TWEEDSAND BYPASSING

ENVIRONMENTAL MONITORING SUMMARY – JULY 2022

1. SAND PUMPING & DREDGING

- 29,130 m^3 was pumped to Snapper Rocks East.
- 11,445 m^3 was pumped to Duranbah.
- 0 m^3 of sand was dredged

Sand Delivery July 2022

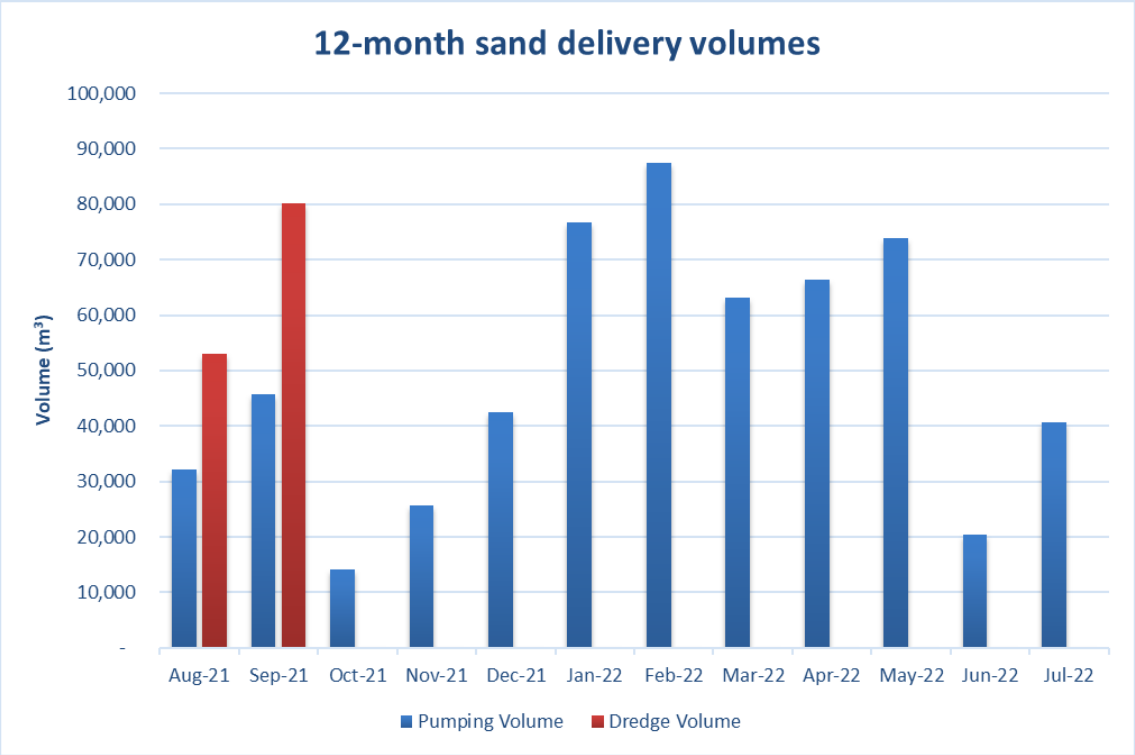
Pumped:	40,575 m^3
Dredged:	0 m^3
Total:	40,575 m^3

The number of days sand was pumped this month = 26

Sand Delivery May 2000 to date

Pumped:	10,860,540 m^3
Dredged*:	2,715,369 m^3
Total*:	13,575,908 m^3

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

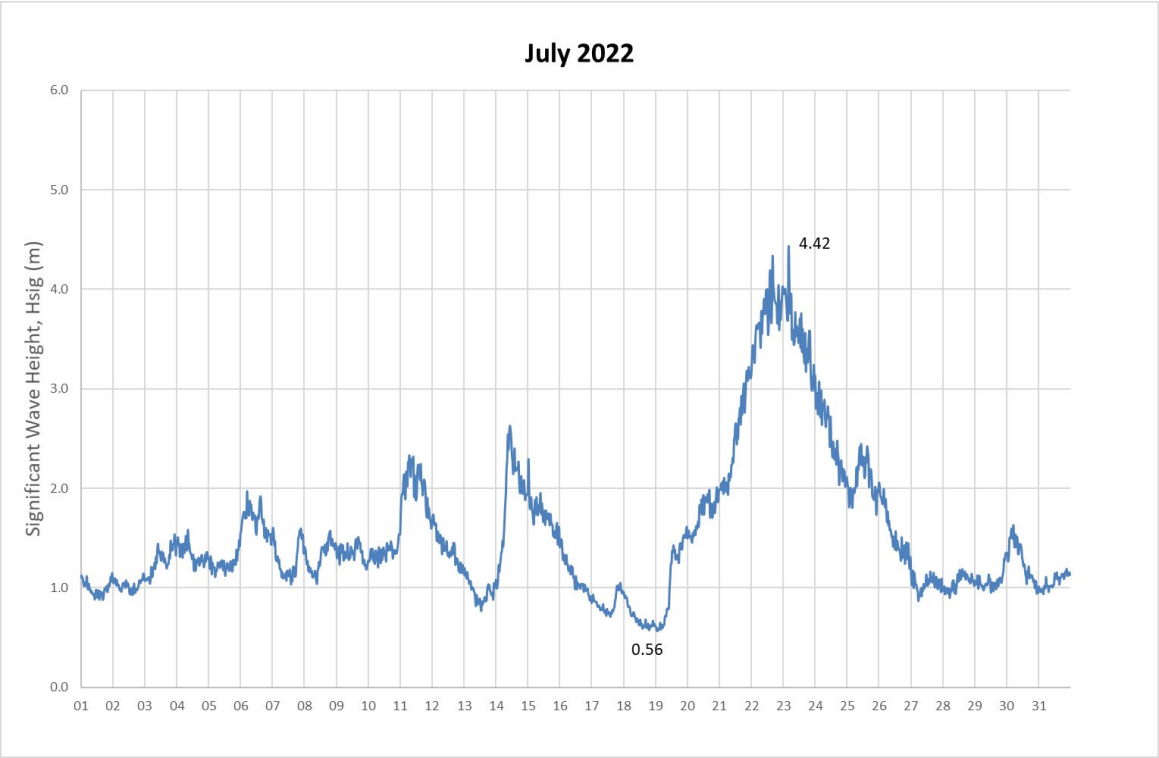


2. WAVE CONDITIONS

During July the swell direction was predominantly southeast and wave heights were relatively small. A low from the Coral Sea moved down the coast in the 3rd week of July. This produced a significant swell event over 4 days with wave directions from the ENE and east, and with a peak significant wave height over 4 m.

- Minimum H_{sig}: 0.56 m on 19 July 2022
- Maximum H_{sig}: 4.42 m on 23 July 2022
- Number of days where H_{sig} <1 m at some point: 13
- Number of days where H_{sig} >2 m at some point: 10

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

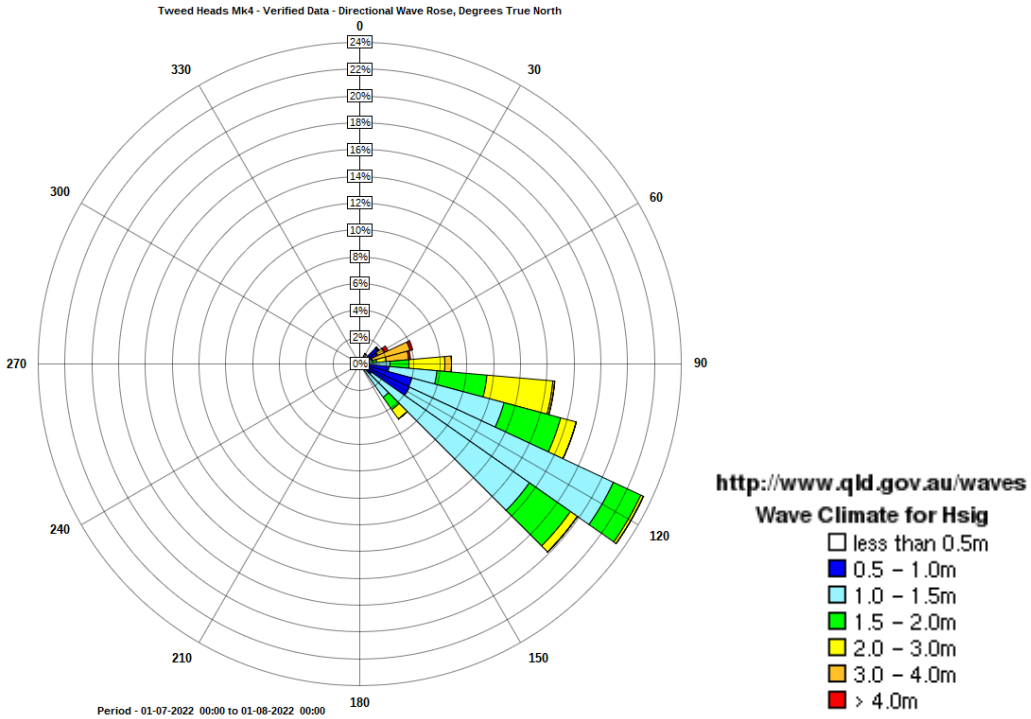


*(**Source:** Tweed Heads Waverider buoy; Queensland Government)*

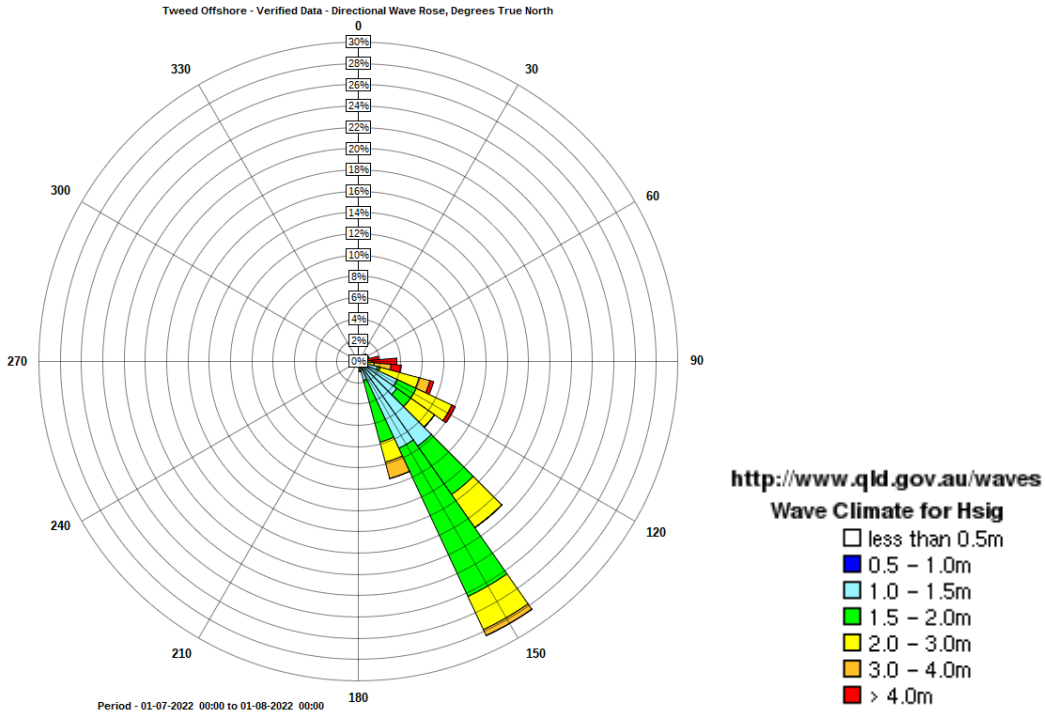
In January 2020 TSB commissioned the deployment of another Waverider buoy in the Tweed region. The Tweed Offshore Waverider buoy was deployed in approximately 60 m water depth to the east and adjacent to Kingscliff and Dreamtime Beaches. The purpose of the Tweed Offshore buoy is to observe and assess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



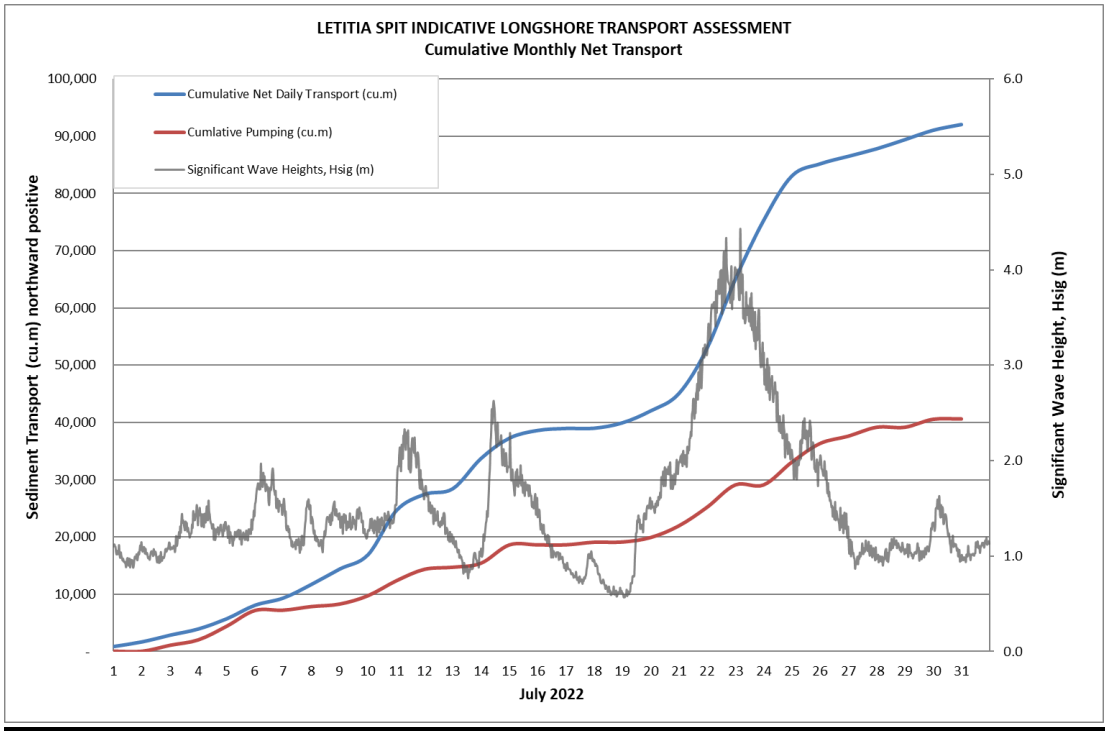
OFFSHORE WAVE DIRECTION

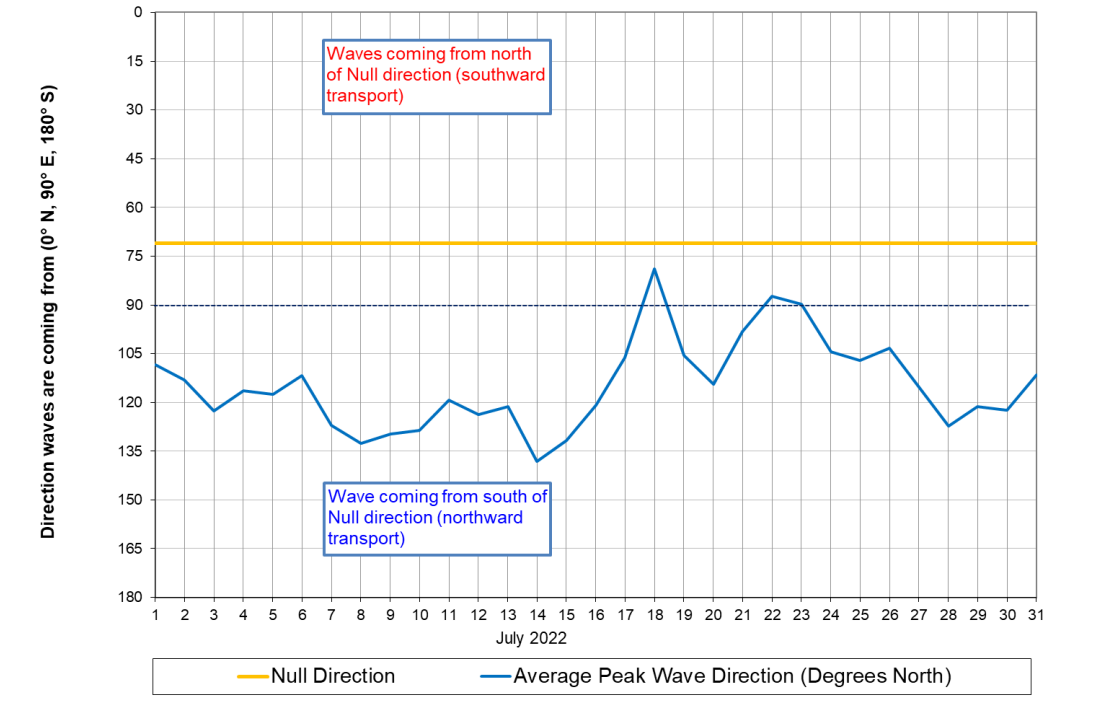


3. INDICATIVE LONGSHORE TRANSPORT

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 July 2022 the estimated natural sand transport moving north towards the Tweed River entrance was calculated to be in the order of 92,000 m^3. This result is 148 per cent of the average estimated sand transport quantity of approx. 62,000 m^3 for July.





4. BEACH AND SURF AMENITY OBSERVATIONS

Sand was pumped to north Duranbah beach between the 21st and 25th July coinciding with the Coral Sea well event. Beaches are still in a good condition, although sand banks were affected by the easterly swell event.

	
Duranbah before placement and swell event	**Duranbah after placement and swell event**

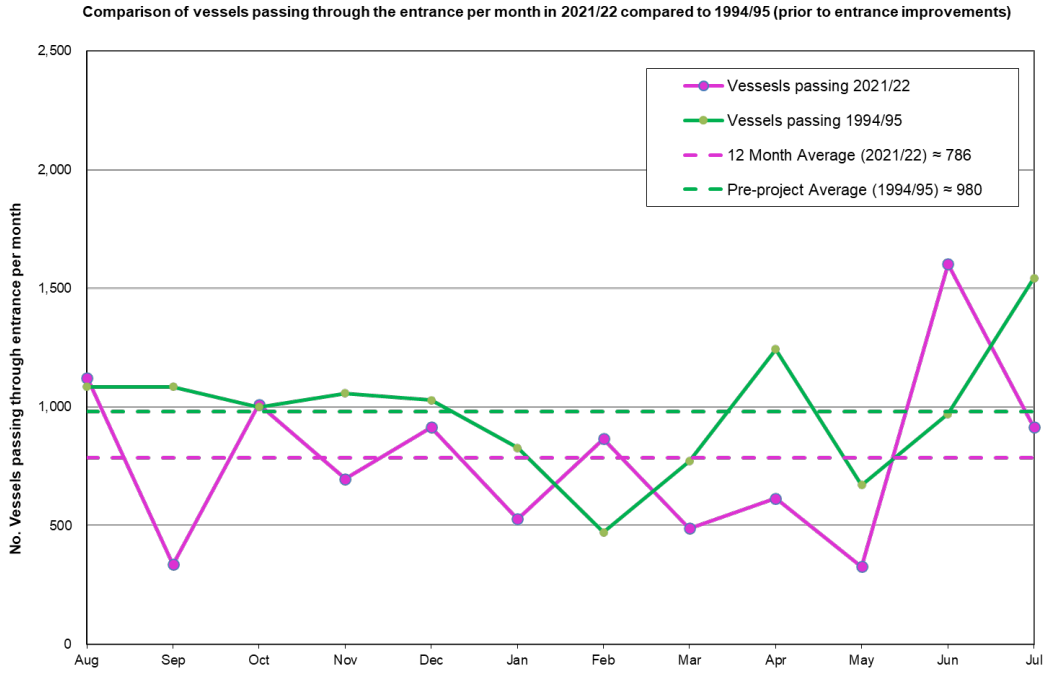
Duranbah produced quality waves during early July. The large swell of 22-24 July saw excellent but crowded waves from Greenmount through to Kirra

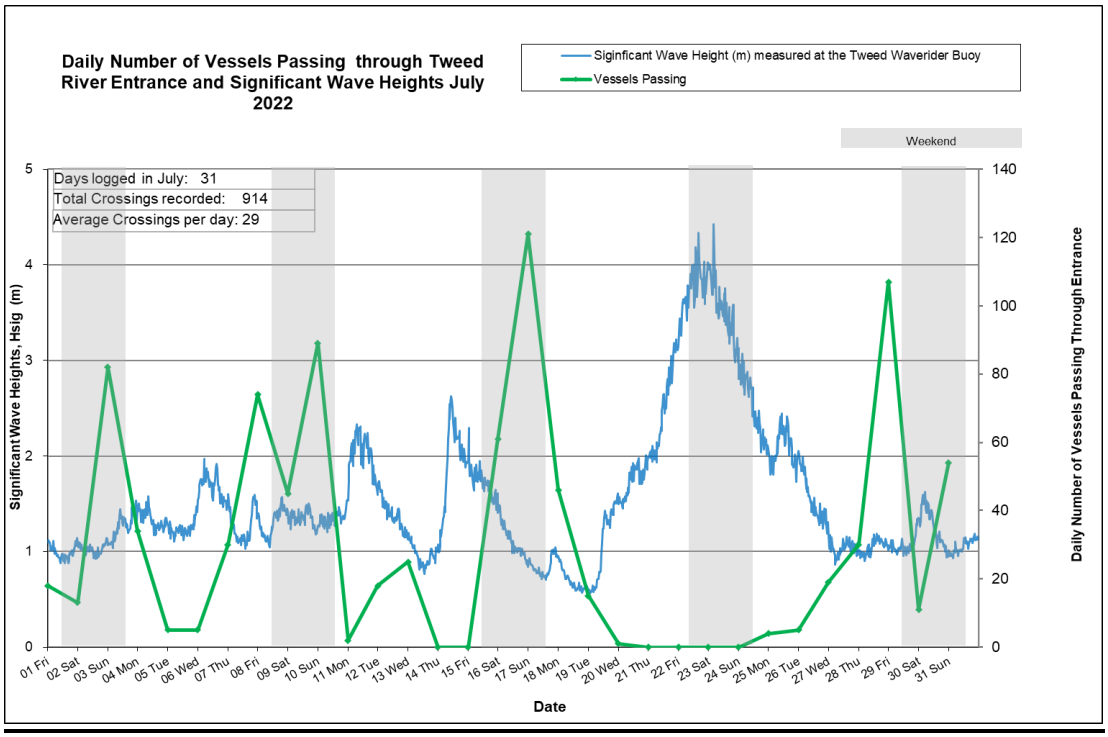

Kirra – 22-24 July 2022


Greenmount – 22-24 July 2022
Settings

5. TWEED RIVER ENTRANCE USAGE

A total of 914 Tweed River entrance vessel crossings were recorded for the month (48 per cent of the July average (2002–2022)).





Date July 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						18
2						13
3						82
4						34
5						5
6						5
7						30
8						74
9						45
10						89
11						2
12						18
13						25
14						0
15						0
16						61
17						121
18						46
19						15
20						1
21						0
22						0
23						0
24						0
25						4
26						5
27						19
28						30
29						107
30						11
31						54
					Total:	914

Marine Rescue NSW - Monitoring Results (Not including trawlers)

Weekends

Source: *Marine Rescue NSW, Point Danger*