TWEEDSAND BYPASSING

# ENVIRONMENTAL MONITORING SUMMARY – MAY 2022

## 1. SAND PUMPING & DREDGING

- 73,797 $m^3$ was pumped to Snapper Rocks East.
- 0 $m^3$ of sand was dredged

**Sand Delivery May 2022**

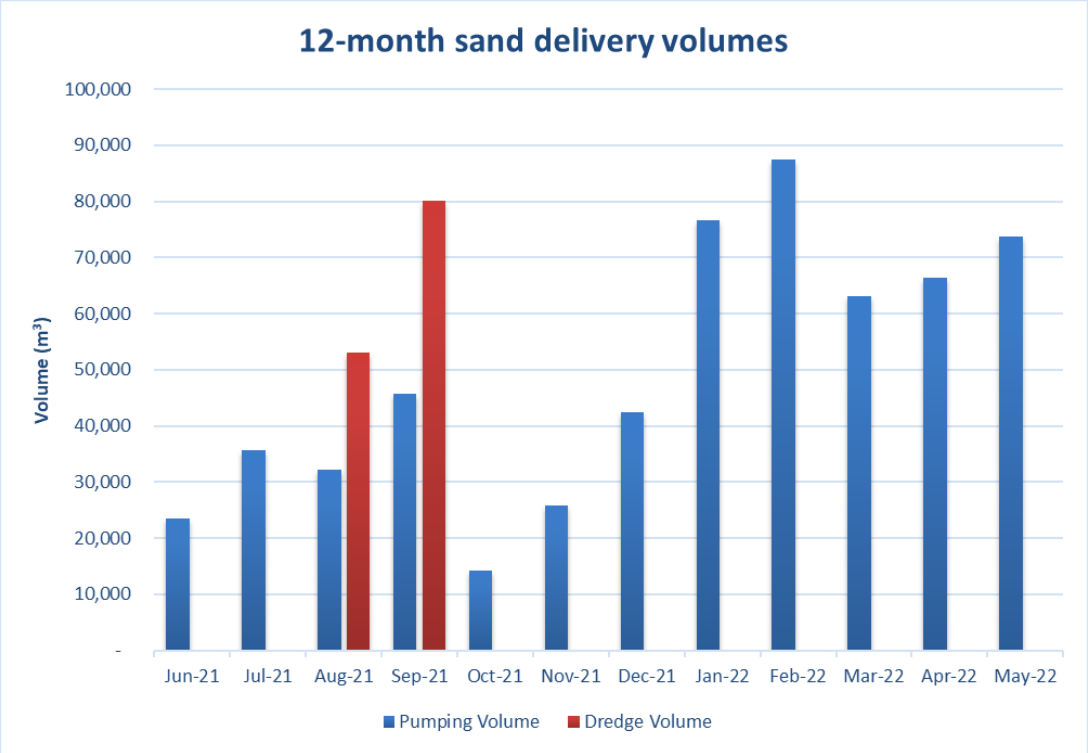
| | |
|---|---|
| Pumped: | 73,797 $m^3$ |
| Dredged: | 0 $m^3$ |
| Total: | 73,797 $m^3$ |

The number of days sand was pumped this month = 26

**Sand Delivery May 2000 to date**

| | |
|---|---|
| Pumped: | 10,799,648 $m^3$ |
| Dredged*: | 2,715,369 $m^3$ |
| Total*: | 13,515,016 $m^3$ |

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

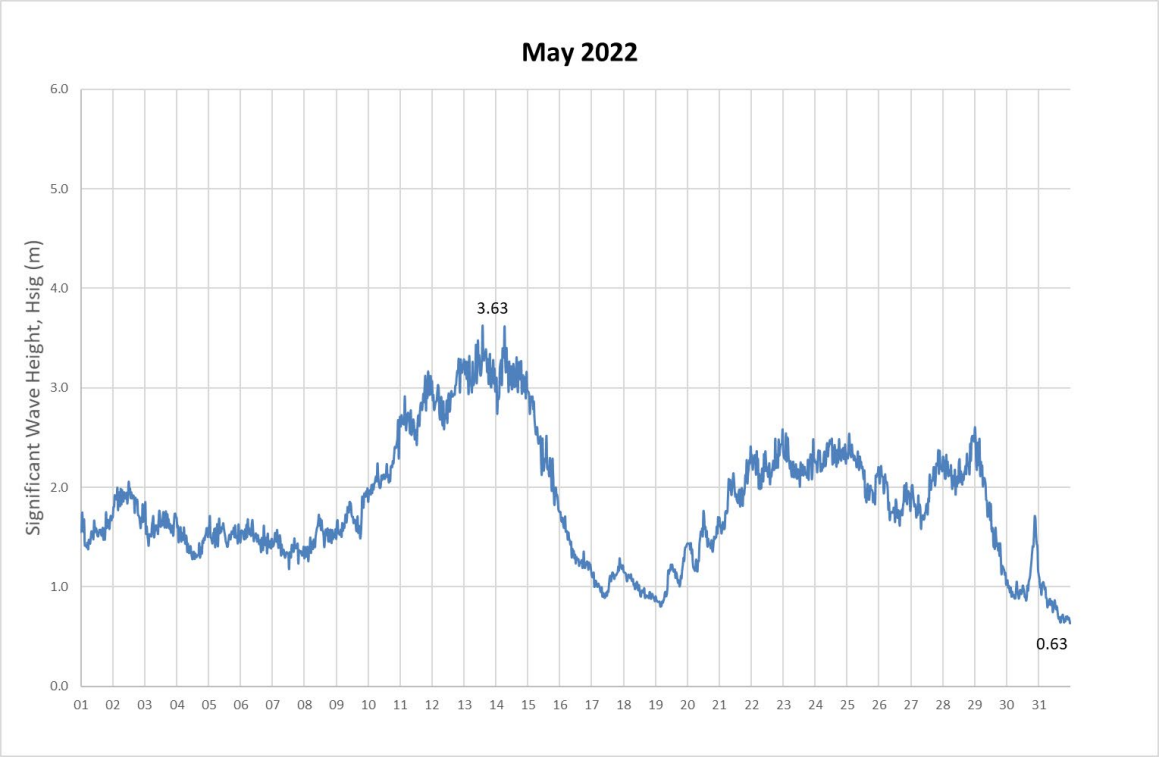


## 2. WAVE CONDITIONS

May was dominated by ENE swell throughout the month. A low-pressure system produced large swell through the second week of May peaking at 3.63 m. The reminder of the month saw a number of days with wave heights over 2 m which eased off moving into June.

- Minimum $H_{sig}$: 0.69 m on 31 May 2022
- Maximum $H_{sig}$: 3.05 m on 13 May 2022
- Number of days where $H_{sig}$ <1 m at some point: 5
- 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

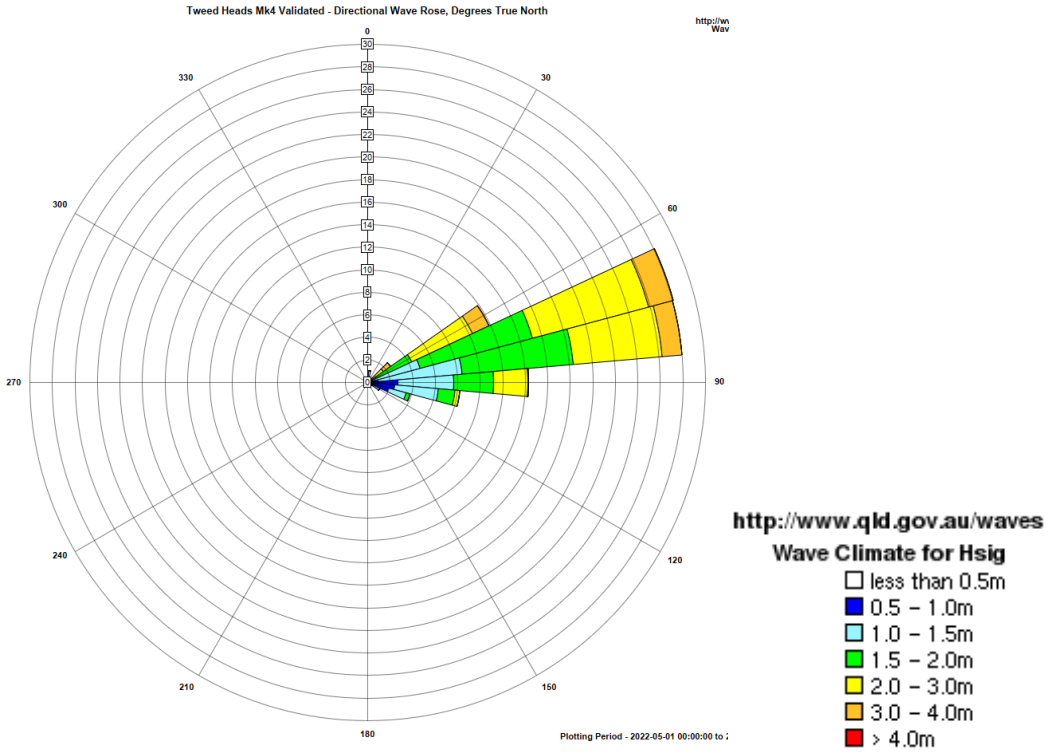



*(**Source:** Tweed Heads Waverider buoy; Queensland Government)*

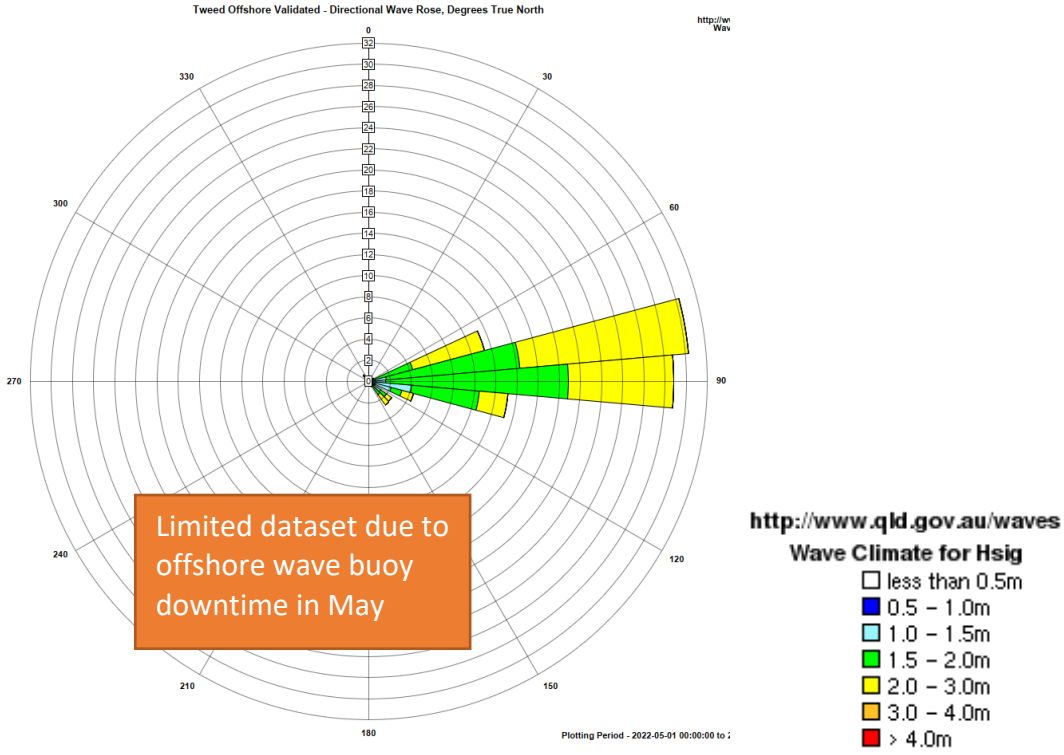
In January 2020 TSB commissioned the deployment of another Waverider buoy in the Tweed region. The Tweed Offshore Waverider buoy was deployed in approximately 60 m water depth to the east and adjacent to Kingscliff and Dreamtime Beaches. The purpose of the Tweed Offshore buoy is to observe and assess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

## NEARSHORE WAVE DIRECTION




## OFFSHORE WAVE DIRECTION

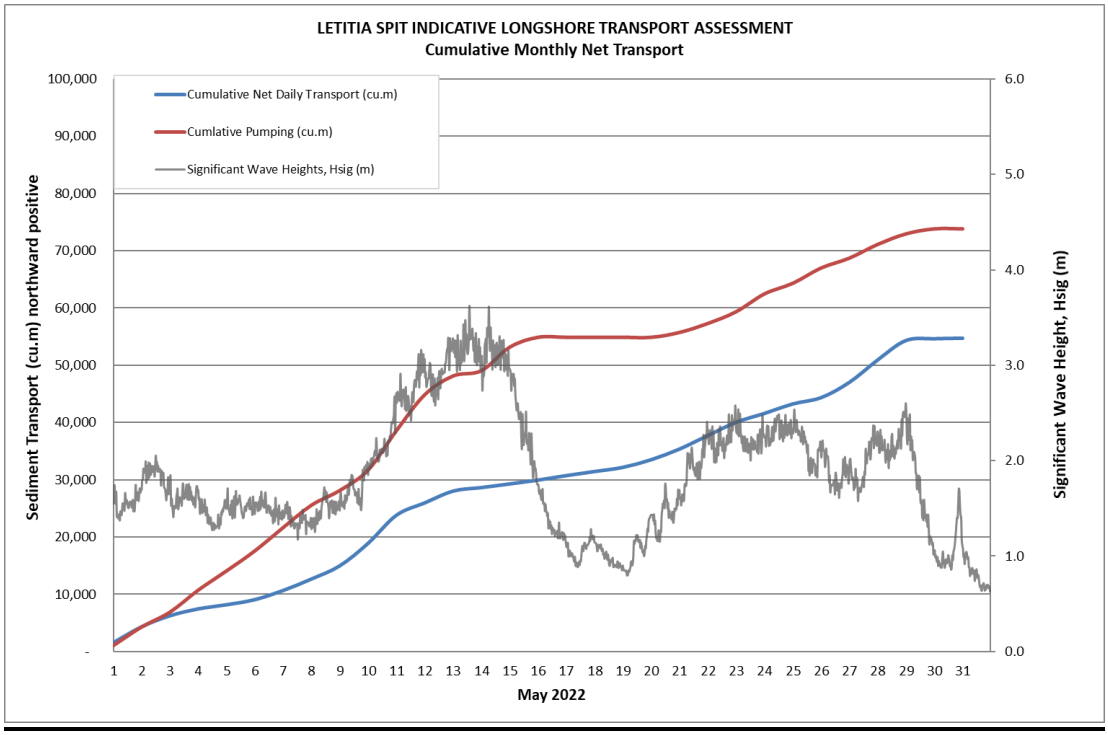


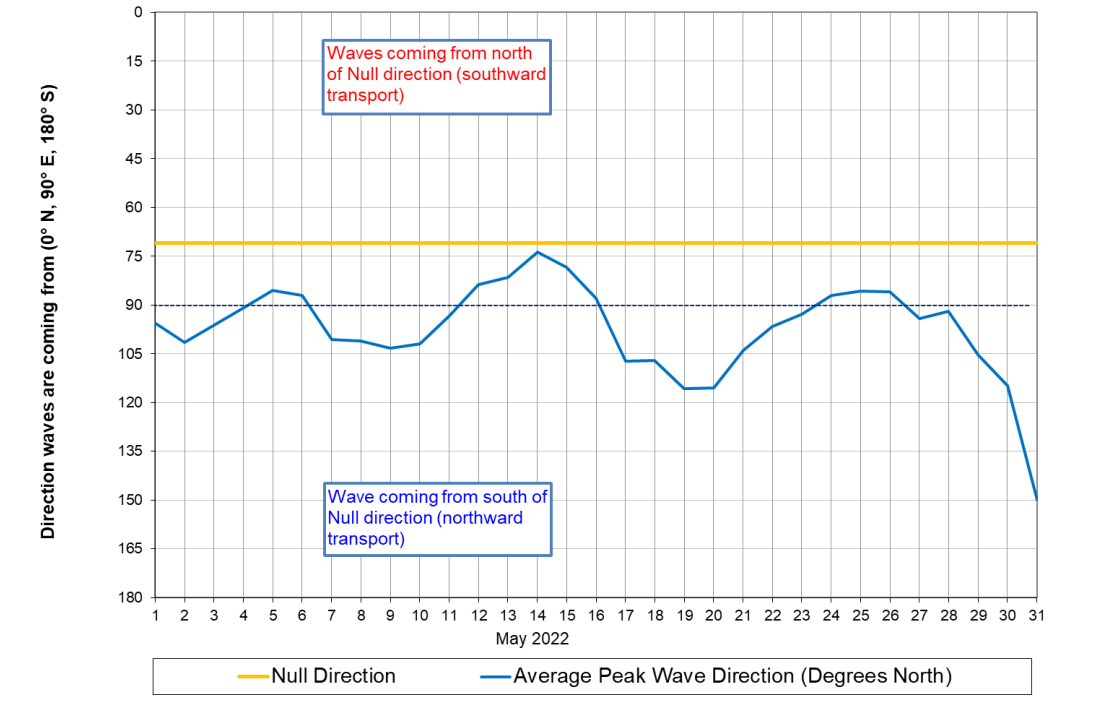

Limited dataset due to offshore wave buoy downtime in May

## 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 May 2022 the estimated natural sand transport moving north towards the Tweed River entrance was calculated to be in the order of 55,000 m3. This result is 86 per cent of the average estimated sand transport quantity of approx. 64,000 m3 for May.



## 4. BEACH AND SURF AMENITY OBSERVATIONS

As of mid-May, beaches were generally in a healthy state. Some areas including immediately north of Kirra groyne and north of Fingal Head are lower in sand volume, likely due to ENE conditions and lack of sediment transport around the points.

| | |
|---|---|
|  |  |
| **Kirra** | **Rainbow Bay** |

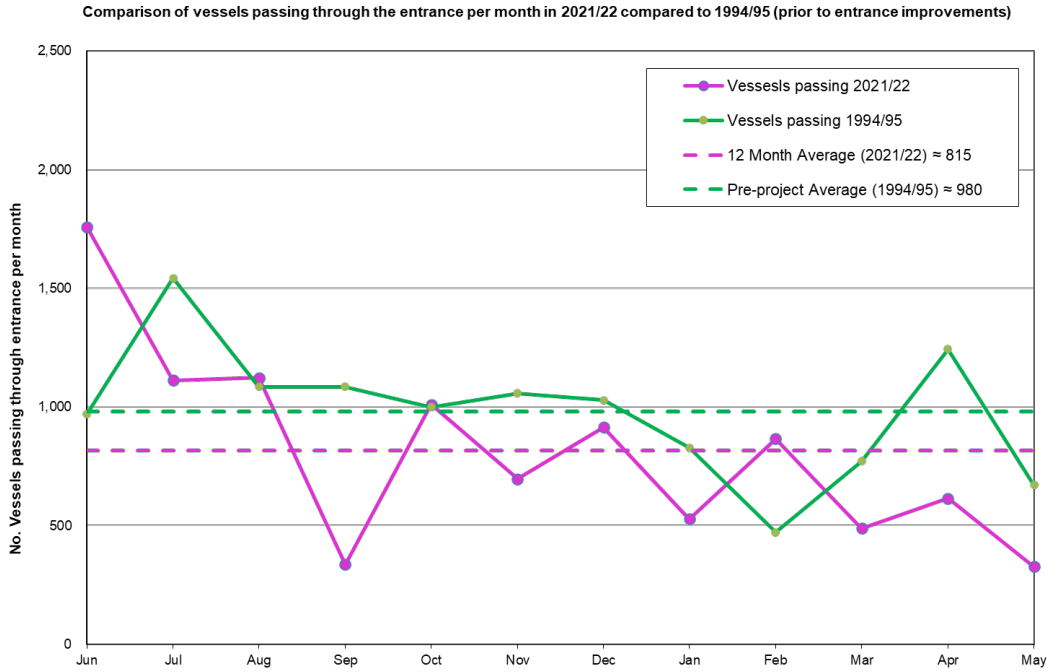
Excellent surfing conditions extended into May for the southern Gold Coast point breaks. With a large number of days having swell height above 1m, Snapper Rocks to Greenmount and Kirra produced high quality waves. The World Surf League Challenger series event was held at Snapper Rocks with quality waves available for competitors.

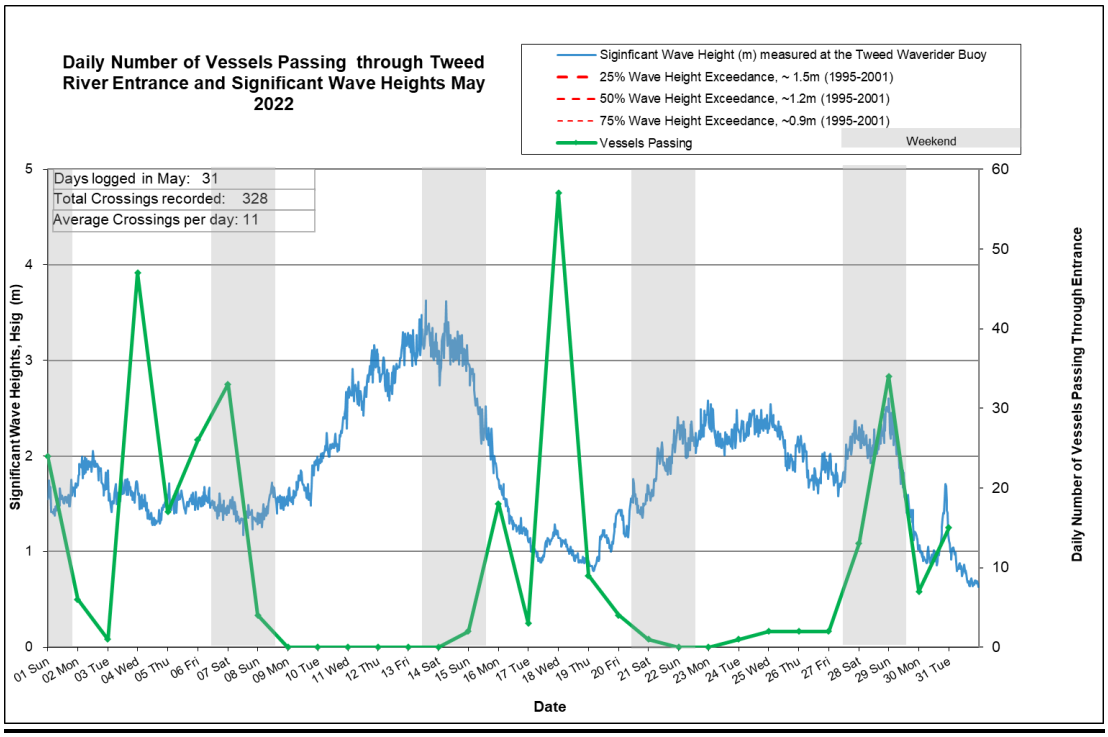

*Swilly via www.surfline.com*

*Surf News Network*

## 5. TWEED RIVER ENTRANCE USAGE

A total of 328 Tweed River entrance vessel crossings were recorded for the month (18 per cent of the May average (2002–2022)).



| Date May 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 | | | | | | 24 |
| 2 | | | | | | 6 |
| 3 | | | | | | 1 |
| 4 | | | | | | 47 |
| 5 | | | | | | 17 |
| 6 | | | | | | 26 |
| 7 | | | | | | 33 |
| 8 | | | | | | 4 |
| 9 | | | | | | 0 |
| 10 | | | | | | 0 |
| 11 | | | | | | 0 |
| 12 | | | | | | 0 |
| 13 | | | | | | 0 |
| 14 | | | | | | 0 |
| 15 | | | | | | 2 |
| 16 | | | | | | 18 |
| 17 | | | | | | 3 |
| 18 | | | | | | 57 |
| 19 | | | | | | 9 |
| 20 | | | | | | 4 |
| 21 | | | | | | 1 |
| 22 | | | | | | 0 |
| 23 | | | | | | 0 |
| 24 | | | | | | 1 |
| 25 | | | | | | 2 |
| 26 | | | | | | 2 |
| 27 | | | | | | 2 |
| 28 | | | | | | 13 |
| 29 | | | | | | 34 |
| 30 | | | | | | 7 |
| 31 | | | | | | 15 |
| | | | | | Total: | 328 |

Marine Rescue NSW - Monitoring Results (Not including trawlers)

Weekends

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