



2019 Report Card Results

Key Messages and 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 Tuesday 22 October 2019.

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 Healthy Land and Water Monitoring Program background

The Healthy Land and Water Monitoring Program is one of the most comprehensive waterway monitoring programs in Australia. The Program delivers a regional assessment of the environmental condition and benefits of waterways.

The 2019 Program was the fifth iteration since new measures were introduced in 2015 to focus on additional pressures and to understand the links between water quality and waterway benefits that are provided to the community. This assessment is undertaken for each of South East Queensland's 18 major catchments and five zones in Moreton Bay and the Broadwater. A summary of the Report Card Environmental Grades and Waterway Benefit Ratings can be found in Appendix 1.

The Program is managed by Healthy Land and Water on behalf of our member organisations and is delivered by a team of scientific experts from state and local government, water utilities, universities and industry.

2 Results – What do they mean?

The 2019 Report Card Environmental Condition Grades and Waterway Benefits Ratings are based on analysis of data compiled from July 2018 to June 2019.

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 used to calculate the 2019 grades have been 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:






South East Queensland's waterways provide many social and economic benefits to the community through recreation, tourism, fishing and providing clean drinking water. The Waterway

Benefit Rating provides an assessment of these social and economic benefits, which are combined to reach an overall rating.

Social - measures the personal benefits of using waterways, community connection with waterways, community satisfaction with waterways as well as their 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 2019 Key Messages

3.1 Waterways provide significant social and economic benefits

- South East Queensland is fortunate to have beautiful waterways (creeks, rivers, lakes, beaches and bays) that underpin our lifestyle, cultural identity and economy. The region has emerged as one of Australia's most important economic areas and waterway health is integral to our future economic growth. Waterways are estimated to provide over \$5 billion per year to South East Queensland's economy through industry, tourism, recreation and fishing.
- The latest results from our survey shows that people in South East Queensland love their waterways, that they understand the value of their waterways and want them to be protected.
- The value that residents receive from their waterways varies from catchment to catchment. For example, some residents value waterways for their contribution to livelihoods whilst other residents value their waterways for rest and relaxation.
- Residents across South East Queensland are united in their desire for their waterways to be protected.



3.2 Overall waterway health trends

- The 2019 Report Card shows no dramatic changes in Report Card Grades. The bay zones and coastal catchments are in good condition, however there are some worrying trends in certain key indicators of our catchment's health. The freshwater health of our upper catchment streams is in very poor condition, so we must continue to act if we want to maintain the resilience of these highly valued waterways.
- Freshwater fish and macroinvertebrates (e.g. crayfish, snails, insects) are doing it tough in our dry environment, with little resilience to the increasingly dry conditions. The freshwater fish and macroinvertebrate scores in some western catchments are the poorest we've seen since 2007, at the end of the last drought.

3.3 Exciting improvements to the health of Moreton Bay - Mud in Moreton Bay reducing and seagrass is increasing!

- The recent less than average rainfall has brought respite for Moreton Bay, giving time for natural processes to flush the mud out of Moreton Bay. As a result, Moreton Bay has better water quality and more seagrass, meaning a healthier ecosystem.
- Seagrass is a flowering plant that has adapted to living in the ocean. It plays an important ecological role as habitats and nursery areas for young fish. Dugongs and sea turtles also feed on seagrass. Seagrass trap and stabilise sediments, preventing erosion in estuaries and providing shelter for fish and invertebrate fauna such as snails and sea urchins.
- Since 2015, Healthy Land and Water have recorded a reduction in mud in the shallow parts of Moreton Bay.
- Sediment (or mud) in our waterways reduces water clarity, contains pollutants and impacts fish populations which threaten the livelihoods of the people and industries that rely on healthy waterways.
- The majority of mud enters our waterways during large rainfall events, such as the 2011 and 2013 flood events, which are a regular feature of our sub-tropical climate in South East Queensland. Less than average rainfall over the past few years has resulted in a reduction in the amount of mud entering Moreton Bay through large rainfall events.
- The 2019 Report Card has revealed that the amount of mud in the shallower regions of Moreton Bay has been slowly redistributed to the deep areas in the Central Bay or removed from the Bay entirely.
- This improvement in Moreton Bay highlights the resilience of Moreton Bay to recover and rejuvenate, so long as the Bay has respite from regular pressures.
- The extent of seagrass has increased in Moreton Bay. There has been significant long-term recovery of seagrass meadows in Southern Deception Bay which were lost entirely in 1996. In

addition, seagrass meadows in Bramble Bay, which have not been seen since the 1950's, have also recovered over the past two years.

3.4 Continued action required to reduce sediment pollution

- The major issue impacting waterway health in South East Queensland continues to be the amount of mud or sediment entering our waterways.
- Despite the improvement of mud in Moreton Bay, without further significant investment in reducing sediment pollution, our waterways will continue to deteriorate, along with the many environmental, social and economic benefits they provide.
- South East Queensland is one of the fastest growing populations in Australia. Our growing population is placing significant pressures on waterway health such as clearing vegetation in urban areas to make way for houses.
- This highlights the need to build the resilience of our waterways and reduce the amount of sediment entering our waterways. To do so, we must prepare our catchments for large rainfall events through managing erosion, stabilising creek channels, rehabilitating riverbank areas, applying sustainable agricultural management and introducing water sensitive urban design.
- It takes time for the benefits of management actions to become evident. Significant investment in managing sediment pollution must continue to keep up with population growth, otherwise any improvements in local waterway health are unlikely to be maintained and the recovery of Moreton Bay will be unpredictable.

3.5 About the Ecosystem Health Monitoring Program

- Healthy Land and Water is committed to understanding the pressures facing our waterways so we can better protect them for future generations.
- Since 1999, we have conducted a comprehensive monitoring program, and data from the program has been compiled and analysed to form the annual Report Card.
- The Report Card provides an annual assessment of the ecosystem health of South East Queensland's waterways via A-F health grades. The release of the Report Card results is the culmination of twelve months of scientific monitoring at 311 freshwater, estuarine, marine and event monitoring sites throughout the region. In addition, the Report Card outlines the social and economic benefits that waterways provide to local communities through a 1- 5 star rating.

4 Overall Moreton Bay

4.1 Environmental Condition (A-)

- Moreton Bay has improved slightly and remains in excellent condition.

Why?

- The improvement to the health of Moreton Bay is due to excellent water quality and a decrease in mud which has improved seagrass extent and the depth at which it grows. To find out more refer to the 2019 Key Messages in the previous section, specifically section 3.3.

5 Central Bay

5.1 Environmental Condition (A-)

- Central Bay improved slightly and remains in excellent condition.

Why?

- Water quality remains excellent despite a slight increase in total nitrogen.
- Central Bay retained a very high proportion of wetland habitat (mangroves and saltmarsh) compared to pre-cleared (87%).
- Mud reduced significantly from moderate to very low likely due to flushing and resuspensions into the deeper parts of the Bay. A significant “mud patch” remains within the deeper waters of Central Bay though this has reduced in size since 2015.
- The extent of seagrass habitat remains moderate and grows at depths of up to 1.6m due to excellent water clarity.

5.2 Waterway Benefit Rating

- The Healthy Land and Water Waterway Benefit Rating is not measured in this area.

5.3 Ways to improve waterway health and benefits

- Not applicable.

6 Western Bay

6.1 Environmental Condition (A-)

- The Western Bay, which includes Bramble, Deception and Waterloo Bays, improved slightly from good to excellent condition for the first time since the new monitoring program began in 2015.

Why?

- Water quality remains excellent with low nutrients, turbidity and algae growth.
- The Western Bay retained a moderate proportion of wetland habitat (mangroves and saltmarsh) compared to precleared (58%).
- Mud has reduced significantly from moderate to very low likely due to flushing and resuspensions into the deeper parts of the Bay. A significant area of mud referred to as the “mud patch” remains mostly within the deeper waters of Central Bay, extending into part of the Western Bay. The extent of this mud patch has reduced in size since 2015.
- There has been an increase in the extent of the seagrass meadow in Southern Deception Bay. This meadow was wiped out following a Caboolture River flood in 1996. It began to re-establish in 2009 and continued to expand, surviving both the 2011 and 2013 flood events. Surveys in late 2018 showed that the extent of the meadow is approaching what it was pre-flood.
- There has also been a re-establishment of seagrass in northern Bramble Bay. The meadow was first spotted by Healthy Land and Water staff in 2017 and recent surveys has shown a significant increase in the extent and biodiversity of the meadow since then. Seagrass was last seen in the area in the 1940's which represents a significant and exciting improvement to the condition of Moreton Bay.
- The depth at which seagrass grows also improved at sites in northern Deception Bay, Fisherman Island, Wynnum and Birkdale sites.

6.2 Waterway Benefit Rating

The Healthy Land and Water Waterway Benefit Rating is not measured in this area.

6.3 Ways to improve waterway health

- Careful measures to reduce mud running off development and construction sites, as well as high risk erosion sites during rainfall and flooding events. This is critical to maintaining the condition of the Western Bay and retaining the extensive environmental and economic values (e.g. recreation fishing and other waterway based recreation activities) that currently exist.
- Continued investment in minimising wastewater treatment plant and other industrial discharges, 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 improved slightly and remains in excellent condition.

Why?

- Water quality remains excellent with improvements in water clarity and total nitrogen.
- Eastern Bay retains a very high proportion of wetland habitat (mangroves and saltmarsh) compared to the pre-cleared extent (87%).
- Mud has reduced from low to very low likely due to flushing and resuspensions into the deeper parts of the Bay.
- The depth at which seagrass grows improved at some sites specifically at Crab Island and Pelican Banks. Seagrass extent remains excellent due to very low water clarity low.

7.2 Waterway Benefit Rating

The Healthy Land and Water Waterway Benefit Rating is not measured in this area.

7.3 Ways to improve waterway health

Not applicable.

8 Southern Bay

8.1 Environmental Condition (B+)

- The Southern Bay improved slightly and remains in good condition.

Why?

- Water quality remains in excellent condition despite slight declines in water clarity and increases in algae. Nutrients, total nitrogen and total phosphorus, improved slightly.
- The Southern Bay retained a very high proportion of wetland habitat (mangroves and saltmarsh) compared to pre-cleared (91%).
- Ex-Tropical Cyclone Debbie and associated flood waters from the Logan River contributed mud accumulated within the Southern Bay in 2013. The mud has since improved within some sections of Southern Bay likely due to flushing and resuspensions into the deeper parts of the Bay.

- The depth at which seagrass grows remains very poor particularly in areas with a higher percentage of mud. Seagrass extent remains moderate despite pressure from water clarity being very low.

8.2 Waterway Benefit Rating

- The Healthy Land and Water Waterway Benefit Rating is not measured in this area.

8.3 Ways to improve waterway health

- Careful measures are required to reduce mud running off development and construction sites, as well as high risk erosion sites 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 improved slightly and remains in excellent condition.

Why?

- Water quality remains in excellent condition. A slight decline in total nitrogen offset a slight increase in water clarity.
- The Broadwater retained a very high proportion of wetland habitat (mangroves and saltmarsh) compared to the pre-cleared extent (95%).
- Mud has improved since 2015 from low to very low likely due to tidal flushing aiding movement out of the Broadwater.
- The depth to which seagrass grows within the Broadwater remains excellent. Seagrass extent was also good with slight improvements in water clarity reducing the pressure on the Broadwater's meadows.

9.2 Waterway Benefit Rating

- The Healthy Land and Water waterway Benefit Rating is not measured in this area.

9.3 Ways to improve waterway health

- Careful measures are required to reduce mud running off development and construction sites, as well as high risk erosion sites 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 improved slightly and remains in excellent condition.

Why?

- Pollutant loads remain high despite slight decreases in sediment (mud) and nutrients generated from the land (268 to 233 kg/ha of sediment).
- The health of freshwater creeks improved, from good to excellent. An increase in fish community health at Sandy Creek, as well as water quality and bug health at Cooloolah contributed to this improvement.
- Stream bank vegetation and wetland extent remains excellent in the freshwater reaches of the catchment. The extent of wetland habitat in the estuary also remains excellent which is critical for maintaining the productive commercial and recreational fisheries that the community relies on.
- The water quality of the estuary and estuarine lakes improved and remains in excellent condition. There was an improvement in total nitrogen, which had been elevated throughout the estuary in 2018. Water clarity also decreased slightly, although increased slightly in Lake Cooroibah.

10.2 Waterway Benefit Rating ★★★★★

- Excellent catchment condition results in extremely high numbers of residents satisfied (88%) with their local waterways. This is also likely due to very high satisfaction with their ability to access and use local waterways (87% compared to 64% for all of SEQ).
- Residents report that they value their local waterways for recreation. 69% of residents recreate in or alongside their local waterway at least weekly, among the highest within SEQ. The top activities include walking or running (80 days/year), enjoying nature (48 days/year), swimming (23 days/year), picnics/BBQs (11 days/year), cycling (11 days/year), boating/sailing (10 days/year) and surfing/kite surfing/sail boarding (9 days/year).

10.3 Ways to improve waterway health and benefits

- Protecting streambank vegetation and wetlands from clearing and weed infestation is key to maintaining catchment condition and recreational value in the face of projected increasing population and development. Currently 92% of streambanks in the catchment have vegetation and 68% has never been cleared. Maintaining this vegetation is critical to offset any increasing pressure from population or tourist increases.

- We can all do our bit to improve the condition and the enjoyment that our local waterways provide. Keeping bare soils covered on our properties and workplaces, trapping and reusing stormwater from our roofs on our gardens and lawns, and stopping sediment from leaving construction sites during rainfall will all contribute to a reduction in the pollutant loads entering our waterways.
- Preserve the community's emotional connection with waterways by protecting and promoting their use and access. A very high number (73%) of residents are satisfied with the overall condition of their local waterways and are therefore motivated to use and protect them (68%). Initiatives such as Noosa Festival of Water celebrate local waterways and are also valuable for increasing the community's connection with their local waterways.
- Create opportunities and incentives for residents to make changes around their home or in their local waterway to improve waterway condition. High numbers of residents feel it is their personal responsibility (47%) and are willing to donate time (38%) towards local waterway protection.
- Campaigns to highlight the value of waterways to the community can improve feelings of responsibility and willingness to engage in or support waterway protection activities. Focus campaigns around residents' top environmental issue of concern to increase traction, which are #1 local extinction of native species, #2 climate change, #3 litter, and #4 loss of places of natural beauty.

11 Maroochy Catchment

11.1 Environmental Condition (B-)

- The catchment remains in good condition.

Why?

- Pollutant loads have increased from very high to extremely high within the Maroochy Catchment. It was one of only three catchments where pollutant loads increased due to a slight increase in sediment (mud) and nutrients generated from the land (612 to 687 kg/ha of sediment). Pollutant loads also increased in the Mooloolah and Bremer catchments. The Maroochy is susceptible to hillslope erosion in the upper catchment and although rainfall was lower than average there was a significant rainfall event earlier this year which may have activated these high-risk areas.
- The health of freshwater creeks improved from good to excellent condition. Affected by large flows and scouring in previous years, this was a correction to more typical condition. Water quality, ecosystem processes and bugs improved though fish community health declined slightly.

- The extent of freshwater wetlands in the catchment remains poor however the extent of mangroves and saltmarshes in the catchment's estuary, which are critical for productive recreational and commercial fisheries, remains in good condition.
- The health of the estuary improved slightly and remains excellent due to a reduction in nutrients particularly total nitrogen. Water clarity and dissolved oxygen also improved however algae levels increased slightly, notably in the mid to upper estuary.

11.2 Waterway Benefit Rating

- Good catchment condition results in high numbers of residents satisfied (72%) with their local waterways. This is also likely due to very high satisfaction with their ability to access and use local waterways (78% compared to 64% for all of SEQ).
- Residents report they value their local waterways for recreation. 63% of residents recreate in or alongside their local waterway at least monthly. The top activities include walking or running (57 days/year), enjoying nature (30 days/year), swimming (9 days/year), picnics or BBQs (6 days/year), fishing (5 days/year), and surfing/kite surfing/sail boarding (4 days/year).
- Despite high pollutant loads, the amount of mud removed from drinking water at the treatment plants remains very low compared with previous years. Only 155 kg/ML was removed on average from the Image Flat and Landers Shute drinking water treatment plants this year.

11.3 Ways to improve waterway health and benefits

- Protecting the existing critical streambank vegetation and wetlands from clearing and weed infestation is key to maintaining catchment condition and recreational value in the face of projected increasing population and development. Currently 85% of streambanks in the Maroochy catchment are vegetated. Over the next 25 years, the population in the Sunshine Coast Council area is projected to increase to approx. 500,000 people so protecting and enhancing the condition and access for residents to enjoy their local waterways will be critical.
- We can all do our bit to improve the condition and the enjoyment that our local waterways provide. Keeping bare soils covered on our properties and workplaces, trapping and reusing stormwater from our roofs on our gardens and lawns, and stopping sediment from leaving construction sites during rainfall will all contribute to a reduction in the pollutant loads entering our waterways.
- Preserve the community's emotional connection with waterways by protecting and promoting their use and access. A very high number (73%) of residents feel nature in general is an important part of their lives, and high numbers (55%) are motivated to protect their local waterways and feel it is their personal responsibility.



- Campaigns to highlight the value of waterways to the community can improve feelings of responsibility and willingness to engage in or support waterway protection activities. Focus campaigns around residents' top environmental issue of concern to increase traction, which are #1 litter, #2 local extinction of native species, #3 loss of places of natural beauty and #4 tree clearing.
- Moderate numbers are willing to donate time (30%) towards local waterway protection. As such, create opportunities and incentives for residents to make changes around their home or in their local waterway to improve waterway condition.

12 Mooloolah Catchment

12.1 Environmental Condition (C+)

- The catchment has improved slightly and remains in fair condition.

Why?

- Pollutant loads remain very high in the Mooloolah catchment. It was one of only three catchments where pollutant loads increased due to a slight increase in sediment (mud) and total nitrogen. Pollutant loads also increased in the Maroochy and Bremer catchments. The Mooloolah is susceptible to hillslope erosion and landslips in the upper catchment and although rainfall was lower than average there was a significant rainfall event earlier this year which may have activated these high-risk areas.
- The health of freshwater creeks improved, from fair to good, due to slight improvements in water quality, ecosystem processes and bugs. Affected by large flows and scouring in previous years, this was a correction to more typical condition.
- Stream bank vegetation remains fair and wetland extent remains poor across the freshwater reaches of the catchment. The extent of wetland habitat in the estuary also remains fair.
- The health of the estuary remains excellent due to slight improvements in most indicators, particularly total nitrogen in the mid to upper reaches of the estuary.

12.2 Waterway Benefit Rating

- Despite only fair catchment condition, very high numbers of residents are satisfied with their local waterways (80%) (compared with 58% for all of SEQ). This is likely due to the communities very high satisfaction with their ability to access and use their local waterways (82%). Fewer are satisfied with their overall condition and health (55%).
- Residents value their local waterways for recreation very highly. 61% enjoy recreating in or alongside their local waterway at least weekly. The most frequent recreation activities include walking/running (52 days/year), enjoying nature (33 days/year), swimming (14 days/year),

picnics/BBQs (9 days/year), fishing (5 days/year) and cycling (4 days/year). They are also very highly valued as a place of rest and relaxation and for spending time with friends and family.

12.3 Ways to improve waterway health and benefits

- Protecting the existing critical streambank vegetation and wetlands from clearing and weed infestation is key to maintaining catchment condition and recreational value in the face of projected increasing population and development. Currently 81% of streambanks in the Mooloolah catchment are vegetated. Over the next 25 years, the population in the Sunshine Coast Council area is projected to increase to approx. 500,000 people so protecting and enhancing the condition and access for residents to enjoy their local waterways will be critical.
- We can all do our bit to improve the condition and the enjoyment that our local waterways provide. Keeping bare soils covered on our properties and workplaces, trapping and reusing stormwater from our roofs on our gardens and lawns, and stopping sediment from leaving construction sites during rainfall will all contribute to a reduction in the pollutant loads entering our waterways.
- Preserve the community's emotional connection with waterways by protecting and increasing their use and access. A very high number (74%) of residents feel nature in general is an important part of their lives, and high numbers (61%) are motivated to protect their local waterways or feel it is their personal responsibility (44%). Initiatives to increase the access and use of the Mooloolah waterways are valuable for increasing the community's connection with their local waterways which improves motivation to help protect them.
- Campaigns to highlight the value of waterways to the community can improve feelings of responsibility and willingness to engage in or support waterway protection activities. Focus campaigns around residents' top environmental issue of concern to increase traction, which are #1 climate change, #2 litter, #3 water pollution and #4 tree clearing.

13 Pumicestone Catchment

13.1 Environmental Condition (A-)

- The catchment has improved slightly from good to excellent condition.

Why?

- Pollutant loads have significantly reduced by more than half, from low to very low, due to a decrease in sediment (mud) and nutrients generated from the land (190 to 85 kg/ha of sediment). Decreases in pollutant loads were a result of reduced rainfall this year.
- Freshwater health improved slightly and remains in excellent condition. Bug and fish communities remain excellent despite a slight decline. Fish decline at Bluegum Creek in



Beerwah State Forest may reflect land clearing in the area. Water quality and ecosystem processes also remains excellent.

- Stream bank vegetation remains in good condition however wetland extent remains poor in the freshwater reaches of the catchment. The extent of wetland (mangroves and saltmarsh) habitat in the estuary remains excellent which is critical for maintaining a productive recreational and commercial fishery that the local community relies on.
- The health of the estuary remains excellent due to slight improvements in water clarity, dissolved oxygen and total nitrogen.

13.2 Waterway Benefit Rating

- Excellent catchment condition results in very high numbers of residents (77%) satisfied with their local waterways (compared with 58% for all of SEQ).
- Residents report they value their local waterways for recreation. 54% of residents recreate in or alongside their local waterway at least weekly. Very high numbers value them as a place of rest and relaxation (65%) or for social interaction with friends and family (56%). The top activities include walking / running (56 days/year), enjoying nature (35 days/year), cycling (12 days/year), picnics/BBQs (7 days/year), swimming (6 days/year), fishing (6 days/year) and rowing/kayaking (3 days/year).

13.3 Ways to improve waterway health and benefits

- Protecting streambank vegetation and wetlands from clearing and weed infestation is key to maintaining catchment condition and recreational value in the face of projected increasing population and development. Currently 88% of streambanks in the catchment have vegetation and 36% has never been cleared. Over the next 25 years the Moreton Bay Regional Council area is projected to be one of the fastest growing urbanised areas in the region, with a 45% expansion in the urban footprint which will increase the threat of pollutants to the Pumicestone Passage.
- Preserve the community's emotional connection with waterways by protecting and promoting their use and access. A very high number (72%) of residents feel nature in general is an important part of their lives and are motivated to use and protect their local waterways (61%). Initiatives such as the Pumicestone Passage Catchment Action Plan are aimed at improving the condition of the catchment which will help to maintain the benefits the community relies on.
- Create opportunities and incentives for residents to make changes around their home or in their local waterway to improve waterway condition. High numbers of residents (43%) feel it is their personal responsibility and are willing to donate time (35%) towards local waterway protection.

- Campaigns to highlight the value of waterways to the community can improve feelings of responsibility and willingness to engage in or support waterway protection activities. Focus campaigns around residents' top environmental issue of concern to increase traction, which are #1 litter pollution, #2 climate change, #3 water pollution and #4 decline in fish numbers/sustainable fisheries.

14 Caboolture Catchment

14.1 Environmental Condition (B+)

- The catchment remains in good condition.

Why?

- Pollutant loads have reduced and remain low due to decreased sediment (mud) and nutrients (204 kg to 172 kg TSS/kg). This is a result of reduced rainfall this year.
- Freshwater health remains in excellent condition despite declining slightly. Water quality and ecosystem processes remain stable though fish community and bug health declined.
- Stream bank vegetation remains in good condition however wetland extent remains poor across the freshwater reaches of the catchment. The extent of wetland habitat (mangroves and saltmarshes) in the estuary remains excellent which is critical for supporting productive recreational and commercial fisheries and help stabilise river banks and avoid erosion.
- The health of the estuary declined slightly, due to increased total nitrogen in the mid reaches of the estuary. Overall however the estuary remains in good condition with excellent water clarity and dissolved oxygen.

14.2 Waterway Benefit Rating



- Good catchment condition results in high numbers of residents (56%) satisfied with their local waterways (the average for SEQ is 58%).
- Residents report they value their local waterways for recreation. 45% of residents recreate in or alongside their local waterway at least monthly. High numbers value them as a place of rest and relaxation (60%) or for social interaction with friends and family (51%). The top activities include walking or running (29 days/year), enjoying nature (13 days/year), picnics or BBQs (6 days/year) and fishing (5 days/year).

14.3 Ways to improve waterway health and benefits

- Protecting streambank vegetation and wetlands from clearing and weed infestation is key to maintaining catchment condition and recreational value in the face of projected increasing population and development. Currently 85% of streambanks in the catchment have vegetation and 26% has never been cleared. Over the next 25 years the Moreton Bay Regional Council area is projected to be one of the fastest growing urbanised areas in the



region, with a 45% expansion in the urban footprint which will increase the threat of pollutants entering waterways.

- Preserve the community's emotional connection with waterways by protecting and promoting their use and access. A very high number (69%) of residents feel nature in general is an important part of their lives, and high numbers (44%) are motivated to use and protect their local waterways. Initiatives to increase the access and use of the waterways are valuable for increasing the community's connection with their local waterways and ultimately their motivation to help protect waterways.
- Campaigns to highlight the value of waterways to the community can improve feelings of responsibility and willingness to engage in or support waterway protection activities. Focus campaigns around residents' top environmental issue of concern to increase traction, which are #1 litter, #2 local extinction of native species and #3 water.

15 Pine Catchment

15.1 Environmental Condition (B)

- The catchment has improved slightly and remains in good condition.

Why?

- Pollutant loads have reduced by more than half and remain very low due to decreased sediment (mud) and nutrients (128 to 49 kg/ha of sediment).
- The health of freshwater creeks declined slightly, though remains fair. Water quality, ecosystem processes and bug health declined while fish community health improved.
- The extent of freshwater wetlands in the catchment remains poor while the extent of mangroves and saltmarshes in the catchments estuaries which are critical for productive recreational and commercial fisheries remain in excellent condition.
- The health of the estuary improved significantly from good to excellent due to a decrease in nutrients (total nitrogen and phosphorus) and improved dissolved oxygen throughout the estuary.

15.2 Waterway Benefit Rating

- Good catchment condition results in high numbers of residents satisfied (58%) with their local waterways. This is also likely due to high satisfaction with their ability to access and use local waterways (65% compared to 64% for all of SEQ).
- Residents report they value their local waterways for recreation. 48% of residents recreate in or alongside their local waterway at least monthly. The top activities include walking or running (47 days/year), enjoying nature (16 days/year), cycling (7 days/year), picnics/BBQs (4 days/year), swimming (2 days/year) and fishing (2 days/year).

- Very low pollutant loads in the catchment this year meant the amount of mud removed from the North Pine drinking water treatment plant remains low.

15.3 Ways to improve waterway health and benefits

- Protecting the existing critical streambank vegetation and wetlands from clearing and weed infestation is key to maintaining catchment condition and recreational value in the face of projected increasing population and development. Currently 78% of streambanks in the Pine catchment are vegetated. Over the next 25 years, the population in the Moreton Bay Regional Council area is projected to increase to approx. 656,000 people so protecting and enhancing the condition and access for residents to enjoy their local waterways will be critical for maintaining lifestyles in the catchment.
- We can all do our bit to improve the condition and the enjoyment that our local waterways provide. Keeping bare soils covered on our properties and workplaces, trapping and reusing stormwater from our roofs on our gardens and lawns, and stopping sediment from leaving construction sites during rainfall will all contribute to a reduction in the pollutant loads entering our waterways.
- Preserve the community's emotional connection with waterways by protecting and promoting their use and access. A very high number (69%) of residents feel nature in general is an important part of their lives, and high numbers (47%) are motivated to use and protect their local waterways.
- Campaigns to highlight the value of waterways to the community can improve feelings of responsibility and willingness to engage in or support waterway protection activities. Focus campaigns around residents' top environmental issue of concern to increase traction, which are #1 litter, #2 climate change and # 3 local extinction of native species.
- Moderate numbers are willing to donate time (27%) towards local waterway protection. As such, create opportunities and incentives for residents to make changes around their home or in their local waterway to improve waterway condition.

16 Lower Brisbane Catchment

16.1 Environmental Condition (C-)

- Catchment condition has improved slightly from poor to fair for the first time since 2016.

Why?

- Pollutant loads have reduced significantly from high to very low due to substantial reductions in sediment (mud) (613 to 152 kg/ha) and total phosphorus (0.75 to 0.33 kg/ha). Total nitrogen loads remain very low also (2 kg/ha).



- Freshwater health declined slightly, though remains good. The health of fish communities decreased at 10 of 13 sites and bug health improved slightly.
- The extent of freshwater wetlands in the catchment remains poor while the extent of mangroves and saltmarshes in the catchments estuaries which are critical for productive recreational and commercial fisheries remain in fair condition.
- The health of estuaries (Brisbane, Oxley and Cabbage Tree Creek) in the catchment remain poor with elevated nutrients and turbidity in the upper estuarine reaches. An increase in algae (phytoplankton) occurred in Cabbage Tree and Oxley Creeks driven by the accumulation of moderate to high nutrients (total phosphorus and nitrogen) from sewage discharges and low flows. Algal growth in the Brisbane River is lower than the other systems possibly due to poor water clarity.

16.2 Waterway Benefit Rating

- 50% of residents were satisfied with the condition of their local waterways (compared with 58% for all of SEQ). This is likely due to a low level of satisfaction with their ability to access and use their local waterways (58% compared with 64% for all SEQ).
- Despite these results, residents still value their local waterways for recreation. 48% of residents enjoy recreating in or alongside their local waterway at least monthly. High numbers value them as a place of rest and relaxation (53%) or for social interaction with friends and family (46%). The most frequent recreation activities include walking/running (42 days/year), enjoying nature (17 days/year), cycling (8 days/year) and picnics/BBQs (5 days/year).

16.3 Ways to improve waterway health and benefits

- Protecting the existing critical streambank vegetation and wetlands from clearing and weed infestation is key to maintaining catchment condition and recreational value in the face of projected increasing population and development. Currently 83% of streambanks in the Lower Brisbane catchment are vegetated. Over the next 25 years, the population in the Brisbane City Council area is projected to increase to approx. 1.5 million people so protecting and enhancing the condition and access for residents to enjoy their local waterways will be critical.
- We can all do our bit to improve the condition and the enjoyment that our local waterways provide. Keeping bare soils covered on our properties and workplaces, trapping stormwater from our roofs and reusing it on gardens and lawns, and stopping sediment from leaving construction sites during rainfall will all contribute to a reduction in the pollutant loads entering our waterways.
- Improving access and use of waterways increases the community's connection with their waterways and motivation to protect them. 67% of residents feel nature in general is an important part of their lives, however only around half of those residents are motivated to protect their local waterways (36%) or feel it is their personal responsibility (35%). Initiatives



such as the Oxley Creek Transformation are increasing the access and use of the Oxley Creek, and will be valuable for increasing the community's connection with their local waterways.

- Campaigns to highlight the value of waterways to the community can improve feelings of responsibility and willingness to engage in or support waterway protection activities. Targeted campaigns focusing on top environmental concern, which are #1 climate change, #2 litter and #3 water pollution, will increase traction with residents.
- Only 30% of residents were willing to donate time towards local waterway protection. As such, it is important to create opportunities and incentives for residents to make changes around their home or in their local waterway to improve environmental condition.

17 Redland Catchment

17.1 Environmental Condition (C+)

- The catchment has improved slightly though remains in fair condition.

Why?

- Pollutant loads significantly reduced from high to very low due to reduced sediment (mud) and nutrients (401 to 108 kg/ha of sediment).
- Freshwater health increased slightly though remains very poor with little to no change in results except for fish community health which improved.
- Stream bank vegetation remains in good condition; however, wetland extent remains poor in the freshwater reaches of the catchment. The extent of wetland habitat (mangroves and saltmarshes) in the estuary remains excellent which is critical for maintaining the productive recreational and commercial fisheries the Redlands community relies on.
- The health of the estuaries (Tingalpa and Eprapah) declined from fair to poor due to a persistent algae bloom in the middle section of Eprapah Creek which exceeded guidelines on several occasions this past year. Water clarity and total nitrogen also declined in Eprapah Creek whilst very little change occurred in Tingalpa Creek.

17.2 Waterway Benefit Rating

- Despite fair catchment condition, high numbers of residents (67%) are satisfied with their local waterways (compared with 58% for all of SEQ).
- Residents report they value their local waterways for recreation. 48% of residents recreate in or alongside their local waterway at least monthly. Very high numbers value them as a place of rest and relaxation (66%) or for social interaction with friends and family (55%). The top activities include walking/running (48 days/year), enjoying nature (21 days/year), cycling (6 days/year), picnics/BBQs (5 days/year) and swimming (2 days/year).

- A decrease in pollutant loads this year reduced the amount of mud removed from drinking water at the treatment plants. On average 107 kg/ML sludge was removed from the Capalaba and North Stradbroke water treatment plants this year, reducing treatment costs.

17.3 Ways to improve waterway health and benefits

- Protecting the existing critical streambank vegetation and wetlands from clearing and weed infestation is key to maintaining catchment condition and recreational value in the face of projected increasing population and development. Currently 86% of streambanks in the Redlands catchment are vegetated. Over the next 25 years, the population in the Redlands is projected to increase to approx. 188,000 people so protecting and enhancing the condition and access for residents to enjoy their local waterways will be critical.
- We can all do our bit to improve the condition and the enjoyment that our local waterways provide. Keeping bare soils covered on our properties and workplaces, trapping and reusing stormwater from our roofs on our gardens and lawns, and stopping sediment from leaving construction sites during rainfall will all contribute to a reduction in the pollutant loads entering our waterways.
- Preserve the community's emotional connection with waterways by protecting and promoting their use and access. A very high number (68%) of residents feel nature in general is an important part of their lives, and high numbers (44%) are motivated to use and protect their local waterways.
- Campaigns to highlight the value of waterways to the community can improve feelings of responsibility and willingness to engage in or support waterway protection activities. Focus campaigns around residents' top environmental issue of concern to increase traction, which are #1 litter, #2 climate change, # 3 local extinction of native species and #4 loss of places of natural beauty.
- Moderate numbers of residents (36%) feel they know very little about their local waterways. Education to improve understanding and awareness of local waterways can improve feelings of responsibility and willingness to engage in or support waterway protection activities.

18 Mid Brisbane Catchment

18.1 Environmental Condition (C+)

- The catchment has improved slightly though remains in fair condition.

Why?

- Pollutant loads remain very low despite a reduction in sediment (mud) and nutrient loads (64 to 9 kg/ha of sediment) this year.

- The health of freshwater creeks improved from very poor to fair, despite a decline in fish health, due to a significant improvement in ecosystem processes.
- The extent of stream bank vegetation remains poor, with only 74% of stream banks vegetated in the Mid Brisbane catchment. This affects the resilience of freshwater streams, reducing their capacity to stay healthy as climate varies year to year.

18.2 Waterway Benefit Rating

- Despite only fair catchment condition, high numbers of residents were satisfied (65%) with their local waterways. This is likely due to very high satisfaction with their ability to access and use local waterways (76% compared to 64% for all of SEQ).
- Residents report they value their local waterways for recreation. 30% of residents recreate in or alongside their local waterway at least monthly. The top activities include enjoying nature (23 days/year), walking or running (16 days/year), boating/sailing (7 days/year), picnics/BBQs (3 days/year) and camping (2 days/year).
- Pollutant loads running off the catchment remain low though the amount of mud removed from drinking water at the treatment plants increased this year. On average 722 kg/ML was removed from drinking water at the Lowood, Mount Crosby Eastbank and Mount Crosby Westbank water treatment plants, increasing treatment costs this year.

18.3 Ways to improve waterway health and benefits

- Protecting the existing critical streambank vegetation and wetlands from clearing and weed infestation is key to maintaining catchment condition and recreational value. Currently 74% of streambanks in the Mid Brisbane catchment are vegetated.
- Improving access and use of waterways increases the community's connection with their waterways and motivation to protect them. A high number (77%) of residents feel nature in general is an important part of their lives, however only moderate numbers (30%) are motivated to use or protect their local waterways.
- Campaigns to highlight the value of waterways to the community can improve feelings of responsibility and willingness to engage in or support waterway protection activities. Focus campaigns around residents' top environmental issue of concern to increase traction, which are #1 litter, #2 local extinction of native species, and #3 water pollution.
- High numbers of residents are willing to donate time (48%) towards local waterway protection. As such, create opportunities and incentives for residents to make changes around their home or in their local waterway to improve waterway condition.

19 Upper Brisbane Catchment

19.1 Environmental Condition (D)

- The catchment has declined slightly and remains in poor condition.

Why?

- The Upper Brisbane catchment lies within the driest area of South East Queensland with below average rainfall for the past three years. This attributed to reduced pollutant loads across the catchment from low to very low due to reduced sediment (mud) and nutrients (213 to 19 kg/ha of sediment).
- Freshwater health has declined and remains in very poor condition due to a decrease across all indicators particularly fish communities and bug health.
- Stream bank vegetation remains poor and wetland extent remains fair in the freshwater reaches of the catchment. Restoring the extent of both types of vegetation will be critical in mitigating the projected increases in pressures from climate extremes like floods and drought.

19.2 Waterway Benefit Rating

- Poor catchment condition results in only moderate numbers of residents (47%) satisfied with their local waterways.
- Despite these results, residents still value their local waterways for recreation. High numbers of residents (60%) valued their local waterway as a place of rest and relaxation or for social interaction with friends and family (58%). 38% of residents enjoy recreating in or alongside their local waterway at least monthly. Residents reported their recreational use of local waterways was predominantly enjoying nature (27 days/year), walking or running (21 days/year), picnics/BBQs (9 days/year) and fishing (3 days/year).
- The catchment is the major drinking water supply catchment for Brisbane City. The amount of mud removed from drinking water was slightly lower than last year despite a significant reduction in sediment loads within the catchment this year.

19.3 Ways to improve waterway health and benefits

- Protecting the existing critical streambank vegetation and wetlands from clearing and weed infestation is key to maintaining catchment condition and protecting agricultural land from erosion and drinking water supply in the face of projected increasing extremes in climate like floods. Currently 63% of streambanks in the catchment are vegetated, the protection and expansion of which will be critical to offset increasing future pressures.
- Increase residents' ability to use waterways in their catchment for recreation to improve the community's connection with their local waterways and motivation to protect them. While the community is highly satisfied with the accessibility of their waterways (67%), they are only

moderately happy with their ability to use those waterways (50%). As such, only few are motivated to protect their local waterways (35%) or feel it is their personal responsibility (25%).

- Campaigns to highlight the value of waterways to the community can improve feelings of responsibility and willingness to engage in or support waterway protection activities. Focus campaigns around residents' top environmental issues of concern to increase traction, which for Upper Brisbane are #1 weeds/pests, and #2 water supply/drought.
- Moderate numbers of residents are willing to donate time (31%) to local waterway protection. Engage residents in local waterway protection by addressing their top issue of concern, which for Lockyer is #1 weeds/pests, and #2 water supply/drought.

20 Stanley Catchment

20.1 Environmental Condition (B-)

- The catchment has declined slightly though remains in good condition.

Why?

- Pollutant loads reduced from low to very low due to reduced sediment (mud) and nutrient loads (232 to 57 kg/ha of sediment).
- The health of freshwater creeks has declined from excellent to good due to a decrease in fish community health, ecosystem processes and water quality.
- Stream bank vegetation and wetland extent remains fair in the freshwater reaches of the catchment which is critical to mitigate against climate variation and an increase in extreme events in the future.

20.2 Waterway Benefit Rating

- Good catchment condition results in high numbers of residents satisfied with the usability of their waterways (59%) and access (66%).
- Residents report they value their local waterways for recreation. This year 47% of residents enjoyed recreating in or alongside their local waterway at least monthly. The most frequent recreation activities include enjoying nature (47 days/year), walking or running (36 days/year), swimming (6 days/year) and picnics or BBQs (3 days/year).
- The amount of mud removed from drinking water was slightly higher than last year.

20.3 Ways to improve waterway health and benefits

- Protecting the existing critical streambank vegetation and wetlands from clearing and weed infestation is key to maintaining catchment condition and protection of agricultural land in



the face of a projected increase in climate extremes like floods. Currently 69% of streambanks in the catchment are vegetated.

- Preserve and improve the community's emotional connection with waterways by protecting and promoting their use and access. A very high number (78%) of residents feel nature in general is an important part of their lives, however only half of those are motivated to use or protect their local waterways (37%).
- Create opportunities and incentives for residents to make changes around their home, on their property or in their local waterway to improve waterway condition. High numbers of residents (57%) feel it is their personal responsibility and are willing to donate time (50%) towards local waterway protection (highest in SEQ which is an average of 28%).
- Campaigns to highlight the value of waterways to the community can improve feelings of responsibility and willingness to engage in or support waterway protection activities. Focus campaigns around residents' top environmental issues of concern to increase traction, which for Stanley are #1 tree clearing, #2 weeds and pests, and #3 climate.

21 Lockyer Catchment

21.1 Environmental Condition (D)

- The catchment has declined slightly though continues to remain in poor condition.

Why?

- Pollutant loads remain very low despite a slight reduction in sediment (mud) (40 to 2 kg/ha of sediment) and nutrients.
- Freshwater health has declined and remains in very poor condition due to a decrease across all indicators particularly fish community and bug health. Weeds and lack of flow (isolated pools) reduce waterway connectivity and available habitat particularly at Laidley creek which was completely dry for the first time since sampling began at this location in 2010.
- The extent of stream bank vegetation throughout the catchment remains poor, with only 69% of stream banks vegetated.

21.2 Waterway Benefit Rating

- Poor catchment condition results in only moderate numbers of residents (46%) satisfied with their local waterways.
- Despite these results, residents still value their local waterways for recreation. High numbers of residents (54%) valued their local waterway as a place of rest and relaxation or for social interaction with friends and family. 35% of residents enjoy recreating in or alongside their local waterway at least monthly. The most frequent recreation activities include walking or running (36 days/year) and enjoying nature (15 days/year).

21.3 Ways to improve waterway health and benefits

- Protecting the existing critical streambank vegetation and wetlands from clearing and weed infestation is key to maintaining catchment condition and protecting agricultural land from erosion in the face of increasing extreme events like floods. Currently 69% of streambanks in the Lockyer catchment are vegetated.
- Improving access and use of waterways increases the community's connection with their waterways and motivation to protect them. 63% of residents feel nature in general is an important part of their lives, however only half of those are motivated to protect their local waterways (31%) or feel it is their personal responsibility (33%).
- Campaigns to highlight the value of waterways to the community can improve feelings of responsibility and willingness to engage in or support waterway protection activities. Focus campaigns around residents' top environmental issue of concern to increase traction, which are #1 water supply/drought, #2 litter pollution and #3 weeds and pest infestation, for residents of the Lockyer catchment.
- Moderate numbers of residents are willing to donate time (28%) to local waterway protection. As such, create opportunities and incentives for residents to make changes around their properties or in their local waterway to improve waterway condition.

22 Bremer Catchment

22.1 Environmental Condition (D+)

- The catchment remains in poor condition.

Why?

- Pollutant loads remain very low in the Bremer catchment. However, it was one of only three catchments where pollutant loads increased this year. Pollutant loads also increased in the Maroochy and Mooloolah catchments. A slight increase in sediment (mud) and reduction in nutrients occurred, particularly nitrogen (2.2 to 0.5 kg/ha generated from the land).
- Freshwater health continues to decline and remains in poor condition due to a decrease across most indicators particularly water quality and fish community health.
- The extent of stream bank vegetation throughout the catchment remains very poor, with only 56% of streambanks vegetated.
- Estuarine health improved significantly from poor to good due to improved water clarity and dissolved oxygen, however total phosphorus increased. Salinity levels were higher than last year particularly during spring and summer indicating drier conditions, increasing the accumulation of nutrients within the estuary.



22.2 Waterway Benefit Rating

- Poor catchment condition, results in only moderate numbers of residents (48%) that are satisfied with the usability and accessibility of their local waterways (compared with 64% for all of SEQ).
- Despite this, residents report they do value their local waterways for recreation. 23% recreate in or alongside their local waterway on a monthly basis. Residents reported their recreational use of local waterways was predominantly walking or running (20 days/year) and enjoying nature (15 days/year). They picnicked or camped on average 4 days/year, and rarely participated in other activities.
- Slightly higher pollutant loads in the catchment this year meant the amount of mud removed from drinking water at the Boonah-Kalbar treatment plant was significantly higher (2154 kg/ML) compared to last year (557 kg/ML).

22.3 Ways to improve waterway health and benefits

- Protecting streambank vegetation and wetlands from clearing and weed infestation is key to maintaining catchment condition in the face of projected increasing population and development. Over the next 25 years Ipswich City Council area is projected to be one of the fastest growing urbanised areas in SEQ, with a 75% expansion in the urban footprint. 56% of streambanks in the Bremer catchment have vegetation and the retention of these will be critical for mitigating the increasing pressures that come with expansion.
- The naturalisation of creek channels in the urban landscape, such as the Small Creek project, increases the accessibility and usability of local waterways. In turn this improves the community's emotional connection with their local waterways and their motivation to use and protect them.
- Improving access and use of waterways increases the community's motivation to protect them. 71% of residents feel nature in general is an important part of their lives, however only a very small number are motivated to protect their local waterways (20%) or feel it is their personal responsibility (30%).
- Campaigns to highlight the value of waterways to the community can improve feelings of responsibility and willingness to engage in or support waterway protection activities. Events such as the Ipswich City Council Fishing and Water Fest aim to celebrate local waterways and increase awareness and value of the Bremer River catchment.
- Focus future campaigns around resident's top environmental concerns to increase traction, which are litter, water pollution, extinctions of local plants and animals, and loss of natural beauty.

23 Logan Catchment

23.1 Environmental Condition (C)

- Catchment condition improved slightly though remains fair.

Why?

- Pollutant loads significantly reduced from very high to very low, with a reduction in sediment (mud) and nutrients (702 to 34 kg/ha of sediment).
- Freshwater health has declined and remains in poor condition predominantly due to a decrease in fish community health across most sites. Whilst macroinvertebrates improved slightly, they remain poor across the mid to lower catchment with declines at several sites.
- Stream bank vegetation and wetland extent remains fair across the freshwater reaches of the catchment. The extent of wetland habitat in the estuary also remains fair.
- Estuarine health remains fair due to increased algae in the upper reaches offset by improved water clarity and decreased nitrogen. Salinity levels were higher than last year particularly during summer indicating much drier conditions.

23.2 Waterway Benefit Rating

- The fair catchment condition results in only moderate numbers of residents (50%) satisfied with the usability and accessibility of their local waterways (compared with 64% for all of SEQ).
- Despite this, residents report they do value their local waterways for recreation. 31% of people recreate in or alongside their local waterway on a monthly basis or more. The top activities include walking or running (21 days/year), enjoying nature (10 days/year), picnicking (4 days/year) and cycling (2 days/year).
- A decrease in pollutant loads generated from the catchment this year means that the amount of mud removed from drinking water at the Beaudesert treatment plant decreased (406 kg/ML to 352 kg/ML).

23.3 Ways to improve waterway health and benefits

- Protecting streambank vegetation and wetlands from clearing and weed infestation is key to maintaining catchment condition in the face of projected increasing population and development. Over the next 25 years, Logan City Council is projected to be one of the fastest growing urbanised areas in SEQ, with a 78% expansion in the urban footprint. 69% of streambanks in the Logan catchment have vegetation and 27% has never been cleared.
- Protecting existing habitat is critical for maintaining the catchment's existing recreational and commercial fisheries values. 71% of mangrove and saltmarsh habitat remains in the Logan estuary.



- Improving access and use of waterways increases the community's connection with their waterways and motivation to protect them. 70% of residents feel nature in general is an important part of their lives, however less than half are motivated to protect their local waterways (29%) or feel it is their personal responsibility (27%). Similarly, only 50% are satisfied with the usability and accessibility of waterways. Projects such as the Logan River Vision are improving the accessibility and usability of the Logan River.
- Campaigns to highlight the value of waterways to the community can improve feelings of responsibility and willingness to engage in or support waterway protection activities. High numbers of residents (40%) in the Logan catchment feel they know very little about their local waterways.

24 Albert Catchment

24.1 Environmental Condition (B-)

- Catchment condition has improved significantly from fair to good condition.

Why?

- Pollutant loads significantly reduced from high to very low with a reduction in sediment (mud) and nutrients (363 to 35 kg/ha of sediment).
- The health of freshwater creeks has improved from good to excellent condition predominantly due to an increase in bug health across most sites. This is likely due to good water flow, despite the dry conditions, from groundwater.
- Stream bank vegetation and wetland extent remain poor in the freshwater reaches of the catchment. The extent of wetland habitat in the estuary also remains poor with only 45% of mangroves and saltmarshes remaining in the catchment.
- Estuarine health declined though remains fair due to increased algae (phytoplankton) in the mid to upper reaches of the estuary. However, water clarity improved significantly, and total phosphorus decreased across the estuary.

24.2 Waterway Benefit Rating

- Good catchment condition results in 60% of people satisfied with the usability and accessibility of their local waterways (compared with 64% for all SEQ).
- Residents report they value their local waterways for recreation. 41% recreate in or alongside their local waterway on a monthly. Residents reported their recreational use of local waterways was predominantly walking or running (31 days/year) or enjoying nature (19 days/year). They only picnicked, boated or fished 3-4 days/year, and rarely participated in other recreational other activities.



- Lower pollutant loads in the catchment this year meant the amount of mud removed from drinking water at the Canungra treatment plant was lower (261 kg/ML in 2018 to 235 kg/ML in 2019).

24.3 Ways to improve waterway health and benefits

- Protecting streambank vegetation and wetlands from clearing and weed infestation is key to maintaining catchment condition and recreational value in the face of projected increasing population and development. 72% of streambanks in the Albert catchment have vegetation and 31% has never been cleared.
- Improving access and use of waterways increases the community's connection with their waterways and motivation to protect them. 69% of residents feel nature in general is an important part of their lives, however only half of those are motivated to protect their local waterways (31%) or feel it is their personal responsibility (27%). Projects such as the Albert River Vision aim to increase the accessibility and usability of the Albert River.
- Campaigns to highlight the value of waterways to the community can improve feelings of responsibility and willingness to engage in or support waterway protection activities. Campaigns should focus around residents' top environmental issue of concern to increase traction, which are litter, climate change, loss of places of natural beauty and water supply/drought.

25 Pimpama-Coomera Catchment

25.1 Environmental Condition (B-)

- The catchment has declined slightly though remains in good condition.

Why?

- Pollutant loads remain low with a reduction in sediment (mud) and nutrients (244 to 121 kg/ha of sediment).
- Freshwater health has declined significantly, from excellent to fair condition, with some of the lowest scores recorded for this catchment since the end of the last drought in 2007. This is due to a decrease in all indicators particularly bug community health and ecosystem processes.
- The vegetation on stream banks in the catchment remains in fair condition, however the extent of freshwater wetlands remains very poor. The extent of wetland habitat in the catchment's estuaries remains good which is critical for the maintenance of healthy recreational and commercial fisheries.
- Estuarine health has declined slightly due to an increase in algae and total phosphorus. While dissolved oxygen improved slightly.



25.2 Waterway Benefit Rating

- Although catchment condition is fair the number of residents (71%) satisfied with the usability and accessibility of their local waterways is high (compared with 64% for all of SEQ).
- Residents value their local waterways for recreation with 53% recreating in or alongside their local waterway on a monthly basis. The top activities include walking or running (57 days/year), enjoying nature (34 days/year), swimming (9 days/year) and cycling (9 days/year).

25.3 Ways to improve waterway health and benefits

- Protecting streambank vegetation and wetlands from clearing and weed infestation is key to maintaining catchment condition and recreational value in the face of projected increasing population and development. Currently 76% of streambanks in the Pimpama Coomera catchment have vegetation and 36% has never been cleared. Over the next 25 years, these catchments are projected to be one of the fastest growing urbanised areas in the City of Gold Coast area.
- Preserve the community's emotional connection with waterways by protecting and promoting their use and access. A very high number (65%) of residents feel nature in general is an important part of their lives, and high numbers (47%) are motivated to use and protect their local waterways. Increasing access to local waterways will improve motivation and connection which will lead to willingness to protect and restore waterway values.
- Create opportunities and incentives for residents to make changes around their home or in their local waterway to improve waterway condition. A moderate number of residents feel it is their personal responsibility (37%) and are willing to donate time (26%) towards local waterway protection.
- Campaigns to highlight the value of waterways to the community can improve feelings of responsibility and willingness to engage in or support waterway protection activities. Focus campaigns around residents' top environmental issue of concern to increase traction, which are #1 litter, #2 water pollution, # 3 local extinction of native species, and #4 loss of places of natural beauty.

26 Nerang Catchment

26.1 Environmental Condition (C)

- The catchment has declined slightly though remains in fair condition.

Why?

- Pollutant loads remain very low, despite a reduction in sediment (mud) and nutrients (138 to 80 kg/ha of sediment).



- The health of freshwater creeks remains excellent with very little change across all indicators.
- Stream bank vegetation remains poor and wetland extent is very poor across the freshwater reaches of the catchment, particularly in the highly urbanised lower catchment. The extent of wetland habitat in the estuary also remains very poor, as only 1% of habitat remains following extensive clearing.
- Estuarine health has declined significantly from excellent to good due to increased algae and total nitrogen. A phytoplankton algae bloom occurred in the upper reaches exceeding the guideline value on three occasions (November, February and May). Interestingly total nitrogen exceeded guideline values during these same months.

26.2 Waterway Benefit Rating

- Despite only fair catchment condition, a very high number of residents (70%) are satisfied with their local waterways (compared with 58% for all SEQ).
- Residents report they highly value their local waterways for recreation. 64% of residents recreate in or alongside their local waterway on a weekly basis. The top activities include walking or running (76 days/year), enjoying nature (42 days/year), cycling (17 days/year), swimming (13 days/year), picnics or BBQs (9 days/year), and surfing or sail boarding (7 days/year).
- Very low pollutant loads in the catchment this year, means that the amount of mud removed from drinking water at the treatment plants remains very low (Molendinar (58 kg/ML) and Mudgeeraba (171 kg/ML)).

26.3 Ways to improve waterway health and benefits

- Protecting streambank vegetation and wetlands from clearing and weed infestation is key to maintaining catchment condition and recreational value in the face of a projected increase in population and development. Currently 68% of streambanks in the Nerang catchment has vegetation and 53% has never been cleared. Over the next 25 years, the population of the City of Gold Coast Council area is projected to nearly double (to approx. 930,000).
- Preserve the community's emotional connection with waterways by protecting and promoting their use and access. A very high number (65%) of residents feel nature in general is an important part of their lives, and high numbers (50%) are motivated to use and protect their local waterways.
- Create opportunities and incentives for residents to make changes around their home or in their local waterway to improve waterway condition. A moderate number of residents feel it is their personal responsibility (37%) and are willing to donate time (32%) towards local waterway protection.
- Campaigns to highlight the value of waterways to the community can improve feelings of responsibility and willingness to engage in or support waterway protection activities. Focus

campaigns around residents' top environmental issue of concern to increase traction, which are #1 litter and #2 loss of places of natural beauty.

27 Tallebudgera-Currumbin Catchment

27.1 Environmental Condition (B+)

- The catchment has improved slightly and remains in good condition.

Why?

- Pollutant loads remain very low despite a reduction in sediment (mud) and nutrients (140 to 107 kg/ha of sediment).
- The health of freshwater creeks improved slightly and remains in excellent condition due to increased fish community health particularly in Currumbin Creek.
- Stream bank vegetation remains good although wetland extent remains very poor in the freshwater reaches of the catchment. 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 health improved slightly and remains in good condition due an improvement in dissolved oxygen and total nitrogen downstream in Tallebudgera and Currumbin Creeks.

27.2 Waterway Benefit Rating

- Good catchment condition results in very high numbers of residents (82%) satisfied with their local waterways (compared with 58% for all of SEQ).
- Residents report they value their local waterways for recreation. 71% of residents recreate in or alongside their local waterway on a weekly basis nearly the highest in SEQ. Very high numbers value them as a place of rest and relaxation (75%) or for social interaction with friends and family (68%). The top activities include walking/running (96 days/year), enjoying nature (54 days/year), swimming (31 days/year), surfing/kite surfing/sail boarding (17 days/year), rowing/kayaking/canoeing (12 days/year), cycling (12 days/year) and picnics/BBQs (8 days/year).

27.3 Ways to improve waterway health and benefits

- Protecting streambank vegetation and wetlands from clearing and weed infestation is key to maintaining catchment condition and recreational value in the face of projected increasing population and development. Currently 84% of streambanks in the catchment has vegetation and 38% has never been cleared. Retention of this vegetation will help maintain the condition and the satisfaction of the community with the health of their waterways.

- Preserve the community's emotional connection with waterways by protecting and promoting their use and access. A very high number (71%) of residents feel nature in general is an important part of their lives and are motivated to use and protect their local waterways (68%). Initiatives to increase the access and use of the Tallebudgera and Currumbin waterways are valuable for increasing the community's connection with their local waterways which improves motivation to help protect them.
- Create opportunities and incentives for residents to make changes around their home or in their local waterway to improve waterway condition. A high number of residents feel it is their personal responsibility (49%) to protect local waterways and moderate numbers are willing to donate time (26%).
- Campaigns to highlight the value of waterways to the community can improve feelings of responsibility and willingness to engage in or support waterway protection activities. Focus campaigns around residents' top environmental issue of concern to increase traction, which are #1 climate change, #2 litter, and #3 decline in fish numbers/sustainable fisheries.

28 Appendix

Appendix 1. Summary of Environmental Condition Grades and Waterway Benefit Rating Scores from 2015 to 2019.

Catchment/Bay Zone	Environmental Condition Grade					Waterway Benefit Rating				
	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Noosa	A-	A-	A-	A-	A-	4.5	4	4.5	4.5	5
Maroochy	C+	B	B-	B-	B-	4	4	4	3.5	4
Mooloolah	C+	B	B-	C+	C+	4	4.5	4	3.5	4
Pumicestone	B-	B+	A-	B+	A-	4.5	4.5	4	4	4
Caboolture	C+	B	B	B+	B+	3.5	3	3	3	3.5
Pine	C	B-	B-	B-	B	3	3	3.5	3.5	3.5
Lower Brisbane	C-	C-	D+	D+	C-	2.5	3	2.5	2.5	3
Redland	C+	C+	C+	C	C+	3.5	3.5	3.5	3.5	3.5
Mid Brisbane	D	D+	B-	C-	C+	2.5	3	3	3	3.5
Upper Brisbane	D	D	D	D	D	3.5	3	3	2.5	3
Stanley	B	B	B-	B	B-	2.5	3	3.5	3.5	3.5



Catchment/Bay Zone	Environmental Condition Grade					Waterway Benefit Rating				
	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Lockyer	D+	D+	D+	D+	D	2.5	2.5	2.5	2.5	3
Bremer	D-	D+	D-	D+	D+	2.5	2.5	2.5	2.5	2.5
Logan	D	C-	C-	C-	C	2.5	2.5	2	2	2.5
Albert	C-	C+	C	C	B-	3	3.5	3	2.5	3.5
Pimpama-Coomera	C+	B	B-	B	B-	3.5	3.5	3.5	3.5	4
Nerang	C-	C	C-	C+	C	4	4	4	4	4
Tallebudgera-Currumbin	C+	B	B-	B	B+	4	4	4.5	4	4.5
Western Bay	B	B	B	B+	A-	Not applicable				
Central Bay	B+	B+	A-	A-	A-					
Eastern Bay	A	A-	A	A-	A					
Southern Bay	B+	B	B	B	B+					
Broadwater	A-	B+	A-	A	A					
Moreton Bay	A-	A-	B+	A-	A-					





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