

# TWEED SAND BYPASSING

## ENVIRONMENTAL MONITORING SUMMARY – MARCH 2024

### 1. SAND PUMPING & DREDGING

- 49,535 m<sup>3</sup> was pumped to Snapper Rocks East.
- 0 m<sup>3</sup> of sand was dredged.

#### Sand Delivery March 2024

Pumped: 49,535 m<sup>3</sup>

Dredged: 0 m<sup>3</sup>

Total: 49,535 m<sup>3</sup>

The number of days sand was pumped this month = 25

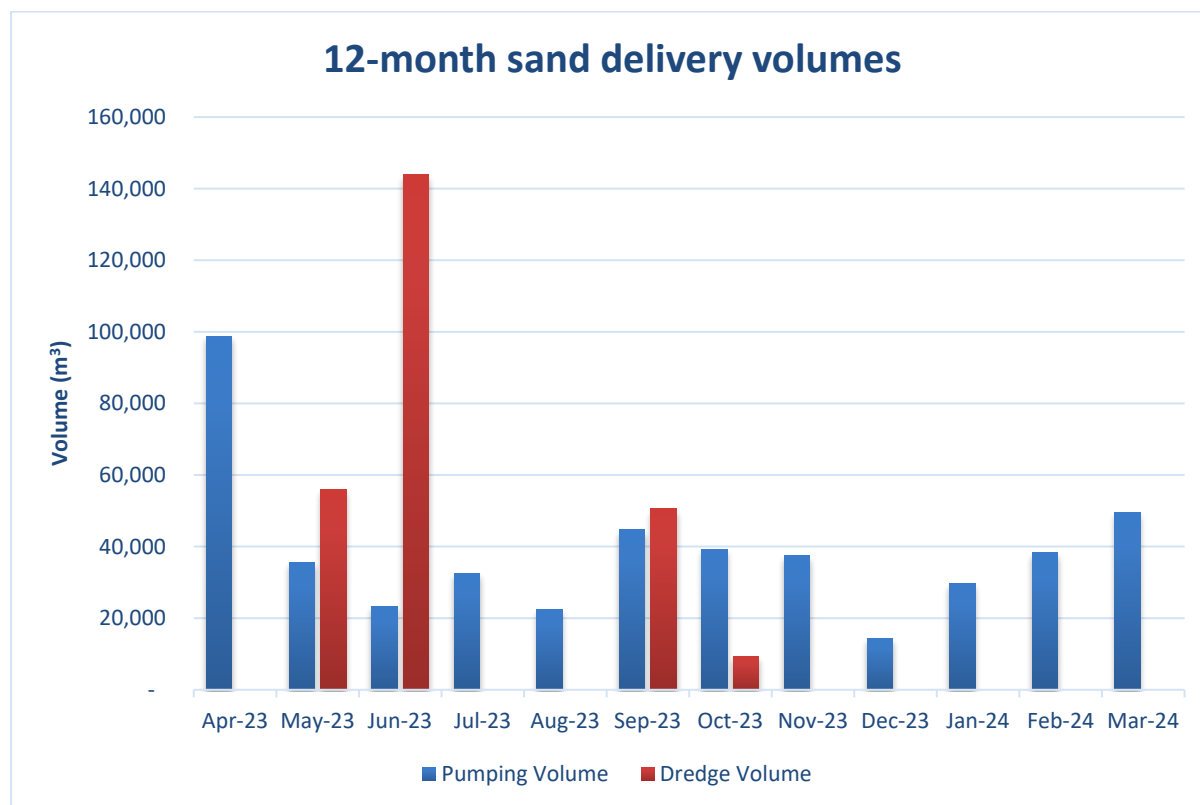
#### Sand Delivery May 2000 to March 2024

Pumped: 11,683,221 m<sup>3</sup>

Dredged\*: 3,047,294 m<sup>3</sup>

Total\*: 14,730,515 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

March saw very active conditions throughout the month, with wave heights greater than 2 m for 16 days throughout the month, with a peak in the second week of wave heights persistently over 3 m. The maximum wave height for the month was observed toward the end of the second week at 3.39 m. Strong easterly conditions were recorded at both the nearshore and offshore Waverider buoys.

- Minimum  $H_{sig}$ : 0.64 m on 03 March 2024
- Maximum  $H_{sig}$ : 3.39 m on 11 March 2024
- Number of days where  $H_{sig} < 1$  m at some point: 7
- 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

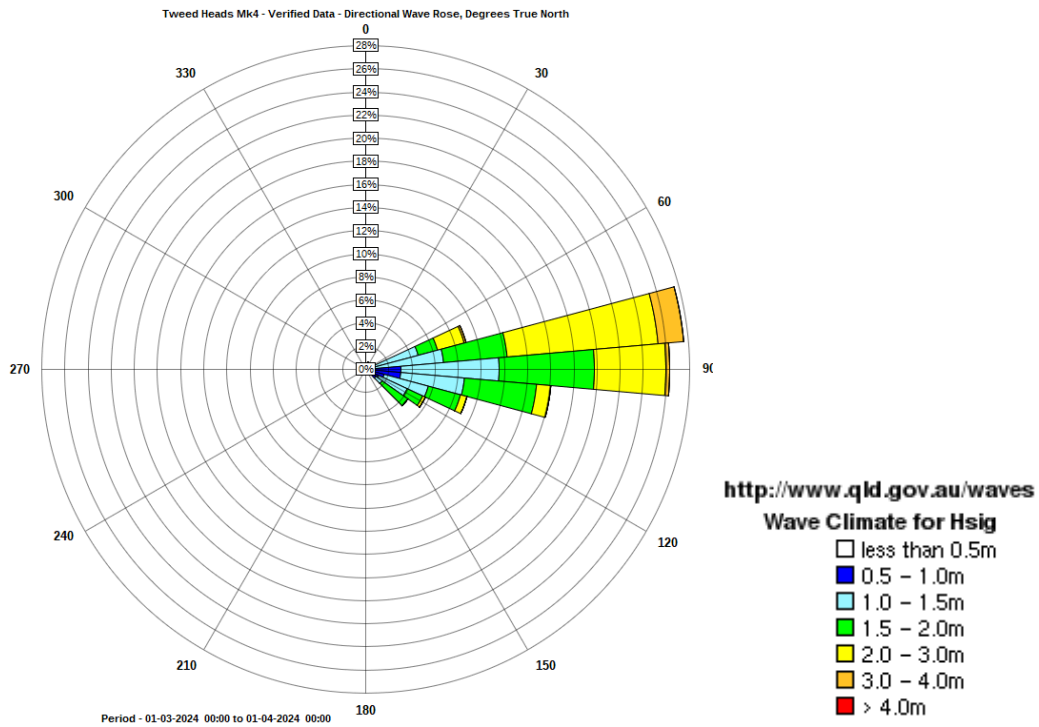


(Source: Tweed Heads Waverider buoy; Queensland Government)

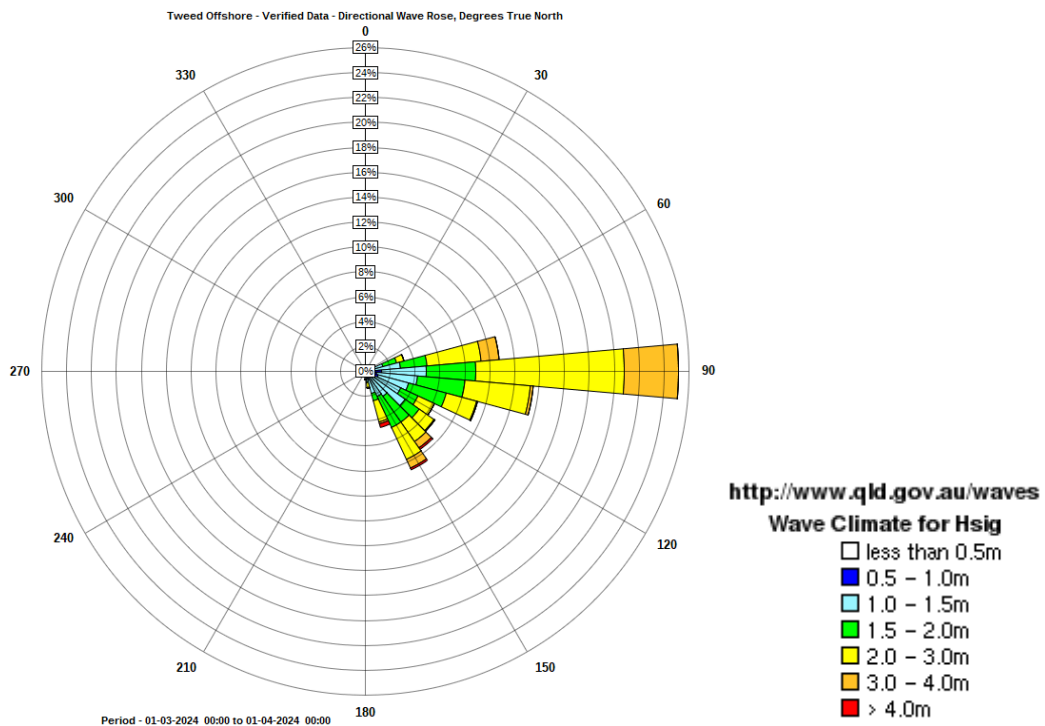
A link to data recorded by the Tweed Heads and Tweed Offshore Waverider buoys is available at:  
<http://www.qld.gov.au/waves>

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## NEARSHORE WAVE DIRECTION



## OFFSHORE WAVE DIRECTION

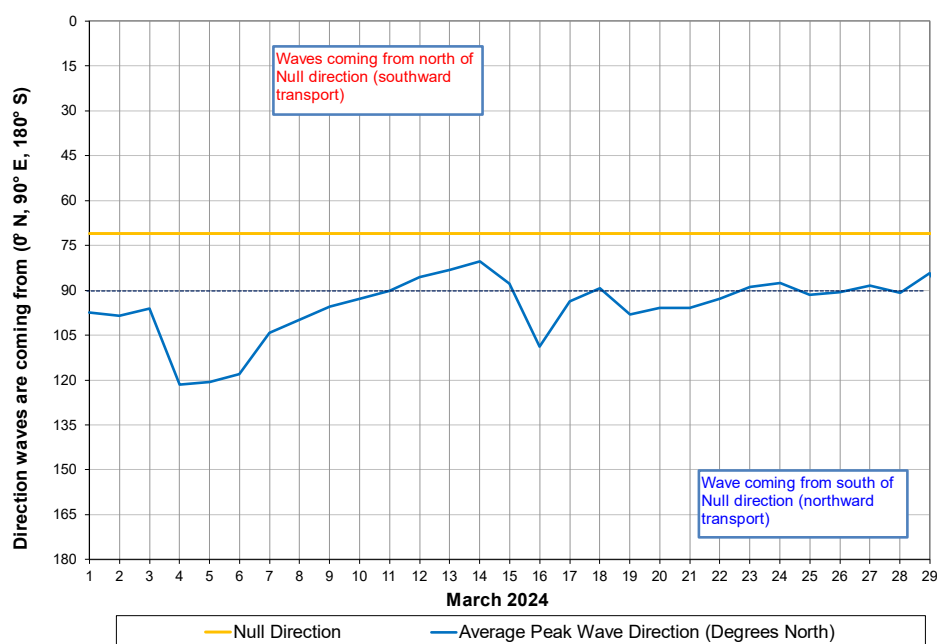
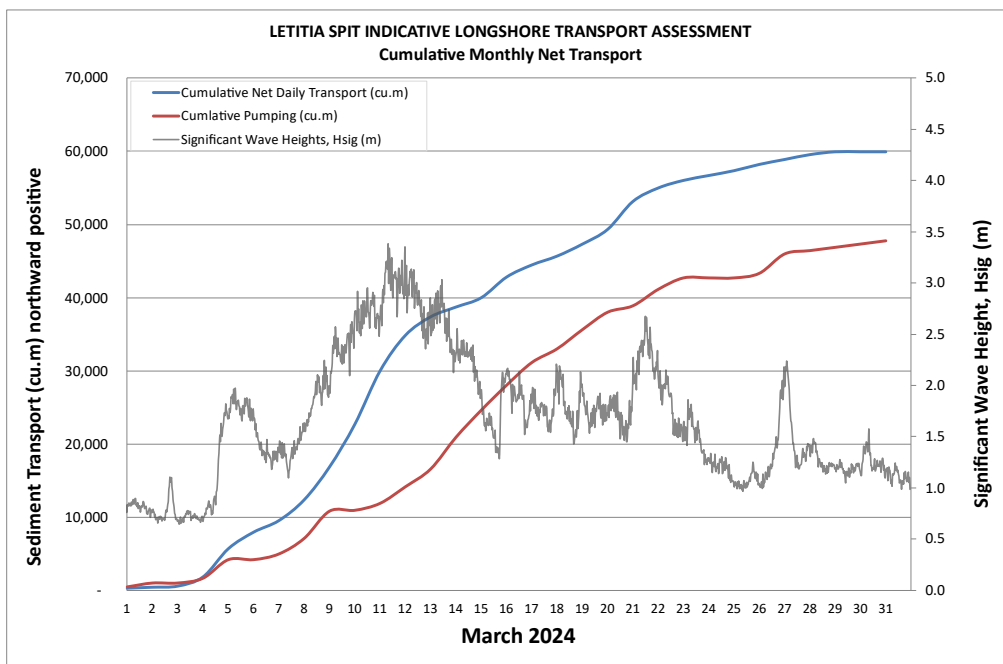


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## 3. INDICATIVE LONGSHORE TRANSPORT

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 March 2024, the estimated natural sand transport moving north towards the Tweed River entrance was calculated to be in the order of 59,900 m<sup>3</sup>. This result is 106 per cent of the average estimated sand transport quantity of approximately. 56,200 m<sup>3</sup> for March.



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## 4. BEACH AND SURF AMENITY OBSERVATIONS

March had a consistent strong E swell direction coupled with significant wave heights. The conditions affected the upper beach at Duranbah, with scarping observed off the southern corner and *Tyalgum* wreck and the rocky outcrops in the swash zone exposed briefly. Frog Beach was observed to also be depleted of sand during the high energy conditions.



**Rainbow Bay 11 March \*south aspect**



**Kirra 11 March**



**Greenmount 11 March**



**Duranbah 11 March**



**Duranbah 28 March**









**Duranbah 11 March**



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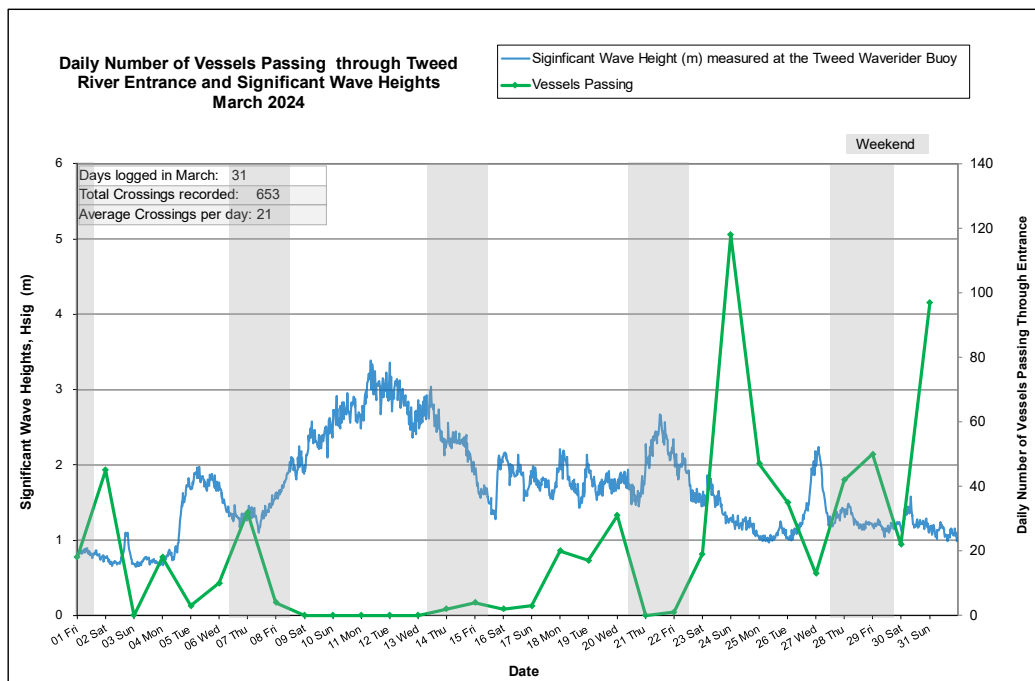
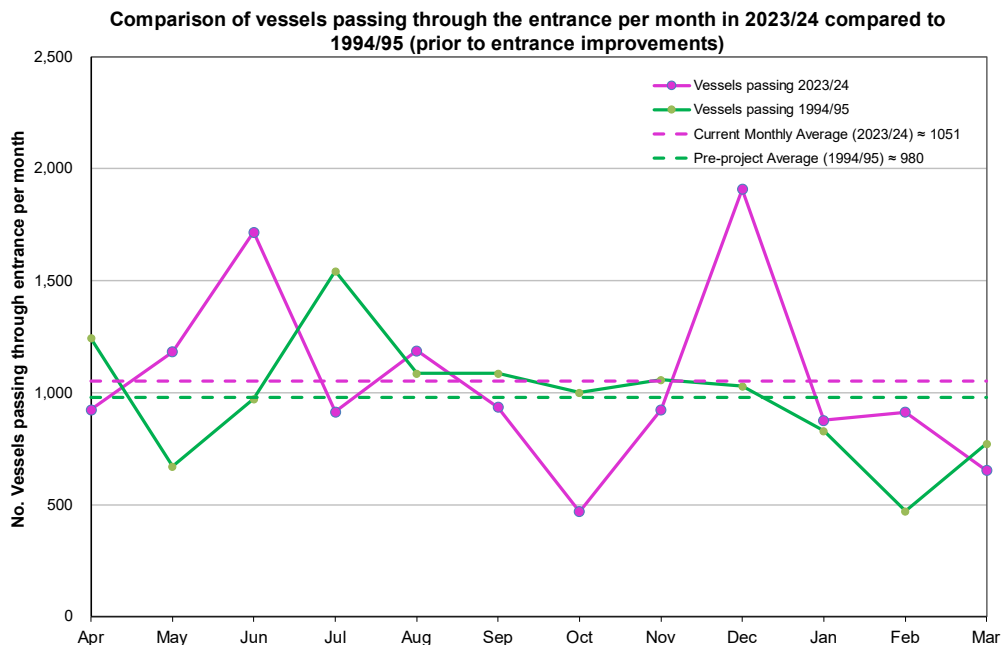
March was observed to provide good surf consistency throughout the month, with sixteen days experiencing swell over 2 m Hsig. This created favourable conditions for the southern Gold Coast points and produced long, hollow barrels for which Kirra is famous.

|   |  |
|---|--|
|    |    |
| <p><b>Duranbah 21 March</b></p>   | <p><b>Duranbah 21 March</b></p>  |
|   |   |
| <p><b>Snapper Rocks 11 March</b></p>  | <p><b>Kirra 12 March</b></p>   |
|  |  |
| <p><b>Snapper Rocks 11 March</b></p>  | <p><b>Kirra 11 March</b></p>   |

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## 5. TWEED RIVER ENTRANCE USAGE

A total of 653 Tweed River entrance vessel crossings were recorded for the month (44 per cent of the March average (2002–2024)).



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| Date<br>March 2024 | Navigation Rating           |                           |                                   |                                |                    | Number of<br>Crossings |
|--------------------|-----------------------------|---------------------------|-----------------------------------|--------------------------------|--------------------|------------------------|
|                    | Impassable < - - - - > Good |                           |                                   |                                |                    |                        |
|                    | Impassable                  | Difficulty<br>Encountered | Some<br>Difficulty<br>Encountered | Relatively<br>Good<br>Crossing | Good<br>Conditions |                        |
|                    | 1                           | 2                         | 3                                 | 4                              | 5                  |                        |
| 1                  |                             |                           |                                   |                                |                    | 18                     |
| 2                  |                             |                           |                                   |                                |                    | 45                     |
| 3                  |                             |                           |                                   |                                |                    | 0                      |
| 4                  |                             |                           |                                   |                                |                    | 18                     |
| 5                  |                             |                           |                                   |                                |                    | 3                      |
| 6                  |                             |                           |                                   |                                |                    | 10                     |
| 7                  |                             |                           |                                   |                                |                    | 32                     |
| 8                  |                             |                           |                                   |                                |                    | 4                      |
| 9                  |                             |                           |                                   |                                |                    | 0                      |
| 10                 |                             |                           |                                   |                                |                    | 0                      |
| 11                 |                             |                           |                                   |                                |                    | 0                      |
| 12                 |                             |                           |                                   |                                |                    | 0                      |
| 13                 |                             |                           |                                   |                                |                    | 0                      |
| 14                 |                             |                           |                                   |                                |                    | 2                      |
| 15                 |                             |                           |                                   |                                |                    | 4                      |
| 16                 |                             |                           |                                   |                                |                    | 2                      |
| 17                 |                             |                           |                                   |                                |                    | 3                      |
| 18                 |                             |                           |                                   |                                |                    | 20                     |
| 19                 |                             |                           |                                   |                                |                    | 17                     |
| 20                 |                             |                           |                                   |                                |                    | 31                     |
| 21                 |                             |                           |                                   |                                |                    | 0                      |
| 22                 |                             |                           |                                   |                                |                    | 1                      |
| 23                 |                             |                           |                                   |                                |                    | 19                     |
| 24                 |                             |                           |                                   |                                |                    | 118                    |
| 25                 |                             |                           |                                   |                                |                    | 47                     |
| 26                 |                             |                           |                                   |                                |                    | 35                     |
| 27                 |                             |                           |                                   |                                |                    | 13                     |
| 28                 |                             |                           |                                   |                                |                    | 42                     |
| 29                 |                             |                           |                                   |                                |                    | 50                     |
| 30                 |                             |                           |                                   |                                |                    | 22                     |
| 31                 |                             |                           |                                   |                                |                    | 97                     |
|                    |                             |                           |                                   |                                | Total:             | 653                    |

Marine Rescue NSW - Monitoring Results (Not including trawlers)

 Weekends

**Source:** Marine Rescue NSW, Point Danger