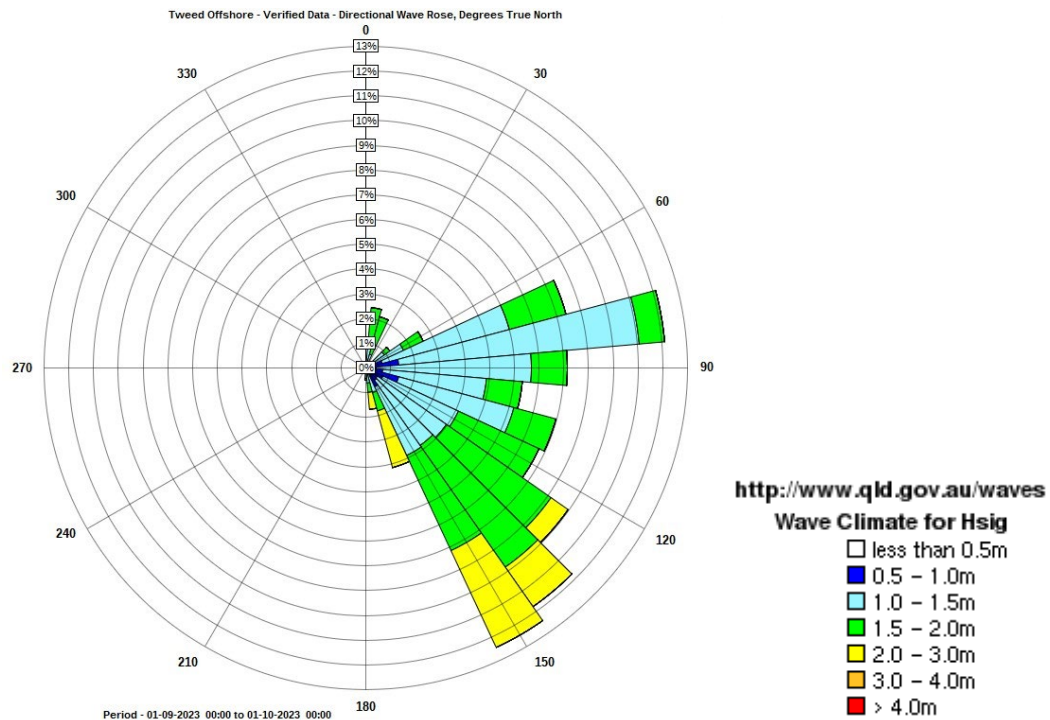
A link to data recorded by the Tweed Heads and Tweed Offshore Waverider buoys is available at:
<http://www.qld.gov.au/waves>

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NEARSHORE WAVE DIRECTION



OFFSHORE WAVE DIRECTION

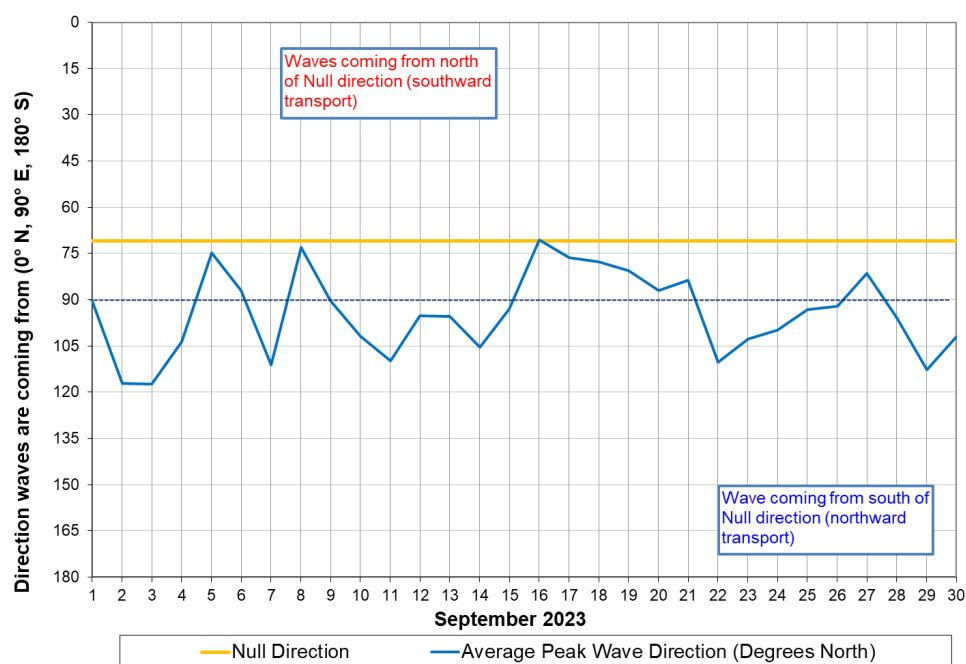
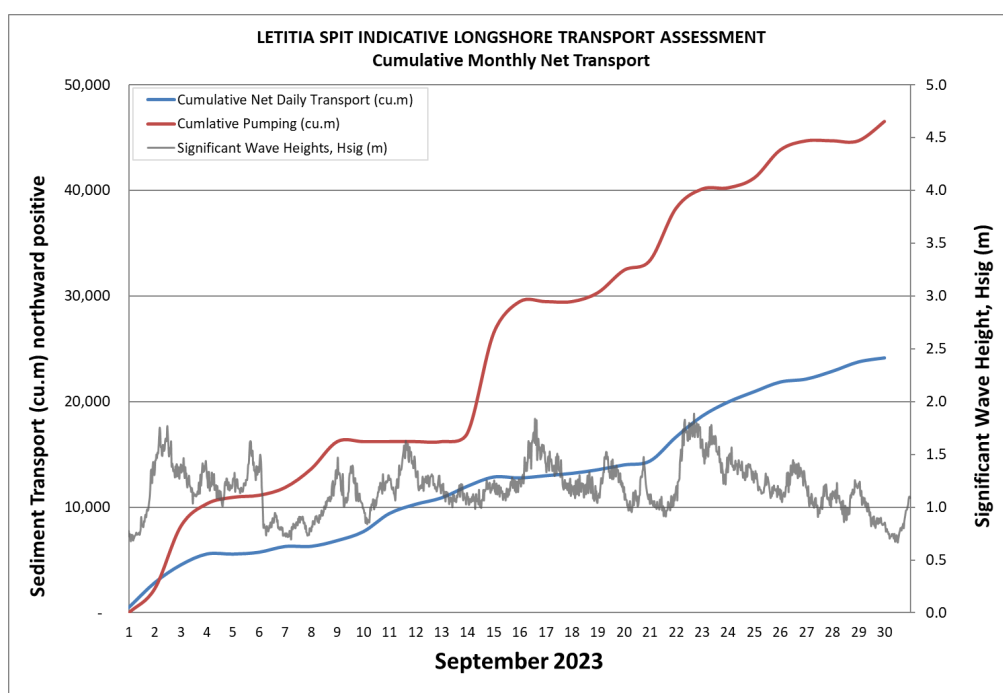


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3. INDICATIVE LONGSHORE TRANSPORT

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 September 2023 the estimated natural sand transport moving north towards the Tweed River entrance was calculated to be in the order of 24,000 m³. This result is 84 per cent of the average estimated sand transport quantity of approx. 29,000 m³ for September.



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4. BEACH AND SURF AMENITY OBSERVATIONS

All beaches held up well under the mild northerly conditions. Note that the majority of dredging for the year was complete by the end of September and resulted in consistently favourable conditions for boat users.



Duranbah 30 September



Fingal 13 September

Lots of options for waves were experienced during September 2023. Duranbah offered many days of quality waves with good quality sand banks. Snapper Rocks to Rainbow Bay had good waves on larger days of swell.



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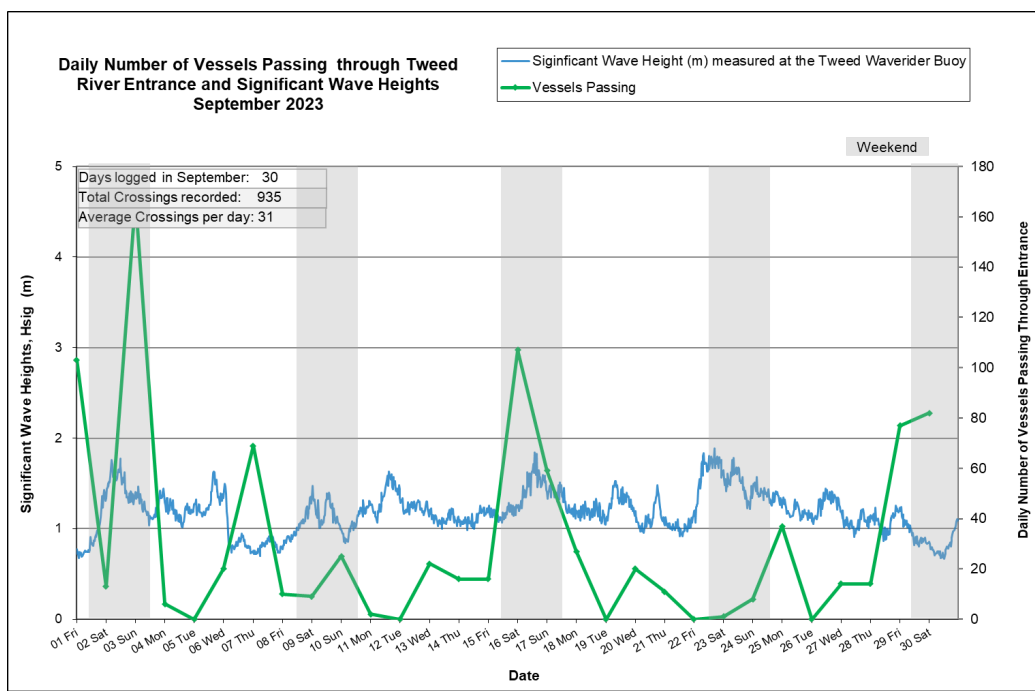
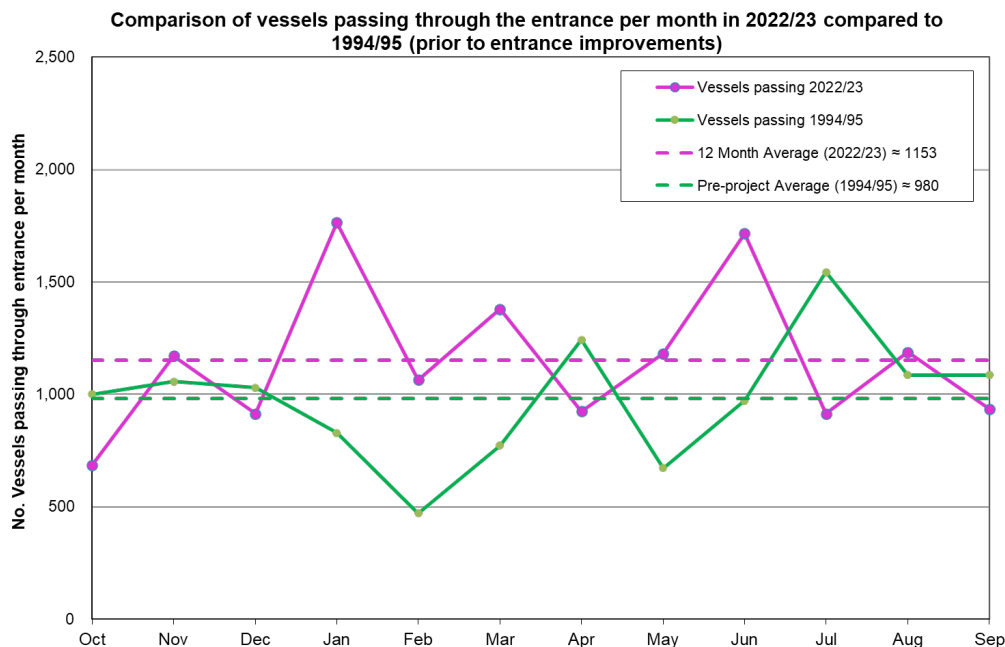
SURFONMARS

Rainbow Bay – 23 September 2023

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5. TWEED RIVER ENTRANCE USAGE

A total of 935 Tweed River entrance vessel crossings were recorded for the month (61 per cent of the September average (2002–2023)).



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Date September 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						103
2						13
3						167
4						6
5						0
6						20
7						69
8						10
9						9
10						25
11						2
12						0
13						22
14						16
15						16
16						107
17						59
18						27
19						0
20						20
21						11
22						0
23						1
24						8
25						37
26						0
27						14
28						14
29						77
30						82
					Total:	935

Marine Rescue NSW - Monitoring Results (Not including trawlers)

 Weekends

Source: Marine Rescue NSW, Point Danger