

# Summary Report for Northern Beaches Council

## Report Card Content 2019/2020

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### *Introduction*

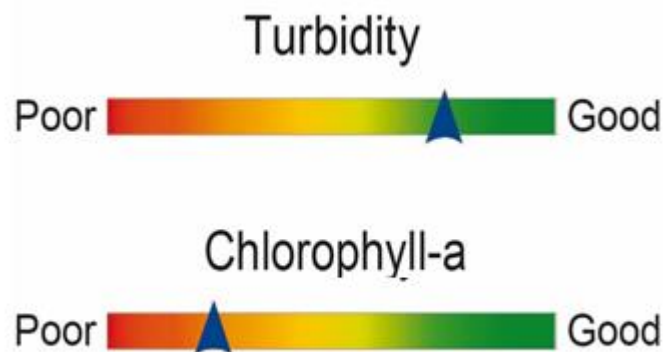
This summary report presents the report card grades calculated for the 2019/2020 sampling period from data collected as part of the water quality monitoring program in Curl Curl, Dee Why and Manly Lagoons, Narrabeen Lakes and Pittwater. Grades from previous sampling periods have been included for comparison. A full overview of sampling protocols and calculations can be found online at <https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Water/Estuaries/assessing-estuary-ecosystem-health-sampling-data-analysis-reporting-protocols-160250.pdf>

## Summary of Grades

### Curl Curl Lagoon

Overall water quality within Curl Curl Lagoon during 2019-2020 was fair (C grade), which is an increase from the previous years monitoring periods where overall water quality within the lagoon was poor. A marked improvement in turbidity within the lagoon saw the grade for turbidity increase from D in 2019-2020 to a B during 2019-2020, with six, mostly relatively minor 80<sup>th</sup> percentile trigger value exceedances observed from the nine sampling trips we have data available for. Despite a slight improvement in chlorophyll-a grade, the 80<sup>th</sup> percentile trigger value was regularly exceeded, with seven trigger value exceedances (two being several times greater), out of ten sampling events observed. This led to Curl Curl Lagoon scoring a D (poor) for the chlorophyll grade in 2019-2020 compared to F (very poor) in 2018-2019.

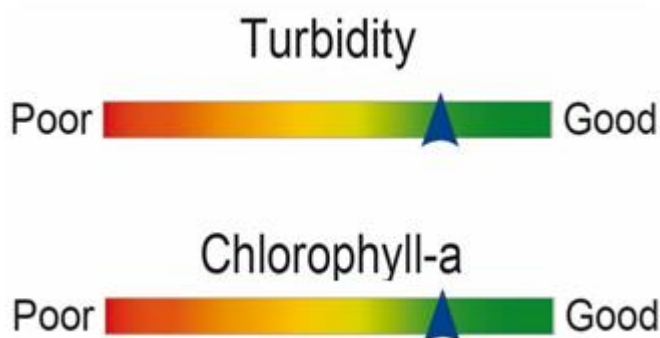
| Sampling Period    | Turbidity | Chlorophyll-a | Overall Water Quality |
|--------------------|-----------|---------------|-----------------------|
| 2011 - 2012        | F         | D             | F                     |
| 2012 - 2013        | C         | F             | F                     |
| 2013 - 2014        | D         | C             | C                     |
| 2014 - 2015        | C         | F             | D                     |
| 2015 - 2016        | C         | D             | D                     |
| 2016 - 2017        | D         | B             | C                     |
| 2017 - 2018        | B         | C             | C                     |
| 2018 - 2019        | D         | F             | F                     |
| <b>2019 - 2020</b> | <b>B</b>  | <b>D</b>      | <b>C</b>              |



## Dee Why Lagoon

Overall water quality within Dee Why Lagoon during 2019-2020 remained good (B grade). Only one 80<sup>th</sup> percentile trigger value exceedance was observed for turbidity during 2019-2020, however this exceedance was nearly three times the 80<sup>th</sup> percentile trigger value resulting in the turbidity grade decreasing from A in 2018-2019 to B for the most recent round of sampling. Chlorophyll-a levels (2019-2020) improved slightly from the previous monitoring data, with only two 80<sup>th</sup> percentile trigger value exceedances observed throughout 2019-2020.

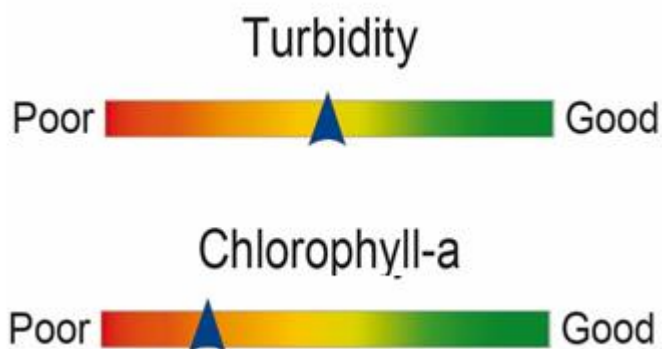
| Sampling Period    | Turbidity | Chlorophyll-a | Overall Water Quality |
|--------------------|-----------|---------------|-----------------------|
| 2011 - 2012        | C         | B             | C                     |
| 2012 - 2013        | A         | C             | B                     |
| 2013 - 2014        | A         | B             | B                     |
| 2014 - 2015        | B         | D             | C                     |
| 2015 - 2016        | A         | B             | B                     |
| 2016 - 2017        | A         | C             | B                     |
| 2017 - 2018        | B         | C             | C                     |
| 2018 - 2019        | A         | C             | B                     |
| <b>2019 - 2020</b> | <b>B</b>  | <b>B</b>      | <b>B</b>              |



## Manly Lagoon

Overall water quality in Manly Lagoon decrease from fair in 2018-2019 to poor in 2019-2020 (D grade). While turbidity was assessed as being poor, with six 80<sup>th</sup> percentile trigger value exceedances recorded during the 2019-2020 sampling period, the 80<sup>th</sup> percentile trigger value for chlorophyll-a levels within the lagoon was exceeded on all but two of the nine sampling trips during 2019-2020. These exceedances for chlorophyll-a were often quite substantial and as a result Manly Lagoon scored D/poor grade for chlorophyll-a in 2019-2020.

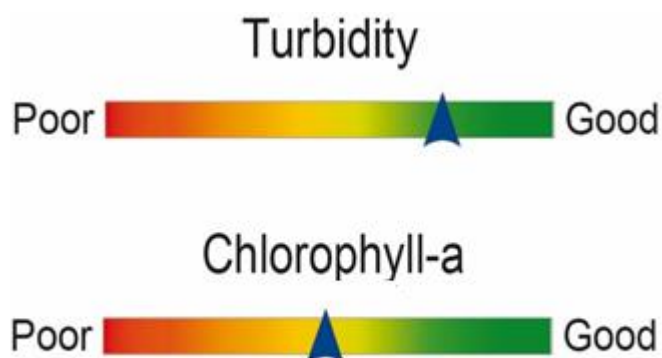
| Sampling Period    | Turbidity | Chlorophyll-a | Overall Water Quality |
|--------------------|-----------|---------------|-----------------------|
| 2011 - 2012        | D         | D             | D                     |
| 2012 - 2013        | B         | F             | D                     |
| 2013 - 2014        | B         | D             | C                     |
| 2014 - 2015        | B         | D             | C                     |
| 2015 - 2016        | D         | D             | D                     |
| 2016 - 2017        | C         | D             | D                     |
| 2017 - 2018        | B         | D             | C                     |
| 2018 - 2019        | B         | F             | C                     |
| <b>2019 - 2020</b> | <b>C</b>  | <b>D</b>      | <b>D</b>              |



## Narrabeen Lakes

Overall water quality within Narrabeen Lakes during the 2019-2020 sampling period remained good (B Grade). The 80<sup>th</sup> percentile trigger values for turbidity was exceeded on five occasions during the 2019-2020 sampling season, however these exceedances were usually minor. Despite the 80<sup>th</sup> percentile trigger value for chlorophyll in Narrabeen Lakes being exceeded on all ten sampling trips, the majority of these exceedances were only minor to moderate, which resulting in a C/fair grade.

| Sampling Period    | Turbidity | Chlorophyll-a | Overall Water Quality |
|--------------------|-----------|---------------|-----------------------|
| 2011 - 2012        | D         | D             | D                     |
| 2012 - 2013        | B         | B             | B                     |
| 2013 - 2014        | B         | B             | B                     |
| 2014 - 2015        | B         | D             | C                     |
| 2015 - 2016        | B         | B             | B                     |
| 2016 - 2017        | B         | B             | B                     |
| 2017 - 2018        | C         | C             | C                     |
| 2018 - 2019        | C         | B             | B                     |
| <b>2019 - 2020</b> | <b>B</b>  | <b>C</b>      | <b>B</b>              |



## Pittwater

Water quality in Pittwater remained consistent with the 2018-2019 sampling period and was again excellent, receiving a grade of A for both turbidity and chlorophyll-a. Both variables were well below their respective trigger values for most sampling trips during 2019-2020.

| Sampling Period    | Turbidity | Chlorophyll-a | Overall Water Quality |
|--------------------|-----------|---------------|-----------------------|
| 2017 - 2018        | A         | A             | A                     |
| 2018 - 2019        | A         | A             | A                     |
| <b>2019 - 2020</b> | <b>A</b>  | <b>A</b>      | <b>A</b>              |

\*As no trigger values are currently available for Drowned Valleys due to limited available data, triggers for Rivers Lower (sal>25) were used to calculate grades.

### Turbidity



### Chlorophyll-a

