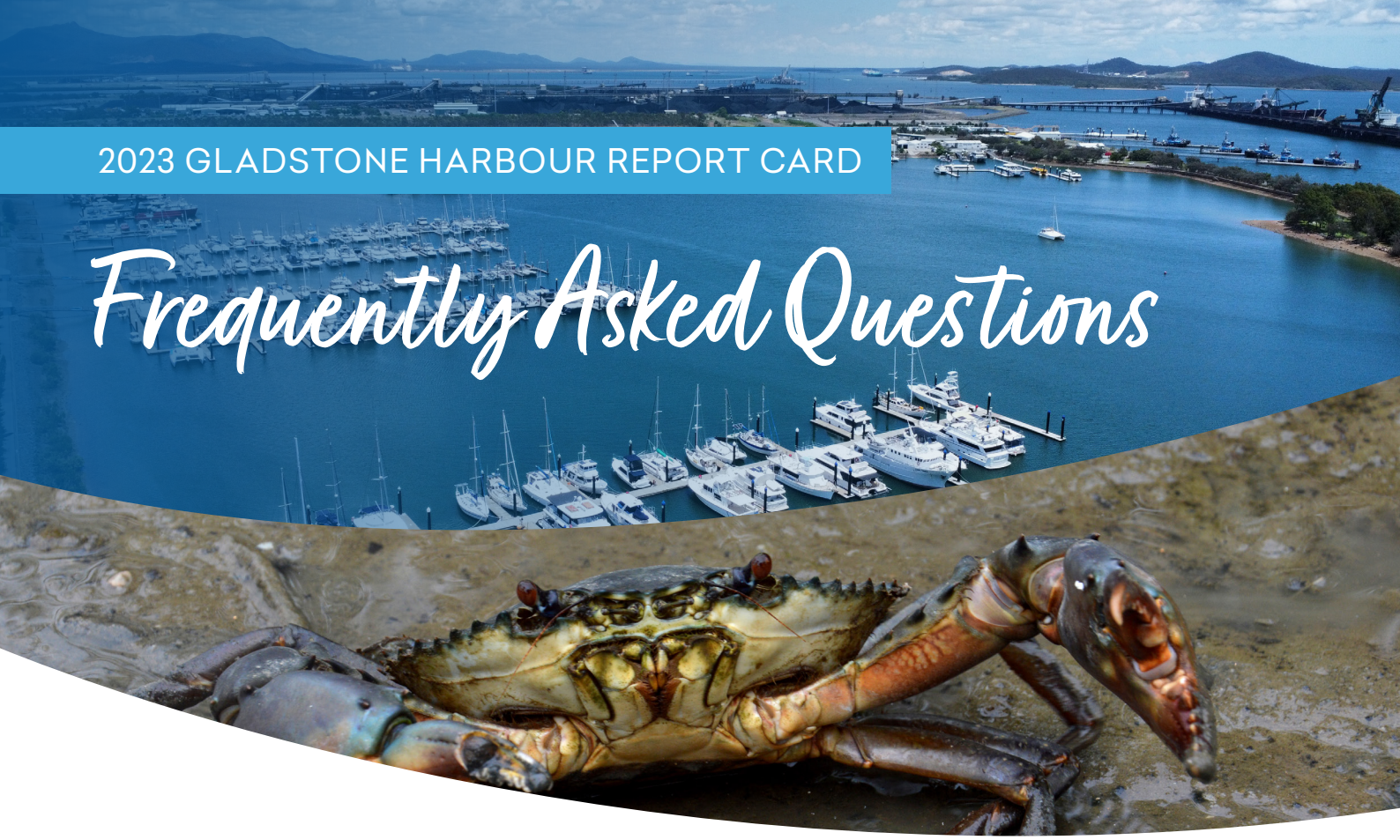
2023 GLADSTONE HARBOUR REPORT CARD

Frequently Asked Questions



WHEN WAS THE DATA COLLECTED FOR THE 2023 REPORT CARD?

The 2023 report card showcases new monitoring data collected between 1 July 2022 and 30 June 2023. Nine years of reporting has shown some indicators are stable each year, therefore no new assessment of the Social and Cultural indicators was conducted in 2023; results are carried over from the 2022 report card. The 2023 report card presents a partial assessment of the Economic indicators, with new assessment of Economic Performance and Economic Stimulus. The Economic Value results are repeated from the 2022 report card. Results from the Environment indicator Mangroves and the Fish health sub-indicator fish HAI have carried over from 2019 and 2021, respectively.

WHAT ARE SUB-INDICATORS AND HOW ARE THEY DIFFERENT TO INDICATORS?

An indicator is an aspect of a system that may be used to indicate the state or condition of that system. For example, 'water quality' may be used to indicate the environmental condition of Gladstone Harbour, while 'shipping activity' may be used to indicate the economic state of the Gladstone Harbour. A sub-indicator is a group of several related measures that sit within an indicator. For instance, the 'nutrients sub-indicator' (within water quality) is comprised of the measures 'total nitrogen', 'total phosphorus', and 'chlorophyll-a'.

CAN THE 2023 RESULTS BE DIRECTLY COMPARED TO THE 2022 RESULTS?

As no new indicators were included and the methods employed to calculate the scores and grades did not change, the 2022 and 2023 scores are directly comparable for new monitoring data in the Environmental and Economic components.

The Social, and Cultural components were not assessed in 2023 and the results from the previous assessments were used.

HOW DO THE SCORES FOR THE ENVIRONMENTAL COMPONENT COMPARE FROM 2021 TO 2022?

The overall score for the Environmental component was 0.63, very similar to the 2022 score (0.64), with both years receiving a satisfactory grade (C).

Overall, the Water and Sediment Quality indicator group scored the same as the previous year (2022 and 2023: 0.89) and has consistently received a very good grade (A) for the past seven years. The 2023 Water Quality indicator score and grades were identical to 2022 (0.81 and good grade (B)). Sediment Quality received a very good grade (A) and very similar grade to 2022 (2022: 0.96, 2023: 0.97).

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In comparison to 2022, the Habitats indicator group received a lower overall score (2022: 0.48, 2023: 0.43), but retained the same grade – poor (D). This was due to a decline in Seagrass scores (2022: 0.70, 2023: 0.58) and a lower overall grade (2022: good (B), 2023: satisfactory (C)). In both 2022 and 2023, Coral scores remained low (2022: 0.15, 2023: 0.14) corresponding to a very poor grade (E). Mangroves were not assessed in 2023 and retained the 2019 score (0.57) and satisfactory grade (C).

The Fish and Crabs indicator group scored similar to the previous year (2022: 0.55, 2023: 0.57) and the grade remained satisfactory (C). The Fish health indicator score and grade was consistent with the 2022 results (both years: 0.81, good grade (B)), while Fish recruitment declined in score (2022: 0.57, 2023: 0.47) and a grade (2022: satisfactory (C), 2023: poor (D)). In contrast, the Mud crabs score increased (2022: 0.39, 2023: 0.51) and resulted in an improved grade (2022: poor (D), 2023: satisfactory (C).

WHY DID THE SEAGRASS SCORES DECLINE?

Seagrass monitoring took place in November 2022 for the 2023 report card. Overall, Seagrass received a score of 0.58 and was graded satisfactory (C). While these results are a decline from the 2022 report card (0.70; good grade, B) it is still a marked improvement from the overall condition observed from 2015 to 2018 (0.35–0.43; poor grade, D).

Three zones, The Narrows, Western Basin and South Trees Inlet, were graded in a good (B) or very good (A) condition. Poor recovery was observed in the Inner Harbour due to low biomass and species composition, resulting in a very poor grade (E) for this zone. Mid Harbour received a lower grade (satisfactory, C) and the Rodds Bay grade remained the same (poor, D).

Twenty years of annual monitoring in seagrass condition around Gladstone Harbour indicates a strong relationship between seagrass condition and influences such as rainfall and river flow. Decreases in seagrass condition in the 2023 Gladstone Harbour Report Card can be attributed to above average rainfall and increased discharge from the Calliope River relative to previous years. Additionally, another factor impacting seagrass recovery around Gladstone Harbour, particularly in the Pelican Banks meadows, is turtle and dugong herbivory. It is likely that high levels of herbivory from dugongs and turtles that may be altering the species composition and restricting recovery of this meadow and therefore resulting in lower grades.

WHY DID THE FISH RECRUITMENT SCORE DECLINE?

Overall, the Fish recruitment score for 2023 was 0.47 – a decline from the previous year (2022: 0.59) and decline of one grade to poor (D) (2022: satisfactory, C). Three zones: Boat Creek, Colosseum Inlet and Rodds Bay had increased scores compared to the 2022 results, while the remaining nine zones had lower scores.

Overall, the reduction in scores and lower grade from the previous year is due to the reduction in pikey bream catch rates. Over the years of the surveys the catch rate for yellowfin bream has varied from 0.12–0.28 fish/cast with 0.22 fish/cast this year being the second highest so far. The catch rate for pikey bream has ranged from 0.09–0.29 fish/cast, with the rate this year of 0.12 fish/cast being the third lowest so far. Dry conditions in November 2022 – February 2023 may have also impacted food supply for important fish species.

WHY DID CORAL RECEIVE A VERY POOR GRADE?

The overall grade for coral in the 2023 report card was very poor (E) for the sixth consecutive year. Low scores reflect low cover of living coral, high macroalgal cover, low abundance of juvenile corals, and minimal change in hard coral cover at most of the surveyed reefs.

The data for each of the four indicators was scored against a baseline of coral surveys collected before 2010 in Gladstone and other data from the Marine Monitoring Program for inshore reefs in the Great Barrier Reef. Coral monitoring in 2015 noted very low coral cover, which reflected the severe impacts of the 2013 flooding. Subsequent monitoring has shown a lack of recovery in coral condition. Ongoing pressures such as high macroalgal cover and the prevalence of bio-eroding sponges continue to limit the recovery of these reefs. Based on various sub-indicator scores, the corals of Gladstone Harbour demonstrated limited recovery potential in 2023.