TWEEDSAND BYPASSING

# ENVIRONMENTAL MONITORING SUMMARY – SEPTEMBER 2020

## 1. SAND PUMPING & DREDGING

- 16,791 m3 was pumped to Snapper Rocks East.
- 0 m3 of sand was dredged.

**Sand Delivery September 2020**

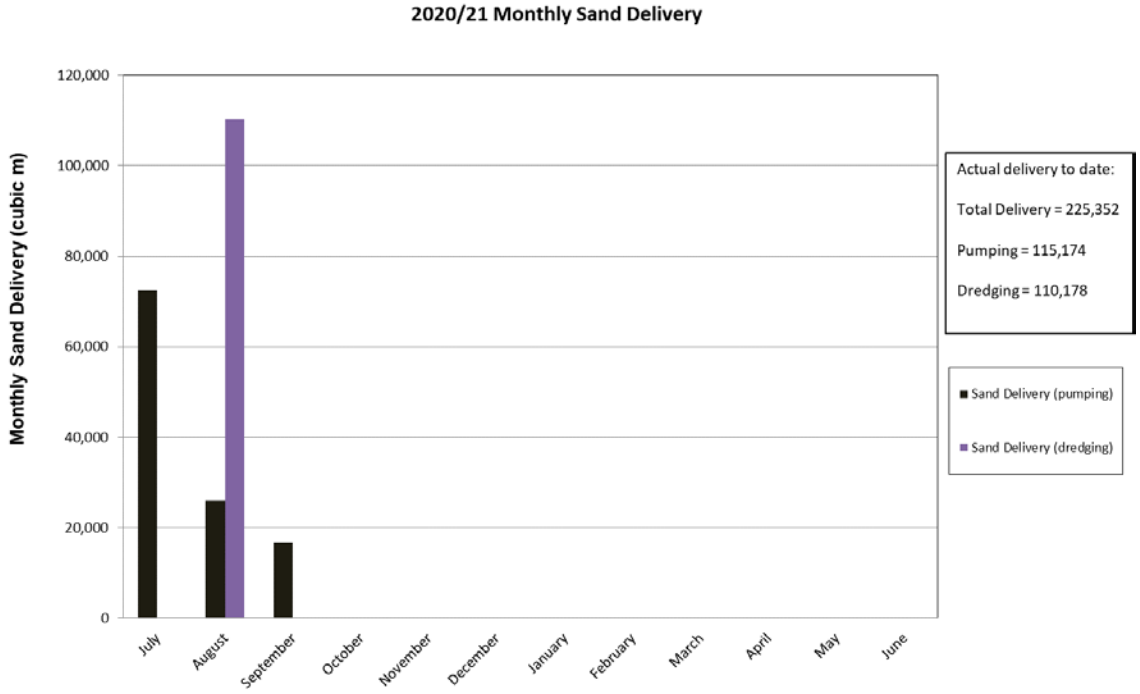
| | |
|---|---|
| Pumped: | 16,791 $m^3$ |
| Dredged: | 0 $m^3$ |
| Total: | 16,791 $m^3$ |

The number of days sand was pumped this month = 13

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

| | |
|---|---|
| Pumped: | 9,995,435 $m^3$ |
| Dredged: | 2,582,053 $m^3$ * |
| Total: | 12,577,488 $m^3$ * |

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

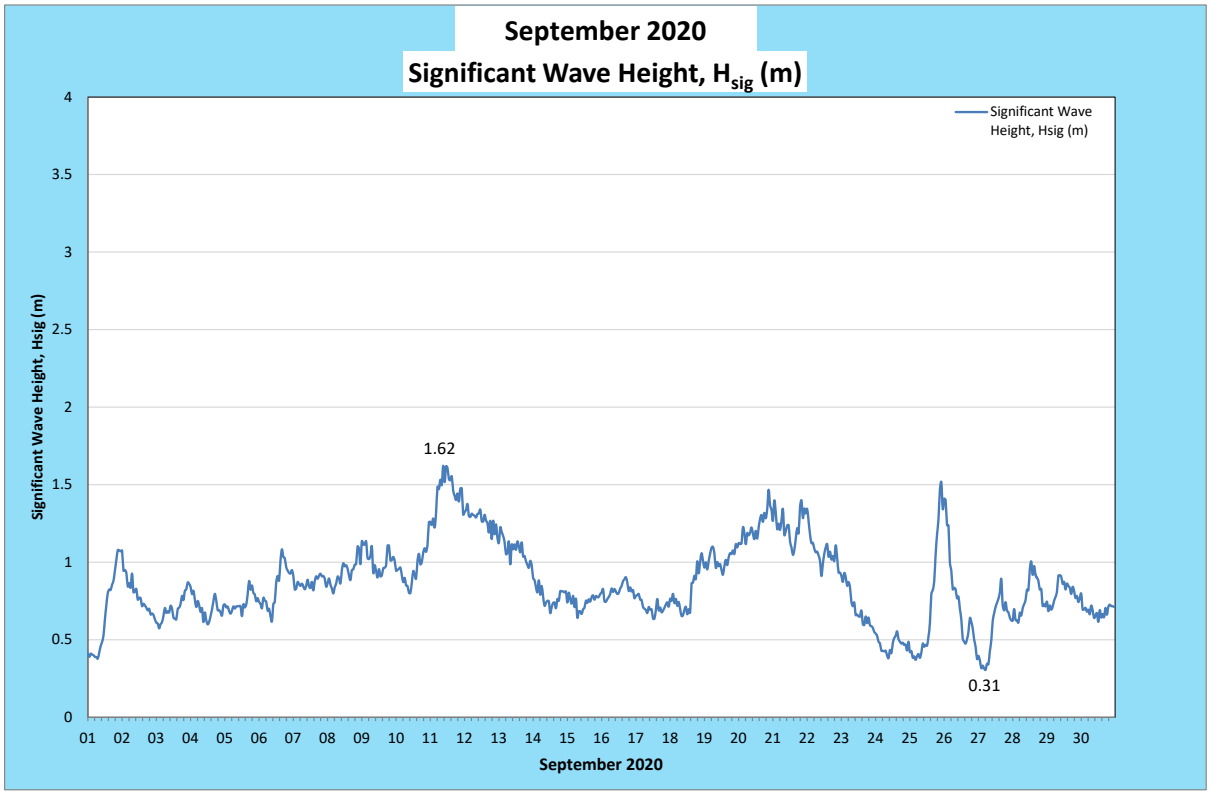


## 2. WAVE CONDITIONS

Significant wave heights ($H_{sig}$) were mostly calm (0.31 m to 1.62 m), with the peak $H_{sig}$ occurring on the 11th of September 2020. Wave directions were predominantly from the ENE.

- Minimum $H_{sig}$: 0.31 m on 27th September 2020
- Maximum $H_{sig}$: 1.62 m on 11th September 2020
- Number of days where $H_{sig}$ < 1 m at some point: 27
- Number of days where $H_{sig}$ > 2 m at some point: 0

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

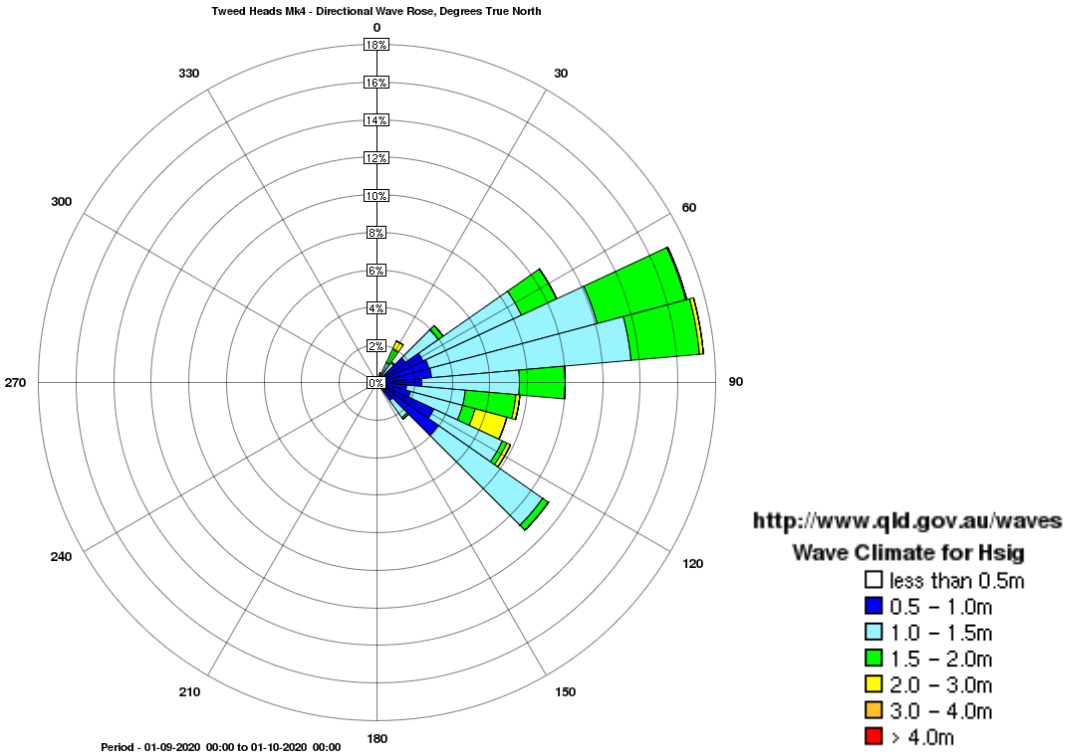



*(**Source:** Tweed Heads Waverider buoy; Queensland Government)*

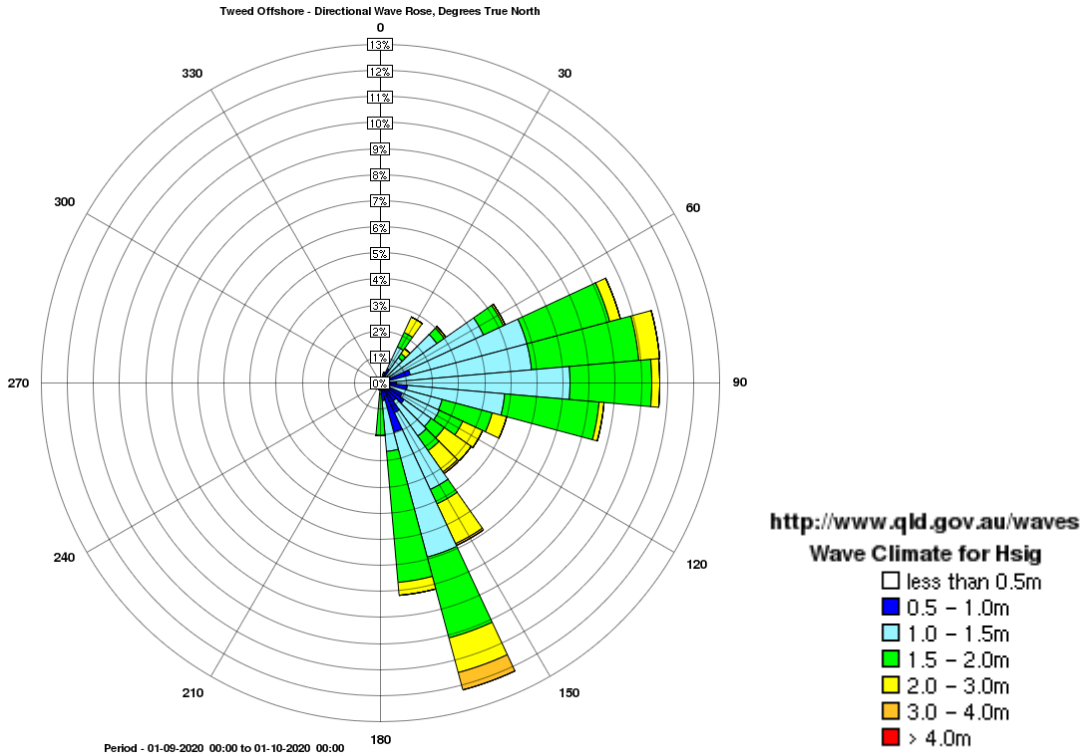
In January 2020 TSB commissioned the deployment of another Waverider buoy in the Tweed region. Tweed Offshore Waverider buoy was deployed in approximately 60 m water depth to the east and adjacent to Kingscliff and Dreamtime Beaches. The purpose of the Tweed Offshore buoy is to observe and assess changes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



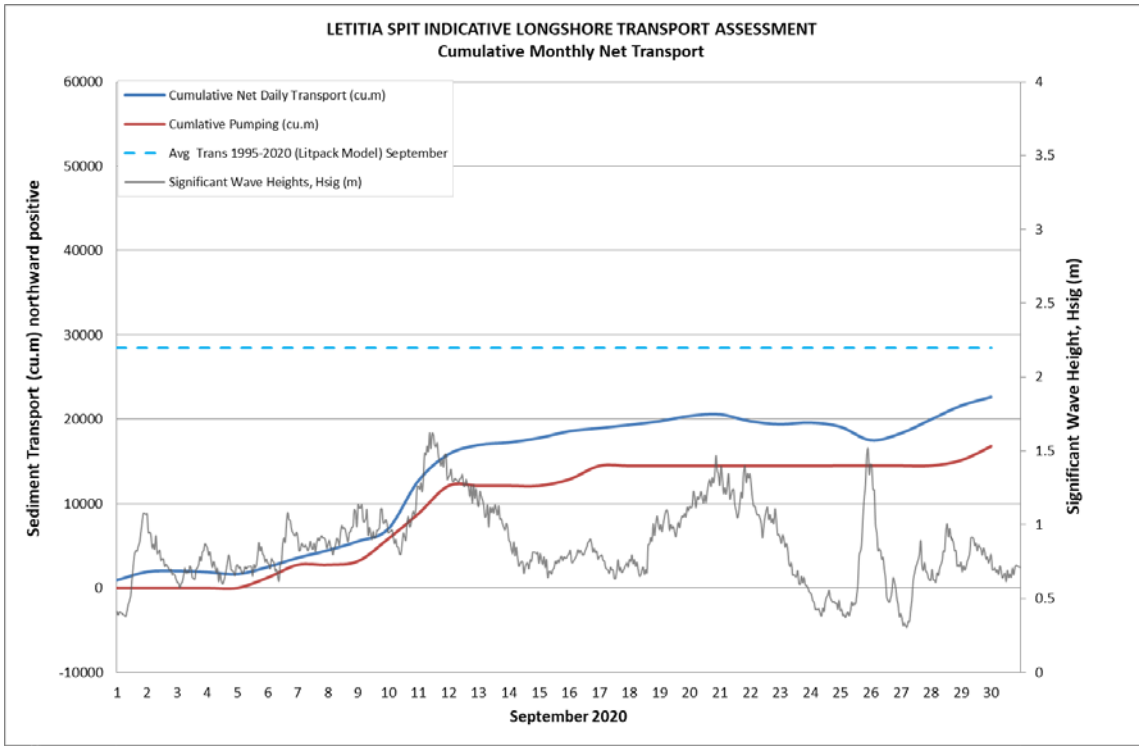

## OFFSHORE WAVE DIRECTION

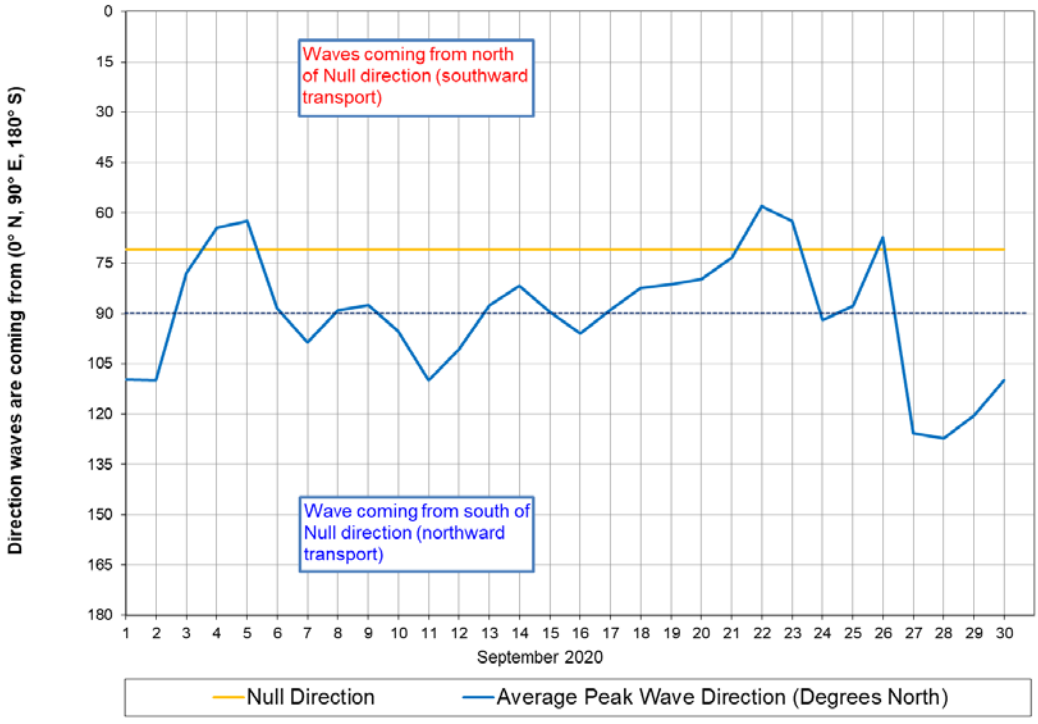


## 3. INDICATIVE LONGSHORE TRANSPORT

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.

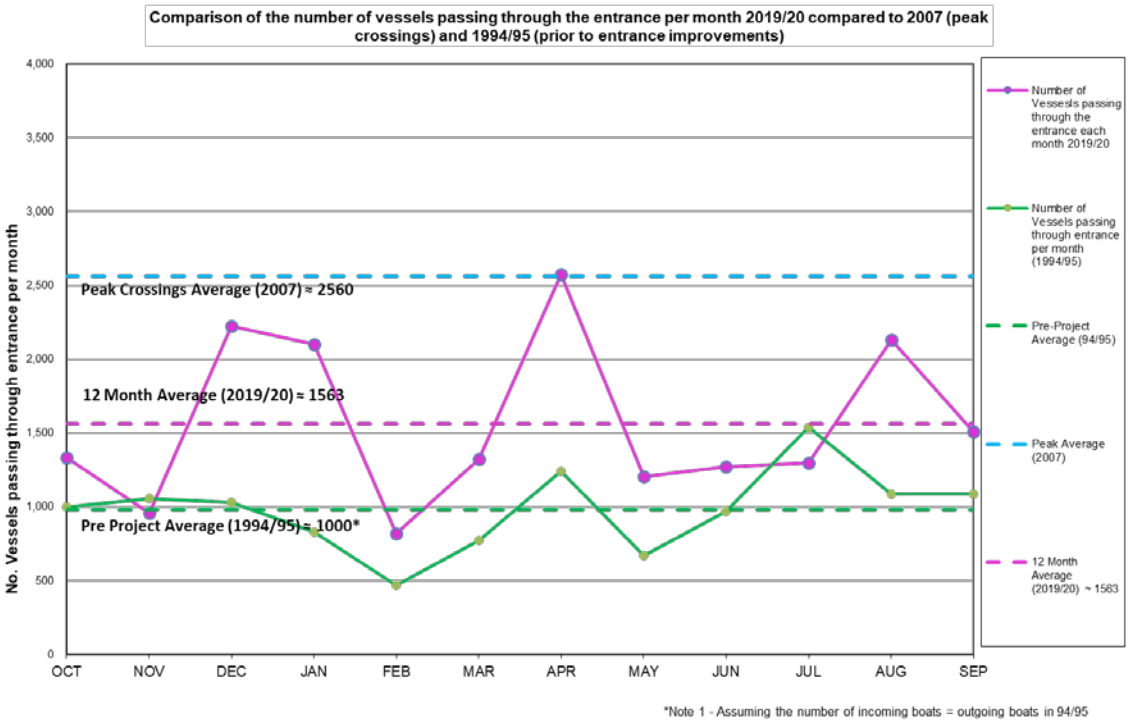
In September 2020 the estimated natural sand transport moving north towards the Tweed River entrance was calculated to be in the order of 23,000 $m^3$. This result is 80% of the average estimated sand transport quantity of approximately 28,000 $m^3$ for the month of September.

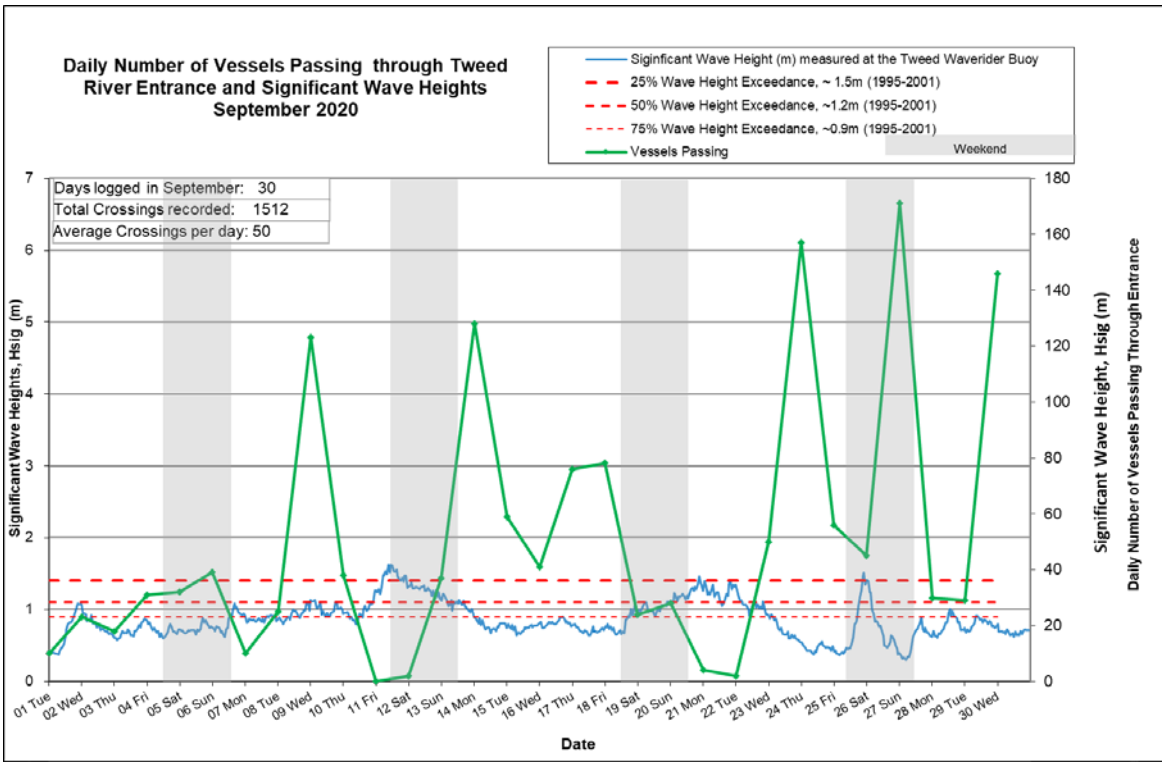


## 4. TWEED RIVER ENTRANCE USAGE

A total of 1,512 Tweed River entrance vessel crossings were recorded for the month (92% of the September average (2002 – 2020)).



TWEEDSAND BYPASSING

| Date September 2020 | Navigation Rating Impassable < - - - - - > Good | | | | | Number of Crossings |
|---|---|---|---|---|---|---|
| | Impassable | Difficulty Encountered | Some Difficulty Encountered | Relatively Good Crossing | Good Conditions | |
| | 1 | 2 | 3 | 4 | 5 | |
| 1 | | | | | | 10 |
| 2 | | | | | | 23 |
| 3 | | | | | | 18 |
| 4 | | | | | | 31 |
| 5 | | | | | | 32 |
| 6 | | | | | | 39 |
| 7 | | | | | | 10 |
| 8 | | | | | | 25 |
| 9 | | | | | | 123 |
| 10 | | | | | | 38 |
| 11 | | | | | | 0 |
| 12 | | | | | | 2 |
| 13 | | | | | | 37 |
| 14 | | | | | | 128 |
| 15 | | | | | | 59 |
| 16 | | | | | | 41 |
| 17 | | | | | | 76 |
| 18 | | | | | | 78 |
| 19 | | | | | | 24 |
| 20 | | | | | | 28 |
| 21 | | | | | | 4 |
| 22 | | | | | | 2 |
| 23 | | | | | | 50 |
| 24 | | | | | | 157 |
| 25 | | | | | | 56 |
| 26 | | | | | | 45 |
| 27 | | | | | | 171 |
| 28 | | | | | | 30 |
| 29 | | | | | | 29 |
| 30 | | | | | | 146 |
| | | | | | **Total:** | 1,512 |

Marine Rescue NSW - Monitoring Results (Not including trawlers)

Weekends

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

* Total does not include trawlers