

# TWEED SAND BYPASSING

## ENVIRONMENTAL MONITORING SUMMARY – JANUARY 2024

### 1. SAND PUMPING & DREDGING

- 29,653 m<sup>3</sup> was pumped to Snapper Rocks East.
- 0 m<sup>3</sup> of sand was dredged.

#### Sand Delivery January 2024

Pumped: 29,653 m<sup>3</sup>

Dredged: 0 m<sup>3</sup>

Total: 29,653 m<sup>3</sup>

The number of days sand was pumped this month = 16

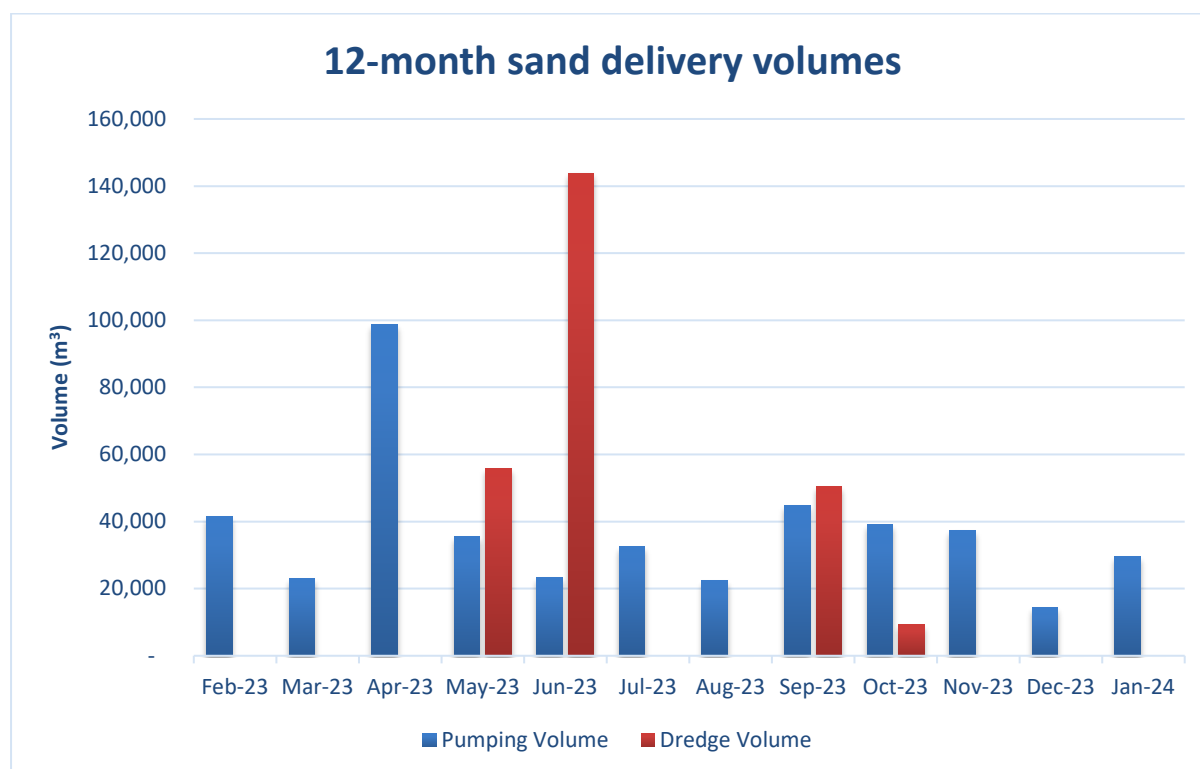
#### Sand Delivery May 2000 to January 2024

Pumped: 11,595,424 m<sup>3</sup>

Dredged\*: 3,047,295 m<sup>3</sup>

Total\*: 14,642,718 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

January saw more active conditions than the last few months, especially in the first couple of weeks with 5 days of wave heights greater than 2m. The highest significant wave height for the month was observed in the second week of the month at 2.73m. Consistent easterly conditions were recorded at both the nearshore and offshore Waverider buoys.

- Minimum  $H_{sig}$ : 0.83 m on 19 January 2024
- Maximum  $H_{sig}$ : 2.73 m on 12 January 2024
- Number of days where  $H_{sig} < 1$  m at some point: 11
- Number of days where  $H_{sig} > 2$  m at some point: 5

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

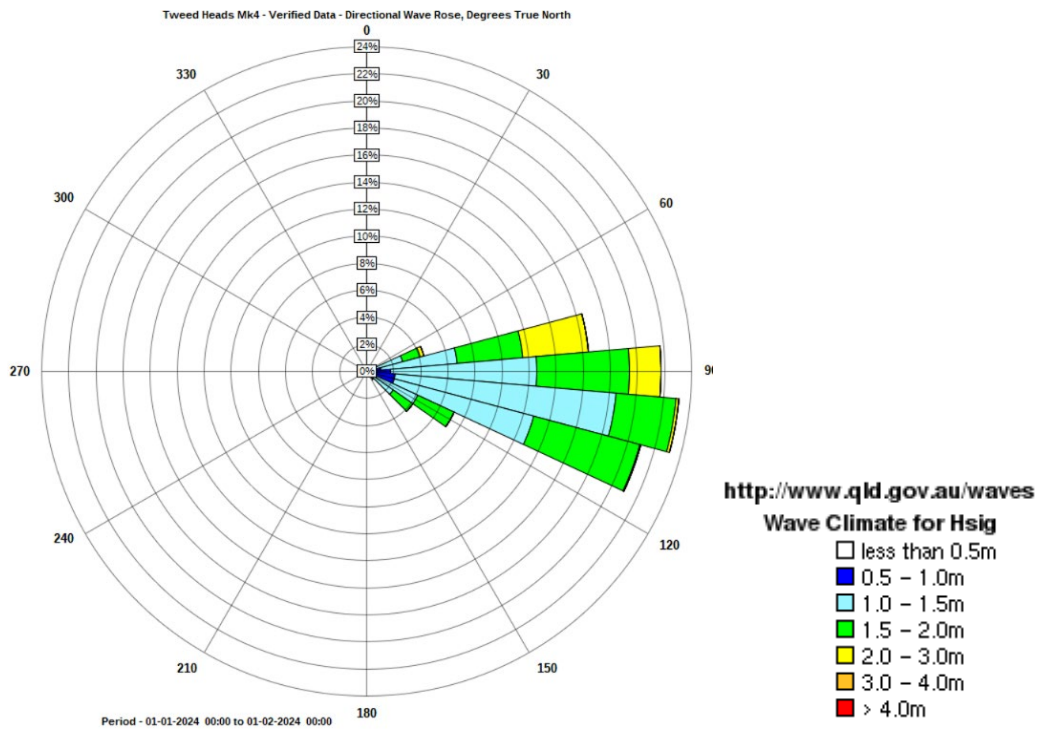


(Source: Tweed Heads Waverider buoy; Queensland Government)

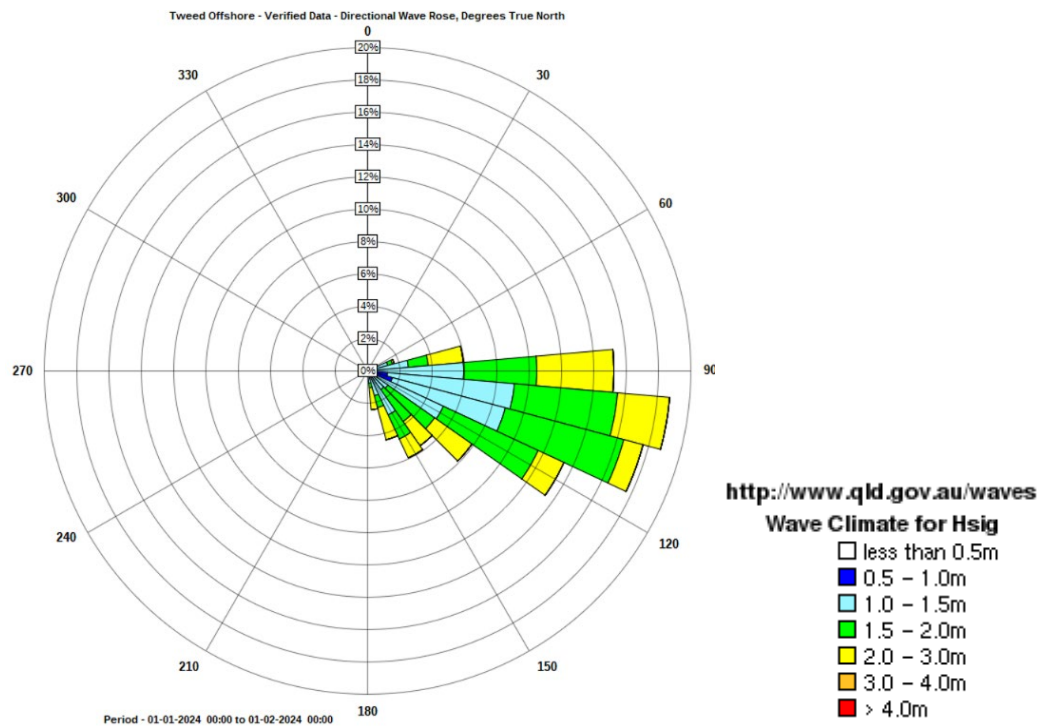
A link to data recorded by the Tweed Heads and Tweed Offshore Waverider buoys is available at:  
<http://www.qld.gov.au/waves>

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## NEARSHORE WAVE DIRECTION



## OFFSHORE WAVE DIRECTION

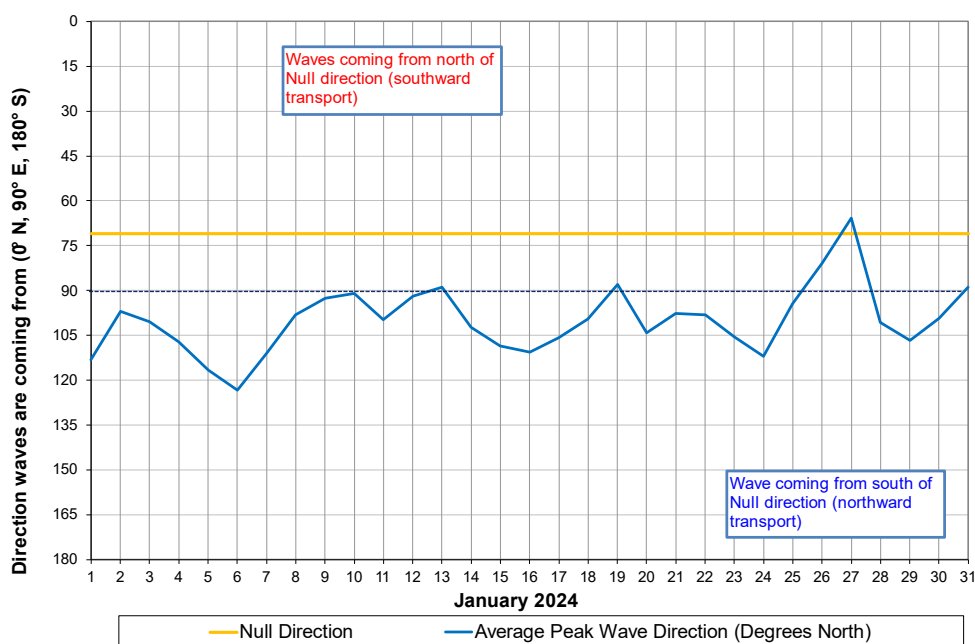
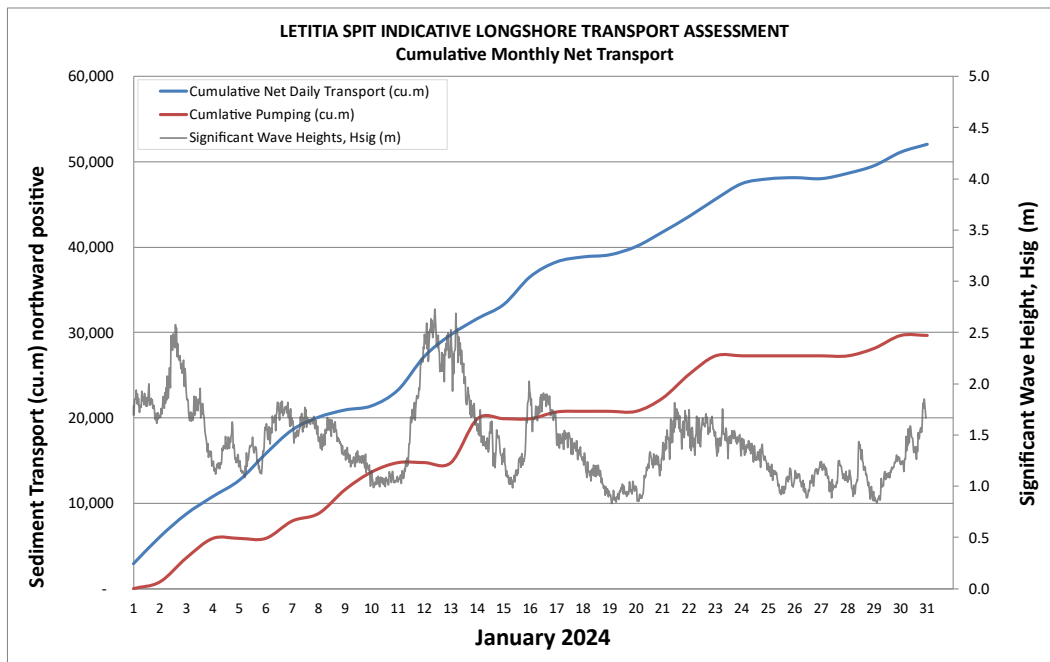


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## 3. INDICATIVE LONGSHORE TRANSPORT

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 January 2024 the estimated natural sand transport moving north towards the Tweed River entrance was calculated to be in the order of 52,000 m<sup>3</sup>. This result is 117 per cent of the average estimated sand transport quantity of approximately 44,000 m<sup>3</sup> for January.



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## **4. BEACH AND SURF AMENITY OBSERVATIONS**

January saw more active conditions throughout the month with a strong E offshore swell direction and moderate wave heights. The estimated sediment transport rate was higher than the January average.

The conditions continue to move sand out from Rainbow Bay and Greenmount with additional sand observed at Kirra. A longshore bar remains in the nearshore with a subsequent longshore trough providing calm swimming conditions that continue to be popular with beach users.



**Rainbow Bay 16 January \*eastern aspect**



**Rainbow Bay 16 January \*western aspect**



**Greenmount 16 January \*western aspect**



**Duranbah 16 January**



# TWEED SAND BYPASSING

January saw an increase in swell compared to December, with five days experiencing significant wave heights over 2 m. Along with favourable winds, this resulted in good surf quality at Duranbah and the southern Gold Coast points.



**Duranbah 4 January**



**Duranbah 23 January**



**Snapper Rocks 12 January**

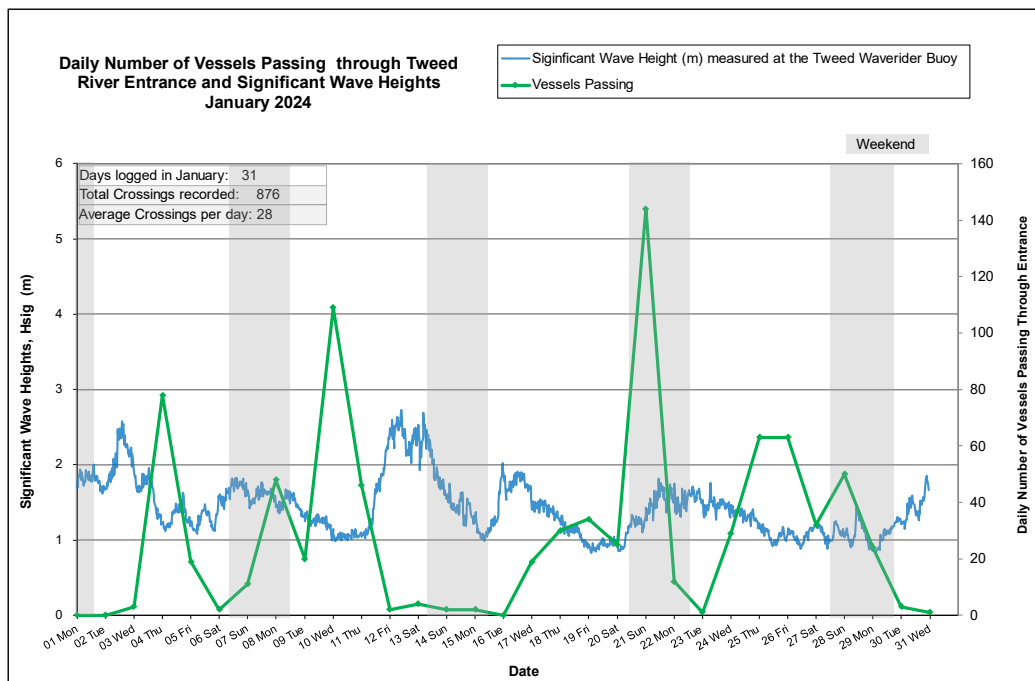
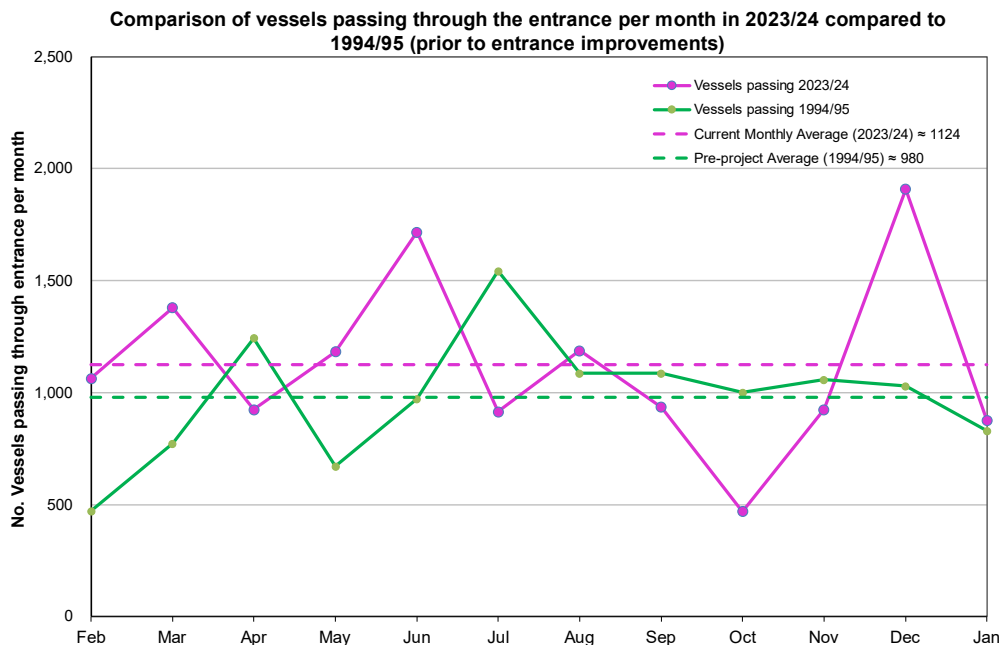


**Greenmount 13 January**

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## 5. TWEED RIVER ENTRANCE USAGE

A total of 876 Tweed River entrance vessel crossings were recorded for the month (45 per cent of the January average (2002–2024)).



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Date January 2024	Navigation Rating					Number of Crossings
	Impassable < - - - - - > Good					
	Impassable	Difficulty Encountered	Some Difficulty Encountered	Relatively Good Crossing	Good Conditions	
	1	2	3	4	5	
1						0
2						0
3						3
4						78
5						19
6						2
7						11
8						48
9						20
10						109
11						46
12						2
13						4
14						2
15						2
16						0
17						19
18						30
19						34
20						25
21						144
22						12
23						1
24						29
25						63
26						63
27						32
28						50
29						24
30						3
31						1
					Total:	876

Marine Rescue NSW - Monitoring Results (Not including trawlers)

 Weekends

**Source:** Marine Rescue NSW, Point Danger