

TWEED SAND BYPASSING

ENVIRONMENTAL MONITORING SUMMARY – AUGUST 2022

1. SAND PUMPING & DREDGING

- 22,517 m³ was pumped to Snapper Rocks East.
- 16,174 m³ of sand was dredged with 8,626 m³ placed at Dreamtime and 7,548 m³ placed at Duranbah

Sand Delivery August 2022

Pumped: 22,517 m³

Dredged: 16,174 m³

Total: 38,691 m³

The number of days sand was pumped this month = 12

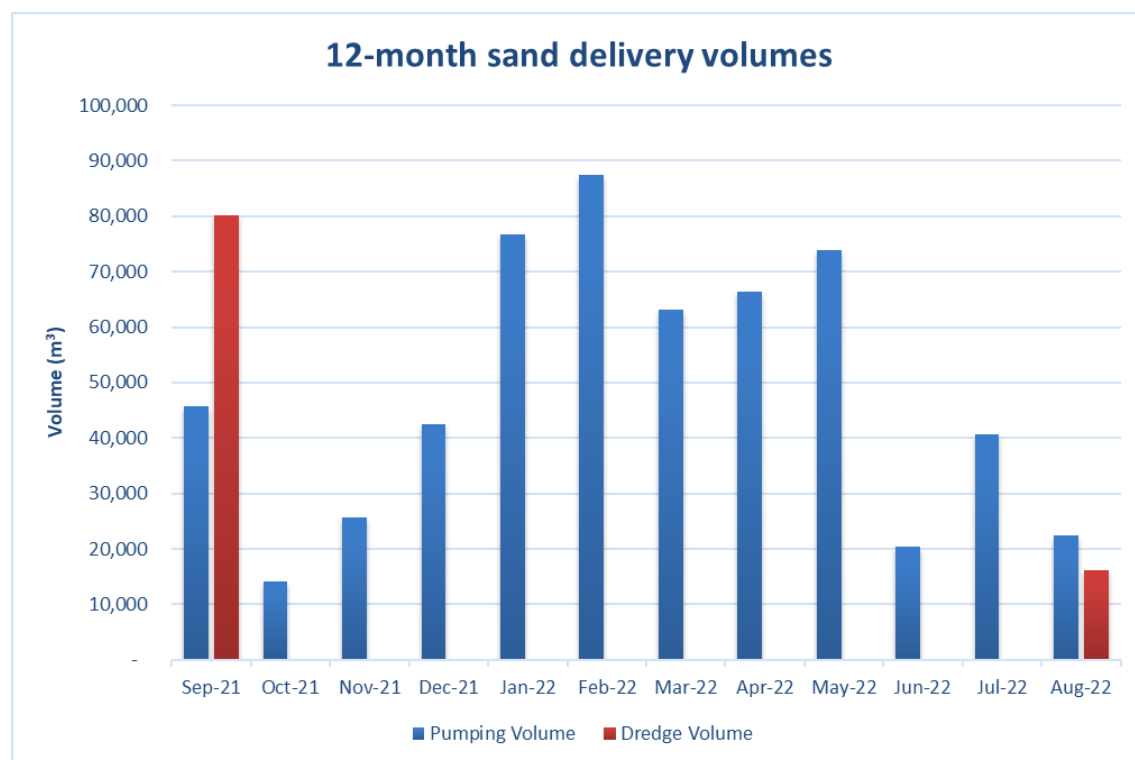
Sand Delivery May 2000 to date

Pumped: 10,883,057 m³

Dredged*: 2,722,916 m³

Total*: 13,605,973 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

During August the swell direction was predominantly east and ESE, and wave heights were relatively small to moderate. There were two distinct swell events over 2 m however they were only above that threshold for less than a day each.

- Minimum H_{sig} : 0.4 m on 7 August 2022
- Maximum H_{sig} : 2.74 m on 24 August 2022
- Number of days where $H_{sig} < 1$ m at some point: 19
- Number of days where $H_{sig} > 2$ m at some point: 3

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



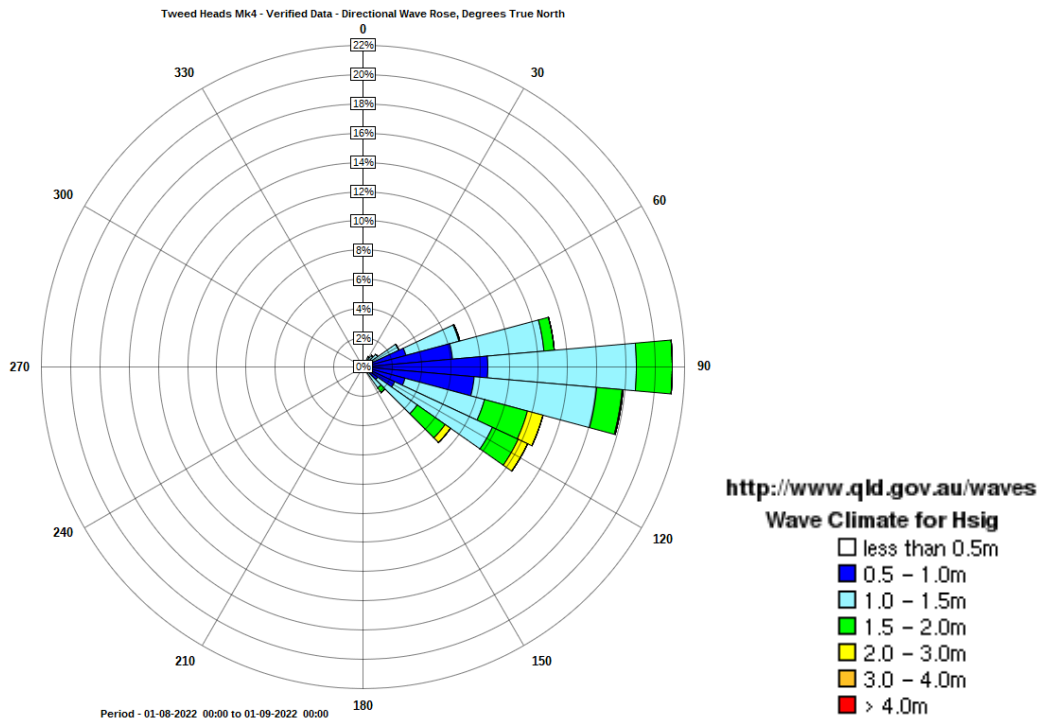
(Source: Tweed Heads Waverider buoy; Queensland Government)

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.

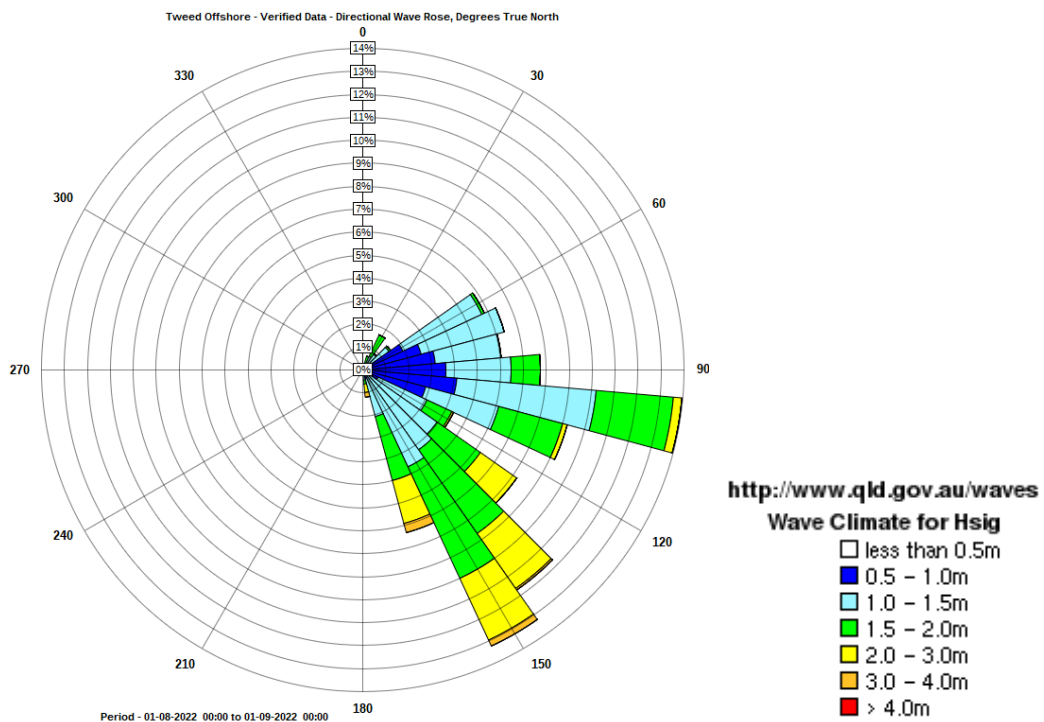
A link to data recorded by the Tweed Heads and Tweed Offshore Waverider buoys is available at: <http://www.qld.gov.au/waves>

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NEARSHORE WAVE DIRECTION



OFFSHORE WAVE DIRECTION

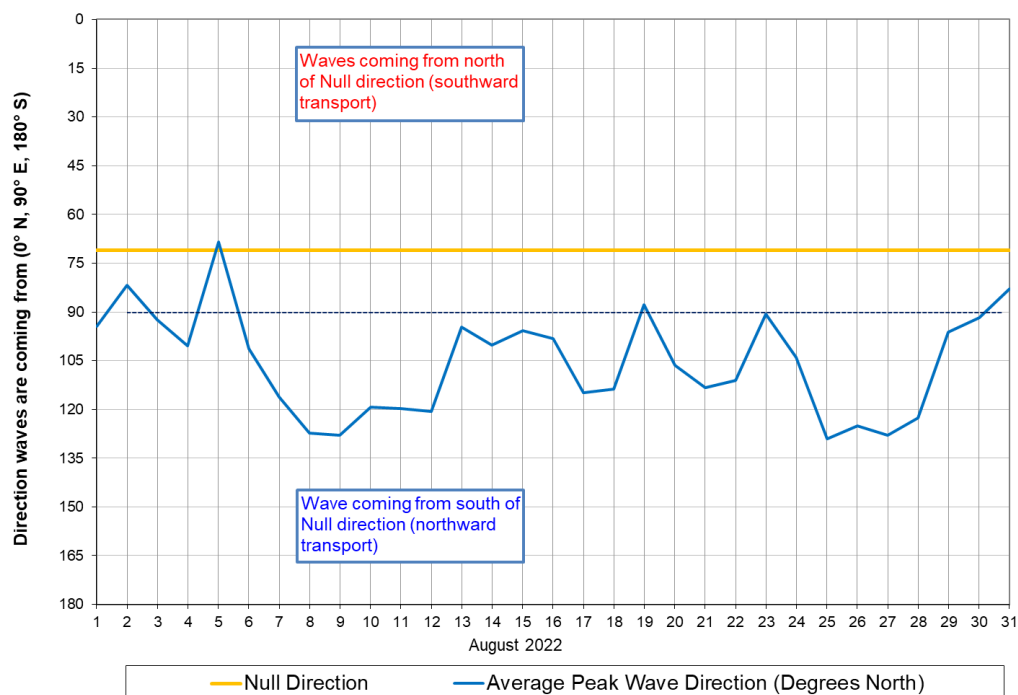
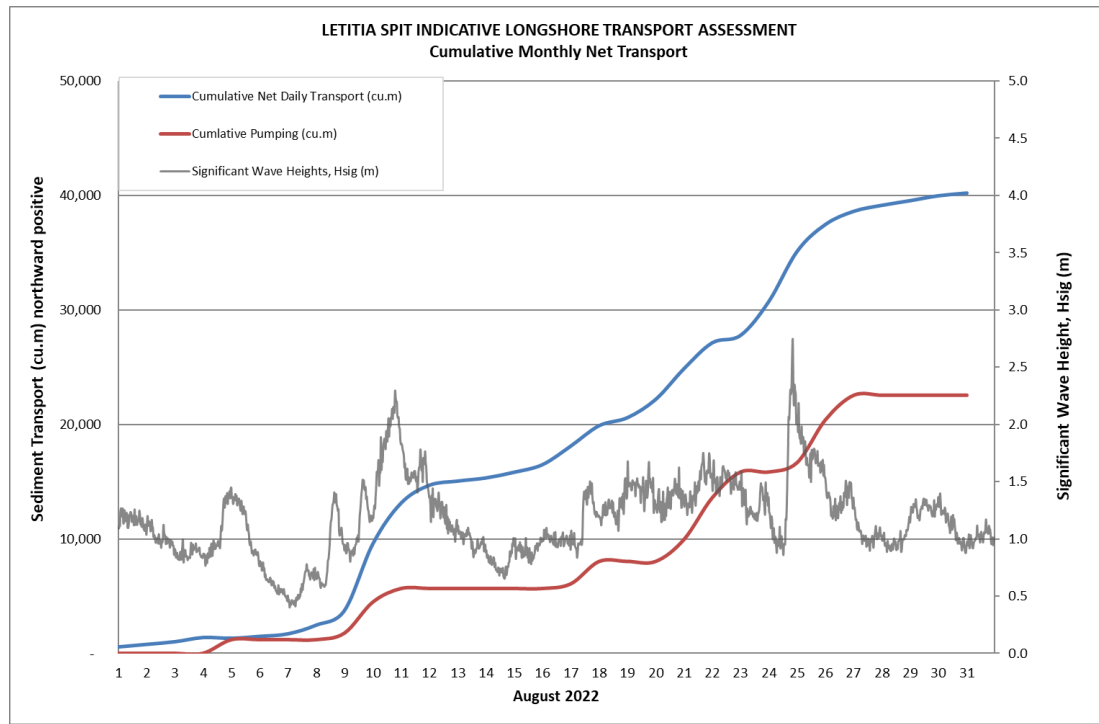


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3. INDICATIVE LONGSHORE TRANSPORT

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 August 2022 the estimated natural sand transport moving north towards the Tweed River entrance was calculated to be in the order of 40,000 m³. This result is 93 per cent of the average estimated sand transport quantity of approx. 43,000 m³ for August.



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4. BEACH AND SURF AMENITY OBSERVATIONS

Duranbah held up well throughout August following the placement of sand in July during a significant swell event. The shoreline along north facing beaches were drawn back over the month due to easterly and ENE swell conditions.



Duranbah July post-placement



Duranbah end of August

Following the swell of late July, Snapper Rocks bank quality deteriorated due to deeper conditions behind and around Snapper Rocks. August saw a rebuilding of the sand pathway from the Snapper Rocks East pumping outlet.

Rainbow Bay through to Greenmount still retained consistent sand bank quality.

Duranbah sand banks were average with some better-quality days toward the end of August.



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Rainbow Bay - August 2022



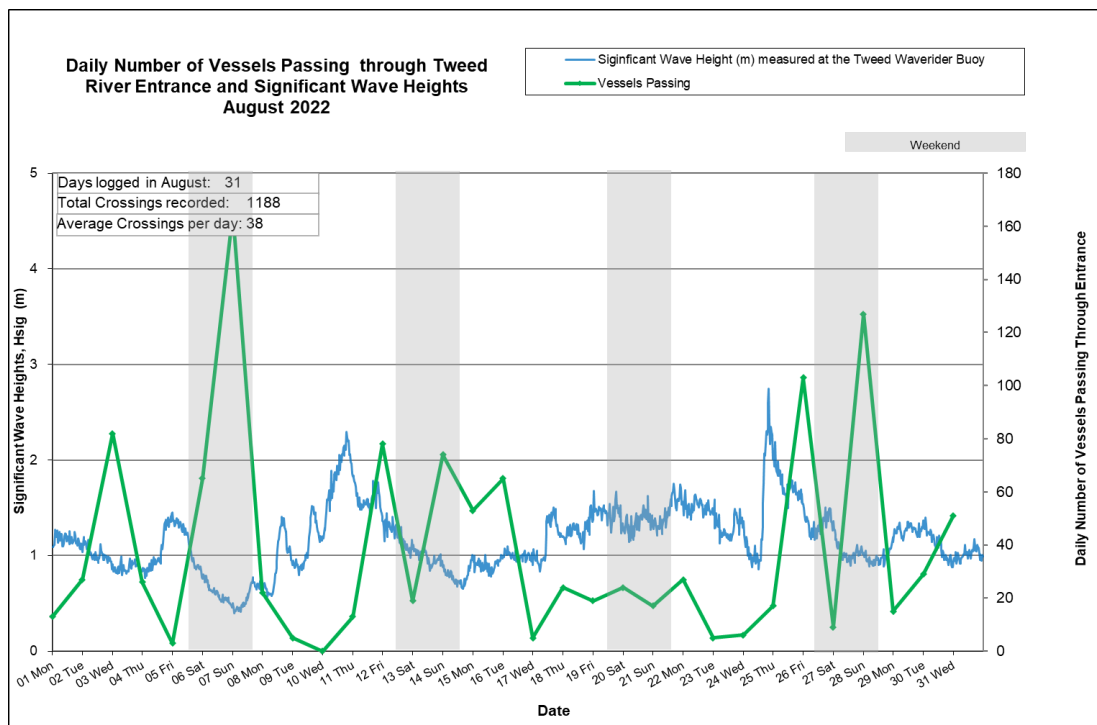
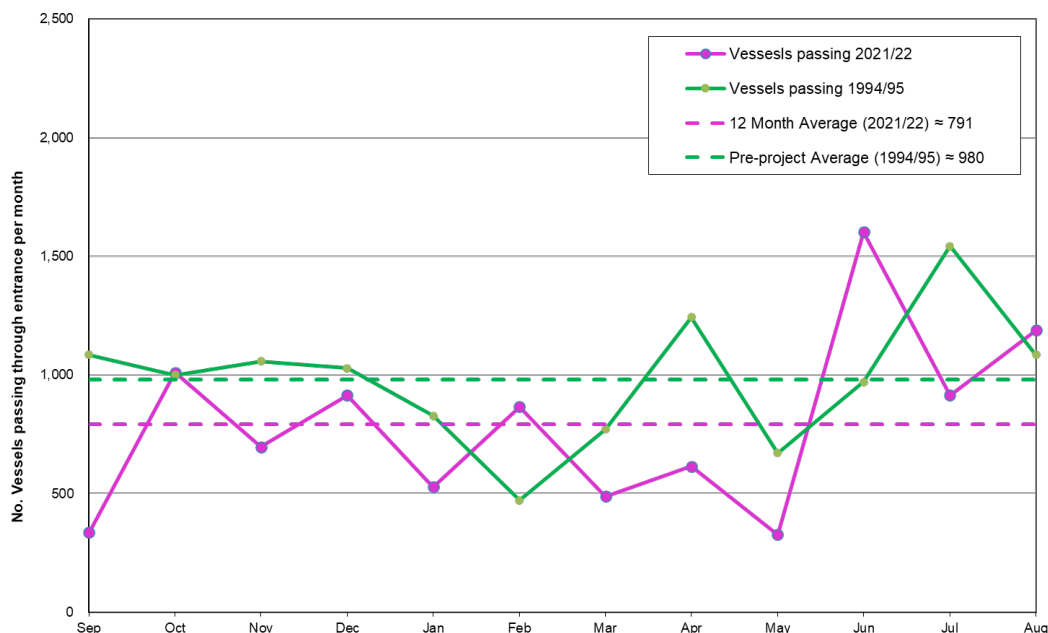
Surfonmars

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5. TWEED RIVER ENTRANCE USAGE

A total of 1,188 Tweed River entrance vessel crossings were recorded for the month (64 per cent of the August average (2002–2022)).

Comparison of vessels passing through the entrance per month in 2021/22 compared to 1994/95 (prior to entrance improvements)



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Date August 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						13
2						27
3						82
4						26
5						3
6						65
7						165
8						22
9						5
10						0
11						13
12						78
13						19
14						74
15						53
16						65
17						5
18						24
19						19
20						24
21						17
22						27
23						5
24						6
25						17
26						103
27						9
28						127
29						15
30						29
31						51
					Total:	1,188

Marine Rescue NSW - Monitoring Results (Not including trawlers)

 Weekends

Source: Marine Rescue NSW, Point Danger