

# TWEED SAND BYPASSING

## ENVIRONMENTAL MONITORING SUMMARY – APRIL 2022

### 1. SAND PUMPING & DREDGING

- 66,392 m<sup>3</sup> was pumped to Snapper Rocks East.
- 0 m<sup>3</sup> of sand was dredged

#### Sand Delivery April 2022

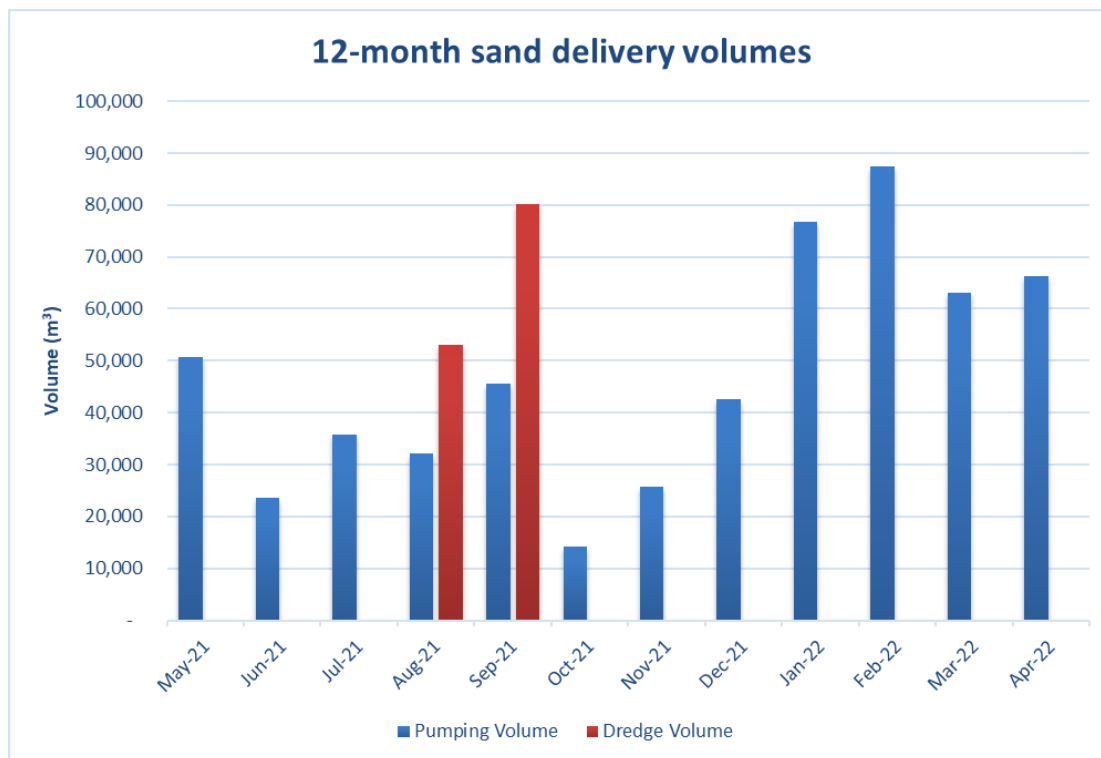
Pumped:	66,392 m <sup>3</sup>
Dredged:	0 m <sup>3</sup>
Total:	66,392 m <sup>3</sup>

The number of days sand was pumped this month = 27

#### Sand Delivery May 2000 to date

Pumped:	10,725,851 m <sup>3</sup>
Dredged*:	2,715,369 m <sup>3</sup>
Total*:	13,441,219 m <sup>3</sup>

\* This Includes 22,870 m<sup>3</sup> of sand delivered by dredge to Palm Beach between June 2005 and September 2005



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## 2. WAVE CONDITIONS

Large swell associated with ex-TC Fifi was experienced through the second week of April and a moderate swell event from the 23<sup>rd</sup> contributed to an overall active month. Wave heights peaked at over 3 m and over a third of the month experienced greater than 2 m swell. Wave directions were predominantly from the ESE to ENE.

- Minimum  $H_{sig}$ : 0.69 m on 4 April 2022
- Maximum  $H_{sig}$ : 3.05 m on 8 April 2022
- Number of days where  $H_{sig} < 1$  m at some point: 7
- Number of days where  $H_{sig} > 2$  m at some point: 11

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



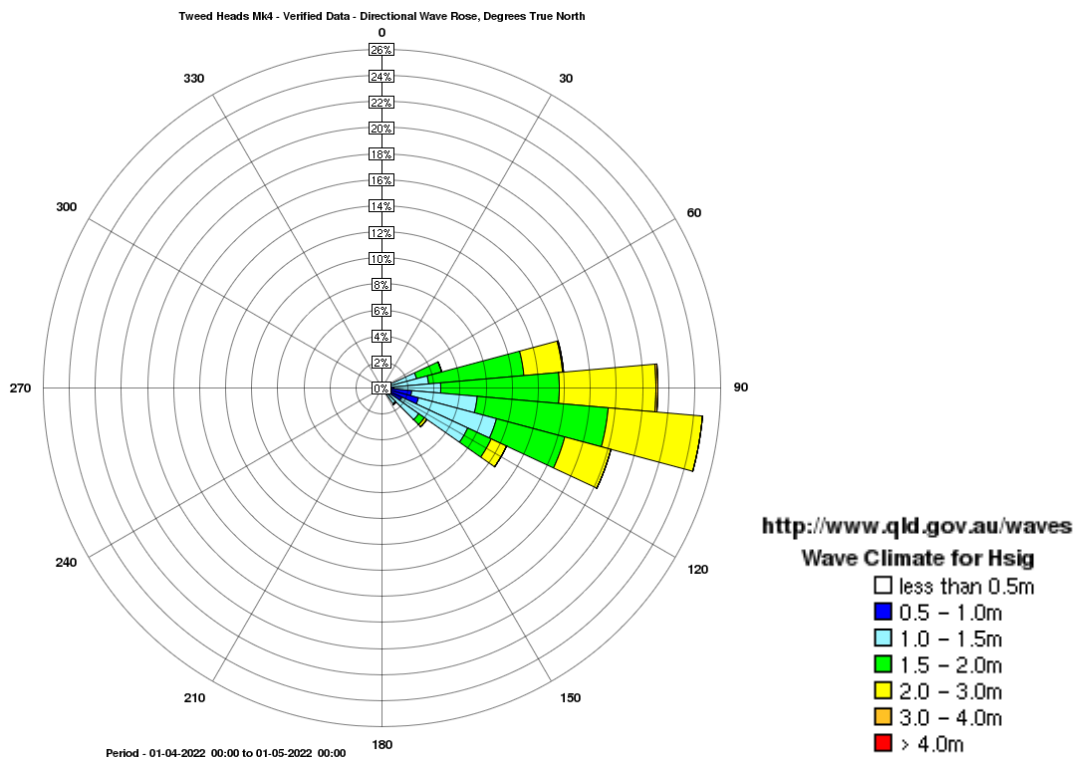
(Source: Tweed Heads Waverider buoy; Queensland Government)

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.

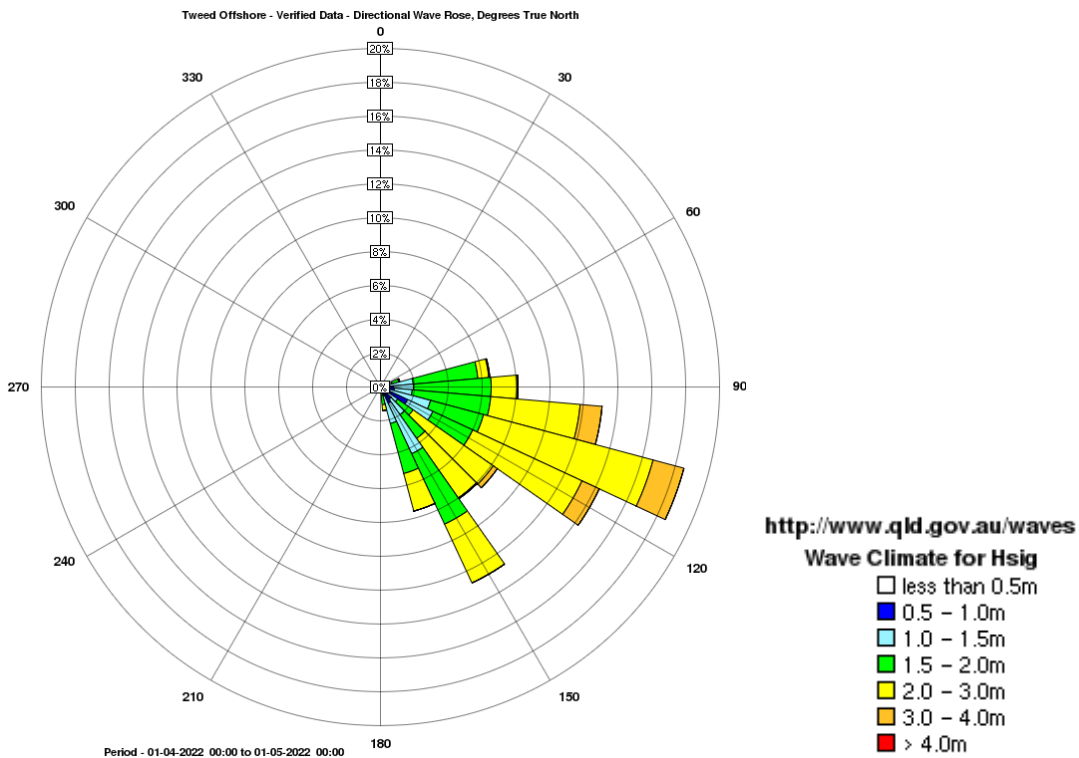
A link to data recorded by the Tweed Heads and Tweed Offshore Waverider buoys is available at: <http://www.qld.gov.au/waves>

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## NEARSHORE WAVE DIRECTION



## OFFSHORE WAVE DIRECTION

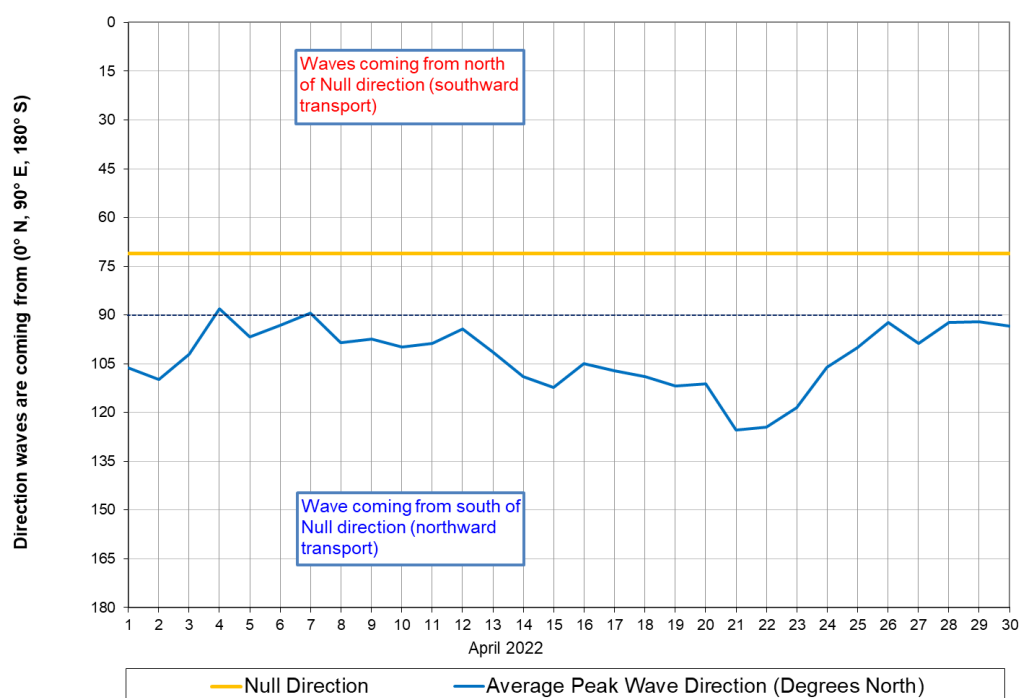
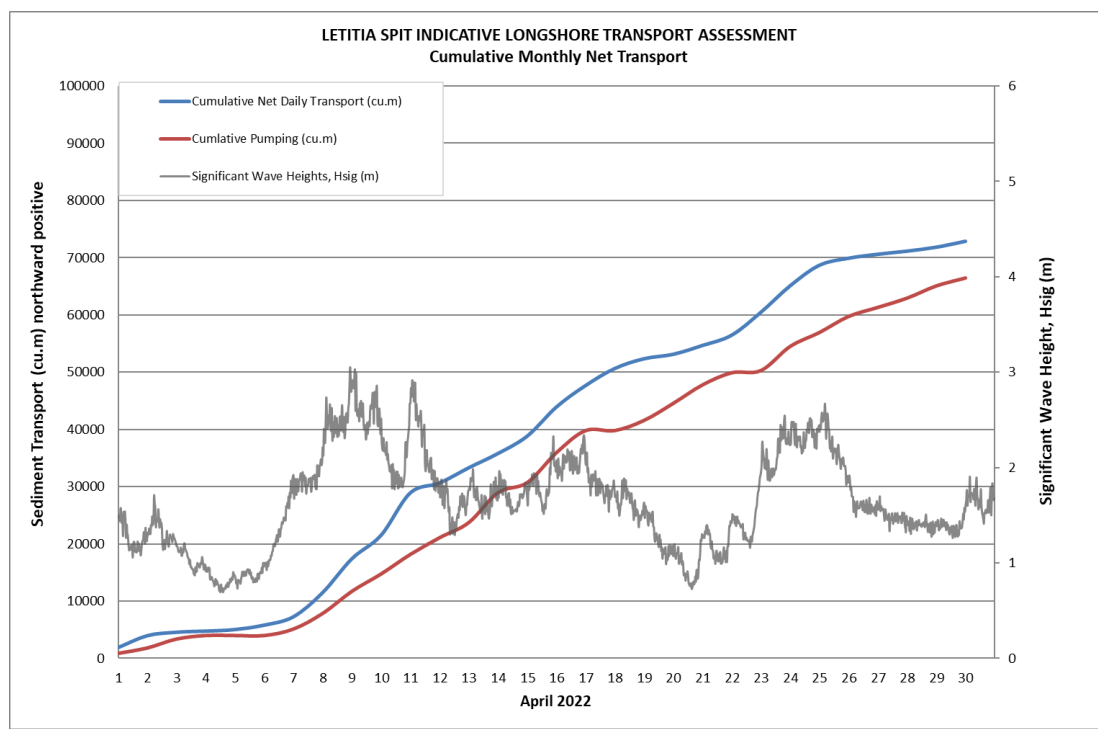


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## 3. INDICATIVE LONGSHORE TRANSPORT

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).

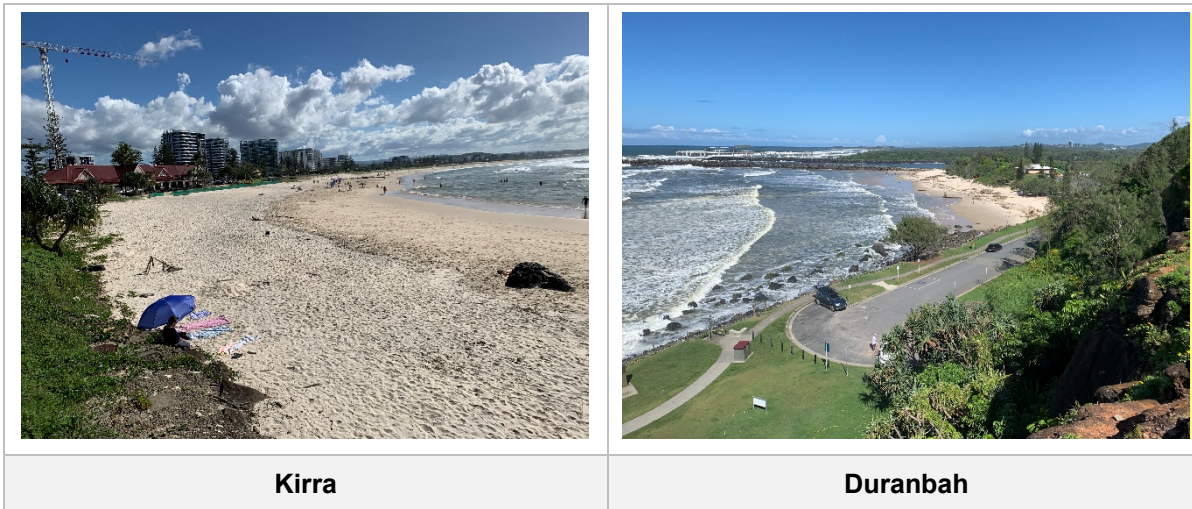
In April 2022 the estimated natural sand transport moving north towards the Tweed River entrance was calculated to be in the order of 73,000 m<sup>3</sup>. This result is 127 per cent of the average estimated sand transport quantity of approx. 57,500 m<sup>3</sup> for April.



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## 4. BEACH AND SURF AMENITY OBSERVATIONS

As of mid-April, beaches were generally in a healthy state based with wide beaches between Kirra and Rainbow. Post-flood debris is still on the upper beach at Duranbah.



Consistent swell, high quality sand banks (Snapper Rocks to Greenmount) and favourable winds were experienced for the month of April. The swell size generally favoured the southern Gold Coast points rather than Duranbah.

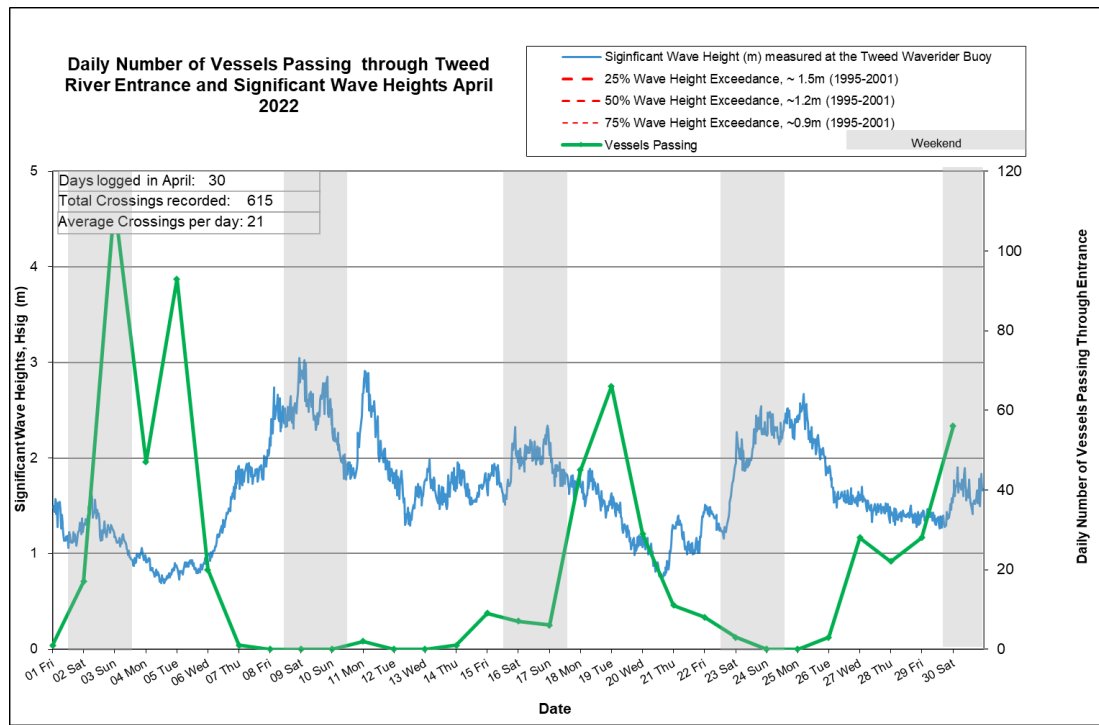
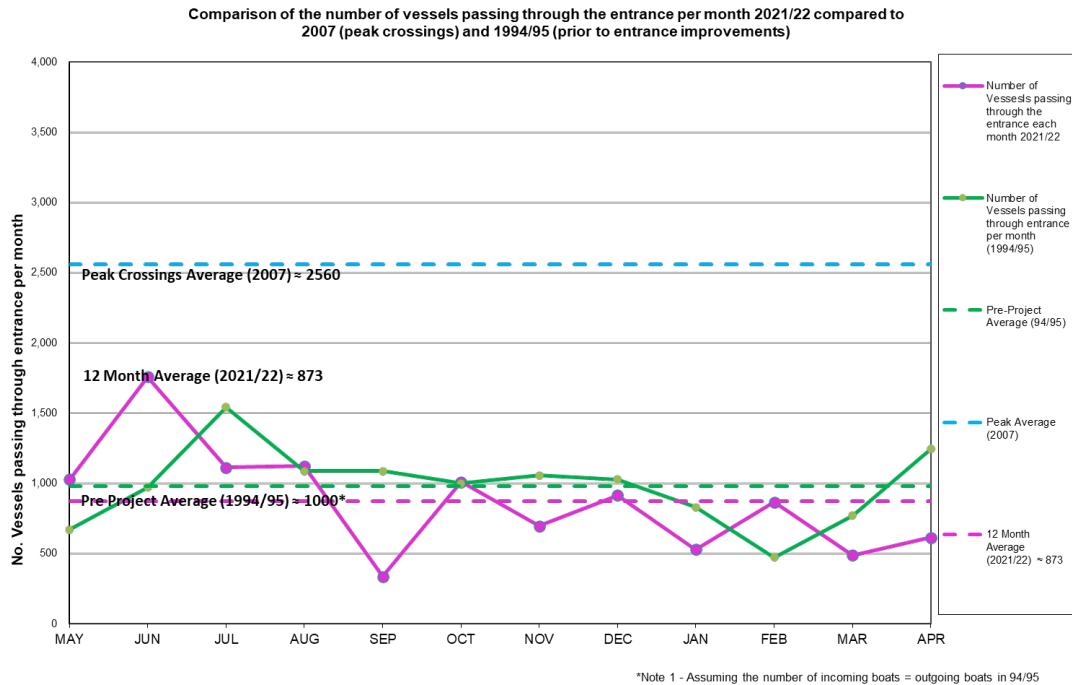




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## 5. TWEED RIVER ENTRANCE USAGE

A total of 615 Tweed River entrance vessel crossings were recorded for the month (35 per cent of the April average (2002–2022)).



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Date April 2022	Navigation Rating					Number of Crossings
	Impassable < - - - - - > Good					
	Impassable	Difficulty Encountered	Some Difficulty Encountered	Relatively Good Crossing	Good Conditions	
1						1
2						17
3						112
4						47
5						93
6						20
7						1
8						0
9						0
10						0
11						2
12						0
13						0
14						1
15						9
16						7
17						6
18						45
19						66
20						29
21						11
22						8
23						3
24						0
25						0
26						3
27						28
28						22
29						28
30						56
					Total:	615

Marine Rescue NSW - Monitoring Results (Not including trawlers)

 Weekends

*Source: Marine Rescue NSW, Point Danger*