

TWEED SAND BYPASSING

ENVIRONMENTAL MONITORING SUMMARY – FEBRUARY 2022

1. SAND PUMPING & DREDGING

- 56,019 m³ was pumped to Snapper Rocks East.
- 31,502 m³ was pumped to Duranbah beach
- 0 m³ of sand was dredged

Sand Delivery February 2022

Pumped: 87,521 m³

Dredged: 0 m³

Total: 87,521 m³

The number of days sand was pumped this month = 25

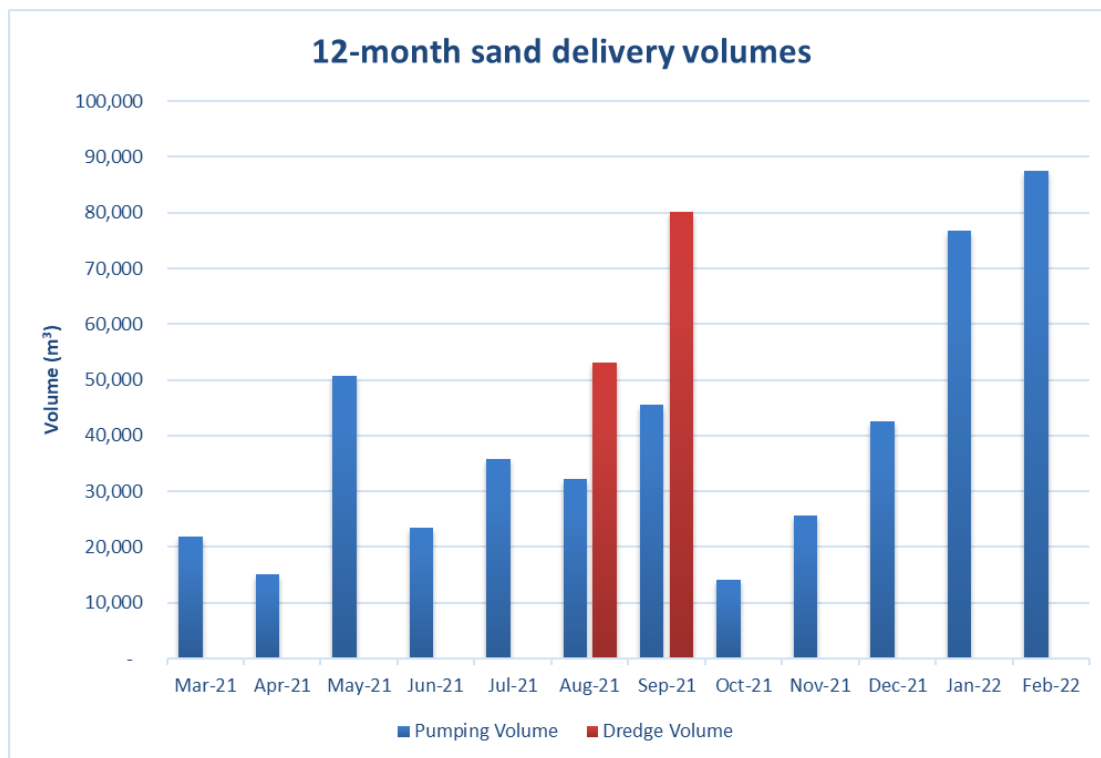
Stage II Sand Delivery May 2000 to date

Pumped: 10,596,367 m³

Dredged*: 2,715,369 m³

Total*: 13,311,735 m³

* This Includes 22,870 m³ of sand delivered by dredge to Palm Beach between June 2005 and September 2005



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2. WAVE CONDITIONS

Significant wave heights (H_{sig}) were variable throughout the month. Three distinct periods of swell over 2 m were experienced in February. A significant wave event was experienced in the last week of the month with wave heights over 4 m. Wave directions were predominantly from the east and ESE with the large swell event from the east.

- Minimum H_{sig} : 0.71 m on 3 February 2022
- Maximum H_{sig} : 4.17 m on 28 February 2022
- Number of days where $H_{sig} < 1$ m at some point: 8
- Number of days where $H_{sig} > 2$ m at some point: 16

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



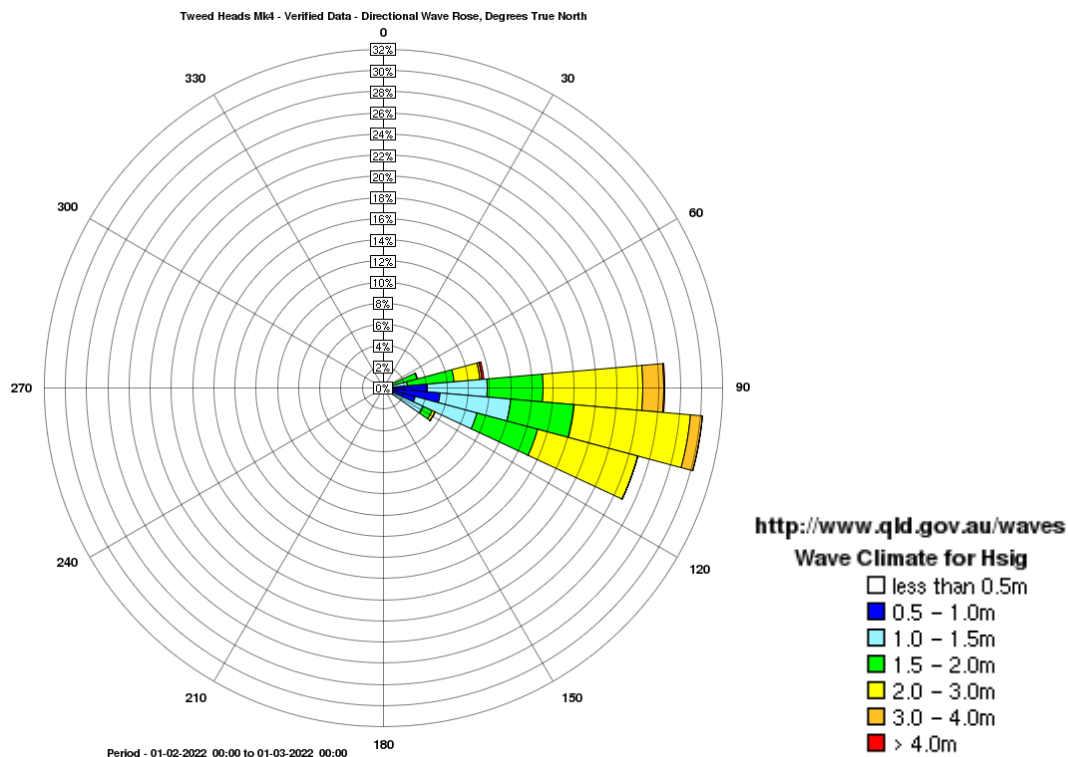
(Source: Tweed Heads Waverider buoy; Queensland Government)

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.

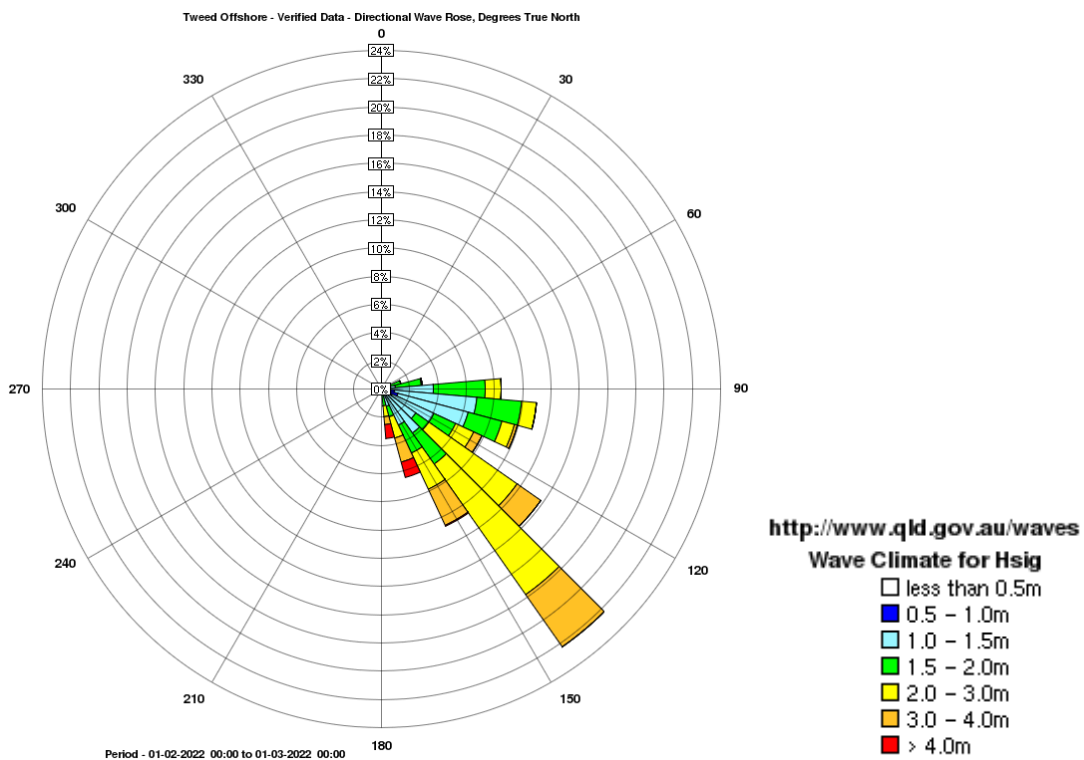
A link to data recorded by the Tweed Heads and Tweed Offshore Waverider buoys is available at: <http://www.qld.gov.au/waves>

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NEARSHORE WAVE DIRECTION



OFFSHORE WAVE DIRECTION

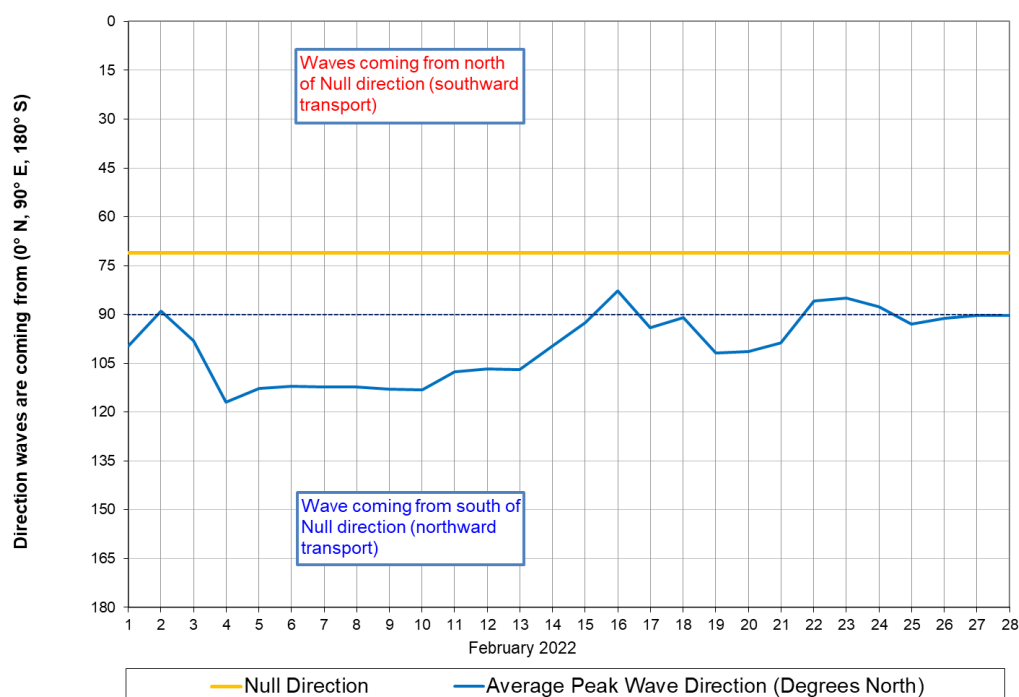
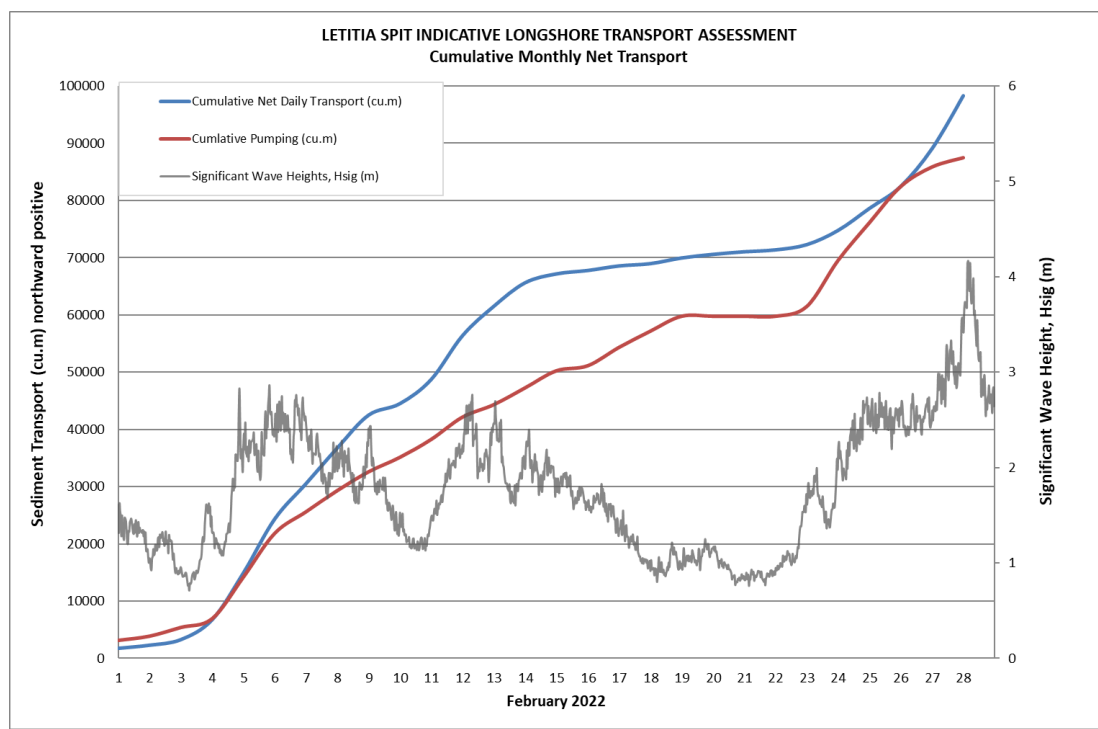


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3. INDICATIVE LONGSHORE TRANSPORT

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 February 2022 the estimated natural sand transport moving north towards the Tweed River entrance was calculated to be in the order of 98,000 m³. This result is 165 per cent of the average estimated sand transport quantity of approx. 60,000 m³ for the month of February.



February 2022

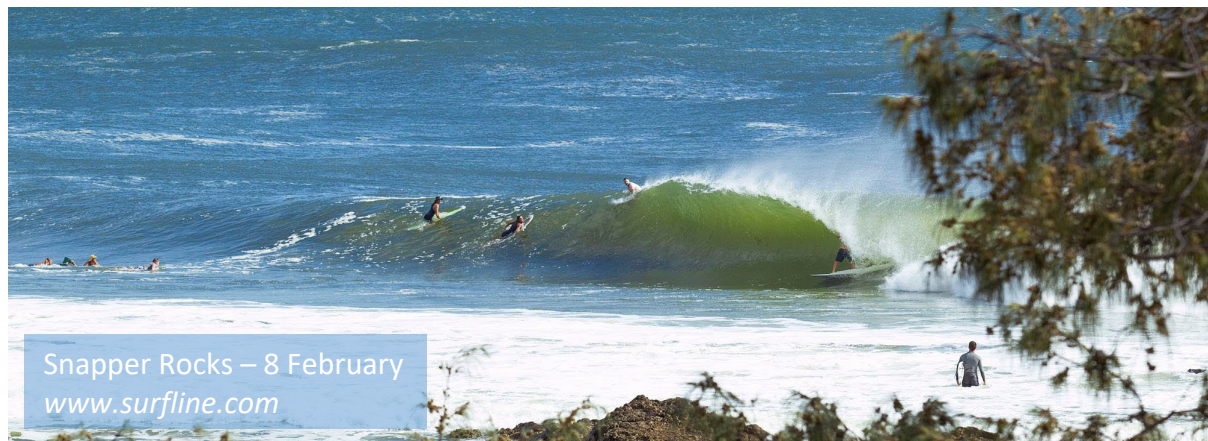
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4. BEACH AND SURF AMENITY OBSERVATIONS

A nourishment campaign at Duranbah beach was undertaken in the first half of the month to replenish sand lost during the December 2021 and January 2022 significant swell conditions.



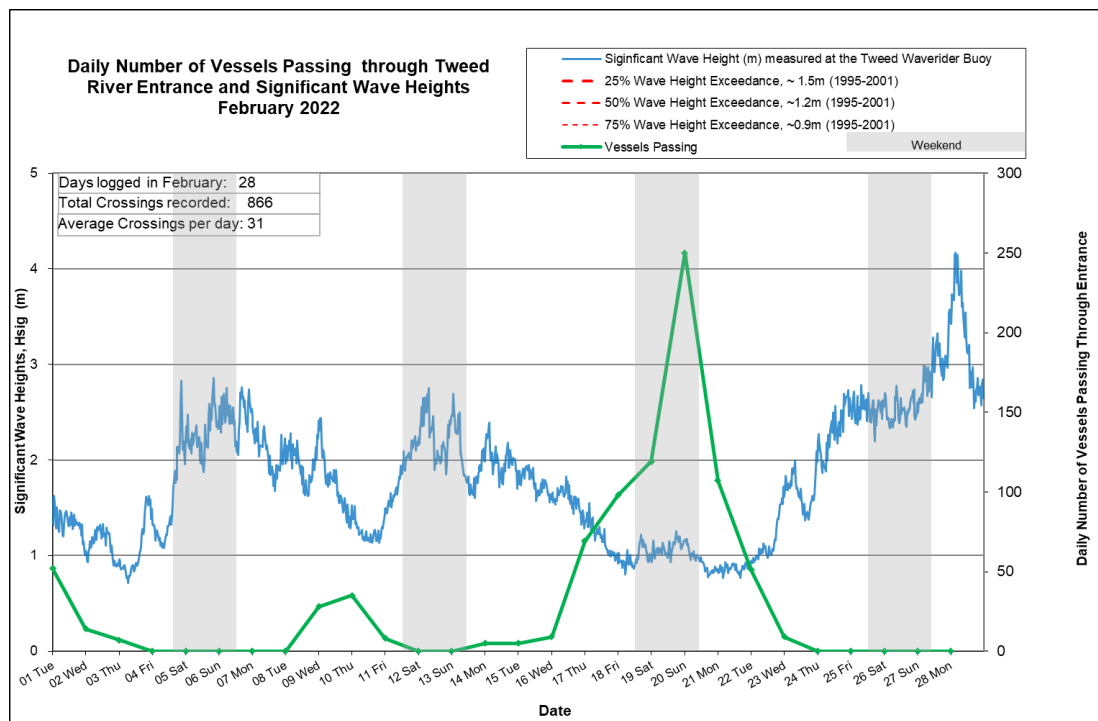
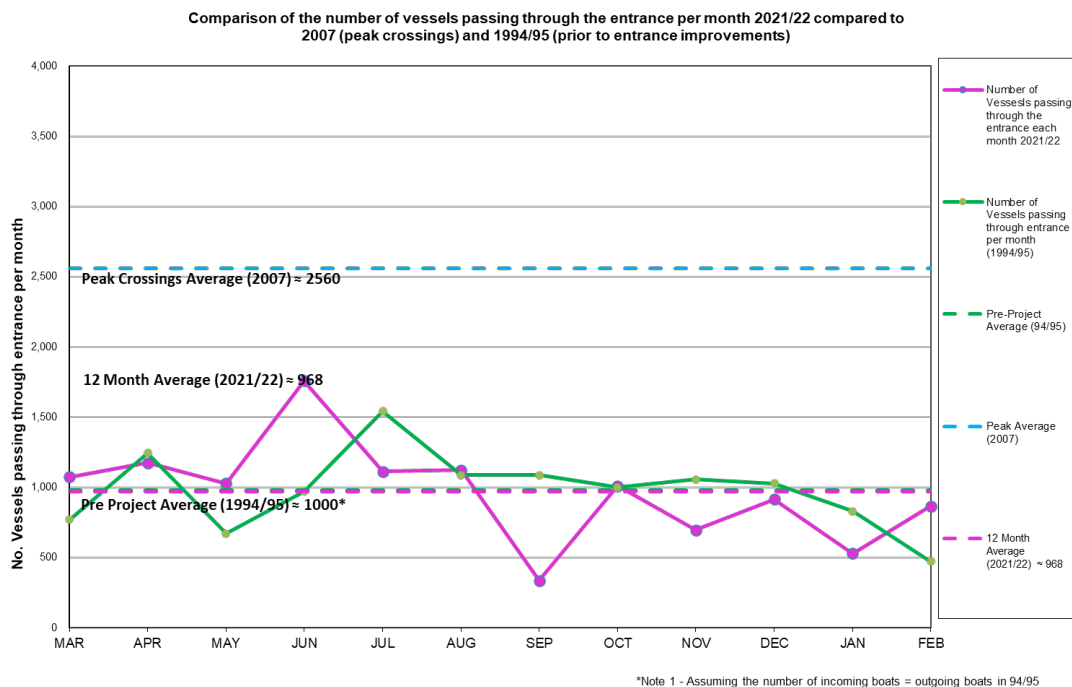
Consistently large swell over the month of February contributed to ongoing erosion at some beaches, but also produced exceptional surfing conditions at Snapper Rocks, Rainbow Bay, Greenmount and Kirra.



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5. TWEED RIVER ENTRANCE USAGE

A total of 866 Tweed River entrance vessel crossings were recorded for the month (67 per cent of the February average (2002–2022)).



February 2022

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Date February 2022	Navigation Rating					Number of Crossings
	Impassable < - - - - - > Good					
	Impassable	Difficulty Encountered	Some Difficulty Encountered	Relatively Good Crossing	Good Conditions	
	1	2	3	4	5	
1						52
2						14
3						7
4						0
5						0
6						0
7						0
8						0
9						28
10						35
11						8
12						0
13						0
14						5
15						5
16						9
17						69
18						98
19						119
20						250
21						107
22						51
23						9
24						0
25						0
26						0
27						0
28						0
					Total:	866

Marine Rescue NSW - Monitoring Results (Not including trawlers)

 Weekends

Source: Marine Rescue NSW, Point Danger