

TWEED SAND BYPASSING

ENVIRONMENTAL MONITORING SUMMARY – JANUARY 2023

1. SAND PUMPING & DREDGING

- 48,339 m³ was pumped to Snapper Rocks East.
- 0 m³ of sand was dredged

Sand Delivery January 2023

Pumped: 48,339 m³

Dredged: 0 m³

Total: 48,339 m³

The number of days sand was pumped this month = 27

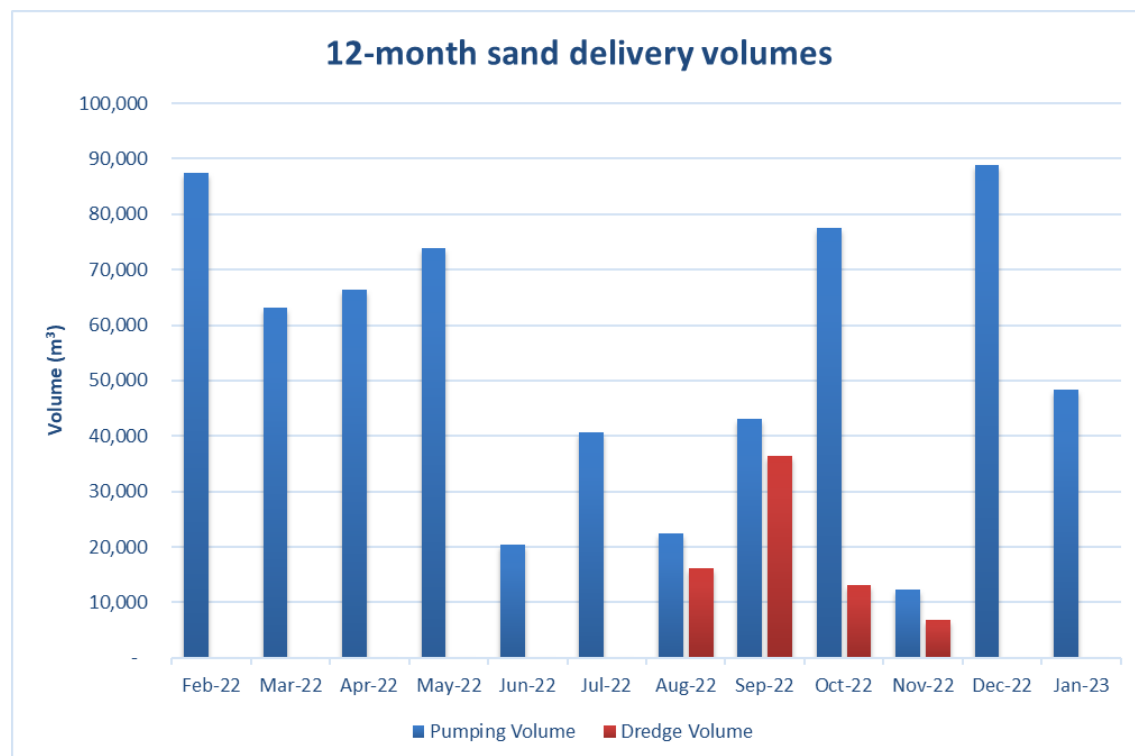
Sand Delivery May 2000 to date

Pumped: 11,153,226 m³

Dredged*: 2,787,767 m³

Total*: 13,940,993 m³

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



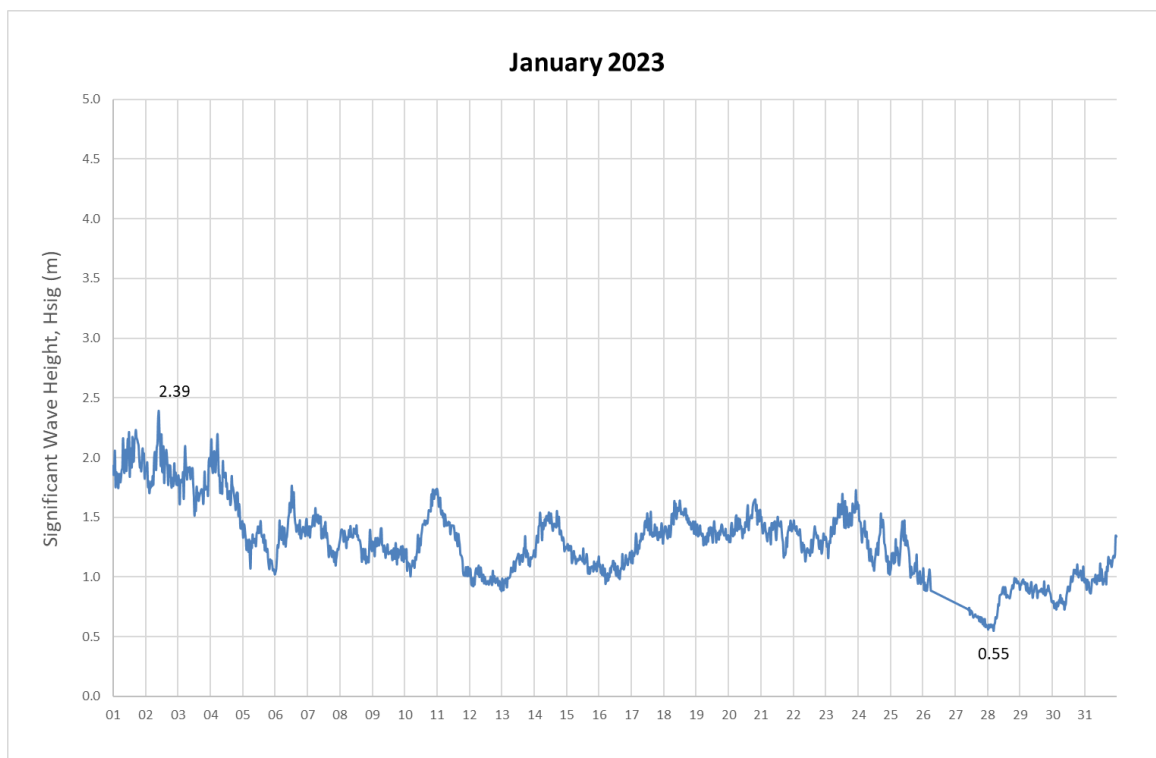
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2. WAVE CONDITIONS

A strong E/NE swell persisted for the first week of January with a peak significant wave height of 2.4m before easing and coming from further south. There were some smaller NE pulses in the second half of the month, and conditions eased off further coming into February.

- Minimum H_{sig} : 0.55 m on 28 January 2023
- Maximum H_{sig} : 2.39 m on 2 January 2023
- Number of days where $H_{sig} < 1$ m at some point: 10
- Number of days where $H_{sig} > 2$ m at some point: 4

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



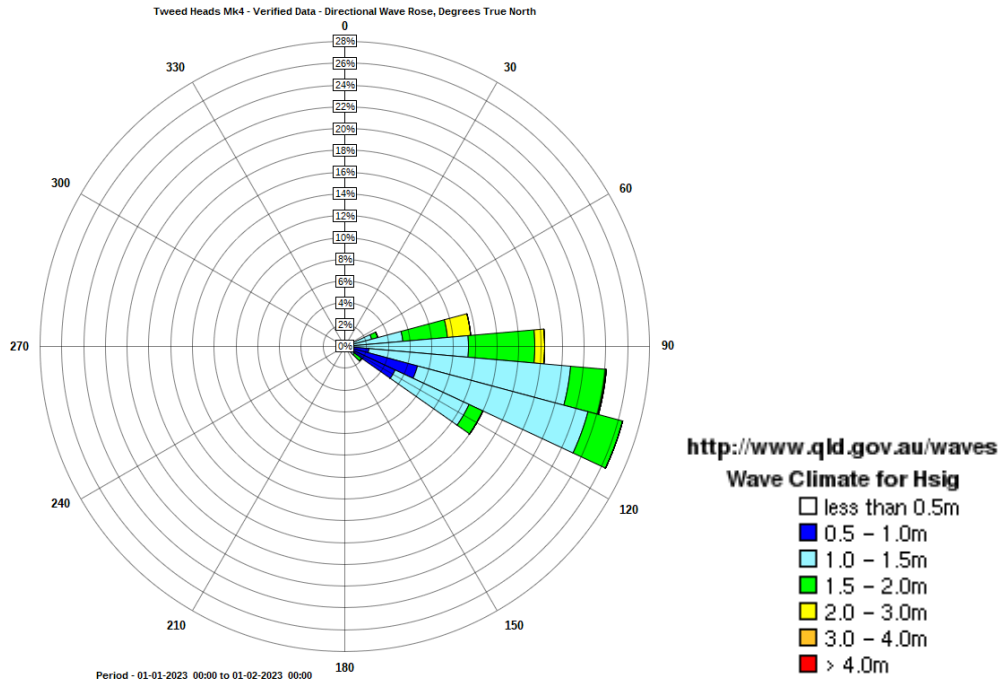
(Source: Tweed Heads Waverider buoy; Queensland Government)

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.

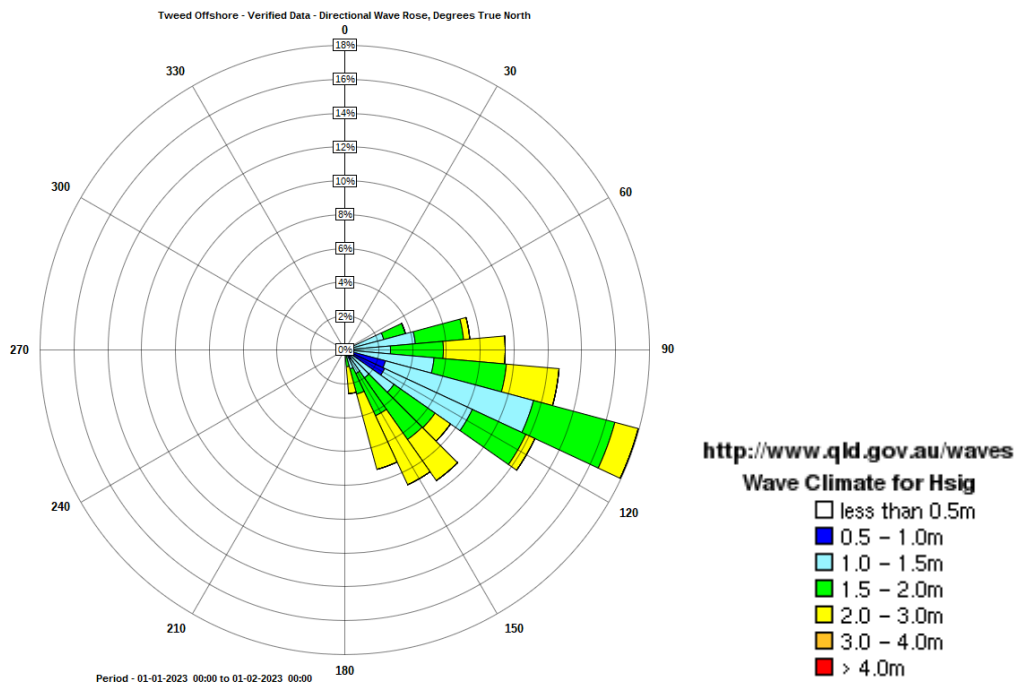
A link to data recorded by the Tweed Heads and Tweed Offshore Waverider buoys is available at: <http://www.qld.gov.au/waves>

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NEARSHORE WAVE DIRECTION



OFFSHORE WAVE DIRECTION

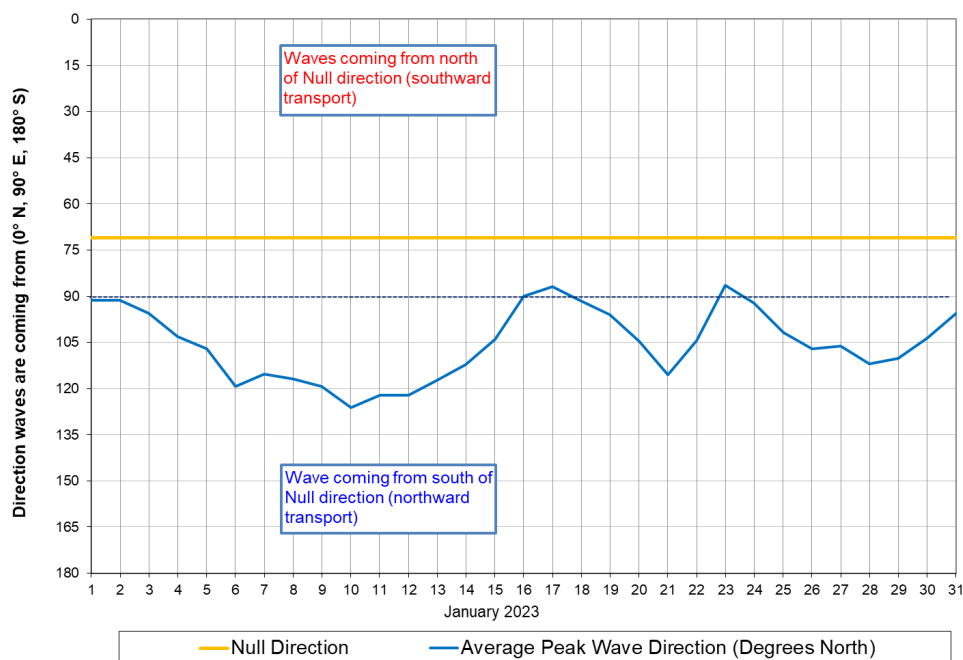
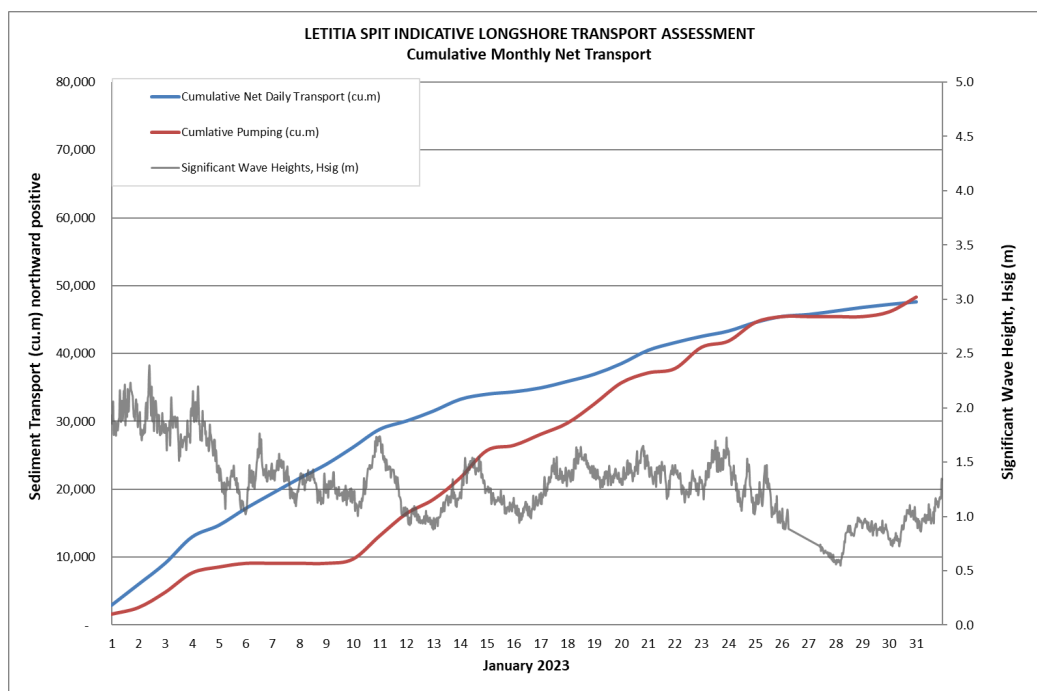


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3. INDICATIVE LONGSHORE TRANSPORT

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 January 2023 the estimated natural sand transport moving north towards the Tweed River entrance was calculated to be in the order of 48,000 m³. This result is 108 per cent of the average estimated sand transport quantity of approx. 44,000 m³ for January.



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4. BEACH AND SURF AMENITY OBSERVATIONS

No significant change was observed along the beaches. Ponding/lagoons at Coolangatta filled in as sand moved onshore under mild conditions. The storm bar evident in December also dissipated somewhat and moved further nearshore.



Duranbah at mid-tide



Crowds at Greenmount early Jan

Surf conditions were good to excellent during January with quality sand banks at Snapper Rocks, Rainbow Bay and Greenmount. Duranbah also offered good quality beach breaks on days with smaller swell and favourable winds,



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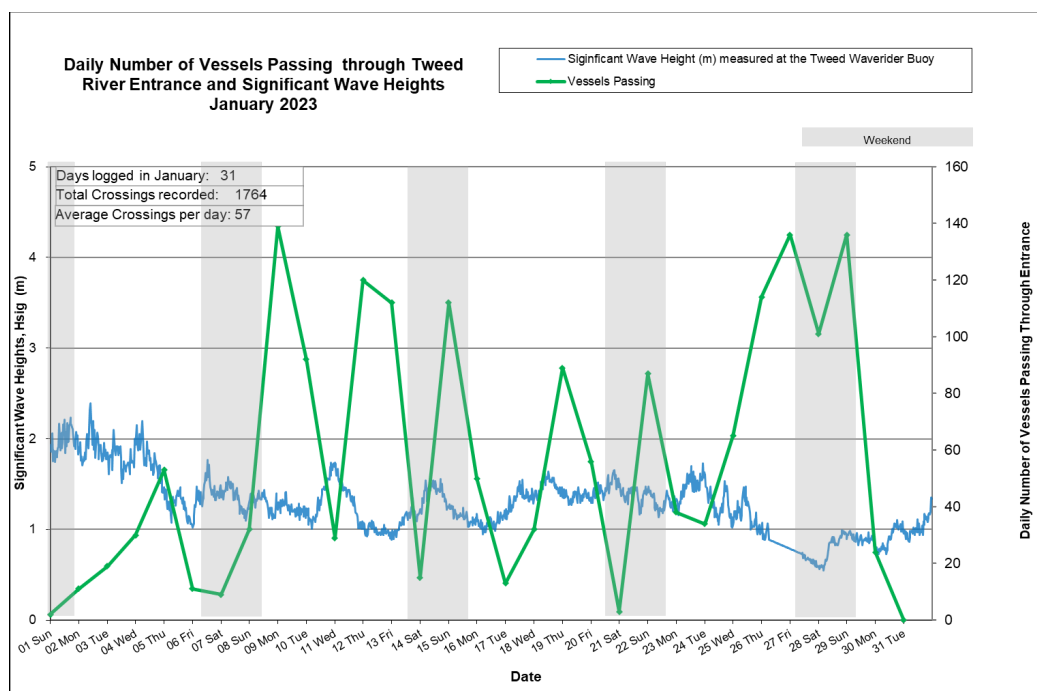
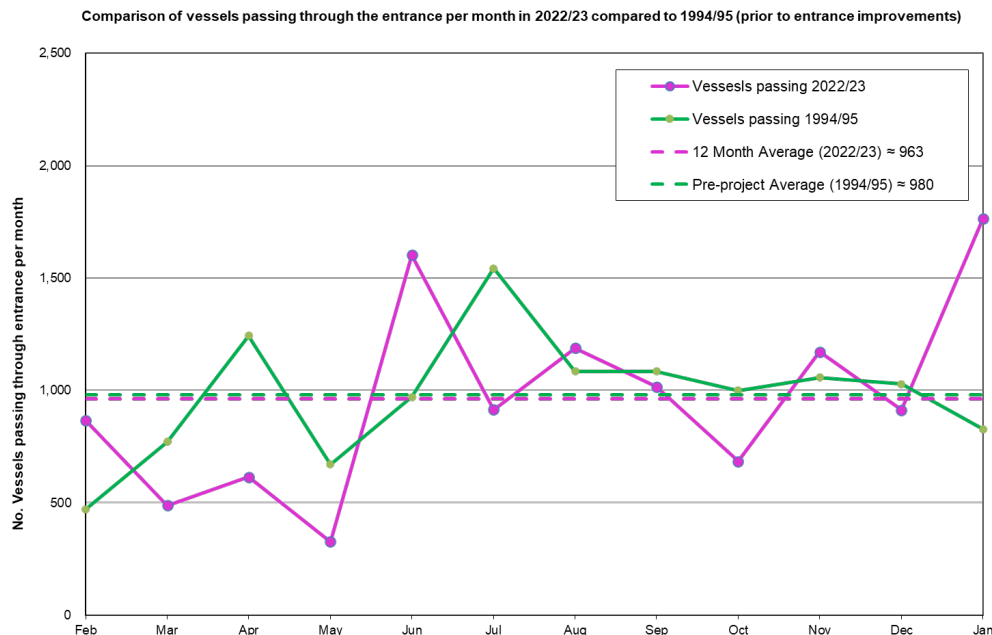
Duranbah – 2 January 2023



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5. TWEED RIVER ENTRANCE USAGE

A total of 1764 Tweed River entrance vessel crossings were recorded for the month (89 per cent of the January average (2002–2023)).



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Date January 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						2
2						11
3						19
4						30
5						53
6						11
7						9
8						32
9						139
10						92
11						29
12						120
13						112
14						15
15						112
16						50
17						13
18						32
19						89
20						56
21						3
22						87
23						38
24						34
25						65
26						114
27						136
28						101
29						136
30						24
31						0
					Total:	1,764

Marine Rescue NSW - Monitoring Results (Not including trawlers)

 Weekends

Source: Marine Rescue NSW, Point Danger