

# TWEED SAND BYPASSING

## ENVIRONMENTAL MONITORING SUMMARY – MAY 2023

### 1. SAND PUMPING & DREDGING

- 35,478 m<sup>3</sup> was pumped to Snapper Rocks East.
- 55,936 m<sup>3</sup> of sand was dredged and placed offshore of Duranbah

#### **Sand Delivery May 2023**

Pumped: 35,478 m<sup>3</sup>

Dredged: 55,936 m<sup>3</sup>

Total: 91,414 m<sup>3</sup>

The number of days sand was pumped this month = 20

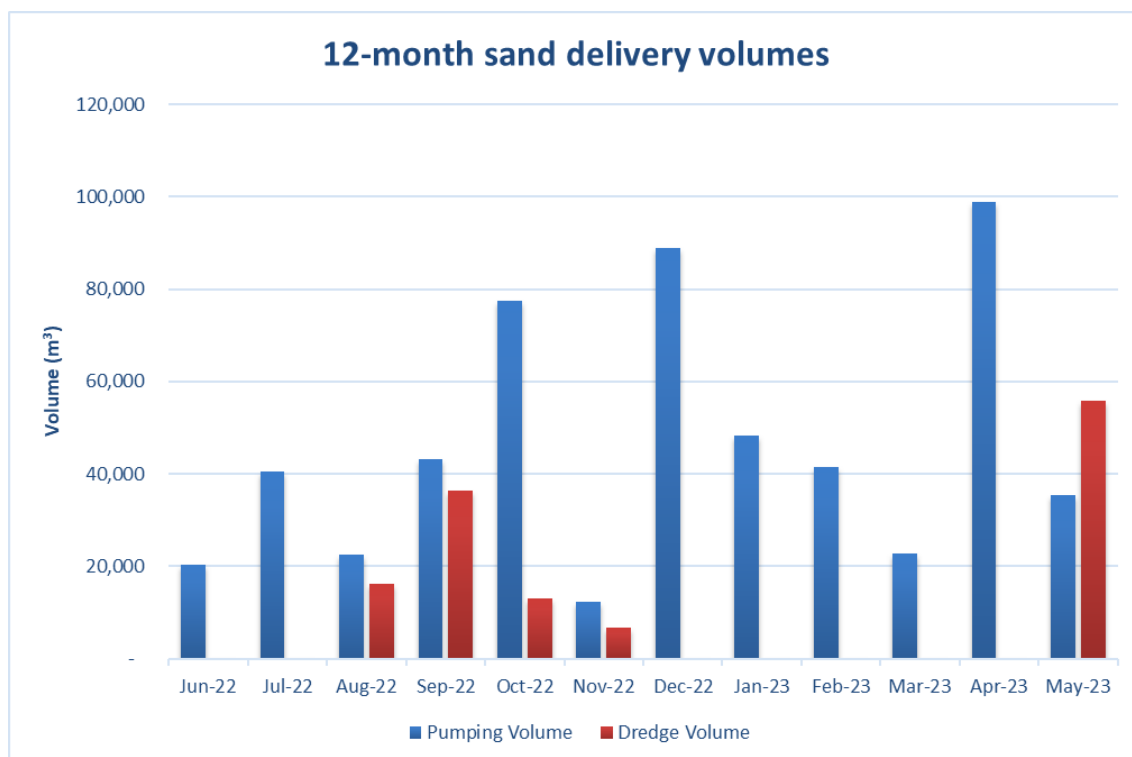
#### **Sand Delivery May 2000 to May 2023**

Pumped: 11,351,959 m<sup>3</sup>

Dredged\*: 2,843,703 m<sup>3</sup>

Total\*: 14,195,662 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



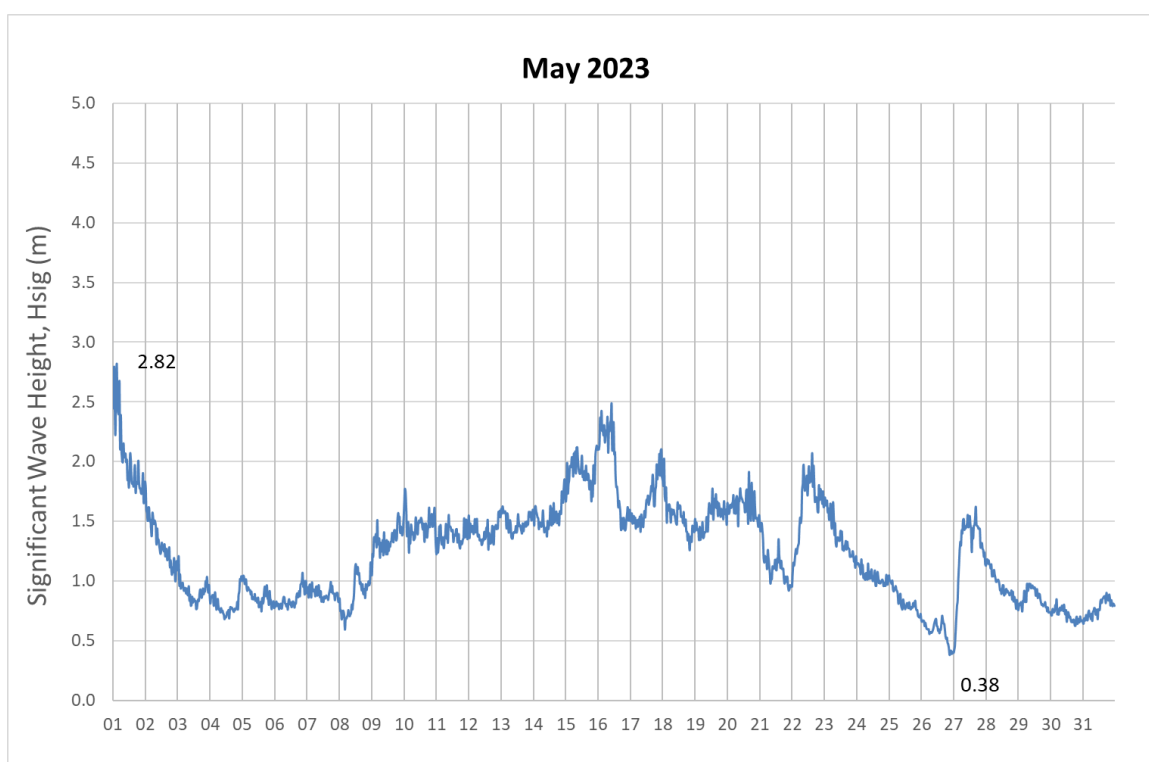
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## 2. WAVE CONDITIONS

April's easterly swell eased within the first week of May. The swell sources throughout May were mixed starting with wave directions from the ESE and eventually tending SE (with a couple of days of northerlies mid-month). Waves around 1.5 m persisted between the 9th and the 23rd with wave heights dropping moving into June.

- Minimum  $H_{sig}$ : 0.38 m on 26 May 2023
- Maximum  $H_{sig}$ : 2.82 m on 01 May 2023
- Number of days where  $H_{sig} < 1$  m at some point: 17
- Number of days where  $H_{sig} > 2$  m at some point: 6

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

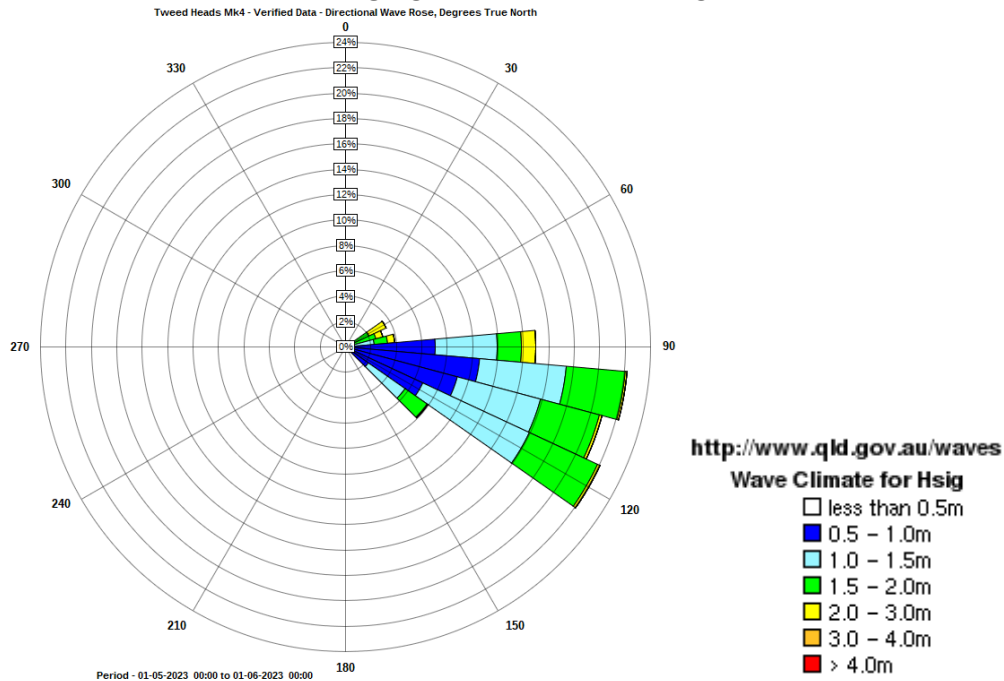


(Source: Tweed Heads Waverider buoy; Queensland Government)

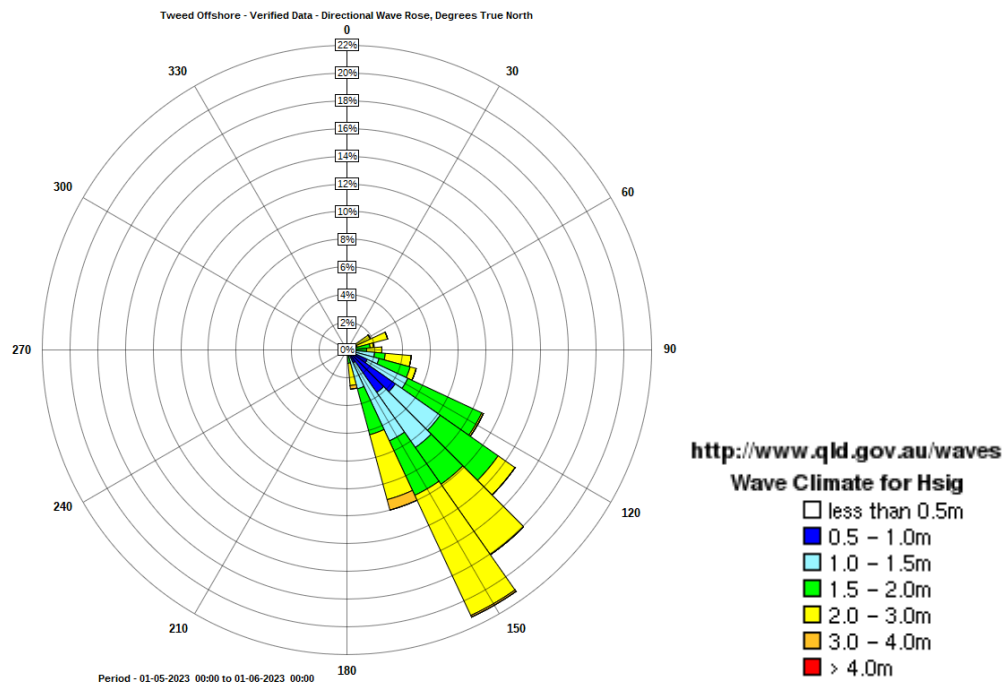
A link to data recorded by the Tweed Heads and Tweed Offshore Waverider buoys is available at:  
<http://www.qld.gov.au/waves>

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## NEARSHORE WAVE DIRECTION



## OFFSHORE WAVE DIRECTION

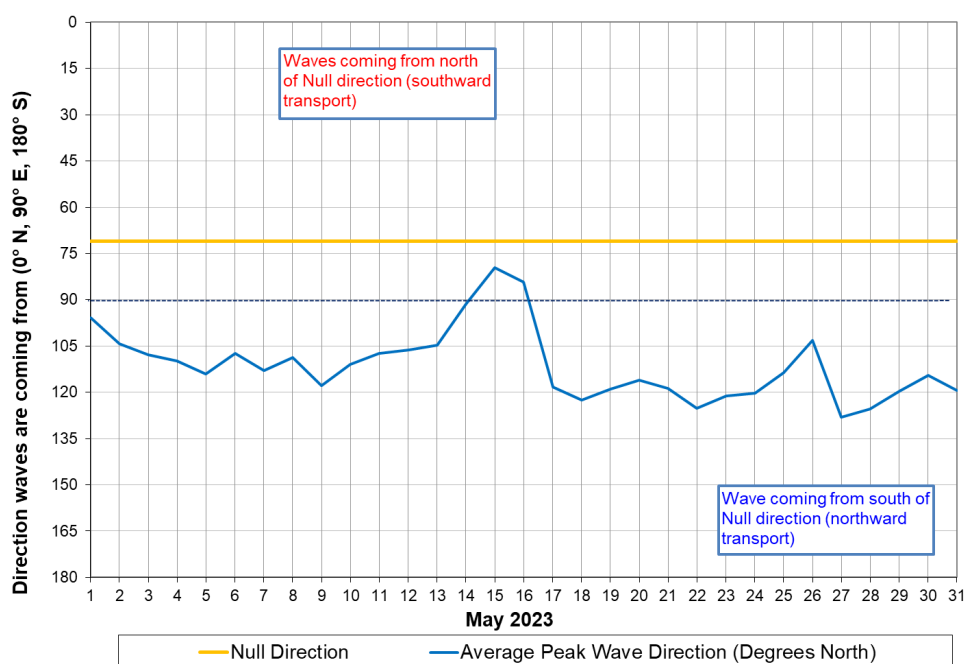
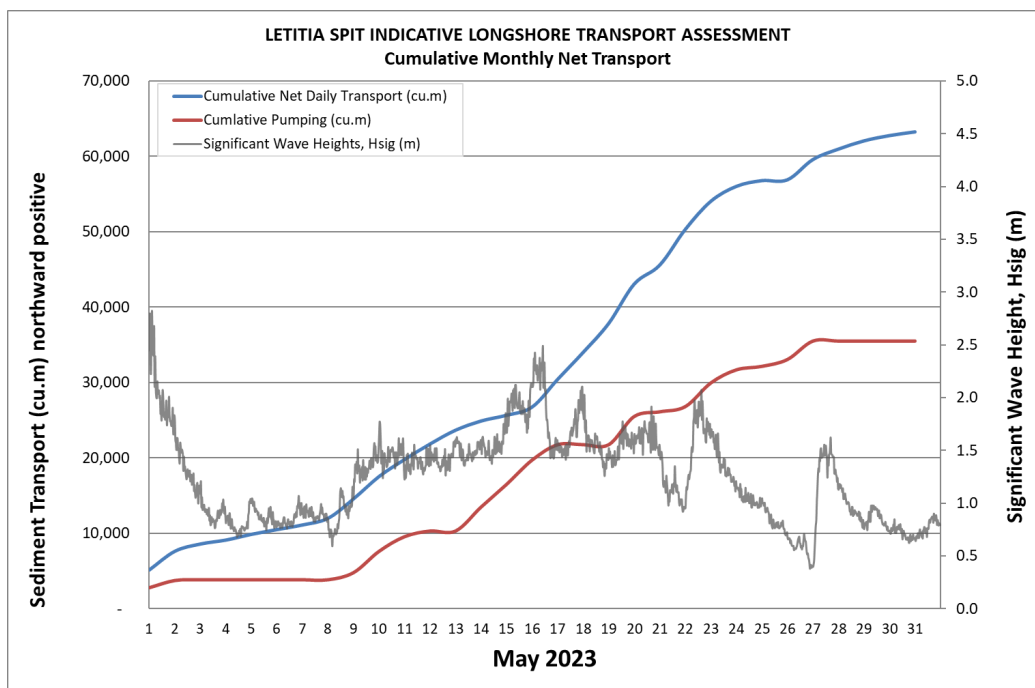


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## 3. INDICATIVE LONGSHORE TRANSPORT

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 May 2023 the estimated natural sand transport moving north towards the Tweed River entrance was calculated to be in the order of 63,000 m<sup>3</sup>. This result is approx. 99 per cent of the average estimated sand transport quantity of approx. 64,000 m<sup>3</sup> for May.



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## 4. BEACH AND SURF AMENITY OBSERVATIONS

In May, the beach built up around Greenmount as the predominantly ESE swell moved sand across Rainbow Bay. At Kirra the beach profile moved shoreward resulting in some loss of sand in the upper beach and the bank moving closer to shore. No significant change was observed as beaches continue to recover from the sustained easterly swell experienced in April.



**Duranbah 31st May**



**Kirra 31st May**

Surf conditions were good during May with moderate wave energy for more than half of the calendar month decreasing into June. Quality sand banks at Snapper Rocks, Rainbow Bay, Greenmount, and Kirra were present. Duranbah also offered good quality beach breaks on days with smaller swell and favourable winds.



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*Greenmount – 15 May 2023*



*surfonmars*



*Duranbah – 2 May 2023*

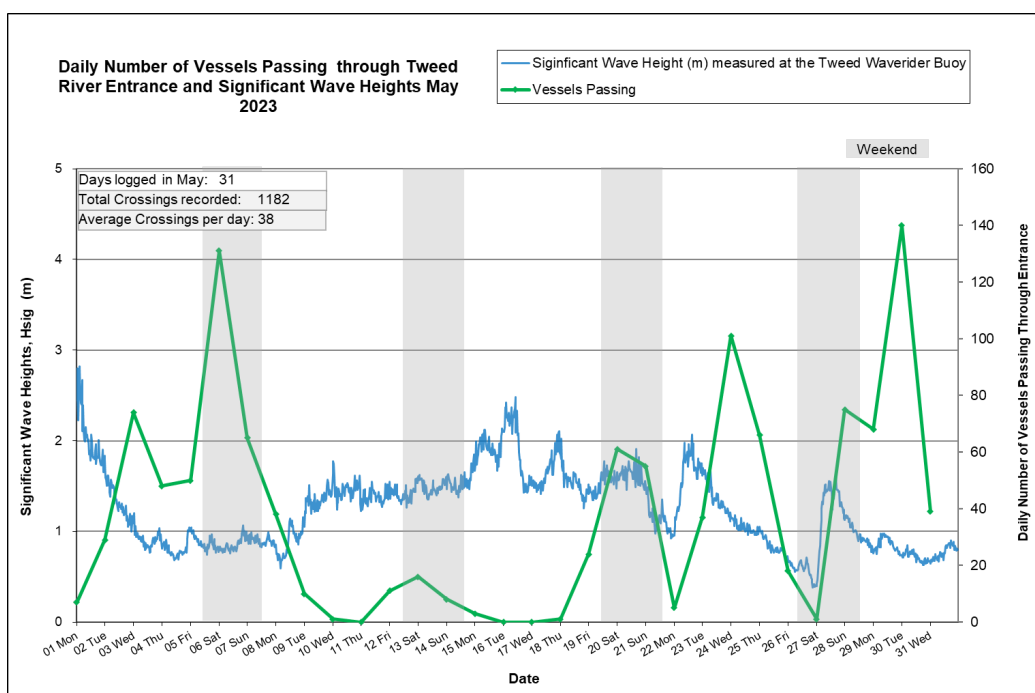
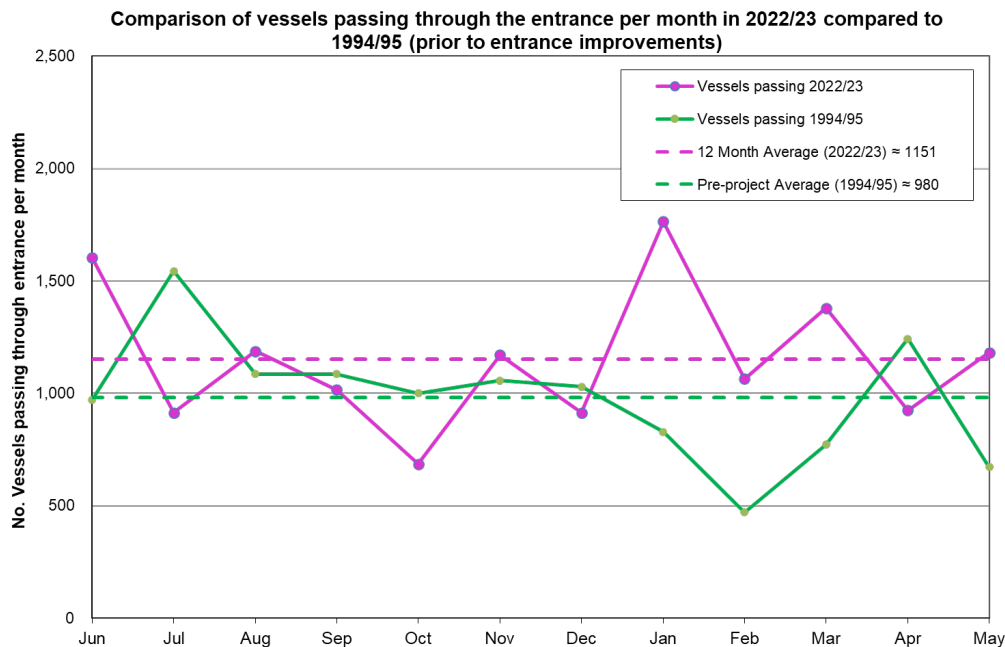
*surfonmars*



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## 5. TWEED RIVER ENTRANCE USAGE

A total of 1,182 Tweed River entrance vessel crossings were recorded for the month (66 per cent of the May average (2002–2023)).



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Date May 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						7
2						29
3						74
4						48
5						50
6						131
7						65
8						38
9						10
10						1
11						0
12						11
13						16
14						8
15						3
16						0
17						0
18						1
19						24
20						61
21						55
22						5
23						37
24						101
25						66
26						18
27						1
28						75
29						68
30						140
31						39
					Total:	1,182

Marine Rescue NSW - Monitoring Results (Not including trawlers)

 Weekends

*Source: Marine Rescue NSW, Point Danger*