TWEEDSAND BYPASSING

ENVIRONMENTAL MONITORING SUMMARY – NOVEMBER 2022

1. SAND PUMPING & DREDGING

- 12,241 m^3 was pumped to Snapper Rocks East.
- 6,832 m^3 of sand was dredged with all placed at Duranbah

Sand Delivery November 2022

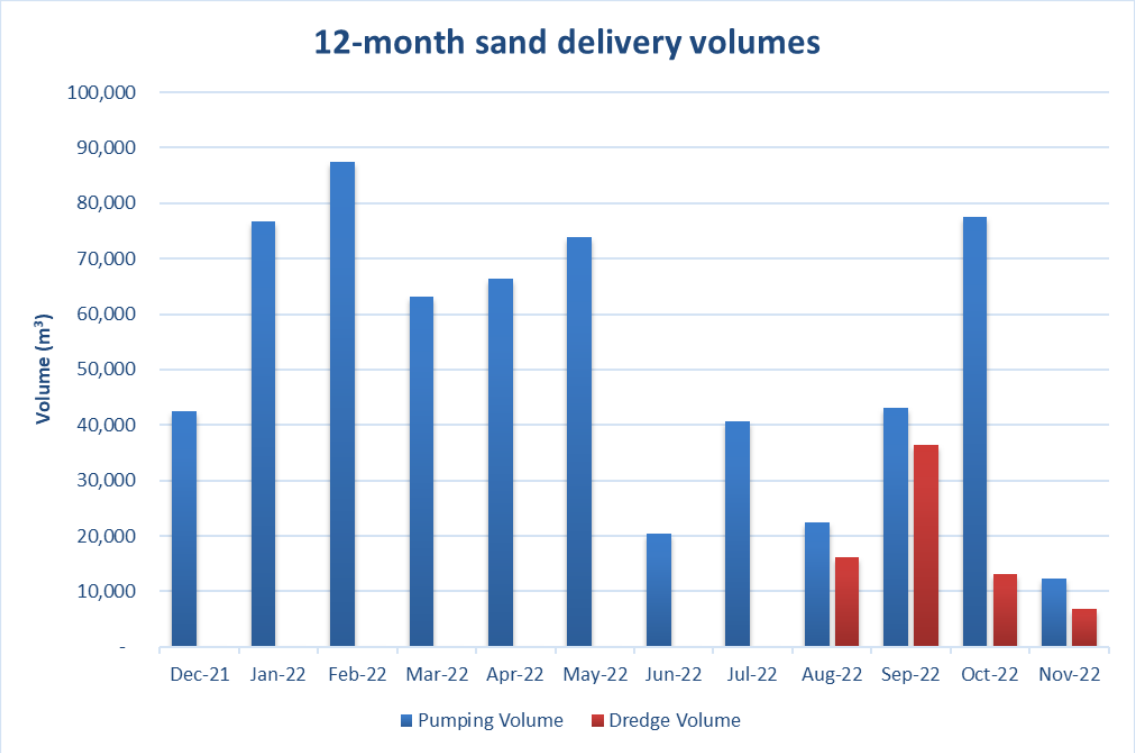
Pumped:	12,241 m^3
Dredged:	6,832 m^3
Total:	19,073 m^3

The number of days sand was pumped this month = 15

Sand Delivery May 2000 to date

Pumped:	11,015,916 m^3
Dredged*:	2,787,767 m^3
Total*:	13,803,683 m^3

* This Includes 22,870 m^3 of sand delivered by dredge to Palm Beach between July 2005 and September 2005



2. WAVE CONDITIONS

Wave heights were relatively mild for the month with several days of <1m significant wave height. Wave direction was predominantly from the ESE.

- Minimum H_{sig}: 0.34 m on 22 November 2022
- Maximum H_{sig}: 1.87 m on 17 November 2022
- Number of days where H_{sig} <1 m at some point: 22
- Number of days where H_{sig} >2 m at some point: 0

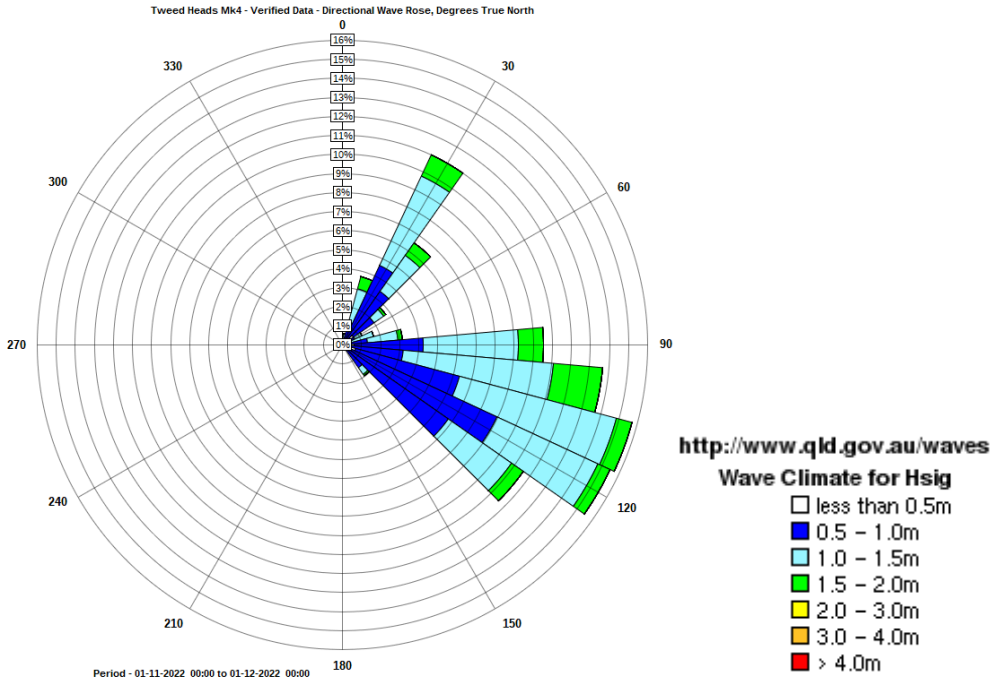
Note: H_{sig} is defined as the average of the highest one-third of waves recorded over a period of approximately 30 minutes

*(**Source:** Tweed Heads Waverider buoy; Queensland Government)*

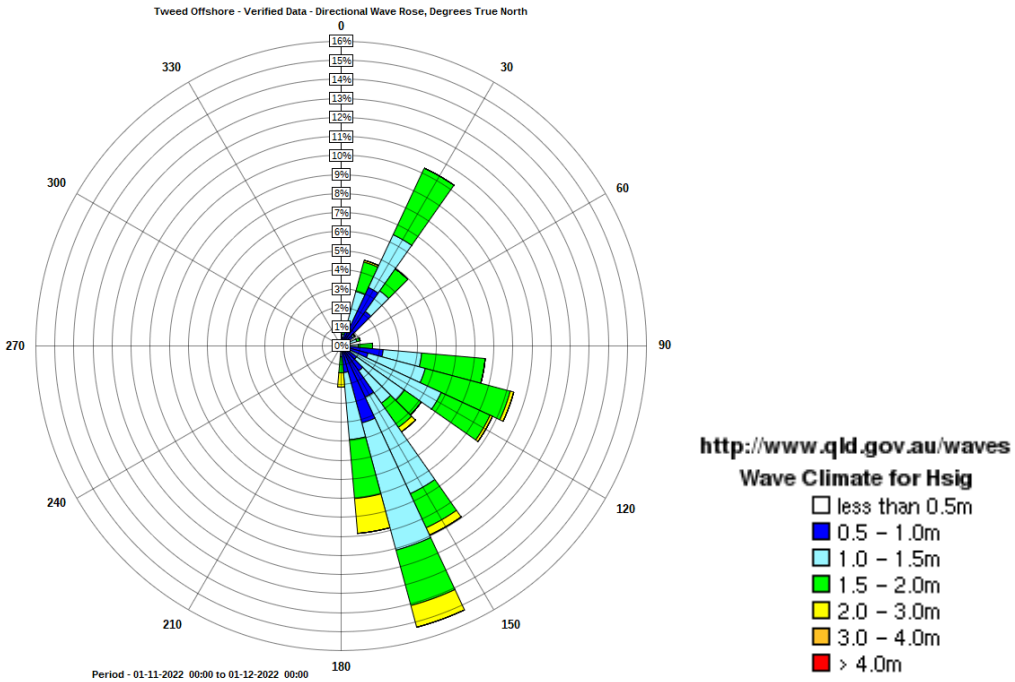
In January 2020 TSB commissioned the deployment of another Waverider buoy in the Tweed region. The Tweed Offshore Waverider buoy was deployed in approximately 60 m water depth to the east and adjacent to Kingscliff and Dreamtime Beaches. The purpose of the Tweed Offshore buoy is to observe and assess 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

NEARSHORE WAVE DIRECTION



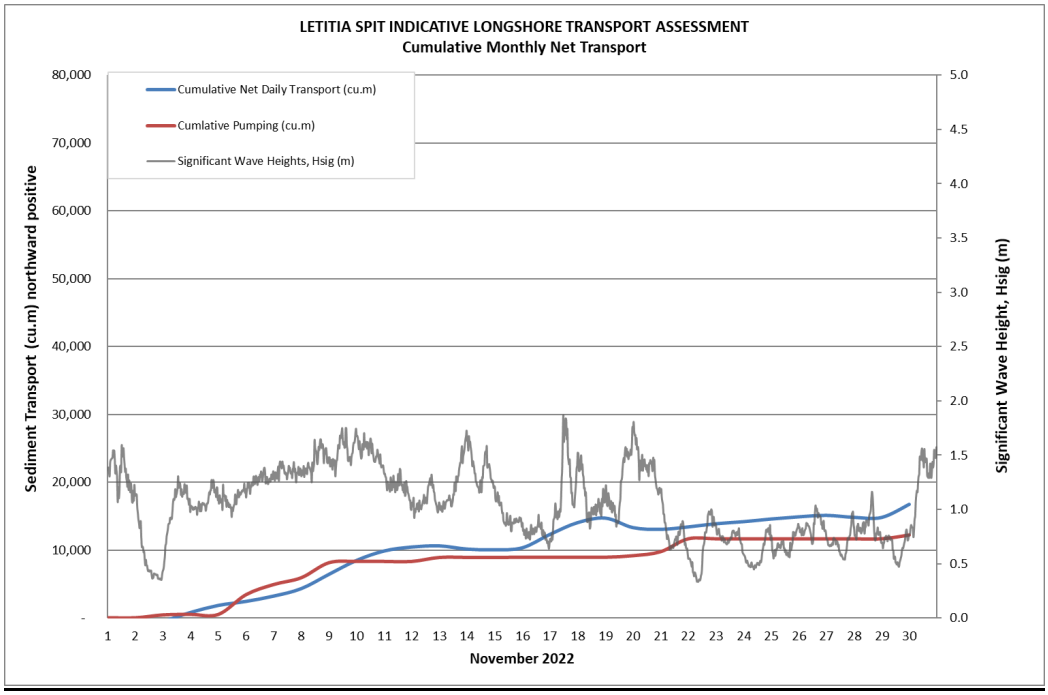
OFFSHORE WAVE DIRECTION

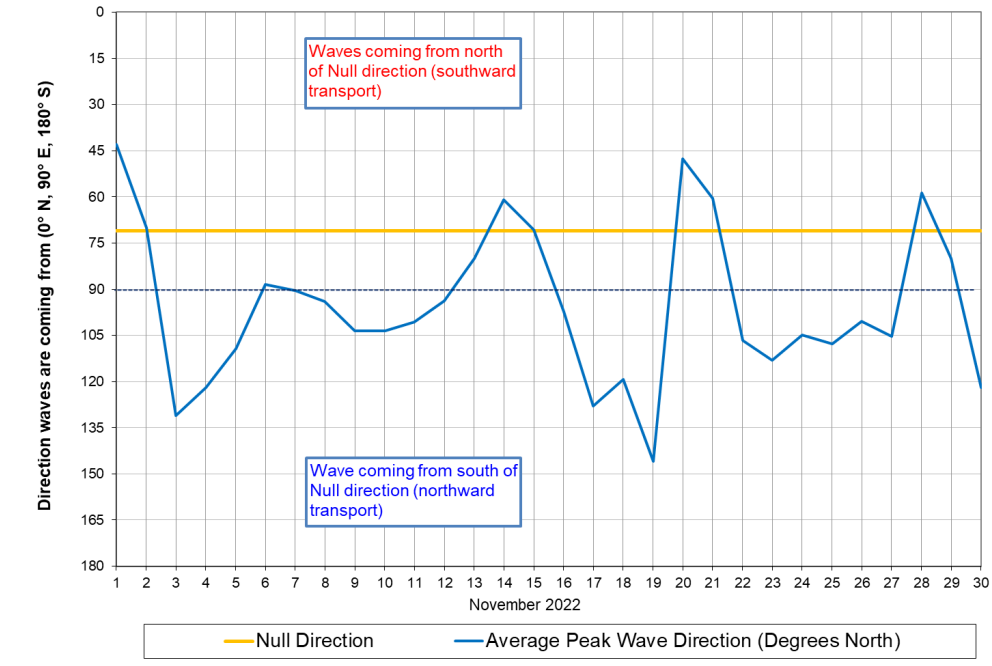


3. INDICATIVE LONGSHORE TRANSPORT

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 November 2022 the estimated natural sand transport moving north towards the Tweed River entrance was calculated to be in the order of 17,000 m^3. This result is 58 per cent of the average estimated sand transport quantity of approx. 29,000 m^3 for November.





4. BEACH AND SURF AMENITY OBSERVATIONS

Mild conditions over the month of November resulted in a gradual building of beaches from Letitia to Kirra. Froggies beach is used as an indicator of conditions and this filled in over the month. In the figures below it can be seen that the beach profile at Kirra shallowed out in November as sand filled in the nearshore trough.

	
Kirra low tide – early November	**Kirra low tide – late November**

November saw mild conditions with smaller swell favouring Duranbah. The rock break at Kirra was popular with pleasant conditions.

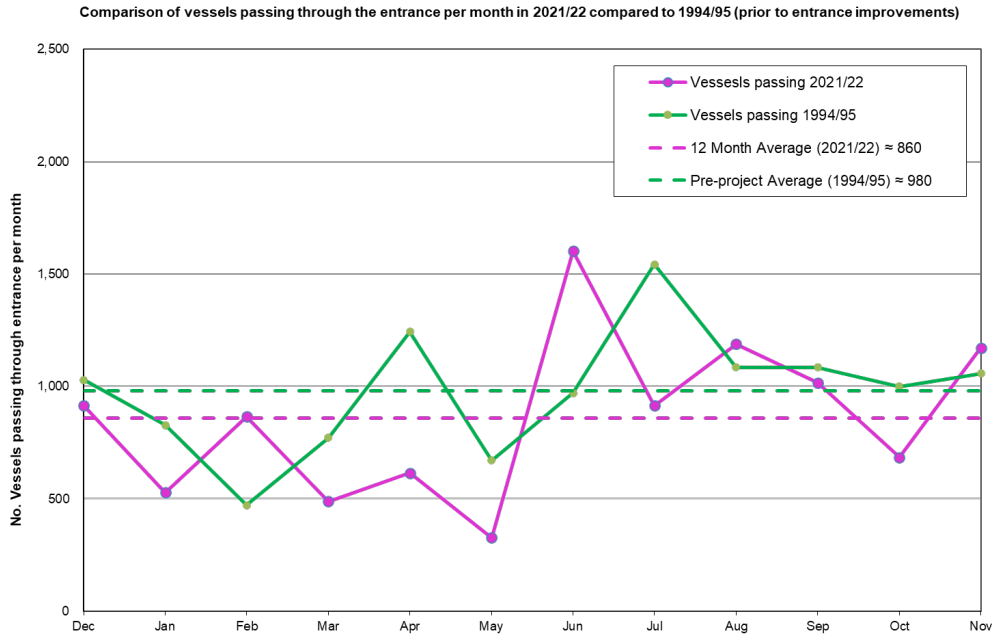

Kirra – mid November 2022

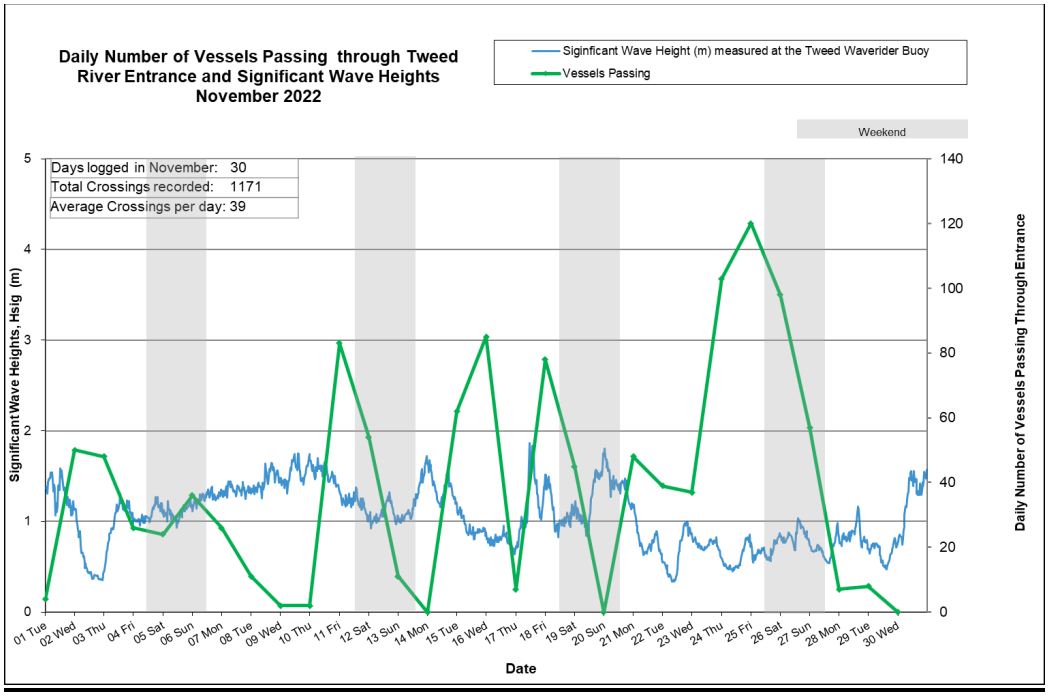

Watch later
Duranbah – 30 November 2022


Duranbah – 30 November 2022

5. TWEED RIVER ENTRANCE USAGE

A total of 1,171 Tweed River entrance vessel crossings were recorded for the month (78 per cent of the November average (2002–2022)).





Date November 2022	Navigation Rating: Impassable < - - - - - > Good					Number of Crossings
	Impassable	Difficulty Encountered	Some Difficulty Encountered	Relatively Good Crossing	Good Conditions	
	1	2	3	4	5	
1						4
2						50
3						48
4						26
5						24
6						36
7						26
8						11
9						2
10						2
11						83
12						54
13						11
14						0
15						62
16						85
17						7
18						78
19						45
20						0
21						48
22						39
23						37
24						103
25						120
26						98
27						57
28						7
29						8
30						0
					Total:	1,171

Marine Rescue NSW - Monitoring Results (Not including trawlers)

Weekends

Source: *Marine Rescue NSW, Point Danger*