

# TWEED SAND BYPASSING

## ENVIRONMENTAL MONITORING SUMMARY – JANUARY 2022

### 1. SAND PUMPING & DREDGING

- 76,670 m<sup>3</sup> was pumped to Snapper Rocks East.
- 0 m<sup>3</sup> of sand was dredged

#### **Sand Delivery January 2022**

Pumped: 76,670 m<sup>3</sup>

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

Total: 76,670 m<sup>3</sup>

The number of days sand was pumped this month = 29

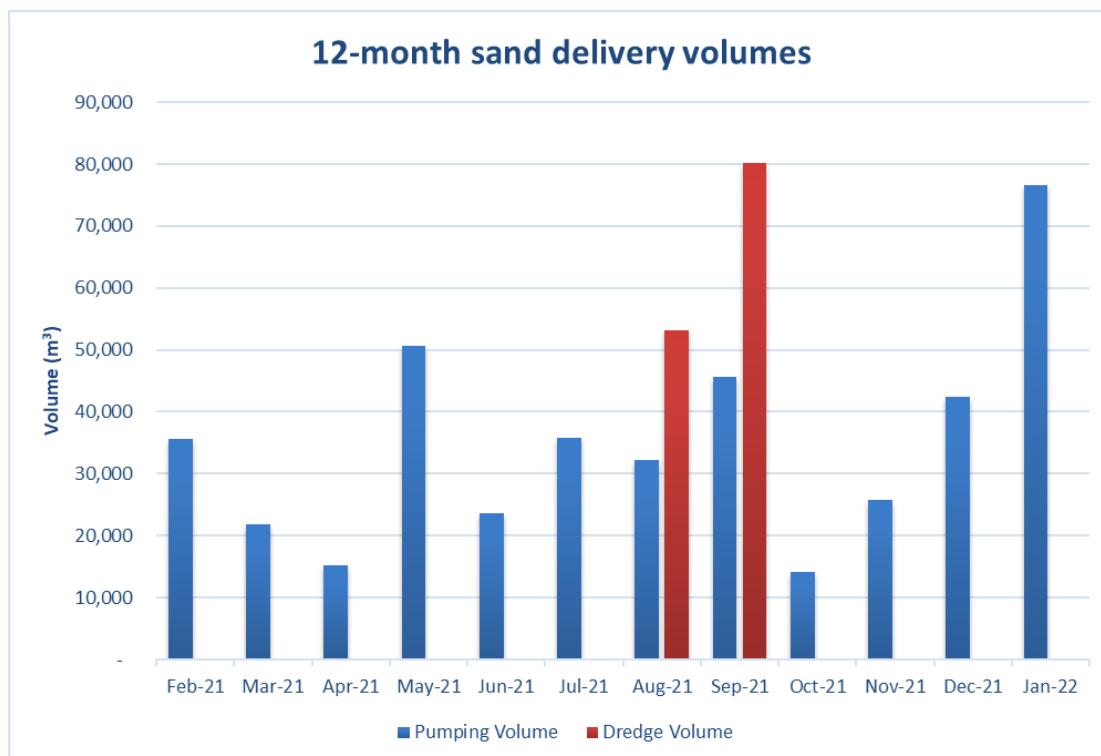
#### **Stage II Sand Delivery May 2000 to date**

Pumped: 10,508,847 m<sup>3</sup>

Dredged\*: 2,715,369 m<sup>3</sup>

Total\*: 13,224,215 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



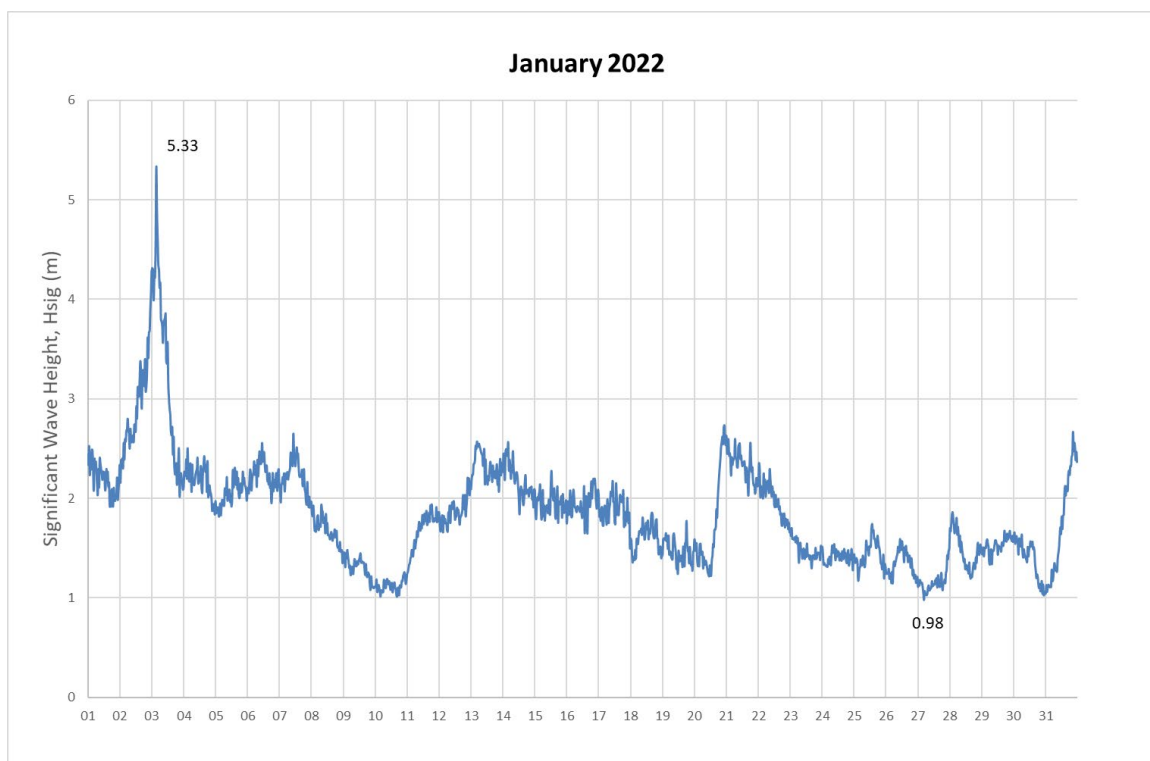
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## 2. WAVE CONDITIONS

Significant wave heights ( $H_{sig}$ ) were consistently above 1.5m throughout January. A significant swell event was experienced in the first week of the month with wave heights reaching over 5 m and then dropping back down to 2 m. Wave directions were predominantly from the east and ESE with the large swell event from the ENE.

- Minimum  $H_{sig}$ : 0.98 m on 19 January 2022
- Maximum  $H_{sig}$ : 5.33 m on 31 January 2022
- Number of days where  $H_{sig} < 1$  m at some point: 1
- Number of days where  $H_{sig} > 2$  m at some point: 17

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



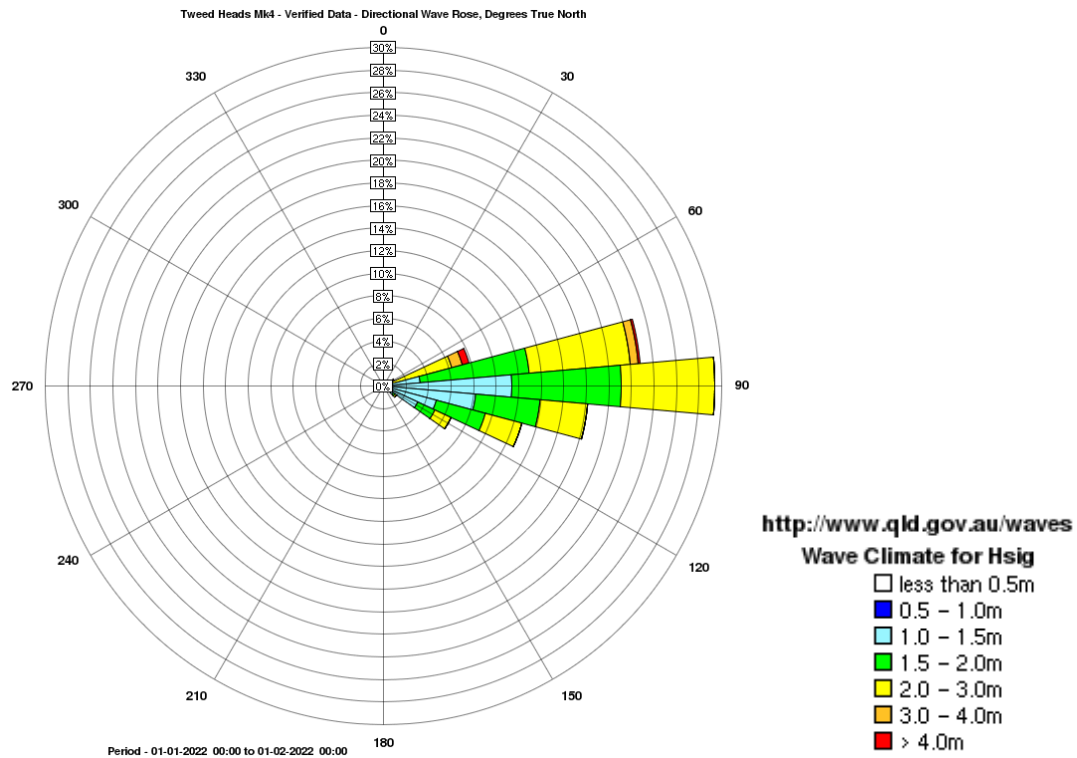
(Source: Tweed Heads Waverider buoy; Queensland Government)

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.

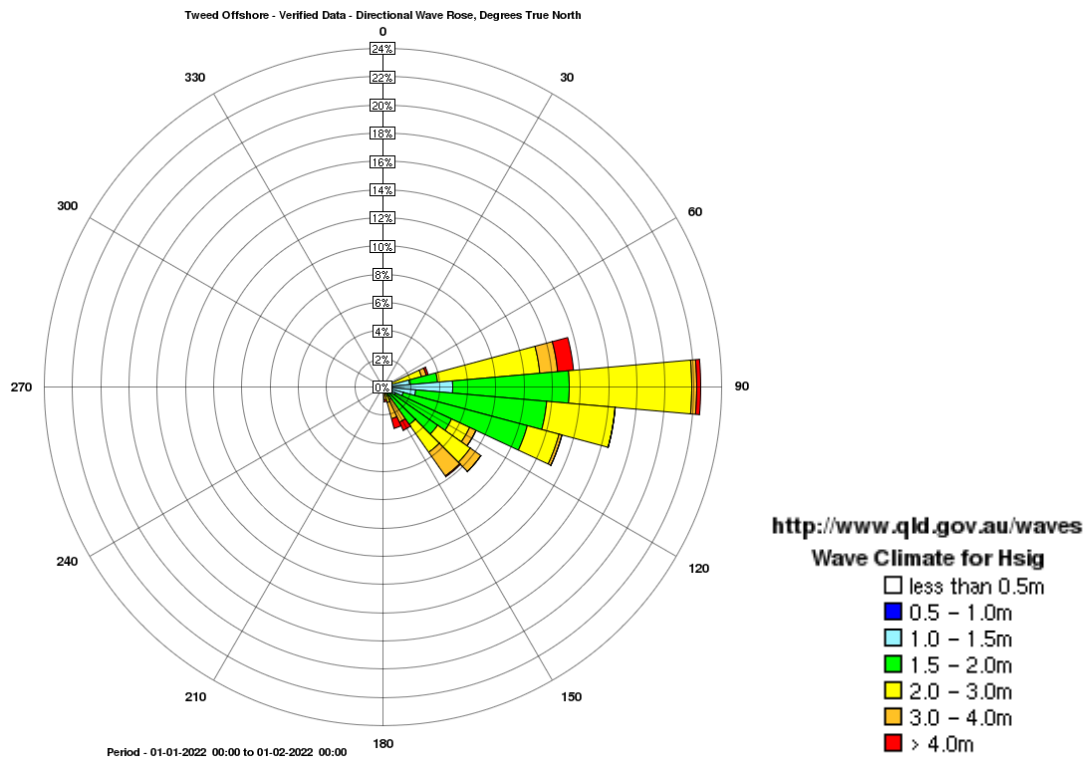
A link to data recorded by the Tweed Heads and Tweed Offshore Waverider buoys is available at:  
<http://www.qld.gov.au/waves>

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## NEARSHORE WAVE DIRECTION



## OFFSHORE WAVE DIRECTION

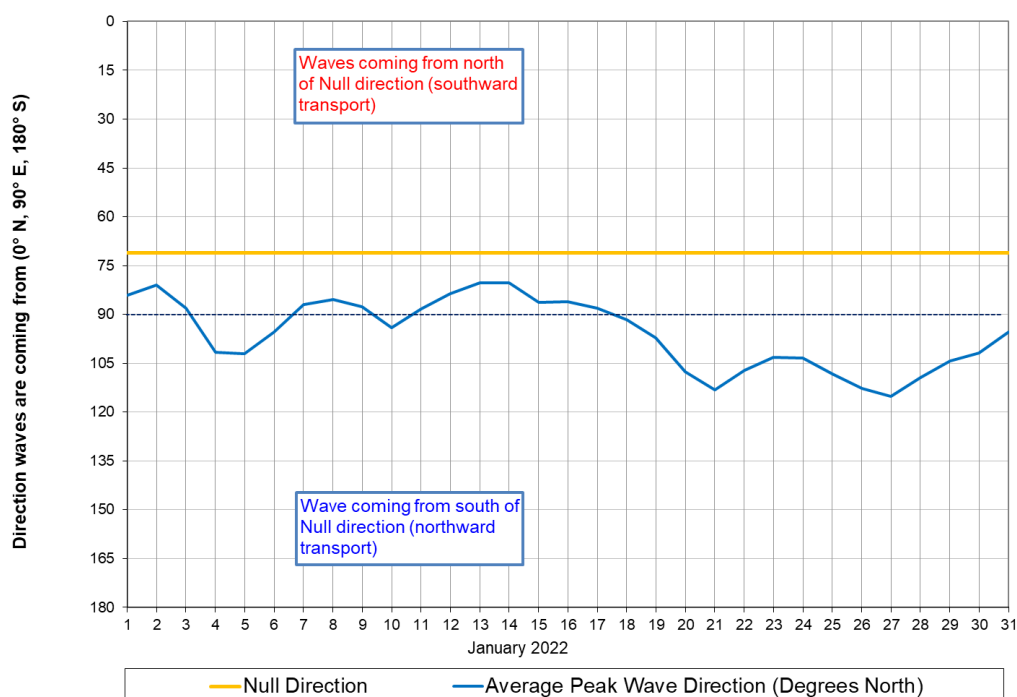
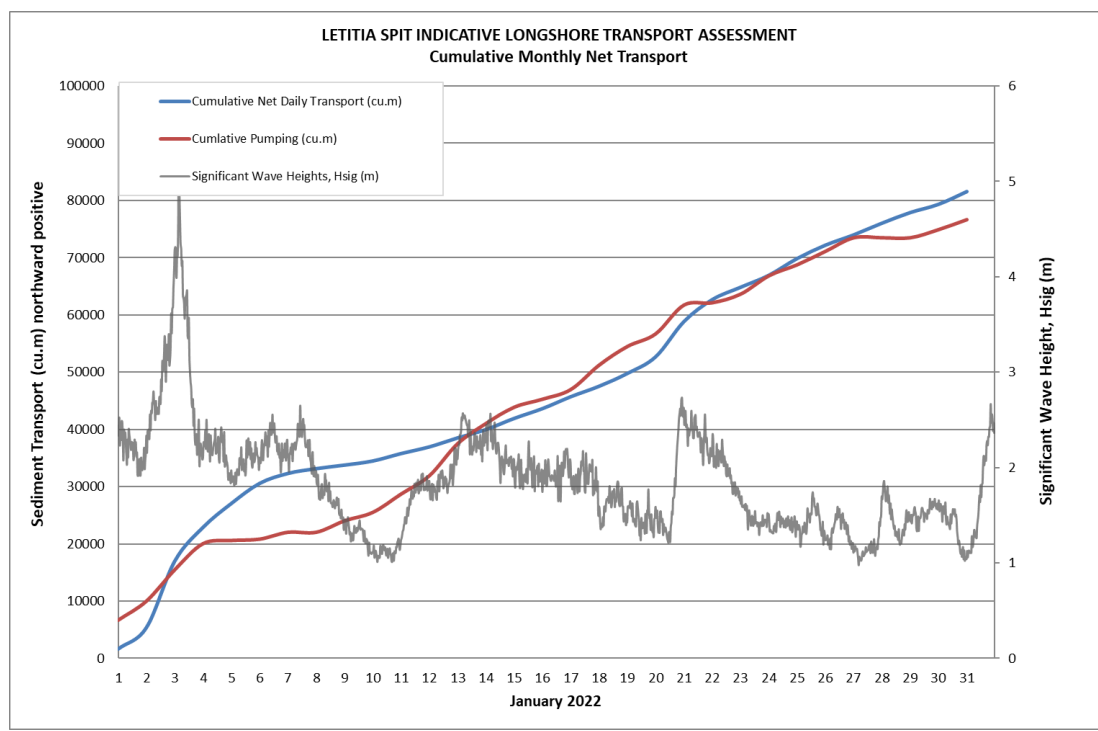


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## 3. INDICATIVE LONGSHORE TRANSPORT

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 January 2022 the estimated natural sand transport moving north towards the Tweed River entrance was calculated to be in the order of 82,000 m<sup>3</sup>. This result is 185 per cent of the average estimated sand transport quantity of approx. 44,000 m<sup>3</sup> for the month of January.

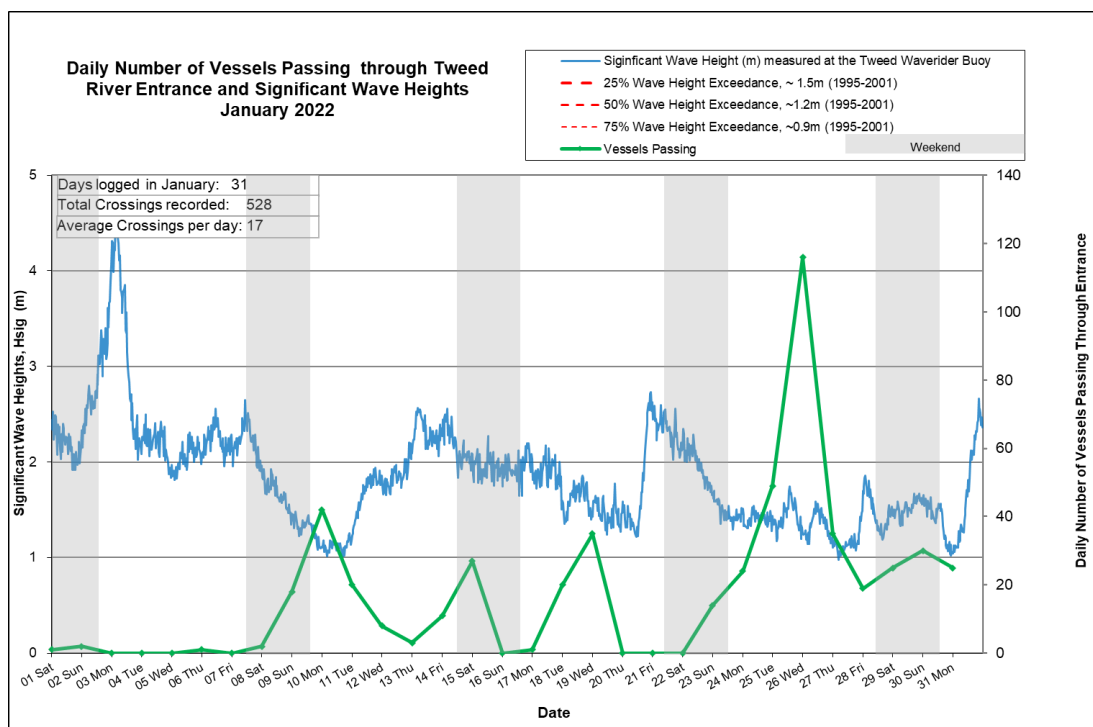
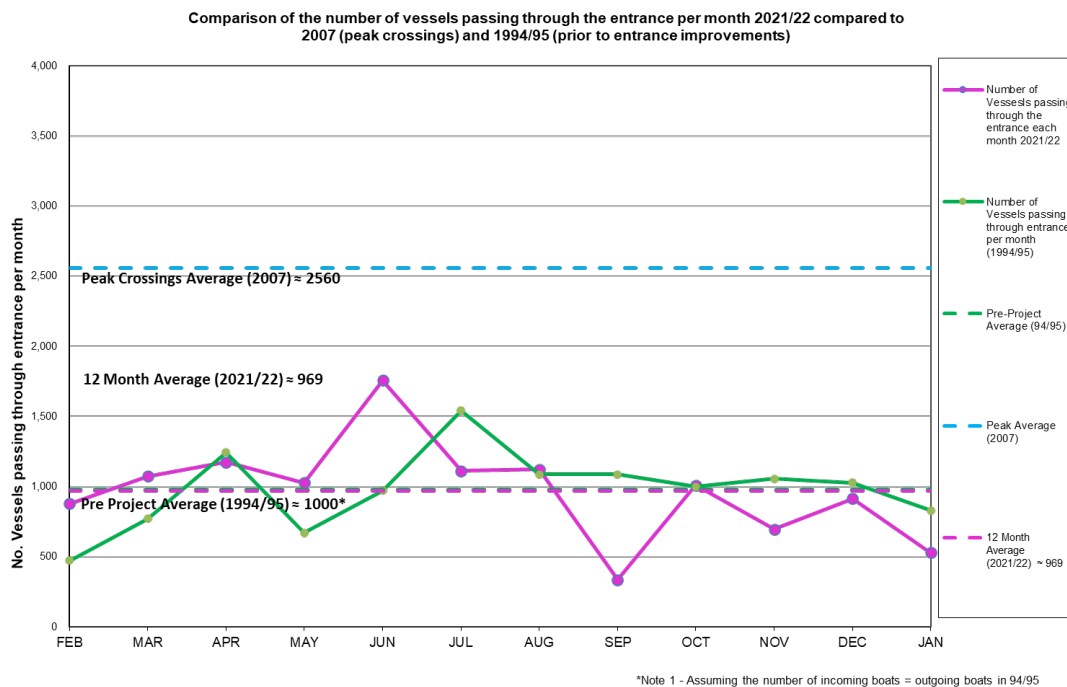


January 2022

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## 4. TWEED RIVER ENTRANCE USAGE

A total of 528 Tweed River entrance vessel crossings were recorded for the month (27 per cent of the January average (2002–2022)).



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| Date<br>January 2022 | 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                    |                               |                           |                                   |                                |                    | 1                      |
| 2                    |                               |                           |                                   |                                |                    | 2                      |
| 3                    |                               |                           |                                   |                                |                    | 0                      |
| 4                    |                               |                           |                                   |                                |                    | 0                      |
| 5                    |                               |                           |                                   |                                |                    | 0                      |
| 6                    |                               |                           |                                   |                                |                    | 1                      |
| 7                    |                               |                           |                                   |                                |                    | 0                      |
| 8                    |                               |                           |                                   |                                |                    | 2                      |
| 9                    |                               |                           |                                   |                                |                    | 18                     |
| 10                   |                               |                           |                                   |                                |                    | 42                     |
| 11                   |                               |                           |                                   |                                |                    | 20                     |
| 12                   |                               |                           |                                   |                                |                    | 8                      |
| 13                   |                               |                           |                                   |                                |                    | 3                      |
| 14                   |                               |                           |                                   |                                |                    | 11                     |
| 15                   |                               |                           |                                   |                                |                    | 27                     |
| 16                   |                               |                           |                                   |                                |                    | 0                      |
| 17                   |                               |                           |                                   |                                |                    | 1                      |
| 18                   |                               |                           |                                   |                                |                    | 20                     |
| 19                   |                               |                           |                                   |                                |                    | 35                     |
| 20                   |                               |                           |                                   |                                |                    | 0                      |
| 21                   |                               |                           |                                   |                                |                    | 0                      |
| 22                   |                               |                           |                                   |                                |                    | 0                      |
| 23                   |                               |                           |                                   |                                |                    | 14                     |
| 24                   |                               |                           |                                   |                                |                    | 24                     |
| 25                   |                               |                           |                                   |                                |                    | 49                     |
| 26                   |                               |                           |                                   |                                |                    | 116                    |
| 27                   |                               |                           |                                   |                                |                    | 35                     |
| 28                   |                               |                           |                                   |                                |                    | 19                     |
| 29                   |                               |                           |                                   |                                |                    | 25                     |
| 30                   |                               |                           |                                   |                                |                    | 30                     |
| 31                   |                               |                           |                                   |                                |                    | 25                     |
|                      |                               |                           |                                   |                                | Total:             | 528                    |

Marine Rescue NSW - Monitoring Results (Not including trawlers)

 Weekends

*Source: Marine Rescue NSW, Point Danger*