



2021 Report Card **Catchment Summaries**

Embargo

The promotion of the Report Card Environmental Condition Grades, Waterway Benefit Ratings, and supporting information contained within this document is **embargoed** until the launch on Thursday 25 November 2021.

Acknowledgements

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Traditional Owner acknowledgement

We acknowledge that the place we now live in has been nurtured by Australia's First Peoples for tens of thousands of years. We believe the spiritual, cultural, and physical consciousness gained through this custodianship is vital to maintaining the future of our region.

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1 About the Ecosystem Health Monitoring Program

The Ecosystem Health Monitoring Program (EHMP) is one of the most comprehensive waterway monitoring programs in Australia. It delivers an annual regional assessment of the environmental condition and benefits of waterways for South East Queensland catchments.

The EHMP commenced in the late 1990s, with this year marking the Report Card's 21st year.

An assessment is undertaken for each of South East Queensland's 18 major catchments and five zones in Moreton Bay and the Broadwater. It includes scientific monitoring at 312 freshwater, estuarine, marine, and event monitoring sites throughout the region.

The results are compiled, analysed and summarised in an annual Report Card, which can be accessed here: reportcard.hlw.org.au. It includes:

- **Ecosystem health grades** (A-F).
- **Social and economic benefits** that waterways provide to local communities (1- 5 star rating) [added in 2015, broadening the program's focus to encompass additional pressures and understand the links between water quality and waterway benefits provided to the community. 2021 marks the seventh year these extra measures were introduced].

A summary of the Environmental Grades and Waterway Benefit Ratings can be found in Appendix 1.

Healthy Land and Water coordinates the program, in partnerships with member organisations including local and state government, water utilities, and Seqwater. Healthy Land and Water and its members are committed to understanding the pressures facing the region's waterways so we can better protect them for future generations. It is delivered with support from scientific expert representatives from government, universities, and industry.

2 Results – What do they mean?

The 2021 Report Card is based on the analysis of data compiled from July 2020 to June 2021.

2.1 Environmental Condition Grade:

The Environmental Condition Grade is comprised of multiple indicators, assessing key freshwater and estuarine aspects of the waterways. Indicators are assessed against established guidelines and benchmarks, resulting in a single grade for each catchment or bay zone. The data is collected using an integration of computer modelling and field monitoring.

- A Excellent:** Conditions meet all guidelines. All key processes are functional and critical habitats are in near pristine condition.
- B Good:** Conditions meet guidelines for most of the reporting area. Most key processes are slightly impacted, and most critical habitats are intact.
- C Fair:** Conditions are close to meeting guidelines in most of the reporting area. Key processes are impacted but still functional and critical habitats are impacted.
- D Poor:** Conditions meet few of the guidelines in most of the reporting area. Many key processes are not functional and most critical habitats are impacted.
- F Fail:** Conditions do not meet the set guidelines. Most key processes are not functional and most critical habitats are severely impacted.

2.2 Waterway Benefit Rating:

The Waterway Benefit Rating provides an assessment of the social and economic benefits of our waterways to the community. This includes recreation, tourism, fishing, and providing clean drinking water.

Social: Measures the personal benefits of using waterways, community connection with waterways, community satisfaction with waterways, and the community's ability to access and use waterways.

Economic: Measures the financial benefits generated through recreational use of waterways and recreational fishing, as well as the contribution the catchment makes to providing clean drinking water.

This information was collected through a range of methods including social surveys and economic assessments.

- ★★★★★ **Maximum** social and economic benefits.
- ★★★★☆ **Very high** social and economic benefits.
- ★★★☆☆ **High** social and economic benefits.
- ★★★☆☆ **Moderate** social and economic benefits.
- ★☆☆☆☆ **Minimum** social and economic benefits.

3 2021 Key messages

3.1 Environmental Condition

With a dataset spanning over 20 years, we can see the condition of South East Queensland's (SEQ) waterways is declining over and above typical cycles of wet and dry periods. As the population in SEQ has grown over the past two decades, significant investments have been made into our catchments and point source pollution such as sewage treatment plants, which has improved water quality in our river estuaries and Moreton Bay. However, the trends in the data are now showing early warning signs that we are struggling to keep up with the escalating population growth to the region, which brings growing levels of pollution to our waterways from land-use changes for new housing, industry and development.

More investment and action is now needed into activities such as restoring streambank vegetation and managing urban run-off and point source pollution.

Overall Report Card grades for 2021 changed little from 2020. Typically grades do not change much year to year, however, drilling down to the data underneath the grades, trends in individual indicators paint a picture of changing waterway condition across the region.

There is a concerning trend of increasing nutrients levels in parts of Moreton Bay and the Brisbane, Pine and Caboolture River estuaries. Drought conditions like SEQ has experienced in the past five years, should result in better coastal water quality, as the estuaries and bay become disconnected from the catchment pollutants that typically come with rainfall.

We do see that in Moreton Bay in 2021, water clarity was the best recorded in 20 years for Western Bay, however, the fact we see increasing nutrient levels in some parts of SEQ is an early sign that nutrient pollution, particularly from urban areas may be creeping up as more people move to South East Queensland. This highlights that investment, planning and action is needed now to protect the future.

One of the key reasons we have been able to hold the line so long, is significant ongoing investment and management of point source pollution, such as sewage treatment plants. This has improved water quality in our river estuaries and Moreton Bay and helped counter the impacts of population growth to the region over the past two decades.

The rural western catchments with sparse vegetation cover and little to no riparian vegetation (notably Upper Brisbane and Lockyer) have no resilience to drought, and as a result, 2021 saw some of the poorest freshwater condition since 2007. Upper Brisbane, a major supplier of drinking water feeding into Wivenhoe Dam, scored an F this year for the first time since 2007, at the end of the Millennial drought. Large-scale investment is required to bring back and protect stream bank vegetation and to restore the resilience across the region, but particularly in the western catchments.

Much work has been done, but there is much left to do. 1000 km of streams have been identified as a priority for stream bank restoration, due to their very high risk of stream bank (channel) erosion. Bringing back stream bank vegetation to around 6,000 km would restore the resilience to many freshwater streams and reduce sediment pollutant loads to the coastal areas by 50%.

The good news is that Moreton Bay appears resilient to times of poorer water quality, if disconnected from the catchment inputs for long enough to recover. The first Report Card was released in 2000 and at the time Bramble and Deception Bays received an F and D respectively, due to algal blooms, poor water quality, sewage and seagrass loss. In 2021 these bays, collectively now reported as "Western Bay", received an A- for the third year in a row.

Water quality in the Western Bay in 2021 is the best on record and seagrass, which returned several years ago, continues to expand growing thicker and deeper. A little further offshore, the Central Bay did even better in 2021, receiving an A for the first time in the history of the program. The mud delivered to Moreton Bay during the 2011 was significant, but with enough time between large events, the bay has been able to process it and the condition is excellent in 2021.

Notably, the return of seagrass to Moreton Bay is an internationally significant achievement. Bringing back seagrass was attempted in other parts of the world, such as Denmark, without success 20 years on. This suggests that Moreton Bay had not gone beyond a point of return when 20 years ago large investments were made to protect Moreton Bay and restore lost seagrass meadows. Expanding seagrass habitat signifies a healthier ecosystem, including fish community health and the protection of internally significant Ramsar wetlands. Protecting this valuable habitat is a priority for South East Queensland.

The 21-year story is a reminder that large-scale investment is still required, particularly in managing the impact of increasing population and the protection and restoration of stream bank vegetation. To date only modest investment in restoration has been made covering small areas and the scale of investment required to make a beneficial impact is substantial.

Different regions face different pressures and priorities:

Northern Catchments: Impacted by development pressures and historic land-use, the priority is to protect existing values and undertake active restoration and protection of wetlands and floodplains.

Central Catchments: Impacted by an increasing population, the priority is stormwater management and naturalising urban waterways where possible, as well as continuing to manage increasing demands on wastewater treatment plants.

Western Catchments: Impacted by historic loss of vegetation and riparian cover, the priority is to protect, manage and restore catchment vegetation and wetlands.

Southern Catchments: Impacted by an increasing population and development, the priority is to manage land-use change and increase erosion and sediment controls and compliance for new development, construction sites and private lands.

3.2 Waterway Benefit

The creeks, rivers, lakes, bays and beaches of South East Queensland continue to provide significant value to the residents of the region during another year affected by the COVID-19 pandemic.

Most South East Queensland residents have a deep connection with nature, reporting that it is an important part of their lives. This year 84% of residents used their local waterways for some form of rest and recreation, including walking, cycling, swimming, picnics and fishing.

COVID-19 restrictions have affected how people use their local waterways. While 25% of people use them less, reporting overcrowding and fear of COVID-19, 52% report they use them the same and 16% residents report they use them more now than before the pandemic, for exercise ("...outdoor exercise was the only freedom we had!" – Tallebudgera-Currumbin resident) and escaping stress ("...to decompress after a stressful day inside" – Lower Brisbane resident).

Extremely high numbers of residents are satisfied with their local waterways in the coastal catchments of Noosa, Sunshine Coast and City of Gold Coast (67-85%). The environmental condition of these catchments ranges from fair to excellent, highlighting that good environmental condition promotes very high satisfaction with waterways, but not exclusively. Even if environmental condition is only fair,

waterways with good accessibility and opportunities for engagement can still promote high levels of community benefits and satisfaction with local waterways.

Personal benefits arise when waterways act as a place of rest and relaxation, exercise or to socialise with friends and family. Residents of all catchments report high levels of social benefits from using their local waterways. Despite some of the poorest waterway condition in 2021 in catchments such as Lockyer, Upper Brisbane and Bremer, 48-63% of residents still report that local waterways in these catchments are a valuable place to meet up and socialise with friends and family.

While high numbers of residents feel a personal connection with nature (78% catchment average), fewer (45% catchment average) are motivated to protect their local waterways or feel it is their personal responsibility. South East Queensland needs to empower resident action through promoting opportunities for waterway care.

4 Overall Moreton Bay

4.1 Environmental Condition (A-)

Moreton Bay has improved slightly and remains in excellent condition.

Why?

- Lower than average rainfall continued to limit pollutant loads this year providing respite for Moreton Bay. Recent improvement in bay health, driven by the flushing of mud out of the bay through oceanic circulation, recovery of seagrass, and gradual improvement in overall water quality has been maintained in 2021.
- Recovery of seagrass in northern Bramble Bay in 2017 has been followed this year by recovery within southern Bramble Bay. This indicates widespread seagrass recovery is occurring within Bramble Bay following gradual improvements in water quality over the last decade.
- Estuarine wetland habitat extent remains excellent.

4.2 Waterway Benefit Rating (N/A)

The Waterway Benefit Rating is not measured in this area.

4.3 Ways to improve waterway health and benefits

- Careful measures to reduce sediment running off development and construction sites and reduce erosion in the upper catchments is critical to maintaining the condition of Moreton Bay and retaining the extensive environmental and economic values (e.g. recreation and commercial fishing and other waterway-based recreation activities) that currently exist.
- Continued investment in minimising wastewater treatment plant and other industrial discharges is critical to keep up with population increases and maintain the long-term improvements in water quality of the Moreton Bay.

5 Central Bay

5.1 Environmental Condition (A)

Central Bay improved slightly and remains in excellent condition.

Why?

- Water quality improved slightly this year and remains excellent.
- Total nitrogen and algae (phytoplankton) improved, while total phosphorus and water clarity (turbidity) remained stable.
- Central Bay retains a very high proportion of wetland habitat (mangroves and saltmarsh) compared to pre-cleared (95%).
- The extent of seagrass habitat remains moderate and the depth of water where seagrass is found remains stable at Victoria Point.
- Due to continued resuspension and flushing into the deeper parts of the Bay and limited inputs from the catchment, the extent of mud is likely to have remained very low. The next mud assessment will be undertaken in 2023 at which time the results will be updated.

5.2 Waterway Benefit Rating (N/A)

The Waterway Benefit Rating is not measured in this area.

5.3 Ways to improve waterway health and benefits

- Careful measures to reduce sediment running off development and construction sites and reduce erosion in the upper catchments is critical to maintaining the condition of the Central Bay, and retaining the extensive environmental and economic values (e.g. recreation and commercial fishing and other waterway-based recreation activities) that currently exist.
- Continued investment in minimising wastewater treatment plant and other industrial discharges is critical to keep up with population increases and maintain long-term improvements in water quality of the Central Bay.

6 Western Bay

6.1 Environmental Condition (A-)

Western Bay, which includes Bramble, Deception, and Waterloo Bays remains in excellent condition with slight improvements across most indicators.

Why?

- Total nitrogen improved across Deception Bay, Bramble Bay and Waterloo Bay. Total phosphorus improved across inshore regions of Western Moreton Bay near the Caboolture, Pine and Brisbane River mouths.
- Water clarity (turbidity) improved across Western Bay partly due to limited river inputs of fine sediment.
- Algae (phytoplankton) improved across Deception Bay, Waterloo Bay and within Bramble Bay near the Pine and Brisbane River mouths.
- The Western Bay retains a very high proportion of wetland habitat (mangroves and saltmarsh) compared to pre-cleared (100%).
- The seagrass meadow in southern Deception Bay maintains a high spatial extent. This meadow disappeared following a Caboolture River flood in 1996 and re-established in 2009. Seagrass has also been found growing in much deeper water near the Scarborough Marina this year. The depth at which seagrass grows in northern Deception Bay (Godwin Beach) continued to decline this year.
- Dense seagrass has also been observed in southern Bramble Bay near Nudgee Beach this year. Seagrass was last seen in the area prior to the 1980s. This follows recovery of a small seagrass meadow in northern Bramble Bay in 2017. This indicates widespread seagrass recovery is occurring within Bramble Bay following gradual improvements in water quality.
- Due to continued resuspension and flushing into the deeper parts of the Bay and limited sediment inputs from the catchment, the extent of mud is likely to have remained very low. The next mud assessment will be undertaken in 2023 at which time the results will be updated.

6.2 Waterway Benefit Rating (N/A)

The Waterway Benefit Rating is not measured in this area.

6.3 Ways to improve waterway health

- Careful measures to reduce sediment running off development and construction sites and reduce erosion in the upper catchments is critical to maintaining the condition of the Western Bay and retaining the extensive environmental and economic values (e.g. recreation and commercial fishing and other waterway based recreation activities) that currently exist.
- Continued investment in minimising wastewater treatment plant and other industrial discharges is critical to keep up with population increases and maintain the long-term improvements in water quality of the Western Bay.

7 Eastern Bay

7.1 Environmental Condition (A)

Eastern Bay remains in excellent condition.

Why?

- Water quality remains excellent with improvements in water clarity (turbidity) in the south at Pelican Banks.
- Slight declines in algae (phytoplankton) and total nitrogen were observed at Eastern Banks and in the south.
- The Eastern Bay retains a very high proportion of estuarine wetland habitat (mangroves and saltmarsh) compared to the pre-clearing extent (100%).
- Seagrass extent remains excellent in Eastern Bay due to excellent water clarity. However, the water depth where seagrass is found at Peel Island and Pelican Banks/Canalpin has been declining since 2019.
- Due to continued resuspension and flushing into the deeper parts of the Bay and limited inputs from the catchment, the amount of mud is likely to have remained very low. The next mud assessment will be undertaken in 2023 at which time the results will be updated.

7.2 Waterway Benefit Rating (N/A)

The Waterway Benefit Rating is not measured in this area.

7.3 Ways to improve waterway health

- Careful measures to reduce sediment running off development and construction sites and reduce erosion in the upper catchments is critical to maintaining the condition of the Eastern Bay and retaining the extensive environmental and economic values (e.g. recreation and commercial fishing and other waterway based recreation activities) that currently exist.

8 Southern Bay

8.1 Environmental Condition (B+)

Southern Bay slightly improved and remains in good condition.

Why?

- Water quality remains excellent with an improvement in all indicators. Total nitrogen improved within the northern channels, while total phosphorus improved in the northern and southern channels.
- Water clarity (turbidity) and algae (phytoplankton) also improved slightly.
- The Southern Bay retains a very high proportion of estuarine wetland habitat (mangroves and saltmarsh) compared to the pre-clearing extent (97%).
- The water depth where seagrass is found improved from very poor to poor, improving at Pannikin Island while it is declining at Long Island
- The March 2021 Logan-Albert flood is likely to have delivered high quantities of mud to the Southern Bay. High levels of oceanic flushing in the Southern Bay promote the removal of mud from these shallow environments. The next mud assessment will be undertaken in 2023 at which time the results will be updated.

8.2 Waterway Benefit Rating (N/A)

The Waterway Benefit Rating is not measured in this area.

8.3 Ways to improve waterway health

- Careful measures are required to reduce sediment running off development and construction sites, as well as high risk erosion sites (e.g. channel and gully erosion) during rainfall and flooding events in the upper Logan and Albert catchments. This is critical to maintain the excellent condition of the Southern Bay and retaining the extensive environmental and economic values (e.g. recreation and commercial fishing) that currently exist.

9 Broadwater

9.1 Environmental Condition (A)

The Broadwater significantly improved from good to excellent condition.

Why?

- Water quality improved this year and remains excellent.
- Total nitrogen improved within the southern Broadwater, while total phosphorus improved in the northern Broadwater. Water clarity (turbidity) also improved slightly in the northern Broadwater despite the March 2021 Nerang and Pimpama-Coomera floods which delivered large quantities of mud to the Broadwater.
- Broadwater retains a very high proportion of estuarine wetland habitat (mangroves and saltmarsh) compared to the pre-cleared extent (90%).
- The depth where seagrass was found at Broadwater sites improved this year. City of Gold Coast has also noted the density of seagrass at six sites in the Broadwater also increased in 2021.
- The extent of mud is likely to have remained very low due to tidal flushing aiding sediment movement out of the Broadwater. The next mud assessment will be undertaken in 2023 at which time the results will be updated.

9.2 Waterway Benefit Rating (N/A)

The Waterway Benefit Rating is not measured in this area.

9.3 Ways to improve waterway health

- Careful measures are required to reduce sediment running off development and construction sites, as well as high risk erosion sites (e.g. foreshore and channel erosion) during rainfall and flooding events to maintain the condition of the Broadwater. This is critical to retain the extensive environmental and economic values (e.g. recreation fishing, and other waterway-based recreation activities) that currently exist.

10 Noosa catchment

10.1 Environmental Condition (A-)

The catchment remains in excellent condition.

Why?

- Pollutant loads have increased slightly within the catchment, with sediment (mud) load increasing from 237kg/ha in 2020 to 349kg/ha in 2021. Despite this increase, overall pollutant loads remain moderate due to the conservation of forested areas, especially along waterways and the limited urban area.
- The freshwater creeks remain excellent with a slight improvement in bug community health at Ringtail Creek.
- Stream bank vegetation in the catchment remains excellent (89% cover), and wetland extent remains excellent (88% cover) in the freshwater reaches. The extent of wetland habitat in the estuary also remains excellent with 90% of mangroves and saltmarshes remaining. Higher levels of stream bank vegetation and estuarine habitat supports valuable commercial and recreational fisheries and stops erosion of sediments into the waterways.
- The water quality of the estuary and estuarine lakes remains in excellent condition. Algae (phytoplankton), nutrients (total nitrogen and total phosphorus), dissolved oxygen, and turbidity remain excellent. Low turbidity within Lake Cooribah and Lake Cootharaba was maintained this year.

10.2 Waterway Benefit Rating ★★★★★

- Excellent catchment condition results in extremely high numbers of residents satisfied (86%) with their local waterways, and extremely high levels of personal benefits local residents gain from using their waterways (81% compared to 58% for all of South East Queensland).
- Residents report that they value their local waterways for recreation. 40% of residents recreate in or alongside their local waterways at least daily, among the highest within South East Queensland. The top activities include walking or running (103 days/year per resident), enjoying nature (64 days/year per resident), picnics/BBQs (33 days/year per resident), and cycling (26 days/year per resident).
- The average recreational value of the waterways was \$3,654 per person/year. This value was comprised mostly of picnics and BBQs (49% of value), boating and sailing (17% of value) and recreational fishing (11% of value).

10.3 Ways to improve waterway health and benefits

- Protecting and managing existing values from the pressures of population growth is a priority, with the population in the Noosa Catchment projected to increase significantly over the next 25 years.
- Protect existing streambank vegetation and wetlands, including increasing waterway buffers within the peri-urban/agricultural landscape, as a priority. Currently 89% of streambanks in the Noosa catchment are vegetated and 88% of freshwater wetlands remain.
- Reduce sediment loads and nutrients entering waterways by implementing activities in priority catchments (e.g. Kin Kin and Ring Tail Creek) and continue to support catchment management as outlined in the "Keeping it in Kin" plan. Focus on engagement and compliance within industries with high soil disturbance such as agriculture and development.

- Preserve the community's emotional connection with waterways by protecting their condition and promoting their use and access. Emotional connection fosters feelings of responsibility and willingness to engage in or support waterway protection activities.
- Create opportunities and incentives for residents to make changes around their home, their businesses or in their local waterway to improve waterway condition. 46% of residents are motivated to use and protect local waterways.
- Support integrated catchment management approaches, such as the Noosa River Stakeholder Advisory Committee which establishes a multi sector governance model for the Noosa River and the catchment with a core objective of improved river management.

11 Maroochy catchment

11.1 Environmental Condition (C+)

The catchment remains in fair condition.

Why?

- Pollutant loads remain very high within the Maroochy Catchment, with sediment (mud) load increasing from 784 kg/ha in 2020 to 1,023 kg/ha in 2021. This was due to high rainfall and river flows experienced over the summer months, transporting pollutants from peri-urban and urban areas downstream. Maroochy is susceptible to hillslope and stream bank erosion with the significant rainfall events in December 2020 and March 2021 potentially activating these high-risk areas.
- The health of freshwater creeks remained excellent despite slight declines in fish community health at Doonan Creek and Eudlo Creek. This was offset by significant improvement in bug community health at Doonan Creek. Water quality and ecosystem processes remain excellent.
- Stream bank vegetation in the catchment remains good (83% cover), although wetland extent remains poor (29% cover) in the freshwater reaches of the catchment. The extent of wetland habitat in the estuary remains excellent with 78% of mangroves and saltmarshes remaining. Higher levels of stream bank vegetation and estuarine habitat supports valuable commercial and recreational fisheries and stops erosion of sediments into waterways.
- Estuarine water quality improved slightly and remains excellent. Slight improvements in nutrients (total nitrogen and total phosphorus) and algae (phytoplankton) were observed in the mid to upper estuary, compared to last year. Dissolved oxygen declined slightly in the mid to upper estuary. Water clarity remains excellent.

11.2 Waterway Benefit Rating ★★☆☆☆

- Despite fair catchment condition, a very high numbers of residents are satisfied (68%) with their local waterways. This is likely tied to the very high satisfaction with their ability to access and use local waterways (73% compared to 63% for all of South East Queensland).
- Residents report that they value their local waterways for recreation. 54% of residents recreate in or alongside their local waterways weekly or more. The top activities include walking or running (64 days/year per resident), enjoying nature (28 days/year per resident), swimming (19 days/year per resident), cycling (17 days/year per resident), and picnic and BBQs (13 days/year per resident).
- The waterway recreational value per person was \$2,302/year. The activities that made up this value includes picnics and BBQs (34% of value), boating and sailing (17% of value) and swimming (14% of value).
- The amount of mud removed from drinking water at the treatment plants remains very low. 163 kg/ML was removed on average from the Image Flat and Landers Shute drinking water treatment plants.

11.3 Ways to improve waterway health and benefits

- Protecting and managing existing values from the pressures of population growth is a priority, with the population in the Maroochy region projected to increase rapidly.
- Undertake active restoration and protection of wetlands and floodplains, to restore natural flows of water and reconnect waterways. This includes removing fish barriers, naturalising channels, protecting and restoring riparian habitats, wetlands and freshwater refugia. For example, the restoration the Yandina Creek Wetlands has increased the value to fish communities.

- Reduce sediment loads and nutrients entering waterways through stormwater management, property management, and restoration of areas of high erosion risk across the catchment. Focusing on engagement and compliance within industries with high soil disturbance such as agriculture and development.
- Explore and implement integrated water planning as a means to solve complex water issues, improve waterway health outcomes and provide water security.
- Preserve the community's emotional connection with waterways by protecting their condition and promoting their use and access. Emotional connection fosters feelings of responsibility and willingness to engage in or support waterway protection activities.
- Create opportunities and incentives for residents to make changes around their home, their businesses or in their local waterway to improve waterway condition. 49% of residents are motivated to use and protect local waterways.

12 Mooloolah catchment

12.1 Environmental Condition (C+)

The catchment has improved slightly and remains in fair condition.

Why?

- Pollutant loads increased significantly this last year from high to very high. Sediment (mud) loads increased from 556 kg/ha in 2020 to 723 kg/ha in 2021. Mooloolah is susceptible to hillslope erosion and landslips in the upper catchment with the significant rainfall events in December 2020 and March 2021 potentially activating these high-risk areas.
- Freshwater health improved significantly from fair to excellent, due to bug community health recovery in the Diamond Valley and Meridan Plains. Affected by large flows and scouring last year, improved bug community health corrected to more of a typical condition. Water quality and ecosystem processes remain excellent while fish communities remain in good condition.
- Stream bank vegetation remains good (85% cover), with high levels of stream bank vegetation preventing erosion of sediments. Wetland extent remains poor (30% cover) in the freshwater reaches of the catchment. The extent of wetland habitat in the estuary remains fair with 48% of mangroves and saltmarshes remaining in the catchment.
- Estuarine water quality remains excellent despite a slight decrease in dissolved oxygen in the mid estuary. Total nitrogen improved in the mid estuary within the Mooloolah River National Park.

12.2 Waterway Benefit Rating ★★☆☆☆

- Despite only fair catchment condition, extremely high numbers of residents are satisfied with their local waterways (81% compared with 60% for all of South East Queensland). This is likely due to the community's extremely high satisfaction with their ability to access and use their local waterways (85%).
- Residents value their local waterways for recreation very highly. 76% enjoy recreating in or alongside their local waterway at least monthly. The most frequent recreation activities include walking/running (93 days/year per resident), enjoying nature (48 days/year per resident), swimming (20 days/year per resident), and cycling (11 days/year per resident). They are also extremely highly valued as a place of rest and relaxation and for spending time with friends and family.
- The waterway value per person was calculated as \$2,301/year. The most valuable activities, based on costs per visit were, picnics and BBQs (25 % of value), boating and sailing (18% of value) and swimming (16% of value).

12.3 Ways to improve waterway health and benefits

- Protecting and managing existing values from the pressures of population growth is a priority, with the population in the Mooloolah region projected to increase rapidly.
- Undertake active restoration and protection of wetlands and floodplains, to restore natural flows of water and reconnect waterways. This includes removing fish barriers, naturalising channels, protecting and restoring riparian habitats, wetlands and freshwater refugia.
- Reduce sediment loads and nutrients entering waterways through stormwater management, property management, and restoration of areas of high erosion risk across the catchment, including landslips. Focusing on engagement and compliance within industries with high soil disturbance such as agriculture and development.
- Strengthen local planning and policy instruments to halt the further decline of freshwater wetlands and investigate opportunities for wetland recovery.

- Preserve the community's emotional connection with waterways by protecting their condition and promoting their use and access. Emotional connection fosters feelings of responsibility and willingness to engage in or support waterway protection activities.
- Create opportunities and incentives for residents to make changes around their home, their businesses or in their local waterway to improve waterway condition. 53% of residents are motivated to use and protect local waterways.

13 Pumicestone catchment

13.1 Environmental Condition (B+)

The catchment has declined slightly from excellent to good condition.

Why?

- Pollutant loads significantly increased this year from low to high. Sediment (mud) loads increased from 96 kg/ha in 2020 to 378 kg/ha in 2021. Run-off also delivered high loads of nitrogen (9.8 kg/ha) and phosphorus (1.4 kg/ha) to waterways.
- The health of freshwater creeks slightly improved and remains excellent, due to improvement in bug community health at Bluegum Creek and Tibrogargan Creek. Fish community health declined slightly at Coochin Creek. Water quality and ecosystem processes remain in excellent condition.
- Stream bank vegetation in the catchment remains good (90% cover), and wetland extent remains fair (43% cover) in the freshwater reaches of the catchment. The extent of wetland habitat in the estuary remains excellent with 90% of mangroves and saltmarshes remaining. Higher levels of stream bank vegetation and estuarine habitat supports valuable commercial and recreational fisheries and stops erosion of sediments into the waterways.
- Estuarine water quality remains excellent. Overall nutrients improved, despite increases in total nitrogen at Bells Creek. Algae (phytoplankton) and total phosphorus remain excellent. Dissolved oxygen improved in the Central Passage in the vicinity of Coochin Creek.

13.2 Waterway Benefit Rating ★★★★★

- Good catchment condition results in very high numbers of residents (79%) satisfied with their local waterways (compared with 60% for all of South East Queensland). Pumicestone residents reported extremely high levels of personal connection with nature (86%) and received very high amounts of emotional benefits from their local waterways (79%).
- Residents report they value their local waterways for recreation. 62% of residents recreate in or alongside their local waterway at least weekly. Very high numbers value them as a place of rest and relaxation (76%) or for social interaction with friends and family (71%). The top activities include walking/running (79 days/year per resident), enjoying nature (38 days/year per resident), cycling (15 days/year per resident), swimming (14 days/year per resident), and cycling (10 days/year per resident).
- The waterway value per person was calculated as \$1,752/year. The most valuable activities, based on costs per visit were, picnics and BBQs (26% of value), boating and sailing (23% of value) and recreational fishing (20% of value).

13.3 Ways to improve waterway health and benefits

- Protecting and managing existing values from the pressures of population growth is a priority, with the population in the Moreton Bay region projected to one of the fastest growing urbanised areas in the region.
- Protect and manage critical habitats within the Pumicestone catchment including coastal saltmarsh and mangrove communities and existing critical streambank vegetation and wetlands.
- Increase use of erosion and sediment controls and compliance for new development, construction sites and private lands, particularly in the peri-urban landscape.
- Apply water sensitive urban design practices to new development.

- Reduce excess nutrient run-off from agricultural and agroforestry land by adopting best practice fertiliser use and management. Implement best management practice for unsealed roads, and 4x4 in the Pumicestone catchment.
- Develop and implement management strategies to minimise the impact of increasing visitation and recreational use of the passage.
- Preserve the community's emotional connection with waterways by protecting their condition and promoting their use and access. Emotional connection fosters feelings of responsibility and willingness to engage in or support waterway protection activities.
- Create opportunities and incentives for residents to make changes around their home, their businesses or in their local waterway to improve waterway condition. 55% of residents are motivated to use and protect local waterways.

14 Caboolture catchment

14.1 Environmental Condition (B)

The catchment has declined slightly and remains in good condition.

Why?

- Pollutant loads increased significantly this year from low to high. Sediment (mud) loads increased from 187 kg/ha in 2020 to 603 kg/ha in 2021. Run-off also delivered high loads of nitrogen (5.9 kg/ha) and phosphorus (0.8 kg/ha) to waterways.
- Freshwater health improved slightly and remains in excellent condition due to slight improvement in water quality at Wararba Creek. Ecosystem processes remain in excellent condition and bug and fish community health remain in good condition at Caboolture River.
- Stream bank vegetation in the catchment remains good (83% cover), although wetland extent remains poor (30% cover) in the freshwater reaches of the catchment. The extent of wetland habitat in the estuary remains excellent with 91% of mangroves and saltmarshes remaining in the catchment. Higher levels of stream bank vegetation and estuarine habitat supports valuable commercial and recreational fisheries and stops erosion of sediments into the waterways.
- Estuarine water quality significantly declined from excellent to fair, due to an increase in nutrients (total nitrogen and total phosphorus) in the mid estuary. Algae (phytoplankton) increased and dissolved oxygen decreased slightly. Water clarity remained stable.

14.2 Waterway Benefit Rating ★★☆☆☆

- Good catchment condition results in very high numbers of residents (65%) satisfied with their local waterways (the average for South East Queensland is 60%). Caboolture residents reported extremely high levels of personal connection with nature (81%) with high levels of motivations to use and protect local waterways (42%).
- Residents report that they value their local waterways for recreation. 45% of residents recreate in or alongside their local waterway at least monthly. Very high numbers value them as a place of rest and relaxation (65%) or for social interaction with friends and family (61%). The top activities include walking or running (39 days/year per resident) and enjoying nature (21 days/year per resident).
- The waterway value per person was calculated as \$676/year. The most valuable activities, based on costs per visit were, picnics and BBQs (33% of value) and boating, sailing (22% of value).

14.3 Ways to improve waterway health and benefits

- Protecting and managing existing values from the pressures of population growth is a priority, with the population in the Moreton Bay region projected to be one of the fastest growing urbanised areas in the region.
- As the population grows, manage projected increases in nutrient inputs to waterways by maximising nutrient removal efficiencies of sewage treatment plants.
- Increase use of erosion and sediment controls and compliance for new development, construction sites and private lands.
- Apply water sensitive urban design practices to new development.
- Minimise nutrient inputs from the urban landscape through maintenance and enhancement of stormwater quality treatment infrastructure.
- Remediate areas of high erosion risk across the catchment.
- Protect natural habitats including wetlands that process excess nitrogen delivered to waterways.

- Explore and implement integrated water planning as a means to solve complex water issues, improve waterway health outcomes and provide water security.
- Enhance the community's emotional connection with waterways by protecting their condition and promoting their use and access. Emotional connection fosters feelings of responsibility and willingness to engage in or support waterway protection activities.
- Create opportunities and incentives for residents to make changes around their home, their businesses or in their local waterway to improve waterway condition. 42% of residents are motivated to use and protect local waterways.

15 Pine catchment

15.1 Environmental Condition (C+)

The catchment has declined from good to fair condition.

Why?

- Pollutant loads increased significantly this year from low to high. Sediment (mud) loads increased from 111 kg/ha in 2020 to 320 kg/ha in 2021. Run-off also delivered moderate loads of nitrogen (4.7 kg/ha) and phosphorus (0.5 kg/ha) to waterways.
- The health of freshwater creeks declined from good to poor due to significant declines in fish community health, with higher proportion of alien fish species at three of five sites. Sideling Creek condition declined significantly with more alien fish species and less bug taxa.
- Stream bank vegetation in the catchment remains poor (69% cover), and wetland extent remains very poor (21% cover) in the freshwater reaches of the catchment. The extent of wetland habitat in the estuary remains excellent with 84% of mangroves and saltmarshes remaining in the catchment. High levels of estuarine habitat support valuable commercial and recreational fisheries and stops erosion of sediments into the waterways.
- Estuarine water quality improved slightly this year due to an improvement in nutrients (total nitrogen and total phosphorus) and a decrease in algae (phytoplankton). Dissolved oxygen and water clarity also improved.

15.2 Waterway Benefit Rating ★★★★★

- Despite fair catchment condition, high numbers of residents are satisfied (60%) with their local waterways. This is also likely due to very high satisfaction with their ability to access and use local waterways (64% compared to 63% for all of South East Queensland).
- Residents report that they value their local waterways for recreation. 53% of residents recreate in or alongside their local waterway at least monthly. The top activities include walking/running (52 days/year per resident), enjoying nature (19 days/year per resident), cycling (8 days/year per resident), and picnics/BBQs (7 days/year per resident).
- The waterway value per person was calculated as \$1,254/person. The most valuable activities, based on costs per visit were, picnics and BBQs (28% of value), boating and sailing (27% of value) and recreational fishing (21% of value)
- The amount of mud removed from drinking water at the treatment plant remains very low. On average, only 87 kg/ML/year was removed from the drinking water treatment plants.

15.3 Ways to improve waterway health and benefits

- Protecting and managing existing values from the pressures of population growth is a priority, with the population in the Moreton Bay region projected to be one of the fastest growing urbanised areas in the region.
- Manage projected increases in nutrient inputs to waterways by maximising nutrient removal efficiencies of sewage treatment plants.
- Increase use of erosion and sediment controls and compliance for new development, construction sites and private lands.
- Apply water sensitive urban design practices to new development.
- Minimise nutrient inputs from the urban landscape through maintenance and enhancement of stormwater quality treatment infrastructure.
- Remediate areas of high erosion risk across the catchment.
- Protect natural habitats including wetlands that process excess nitrogen delivered to waterways.

- Explore and implement Integrated Water Planning as a means to solve complex water issues, improve waterway health outcomes and provide water security.
- Enhance the community's emotional connection with waterways by protecting their condition and promoting their use and access. Emotional connection fosters feelings of responsibility and willingness to engage in or support waterway protection activities.
- Create opportunities and incentives for residents to make changes around their home, their businesses or in their local waterway to improve waterway condition. 35% of residents are motivated to use and protect local waterways.

16 Lower Brisbane catchment

16.1 Environmental Condition (D+)

Catchment condition remains in poor condition.

Why?

- Stormwater pollutant loads increased significantly this year from low to moderate, with relatively high contributions from urban areas. Sediment (mud) loads increased from 111 kg/ha in 2020 to 320 kg/ha in 2021. Run-off also delivered moderate loads of nitrogen (3.9 kg/ha) and phosphorus (0.6 kg/ha) to waterways. Major flooding in the Bremer catchment in March also delivered mud and nutrients to the Brisbane estuary and Western and Central Moreton Bay.
- Freshwater health remains in very poor condition. Water quality improved at all 13 sites, however, fish community health declined at nine of 13 sites with an increasing proportion of alien fish since 2012. Ecosystem processes remains in excellent condition and bug community health remains very poor.
- Stream bank vegetation in the catchment remains good (83% cover), although wetland extent remains very poor (24% cover) in the freshwater reaches of the catchment. The extent of wetland habitat in the estuary remains fair with 43% of mangroves and saltmarshes remaining.
- Estuarine water quality, including at Oxley and Cabbage Tree Creek improved from poor to fair overall. Algae (phytoplankton) and water clarity improved slightly. Nutrients (total nitrogen and phosphorus) improved in the Brisbane and Oxley estuaries. Dissolved oxygen declined in the mid to upper Brisbane estuary.

16.2 Waterway Benefit Rating ★★☆☆☆

- High numbers of residents (56%) of residents were satisfied with the condition of their local waterways (compared with 60% for all of South East Queensland). Lower Brisbane residents however reported very high levels of personal connection with nature (71%).
- Residents particularly value their local waterways for recreation. 53% of residents enjoy recreating in or alongside their local waterway at least monthly or more. The most frequent recreation activities include walking/running (44 days/year per resident), enjoying nature (16 days/year per resident), picnics/BBQs (9 days/year per resident), and cycling (7 days/year per resident).
- The waterway value per person was calculated as \$937/year. The most valuable activities, based on costs per visit was picnics and BBQs (40% of value) and boating/sailing (20% of value).
- During this pandemic year the waterways provided personal benefits to residents as a place for spending time with friends and family, rest relaxation and a place for recreation, providing both mental and physical health benefits.

16.3 Ways to improve waterway health and benefits

- Protecting and managing existing values from the pressures of population growth is a priority, with the population in the Brisbane City Council are projected to increase to approximately 1.5 million people over the next 25 years.
- As the population grows, continue to manage projected increases in nutrient inputs to waterways by maximising nutrient removal efficiencies of sewage treatment plants.
- Careful measures are required to reduce sediment running off development and construction sites, as well as high risk erosion sites (e.g. channel and gully erosion) during rainfall and flooding events in the upper Bremer River, mid-Brisbane River and Lockyer Creek catchments.

- Increase use of erosion and sediment controls and compliance for new development, construction sites and private lands.
- Apply water sensitive urban design practices to new development.
- Minimise nutrient inputs from the urban landscape through maintenance and enhancement of stormwater quality treatment infrastructure.
- Undertake freshwater protection and restoration activities including removing fish barriers, restoring instream habitat, naturalising channels, protecting and restoring riparian habitats and freshwater refugia.
- Protect natural habitats, including wetlands and stream bank vegetation, from clearing, weed infestation and loss of connectivity. Currently only 24% of freshwater wetland extent remains in the Lower Brisbane catchment.
- Explore and implement integrated water planning as a means to solve complex water issues, improve waterway health outcomes and provide water security.
- Enhance the community's emotional connection with waterways by protecting their condition and promoting their use and access. Emotional connection fosters feelings of responsibility and willingness to engage in or support waterway protection activities.
- Create opportunities and incentives for residents to make changes around their home, their businesses or in their local waterway to improve waterway condition. 34% of residents are motivated to use and protect local waterways.

17 Redland catchment

17.1 Environmental Condition (C+)

The catchment remains in fair condition.

Why?

- Pollutant loads increased significantly this year from low to moderate. Sediment (mud) loads increased from 235 kg/ha in 2020 to 367 kg/ha in 2021. Run-off and inputs from urban areas also delivered moderate loads of nitrogen (4.5 kg/ha) and phosphorus (0.6 kg/ha) to waterways.
- Freshwater health remains very poor, with slight improvement in bug community health at Hilliards Creek and Moogurrapum Creek. Water quality and ecosystem processes remain excellent and fish community health remains very poor with an increasing proportion of alien fish since 2013.
- Stream bank vegetation in the catchment remains good (84% cover), although wetland extent remains fair (45% cover) in the freshwater reaches of the catchment. The extent of wetland habitat in the estuary remains excellent with 81% of mangroves and saltmarshes remaining in the catchment. Higher level of estuarine habitat supports valuable commercial and recreational fisheries and stops erosion of sediments into the waterways.
- Estuarine water quality (Eprapah and Tingalpa Creeks) improved from fair to good. Improvements in water clarity, nutrients (total nitrogen and phosphorus), algae (phytoplankton) and dissolved oxygen were observed across both estuaries.

17.2 Waterway Benefit Rating ★★☆☆☆

- Despite fair catchment condition, high numbers of residents (60%) are satisfied with their local waterways. Residents reported very high levels of personal connection (78%) with nature, with high levels of feeling motivated to use and protect their local waterways (43%).
- Residents report that they value their local waterways for recreation. 53% of residents recreate in or alongside their local waterway at least monthly or more. Very high numbers value them as a place of rest and relaxation (66%) or for social interaction with friends and family (60%). The top activities include walking/running (61 days/year per resident), enjoying nature (28 days/year per resident), picnics/BBQs (7 days/year per resident), and swimming (4 days/year per resident).
- The recreational value per person was valued at \$1,111/person. The most valuable activities, based on number of visitors multiplied by costs per visit were, picnics and BBQs (41% of value), boating/sailing (17% of value) and recreational fishing (13% of value).
- On average 556 kg/ML of sludge was removed from the Capalaba and North Stradbroke water treatment plants in 2020.

17.3 Ways to improve waterway health and benefits

- Protecting and managing existing values from the pressures of population growth is a priority, with the population in the Redland City Council are projected to increase.
- Protecting and enhancing the condition and access for residents to enjoy their local waterways will be a priority.
- Manage projected increases in nutrient inputs to waterways by maximising nutrient removal efficiencies of sewage treatment plants.
- Protect and manage critical habitats within the Redlands catchment including remnant vegetation throughout Mount Cotton and existing critical streambank vegetation and wetlands. Currently 84% of streambanks in the Redlands catchment are vegetated.

- Undertake freshwater protection and restoration activities including removing fish barriers, restoring instream habitat, naturalising channels, protecting and restoring riparian habitats and freshwater refugia.
- Increase use of erosion and sediment controls and compliance for new development, construction sites and private lands.
- Apply water sensitive urban design practices to new and existing developments. Minimise nutrient inputs from the urban landscape through maintenance and enhancement of stormwater quality treatment infrastructure.
- Explore and implement integrated water planning as a means to solve complex water issues, improve waterway health outcomes and provide water security.
- Enhance the community's emotional connection with waterways by protecting their condition and promoting their use and access. Emotional connection fosters feelings of responsibility and willingness to engage in or support waterway protection activities.
- Create opportunities and incentives for residents to make changes around their home, their businesses or in their local waterway to improve waterway condition. 43% of residents are motivated to use and protect local waterways.

18 Mid Brisbane catchment

18.1 Environmental Condition (C+)

The catchment has improved slightly and remains in fair condition.

Why?

- Stormwater pollutant loads remain very low with only slight increases in sediment (mud) (16.1 kg/ha), nitrogen (0.2 kg/ha) and phosphorus loads (0.02 kg/ha) in 2021. While rainfall increased year on year, the Mid Brisbane continued to receive below average rainfall in 2021, resulting in very low run-off and associated stormwater pollutants.
- Freshwater streams health improved from fair to good condition with significant improvements in ecosystem processes and fish community health at Borallon, despite a slight decline in bug community health at the same site. Water quality health remains excellent at both sites.
- Stream bank vegetation in the catchment remains poor (71% cover), and the extent of freshwater wetlands remains very poor (23% cover).

18.2 Waterway Benefit Rating ★ ★ ★ ★ ★

- Despite fair catchment condition, high numbers of residents (58%) are satisfied with their local waterways. Residents reported very high satisfaction with their ability to access and use local waterways (67% compared to 63% for all of South East Queensland). Very high numbers of residents value them as a place of rest and relaxation (74%) or for social interaction with friends and family (70%). Levels of personal connection (83%) are some of the highest in South East Queensland.
- Residents report that they value their local waterways for recreation. 61% of residents recreate in or alongside their local waterway at least monthly or more. The top activities include enjoying nature (52 days/year per resident), walking or running (42 days/year per resident), and picnics and BBQ's (16 days/year per resident).
- The recreational value per person was valued at \$1,721/person and primarily comprised of picnics/BBQs (46%).
- The amount of mud removed from drinking water at the treatment plants remains moderate to low. On average 461 kg/ML was removed from drinking water at the Lowood, Mount Crosby Eastbank, and Mount Crosby Westbank water treatment plants in 2020.

18.3 Ways to improve waterway health and benefits

- The western catchments of South East Queensland are impacted by historic loss of vegetation and riparian cover, as such the priority is to protect, manage and restore catchment vegetation and wetlands.
- Protect natural habitats, including wetlands and stream bank vegetation, from clearing, weed infestation and loss of connectivity. Currently 71% of streambanks in the Mid Brisbane catchment are vegetated and only 23% of freshwater wetland extent remains.
- Reduce sediment loads and nutrients entering waterways by addressing channel and gully erosion in priority areas.
- Focus on engagement and compliance within industries with high soil disturbance such as agriculture and development.
- Enhance the community's emotional connection with waterways by promoting their use and access, such as wildlife trails, canoe trails and bush walking within reserves. Emotional connection fosters feelings of responsibility and willingness to engage in or support waterway protection activities.

- Create opportunities and incentives for residents to make changes around their home, their businesses or in their local waterway to improve waterway condition. 47% of residents are motivated to use and protect local waterways.

19 Upper Brisbane catchment

19.1 Environmental Condition (F)

The catchment declined from poor to very poor condition.

Why?

- Pollutant loads remain very low with slight decreases in sediment (mud), from 37 kg/ha in 2020 to 10 kg/ha in 2021. Continued drought conditions in the Upper Brisbane catchment in 2021 resulted in very little run-off and minimal river flows.
- Freshwater health significantly declined this year and remains very poor. Water quality, ecosystem processes and bug and fish community health declined at multiple sites potentially due to drought conditions. Notably, Emu Creek and Cooyar Creek condition declined significantly across all four freshwater indicators, freshwater health condition was comparable to the Millennium Drought condition in 2007. Fish community health remains very poor with increasing proportion of alien fish since 2013.
- Stream bank vegetation in the catchment remains very poor with 59% woody vegetation along riverbanks. This affects the resilience of freshwater streams, reducing their capacity to stay healthy as climate varies year to year. The extent of freshwater wetlands remains very poor with only 23% remaining. Restoring the extent of stream bank vegetation and freshwater wetland will be critical in mitigating the projected increases in pressures from climate extremes like floods and drought.

19.2 Waterway Benefit Rating ★★☆☆☆

- Despite poor catchment condition, high numbers of residents (58%) are satisfied with their local waterways. Residents reported very high satisfaction with their ability to access and use local waterways (67% compared to 63% for all of South East Queensland). Very high numbers of residents value them as a place of rest and relaxation (74%) or for social interaction with friends and family (70%). Levels of personal connection (83%) are some of the highest in South East Queensland.
- Residents report that they value their local waterways for recreation. 61% of residents recreate in or alongside their local waterway at least monthly or more. The top activities include enjoying nature (52 days/year per resident), walking or running (42 days/year per resident), and picnics and BBQ's (16 days/year per resident).
- The recreational value per person was valued at \$1,721/person and primarily comprised of picnics/BBQs (46%).
- The catchment is the major drinking water supply catchment for Brisbane City and supplies local communities in the upper Brisbane River valley. The amount of mud removed from drinking water at the Esk treatment plant remains high (1,767 kg/ML/year).

19.3 Ways to improve waterway health and benefits

- The western catchments of South East Queensland are impacted by historic loss of vegetation and riparian cover, as such the priority is to protect, manage and restore catchment vegetation and wetlands.
- Protect natural habitats, including wetlands and stream bank vegetation, from clearing, weed infestation and loss of connectivity. Currently 59% of streambanks in the Upper Brisbane catchment are vegetated and only 23% of freshwater wetland extent remains.
- Restore stream bank vegetation, to restore resilience across the region.

- Reduce sediment loads and nutrients entering waterways by addressing channel and gully erosion in priority areas.
- Focus on engagement and compliance within industries with high soil disturbance such as agriculture and development. Encourage best practice land management, through activities like grazing management programs.
- Enhance the community's emotional connection with waterways by promoting their use and access, for example introducing and promoting fishing trails, canoe trails and river trails. Emotional connection fosters feelings of responsibility and willingness to engage in or support waterway protection activities.
- Create opportunities and incentives for residents to make changes around their home, their businesses or in their local waterway to improve waterway condition. 47% of residents are motivated to use and protect local waterways.

20 Stanley catchment

20.1 Environmental Condition (B+)

The catchment has improved slightly and remains in good condition.

Why?

- Stormwater pollutant loads remain very low though increased slightly. Sediment (mud) load increased from 64 kg/ha in 2020 to 100 kg/ha. Below average rainfall in the Stanley in 2021 resulted in very little run-off, and minimal river flows.
- The health of freshwater creeks improved from good to excellent condition. Bug community health improved at four of eight sites. Water quality, ecosystem processes and fish remain in stable condition.
- Stream bank vegetation in the catchment remains very poor with 64% woody vegetation along riverbanks. The extent of wetland habitat in the freshwater reaches of the catchment remains excellent with 72% of vegetated freshwater swamp remaining.

20.2 Waterway Benefit Rating ★ ★ ★ ★ ☆

- High numbers of Stanley residents (58%) are satisfied with their local waterways. Residents reported very high satisfaction with their ability to access and use local waterways (67% compared to 63% for all of South East Queensland). Very high numbers of residents value them as a place of rest and relaxation (74%) or for social interaction with friends and family (70%). Levels of personal connection (83%) are some of the highest in the South East Queensland region.
- Residents report that they value their local waterways for recreation. 61% of residents recreate in or alongside their local waterway at least monthly. The top activities include enjoying nature (52 days/year per resident), walking or running (42 days/year per resident), and picnics and BBQ's (16 days/year per resident).
- The recreational value per person was valued at \$1,721/person and primarily comprised of picnics/BBQs (46%).
- The amount of mud removed from drinking water at the Kilcoy treatment plant remains low.

20.3 Ways to improve waterway health and benefits

- The western catchments of South East Queensland are impacted by historic loss of vegetation and riparian cover, as such the priority is to protect, manage and restore catchment vegetation and wetlands.
- Protect natural habitats, including wetlands and stream bank vegetation, from clearing, weed infestation and loss of connectivity. Currently 64% of streambanks in the Stanley catchment are vegetated, and 72% of freshwater wetlands remain.
- Restore stream bank vegetation, to protect and restore resilience across the region.
- Focus on engagement and compliance within industries with high soil disturbance such as agriculture and development. Encourage best practice land management, through activities like grazing management programs.
- Enhance the community's emotional connection with waterways by promoting their use and access, for example introducing and promoting wildlife trails, canoe trails and bushwalking in reserves. Emotional connection fosters feelings of responsibility and willingness to engage in or support waterway protection activities.

- Create opportunities and incentives for residents to make changes around their home, their businesses or in their local waterway to improve waterway condition. High numbers 47% of residents are motivated to use and protect local waterways.

21 Lockyer catchment

21.1 Environmental Condition (D-)

The catchment remains in poor condition.

Why?

- Stormwater pollutant loads remain very low due to continued drought conditions. Sediment (mud) loads decreased slightly from 6 kg/ha in 2020 to 4 kg/ha in 2021.
- Freshwater health has slightly declined and remains in very poor condition. Bug and fish community health declined at six of 14 sites, potentially due to drought conditions. Notably, Lockyer Creek upstream (Helidon) and downstream (Lowood) condition declined significantly. Water quality remain in poor condition and ecosystem processes remain excellent at most of the sites except water quality decline at Lockyer Creek downstream (Lowood) and Blackfellow Creek. Fish community health remains very poor in downstream sites with increasing proportion of alien fish since 2019.
- Stream bank vegetation in the catchment remains poor with 70% woody vegetation along riverbanks. This affects the resilience of freshwater streams health, reducing their capacity to stay healthy as climate varies year to year. The extent of wetland habitat in the freshwater reaches of the catchment remains very poor with 32% of vegetated freshwater swamps. Restoring the extent of stream bank vegetation and freshwater wetland will be critical in mitigating the projected increases in pressures from climate extremes like floods and drought.

21.2 Waterway Benefit Rating ★★☆☆☆

- Despite poor catchment condition, residents highly value their local waterways as a place for social interaction with friends and family (62%). 44% of residents enjoy recreating in or alongside their local waterway at least monthly or more. The most frequent recreation activities include walking or running (31 days/year per resident), picnics and BBQs (12 days/year per resident) and enjoying nature (11 days/year per resident).
- The recreational value per person was valued at \$1,040/year and was primarily composed of boating (38% of value), picnics/BBQs (33% of value) and recreational fishing activities (20% of value).
- While residents report very high levels of personal connection with nature (73%), only moderate numbers are motivated to use and protect their local waterways (38%).

21.3 Ways to improve waterway health and benefits

- The western catchments of South East Queensland are impacted by historic loss of vegetation and riparian cover, as such the priority is to protect, manage and restore catchment vegetation and wetlands.
- Protect natural habitats, including wetlands and stream bank vegetation, from clearing, weed infestation and loss of connectivity. Currently 70% of streambanks in the Lockyer catchment are vegetated and only 32% of freshwater wetland extent remains.
- Restore stream bank vegetation to restore resilience across the region.
- Reduce sediment loads and nutrients entering waterways by addressing channel and gully erosion in priority areas.
- Focus on engagement and compliance within industries with high soil disturbance such as agriculture and development. Encourage best practice land management, through activities like grazing and horticultural management programs.

- Enhance the community's emotional connection with waterways by promoting their use and access, such as promoting local wetlands as valuable bird watching and nature experience. Emotional connection fosters feelings of responsibility and willingness to engage in or support waterway protection activities
- Create opportunities and incentives for residents to make changes around their home, their businesses or in their local waterway to improve waterway condition. 38% of residents are motivated to use and protect local waterways.

22 Bremer catchment

22.1 Environmental Condition (D)

The catchment remains in poor condition.

Why?

- Stormwater pollutant loads remain very low in the Bremer catchment despite slight increases, in response to rainfall. Sediment (mud) loads increased from 44 kg/ha in 2020 to 105 kg/ha in 2021. The March 2021 major flood event delivered mud and nutrients to the Bremer and Brisbane estuaries.
- Freshwater health declined slightly and remains in poor condition. Fish community health has declined slightly with higher proportion of alien fish at four of nine sites, potentially due to drought conditions. Water quality improved slightly while ecosystem processes and bug community health remain stable.
- Stream bank vegetation in the catchment remains very poor (55% cover). This affects the resilience of freshwater streams health, reducing their capacity to stay healthy as climate varies year to year. Wetland extent remains fair (with 46% of vegetated freshwater swamps remaining). Restoring the extent of stream bank vegetation will be critical in mitigating the projected increases in pressures from climate extremes like floods and drought.
- Estuarine water quality in the upper estuary remains very poor. Nutrients (total nitrogen and phosphorus) improved slightly, while water clarity remained stable. Dissolved oxygen declined most likely due to inputs of organic matter following rainfall.

22.2 Waterway Benefit Rating ★ ★ ★ ★ ★

- Despite poor catchment condition results, residents expressed high levels of satisfaction (45%) with their local waterways.
- Residents value their local waterways for recreation, with 37% recreating in or alongside their local waterway on a monthly basis or more. Residents reported their recreational use of local waterways was predominantly walking or running (23 days/year), enjoying nature (20 days/year), and cycling (7 days/year).
- The recreational value per person was \$872/year. The most valuable activities, based on costs per visit were recreational fishing (35% of value), picnics and BBQs (25% of value) and boating and sailing (10% of value).
- While residents have very high levels of personal connection with nature in general (65%), only 27% of residents were motivated to use and protect their local waterways.
- The amount of mud removed from Boonah-Kalbar treatment plant remained low.

22.3 Ways to improve waterway health and benefits

- Protecting and managing existing values from the pressures of population growth is a priority, with the population in the Ipswich City Council area projected to be one of the fastest growing urbanised areas in South East Queensland.
- Like other western catchments, the Bremer catchment is also impacted by historic loss of vegetation and riparian cover, as such the priority is also to protect, manage and restore catchment vegetation and wetlands.
- Increase use of erosion and sediment controls and compliance for new development, construction sites and private lands. Apply water sensitive urban design practices to new development. Minimise nutrient inputs from the urban landscape through maintenance and enhancement of stormwater quality treatment infrastructure.

- Undertake freshwater protection and restoration activities including removing fish barriers, restoring instream habitat, naturalising channels, protecting and restoring riparian habitats and freshwater refugia.
- Restore stream bank vegetation, to restore resilience across the region. Protect natural habitats, including wetlands and stream bank vegetation, from clearing, weed infestation and loss of connectivity. Currently 55% of streambanks in the Bremer catchment are vegetated and only 46% of freshwater wetland extent remains.
- Reduce sediment loads and nutrients entering waterways by addressing channel and gully erosion in priority areas.
- Focus on engagement and compliance within industries with high soil disturbance such as agriculture and development. Encourage best practice land management, through activities like grazing and horticultural management programs.
- As the population grows, continue to manage projected increases in nutrient inputs to waterways by maximising nutrient removal efficiencies of wastewater treatment plants.
- Explore and implement Integrated Water Planning as a means to solve complex water issues, improve waterway health outcomes and provide water security.
- Enhance the community's emotional connection with waterways by protecting their condition and promoting their use and access. Emotional connection fosters feelings of responsibility and willingness to engage in or support waterway protection activities.
- Create opportunities and incentives for residents to make changes around their home, their businesses or in their local waterway to improve waterway condition. 65% of residents are motivated to use and protect local waterways.

23 Logan catchment

23.1 Environmental Condition (C+)

Catchment condition remains in fair condition.

Why?

- Stormwater pollutant loads remain very low despite a slight increase. Sediment (mud) loads increased from 74 kg/ha in 2020 to 103 kg/ha in 2021.
- Freshwater health remains in poor condition with all indicators remaining stable. The Native Dog Creek site, however, declined in water quality, bug and fish community health. Fish community health remains very poor with increasing proportion of alien fish since 2013.
- Stream bank vegetation in the catchment remains poor (66% cover). Wetland extent (28% cover) remains poor in the freshwater reaches of the catchment. The extent of wetland habitat in the estuary remains excellent with 75% of mangroves and saltmarshes remaining in the catchment.
- Estuarine health improved from poor to fair. Nutrients (total nitrogen and phosphorus) improved in the lower and upper estuary. Water clarity (turbidity) and dissolved oxygen decreased slightly. Algae (phytoplankton) improved slightly in the upper estuary.

23.2 Waterway Benefit Rating ★★☆☆☆

- Despite fair catchment condition results high numbers of residents (49%) are satisfied with the usability and accessibility of their local waterways (compared with 63% for all of South East Queensland). Very high numbers of residents (73%) report a personal connection with nature however only 28% of residents felt motivated to use and protect their local waterways
- Residents report they value their local waterways for recreation. 43% of people recreate in or alongside their local waterway on a monthly basis or more. The top activities include walking or running (34 days/year per resident), enjoying nature (15 days/year per resident), cycling (8 days/year per resident), and picnicking (6 days/year per resident).
- The recreational value per person is \$724/year and comprised mostly of picnic/BBQ activities (41%).
- The mud removed from Beaudesert treatment plant was moderate to high (425 kg/ML) in 2020.

23.3 Ways to improve waterway health and benefits

- Protecting and managing existing values from the pressures of population growth is a priority, with the population in the Logan City Council area projected to be one of the fastest growing urbanised areas in South East Queensland.
- Increase use of erosion and sediment controls and compliance for new development, construction sites and private lands. Apply water sensitive urban design practices to new development. Minimise nutrient inputs from the urban landscape through maintenance and enhancement of stormwater quality treatment infrastructure.
- Undertake freshwater protection and restoration activities including removing fish barriers, restoring instream habitat, naturalising channels, protecting and restoring riparian habitats and freshwater refugia.
- Restore stream bank vegetation and wetlands, to restore resilience across the region. Protect natural habitats, including wetlands and stream bank vegetation, from clearing, weed infestation and loss of connectivity. Currently 66% of streambanks in the Logan catchment are vegetated and only 28% of freshwater wetland extent remains.

- Reduce sediment loads and nutrients entering waterways by addressing channel and gully erosion in priority areas.
- Focus on engagement and compliance within industries with high soil disturbance such as agriculture and development. Encourage best practice land management, through activities like grazing and horticultural management programs.
- As the population grows, continue to manage projected increases in nutrient inputs to waterways by maximising nutrient removal efficiencies of wastewater treatment plants.
- Explore and implement Integrated Water Planning as a means to solve complex water issues, improve waterway health outcomes and provide water security.
- Enhance the community's emotional connection with waterways by promoting their use and access, such as promoting local tidal estuaries as valuable recreational fishing and nature experience. Emotional connection fosters feelings of responsibility and willingness to engage in or support waterway protection activities
- Create opportunities and incentives for residents to make changes around their home, their businesses or in their local waterway to improve waterway condition. 28% of residents are motivated to use and protect local waterways.

24 Albert catchment

24.1 Environmental Condition (B)

Catchment condition has improved slightly and remains in good condition.

Why?

- Stormwater pollutant loads increased though overall remain low. Nutrient loads (nitrogen and phosphorus) increased while sediment loads (111 kg/ha) were similar to the previous year.
- Freshwater health remains in excellent condition and bug community health improved at three of four sites. Water quality, ecosystem processes and fish community health condition remained.
- Stream bank vegetation (73% cover) and wetland extent (31% cover) remains poor in the freshwater reaches of the catchment. The extent of wetland habitat in the estuary remains excellent with 75% of mangroves and saltmarshes remaining in the catchment.
- Estuarine water quality improved from fair to good. Nutrients (total nitrogen and phosphorus) improved within the mid to upper estuary. Dissolved oxygen and water clarity (turbidity) also improved. Algae (phytoplankton) remained stable.

24.2 Waterway Benefit Rating ★★☆☆☆

- Good catchment condition results in high number of people (54%) satisfied with their local waterways (compared with 60% for all South East Queensland). Very high numbers of residents (69%) valued their local waterway as a place of rest and relaxation or for social interaction with friends and family (63%).
- Residents report that they value their local waterways for recreation. 54% recreate in or alongside their local waterway on a monthly basis or more. Residents reported their recreational use of local waterways was predominantly enjoying nature (44 days/year per resident), walking or running (40 days/year per resident) and picnics and BBQs (15 days/year per resident). The recreational value per person was valued at \$1361/year. The most valuable activities, based on costs per visit was picnics and BBQs (70% of value).
- The amount of mud removed from drinking water at the treatment plant remains very low (85 kg/ML).

24.3 Ways to improve waterway health and benefits

- Protecting and managing existing values from the pressures of population growth is a priority.
- Increase use of erosion and sediment controls and compliance for new development, construction sites and private lands.
- Restore stream bank vegetation and wetlands, to restore resilience across the region. Protect natural habitats, including wetlands and stream bank vegetation, from clearing, weed infestation and loss of connectivity. Currently 73% of streambanks in the Albert catchment are vegetated and only 31% of freshwater wetland extent remains.
- Focus on engagement and compliance within industries with high soil disturbance such as agriculture and development.
- Explore and implement integrated water planning as a means to solve complex water issues, improve waterway health outcomes and provide water security.
- Enhance the community's emotional connection with waterways by promoting their use and access, such as promoting local tidal estuaries as valuable recreational fishing and nature experience. Emotional connection fosters feelings of responsibility and willingness to engage in or support waterway protection activities

- Create opportunities and incentives for residents to make changes around their home, their businesses or in their local waterway to improve waterway condition. 46% of residents are motivated to use and protect local waterways.

25 Pimpama-Coomera catchment

25.1 Environmental Condition (B)

The catchment remains in good condition.

Why?

- Pollutant loads increased significantly this year from moderate to high. This was due to major flooding in March which transported sediment (mud) and nutrients from urban and rural areas to waterways. Sediment (mud) loads increased from 324 kg/ha in 2020 to 434 kg/ha in 2021.
- The health of freshwater creeks remains in excellent condition. Fish community health improved at Pimpama River from fair to good; however, this was offset by a decline in ecosystem processes at Back Creek. Water quality and bug community health condition remain excellent.
- Stream bank vegetation in the catchment remains good (86% cover), although wetland extent remains very poor (20% cover) in the freshwater reaches of the catchment. The extent of wetland habitat in the estuary remains good (73% cover) which is critical for the maintenance of healthy recreational and commercial fisheries.
- Estuarine water quality remains excellent with slight improvements in water clarity and nutrients (total nitrogen and phosphorus). Algae (phytoplankton) improved in the mid estuary, while dissolved oxygen declined most likely due to increased organic matter inputs.

25.2 Waterway Benefit Rating ★★★★★

- Good catchment condition is reflected in the very high numbers of residents (70%) satisfied with their local waterways (compared with 60% for all of South East Queensland). This is likely due to the community's very high satisfaction with their ability to access and use their local waterways (68%).
- Residents value their local waterways for recreation with 59% recreating in or alongside their local waterway on a monthly basis. The top activities include walking or running (58 days/year per resident), enjoying nature (26 days/year per resident), swimming (10 days/year per resident), and picnics and BBQ's (7 days/year per resident).
- The recreational value per person was valued at \$1,409/year. The most valuable activities, based on costs per visit were recreational fishing (25% of value), picnics and BBQs (24% of value) and boating and sailing (23% of value).

25.3 Ways to improve waterway health and benefits

- Protecting and managing existing values from the pressures of population growth is a priority, with the population in the Pimpama-Coomera catchment projected to be one of the fastest growing urbanised areas in the City of Gold Coast area over the next 25 years.
- Manage land-use change and increase the use of erosion and sediment controls and compliance for new development, construction sites and private lands.
- Focus on engagement and compliance within industries with high soil disturbance such as agriculture and development.
- Apply water sensitive urban design practices to new development. Minimise nutrient inputs from the urban landscape through maintenance and enhancement of stormwater quality treatment infrastructure.
- Undertake freshwater protection and restoration activities including removing fish barriers, restoring instream habitat, naturalising channels, protecting and restoring riparian habitats and freshwater refugia.

- Protect natural habitats, including wetlands and stream bank vegetation, from clearing, weed infestation and loss of connectivity. Currently only 20% of freshwater wetland extent remains.
- Explore and implement integrated water planning as a means to solve complex water issues, improve waterway health outcomes and provide water security.
- Enhance the community's emotional connection with waterways by promoting their use and access, such as promoting local tidal estuaries as valuable recreational fishing and nature experience. Emotional connection fosters feelings of responsibility and willingness to engage in or support waterway protection activities
- Create opportunities and incentives for residents to make changes around their home, their businesses or in their local waterway to improve waterway condition. 46% of residents are motivated to use and protect local waterways.

26 Nerang catchment

26.1 Environmental Condition (C)

The catchment remains in fair condition.

Why?

- Pollutant loads increased significantly from low to high. This was due to major flooding in March that transported sediment (mud) and nutrients from urban and rural areas to waterways.
- The health of freshwater creeks remains excellent with bug community health improved at Austinville. Water quality and ecosystem processes remain excellent and fish community health remains in fair condition.
- Stream bank vegetation in the catchment remains poor (73% cover), and wetland extent remains very poor in the freshwater reaches of the catchment (3% cover). The extent of wetland habitat in the estuary also remains very poor (4% cover) due to extensive clearing.
- Estuarine water quality remains excellent, with little change across all water quality indicators (nutrients, algae (phytoplankton), water clarity, and dissolved oxygen).

26.2 Waterway Benefit Rating ★★★★★

- Despite only fair catchment condition, very high numbers of residents (74%) are satisfied with their local waterways (compared with 60% for all South East Queensland). Very high numbers of residents reported that they utilised their local waterway for rest and relaxation (73%).
- Residents report that they highly value their local waterways for recreation. 58% of residents recreate in or alongside their local waterway on a weekly basis. The top activities include walking or running (73 days/year per resident), enjoying nature (37 days/year per resident), swimming (16 days/year per resident), cycling (10 days/year per resident), and picnics or BBQs (10 days/year per resident).
- The recreational value per person was valued at \$1,766/year.
- The amount of mud removed from drinking water at the treatment plant remains very low (64 kg/ML).

26.3 Ways to improve waterway health and benefits

- Protecting and managing existing values from the pressures of population growth is a priority, with the population of the City of Gold Coast area is projected to nearly double to approximately 930,000 over the next 25 years.
- Manage land-use change and increase the use of erosion and sediment controls and compliance for new development, construction sites and private lands.
- Focus on engagement and compliance within industries with high soil disturbance such as agriculture and development.
- Apply water sensitive urban design practices to new development. Minimise nutrient inputs from the urban landscape through maintenance and enhancement of stormwater quality treatment infrastructure.
- Undertake freshwater protection and restoration activities including removing fish barriers, restoring instream habitat, naturalising channels, protecting and restoring riparian habitats and freshwater refugia.
- Protect natural habitats, including wetlands and stream bank vegetation, from clearing, weed infestation and loss of connectivity. Currently less than 5% of freshwater and estuarine wetland extent remains, and only 73% of freshwater stream banks have riparian cover.

- Explore and implement Integrated Water Planning as a means to solve complex water issues, improve waterway health outcomes and provide water security.
- Enhance the community's emotional connection with waterways by promoting their use and access, such as promoting local tidal estuaries as valuable recreational fishing and nature experience. Emotional connection fosters feelings of responsibility and willingness to engage in or support waterway protection activities
- Create opportunities and incentives for residents to make changes around their home, their businesses or in their local waterway to improve waterway condition. 46% of residents are motivated to use and protect local waterways.

27 Tallebudgera-Currumbin catchment

27.1 Environmental Condition (C+)

The catchment has declined from good to fair condition.

Why?

- Pollutant loads have significantly increased from moderate to very high within the catchment. Major flooding in March and high rainfall in December transported sediment (mud) and nutrients from across the catchment to waterways. Sediment (mud) loads increased from 353 kg/ha in 2020 to 584 kg/ha in 2021.
- The health of freshwater creeks remains excellent, due to no change at the five freshwater sites.
- Stream bank vegetation in the catchment remains excellent (91% cover), although wetland extent remains very poor in the freshwater reaches of the catchment (6%). The extent of wetland habitat in the estuary remains fair. Higher levels of stream bank vegetation and estuarine habitat supports valuable commercial and recreational fisheries and stops erosion of sediments into the waterways.
- Estuarine water quality remains excellent, with little change across all water quality indicators (nutrients, algae (phytoplankton), water clarity, and dissolved oxygen).

27.2 Waterway Benefit Rating ★★★★★

- Despite fair catchment condition results, very high numbers of residents (76%) are satisfied with their local waterways (compared with 60% for all of South East Queensland). The Tallebudgera-Currumbin catchment has some of the highest levels of personal connection to nature (82%) in South East Queensland, with very high numbers of residents (69%) motivated to use and protect their waterways.
- Residents report they value their local waterways for recreation. 84% of residents recreate in or alongside their local waterway on a monthly basis with 40% of residents recreating daily. Very high numbers value them as a place of rest and relaxation (84%) or for social interaction with friends and family (69%). The top activities include walking/running (107 days/year per resident), enjoying nature (54 days/year per resident) and swimming (23 days/year per resident). The recreational value per person was valued at \$1,850/year. The most valuable activities, based on costs per visit were recreational fishing (25% of value), picnics and BBQs (23% of value) and swimming (21% of value).

27.3 Ways to improve waterway health and benefits

- Protecting and managing existing values from the pressures of population growth is a priority, with, the population of the City of Gold Coast council area projected to nearly double to approximately 930,000 over the next 25 years.
- Manage land-use change and increase the use of erosion and sediment controls and compliance for new development, construction sites and private lands.
- Focus on engagement and compliance within industries with high soil disturbance such as agriculture and development.
- Apply water sensitive urban design practices to new development. Minimise nutrient inputs from the urban landscape through maintenance and enhancement of stormwater quality treatment infrastructure.
- Undertake freshwater protection and restoration activities including removing fish barriers, restoring instream habitat, naturalising channels, protecting and restoring riparian habitats and freshwater refugia.

- Protect natural habitats, including wetlands and stream bank vegetation, from clearing, weed infestation and loss of connectivity.
- Explore and implement integrated water planning as a means to solve complex water issues, improve waterway health outcomes and provide water security.
- Enhance the community's emotional connection with waterways by promoting their use and access, such as promoting local tidal estuaries as valuable recreational fishing and nature experience. Emotional connection fosters feelings of responsibility and willingness to engage in or support waterway protection activities
- Create opportunities and incentives for residents to make changes around their home, their businesses or in their local waterway to improve waterway condition. 69% of residents are motivated to use and protect local waterways.

28 Appendix 1: Summary of Environmental Condition Grades and Waterway Benefit Rating scores from 2015 to 2021

Catchment/Bay zone	Environmental Condition Grade							Waterway Benefit Rating						
	2015	2016	2017	2018	2019	2020	2021	2015	2016	2017	2018	2019	2020	2021
Noosa	A-	A-	A-	A-	A-	A-	A-	4.5	4	4.5	4.5	5	4.5	5
Maroochy	C+	B	B-	B-	B-	C+	C+	4	4	4	3.5	4	4.5	4
Mooloolah	C+	B	B-	C+	C+	C	C+	4	4.5	4	3.5	4	4.5	4.5
Pumicestone	B-	B+	A-	B+	A-	A-	B+	4.5	4.5	4	4	4	4.5	4.5
Caboolture	C+	B	B	B+	B+	B+	B	3.5	3	3	3	3.5	3.5	3.5
Pine	C	B-	B-	B-	B	B	C+	3	3	3.5	3.5	3.5	4	4
Lower Brisbane	C-	C-	D+	D+	C-	D+	D+	2.5	3	2.5	2.5	3	3	3
Redland	C+	C+	C+	C	C+	C+	C+	3.5	3.5	3.5	3.5	3.5	3.5	3
Mid Brisbane	D	D+	B-	C-	C+	C	C+	2.5	3	3	3	3.5	2.5	3.5
Upper Brisbane	D	D	D	D	D	D	F	3.5	3	3	2.5	3	2.5	3.5
Stanley	B	B	B-	B	B-	B	B+	2.5	3	3.5	3.5	3.5	3.5	4
Lockyer	D+	D+	D+	D+	D	D-	D-	2.5	2.5	2.5	2.5	3	2.5	3
Bremer	D-	D+	D-	D+	D+	D	D	2.5	2.5	2.5	2.5	2.5	3	3.5
Logan	D	C-	C-	C-	C	C+	C+	2.5	2.5	2	2	2.5	2.5	2.5
Albert	C-	C+	C	C	B-	B-	B	3	3.5	3	2.5	3.5	3.5	4
Pimpama-Coomera	C+	B	B-	B	B-	B	B	3.5	3.5	3.5	3.5	4	4	4
Nerang	C-	C	C-	C+	C	C	C	4	4	4	4	4	4.5	4.5
Tallebudgera-Currumbin	C+	B	B-	B	B+	B	C+	4	4	4.5	4	4.5	5	4.5
Western Bay	B	B	B	B+	A-	A-	A-	Not applicable						
Central Bay	B+	B+	A-	A-	A-	A-	A							
Eastern Bay	A	A-	A	A-	A	A	A							
Southern Bay	B+	B	B	B	B+	B+	B+							
Broadwater	A-	B+	A-	A	A	B+	A							
Moreton Bay	A-	A-	B+	A-	A-	A-	A-							



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