

REPORT CARD

Catchment Summaries 2022

REPORT CARD 2022

IT'S AN IMPORTANT PART OF THEIR LIVES



Citation

Report Card Catchment Summaries 2022, Healthy Land & Water

Acknowledgements

The material contained in this publication is produced for general information only. It is not intended as professional advice on specific applications. It is the responsibility of the user to determine the suitability and appropriateness of the material contained in this publication to specific applications. No person should act or fail to act on the basis of any material contained in this publication without first obtaining specific independent professional advice. Healthy Land & Water and the participants of our network expressly disclaim any and all liability to any person in respect of anything done by any such person in reliance, whether in whole or in part, on this publication. The information contained in this publication does not necessarily represent the views of Healthy Land & Water or the participants of our network.

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.









For further information about Healthy Land & Water, please email info@hlw.org.au or telephone (07) 3177 9100.







reportcard.hlw.org.au

Table of Contents

1	About the Ecosystem Health Monitoring Program.....	7
2	Results – What do they mean?	8
	2.1 Environmental Condition Grade:	8
	2.2 Waterway Benefit Rating:	8
	2.3 Cultural Resource Management Index.....	8
3	2022 Key messages	9
	3.1 Environmental Condition.....	9
	3.2 Waterway benefits.....	10
	3.3 Cultural Resource Management	11
	3.4 Regional priorities.....	11
	3.5 Roadmap to Resilience	12
4	Overall Moreton Bay	13
	4.1 Environmental Condition (B+)	13
	4.2 Waterway Benefit Rating (N/A)	13
	4.3 Ways to improve waterway health and benefits.....	14
5	Central Bay	15
	5.1 Environmental Condition (A-)	15
	5.2 Waterway Benefit Rating (N/A)	15
	5.3 Cultural Resource Management	16
	5.4 Ways to improve waterway health and benefits.....	16
6	Western Bay	17
	6.1 Environmental Condition (B+)	17
	6.2 Waterway Benefit Rating (N/A)	17
	6.3 Cultural Resource Management	18
	6.4 Ways to improve waterway health	18
7	Eastern Bay.....	19
	7.1 Environmental Condition (A-)	19
	7.2 Waterway Benefit Rating (N/A)	19
	7.3 Cultural Resource Management	20
	7.4 Ways to improve waterway health	20
8	Southern Bay	21
	8.1 Environmental Condition (B-)	21
	8.2 Waterway Benefit Rating (N/A)	21
	8.3 Cultural Resource Management	22
	8.4 Ways to improve waterway health	22
9	Broadwater	23
	9.1 Environmental Condition (A-)	23
	9.2 Waterway Benefit Rating (N/A)	23
	9.3 Cultural Resource Management	24
	9.4 Ways to improve waterway health	24
10	Yarun (Bribie Island).....	25

10.1	Environmental Condition (N/A)	.....	25
10.2	Waterway Benefit Rating (N/A)	.....	25
10.3	Cultural Resource Management	.....	25
10.4	Ways to improve cultural resource management	.....	25
11	Minjerribah (North Stradbroke Island)	.....	25
11.1	Environmental Condition (N/A)	.....	25
11.2	Waterway Benefit Rating (N/A)	.....	26
11.3	Cultural Resource Management	.....	26
11.4	Ways to improve cultural resource management	.....	26
12	Mulgumpin (Moreton Island)	.....	26
12.1	Environmental Condition (N/A)	.....	26
12.2	Waterway Benefit Rating (N/A)	.....	26
12.3	Cultural Resource Management	.....	27
12.4	Ways to improve cultural resource management	.....	27
13	Small Moreton Bay Islands	.....	27
13.1	Environmental Condition (N/A)	.....	27
13.2	Waterway Benefit Rating (N/A)	.....	27
13.3	Cultural Resource Management	.....	28
13.4	Ways to improve cultural resource management	.....	28
14	South Stradbroke Island	.....	28
14.1	Environmental Condition (N/A)	.....	28
14.2	Waterway Benefit Rating (N/A)	.....	28
14.3	Cultural Resource Management	.....	29
14.4	Ways to improve cultural resource management	.....	29
15	Noosa catchment	.....	30
15.1	Environmental Condition (B)	.....	30
15.2	Waterway Benefit Rating	★★★★★	31
15.3	Cultural Resource Management	.....	31
15.4	Ways to improve waterway health and benefits	.....	31
16	Maroochy catchment	.....	33
16.1	Environmental Condition (C+)	.....	33
16.2	Waterway Benefit Rating	★★★★☆	34
16.3	Cultural Resource Management	.....	34
16.4	Ways to improve waterway health and benefits	.....	34
17	Mooloolah catchment	.....	36
17.1	Environmental Condition (C)	.....	36
17.2	Waterway Benefit Rating	★★★★☆	37
17.3	Cultural Resource Management	.....	37
17.4	Ways to improve waterway health and benefits	.....	37
18	Pumicestone catchment	.....	39
18.1	Environmental Condition (B-)	.....	39
18.2	Waterway Benefit Rating	★★★★☆	40
18.3	Cultural Resource Management	.....	40

	18.4Ways to improve waterway health and benefits.....	40
19	Caboolture catchment	42
	19.1Environmental Condition (C)	42
	19.2Waterway Benefit Rating 	43
	19.3Cultural Resource Management	43
	19.4Ways to improve waterway health and benefits.....	43
20	Pine catchment.....	45
	20.1Environmental Condition (D+)	45
	20.2Waterway Benefit Rating 	46
	20.3Cultural Resource Management	46
	20.4Ways to improve waterway health and benefits.....	46
21	Lower Brisbane catchment	48
	21.1Environmental Condition (F)	48
	21.2Waterway Benefit Rating 	49
	21.3Cultural Resource Management	49
	21.4Ways to improve waterway health and benefits.....	49
22	Redland catchment	51
	22.1Environmental Condition (D+)	51
	22.2Waterway Benefit Rating 	52
	22.3Cultural Resource Management	52
	22.4Ways to improve waterway health and benefits.....	52
23	Mid Brisbane catchment	54
	23.1Environmental Condition (F)	54
	23.2Waterway Benefit Rating 	54
	23.3Cultural Resource Management	55
	23.4Ways to improve waterway health and benefits.....	55
24	Upper Brisbane catchment.....	57
	24.1Environmental Condition (no grade)	57
	24.2Waterway Benefit Rating 	57
	24.3Cultural Resource Management	58
	24.4Ways to improve waterway health and benefits.....	58
25	Stanley catchment.....	60
	25.1Environmental Condition (C)	60
	25.2Waterway Benefit Rating 	60
	25.3Cultural Resource Management	61
	25.4Ways to improve waterway health and benefits.....	61
26	Lockyer catchment.....	63
	26.1Environmental Condition (F)	63
	26.2Waterway Benefit Rating 	63
	26.3Cultural Resource Management	64
	26.4Ways to improve waterway health and benefits.....	64

27	Bremer catchment	66
	27.1 Environmental Condition (F)	66
	27.2 Waterway Benefit Rating 	67
	27.3 Cultural Resource Management	67
	27.4 Ways to improve waterway health and benefits	67
28	Logan catchment	69
	28.1 Environmental Condition (D-)	69
	28.2 Waterway Benefit Rating 	70
	28.3 Cultural Resource Management	70
	28.4 Ways to improve waterway health and benefits	70
29	Albert catchment	72
	29.1 Environmental Condition (C-)	72
	29.2 Waterway Benefit Rating 	73
	29.3 Cultural Resource Management	73
	29.4 Ways to improve waterway health and benefits	73
30	Pimpama-Coomera catchment	75
	30.1 Environmental Condition (C+)	75
	30.2 Waterway Benefit Rating 	76
	30.3 Cultural Resource Management	76
	30.4 Ways to improve waterway health and benefits	76
31	Nerang catchment	78
	31.1 Environmental Condition (D)	78
	31.2 Waterway Benefit Rating 	79
	31.3 Cultural Resource Management	79
	31.4 Ways to improve waterway health and benefits	79
32	Tallebudgera-Currumbin catchment	81
	32.1 Environmental Condition (C+)	81
	32.2 Waterway Benefit Rating 	82
	32.3 Cultural Resource Management	82
	32.4 Ways to improve waterway health and benefits	82
33	Appendix 1: Summary of Environmental Condition Grades and Waterway Benefit Rating scores from 2015 to 2022	84

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 22nd year.

An assessment is undertaken for each of South East Queensland's 18 major catchments, five zones in Moreton Bay, Broadwater and Islands. 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) [commenced in 2000].
- **Social and economic benefits** that waterways provide to local communities (1- 5 star rating), broadening the program's focus to encompass additional pressures and understand the links between water quality and waterway benefits provided to the community [added in 2015, making 2022 the eighth year these extra measures were introduced].
- **Cultural Resource Management Indicators** that provide key measurable statistics on where and how First Nations are being empowered to protect and determine their rights and interests [new in 2022].

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

Healthy Land & Water coordinates the program in partnership with member organisations, including local and state government (Department of Environment and Science), and water utilities (Urban Utilities, Unity Water, Seqwater). Healthy Land & 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 2022 Report Card is based on the analysis of data compiled from July 2021 to June 2022.

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 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 the 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.

2.3 Cultural Resource Management Index

The Cultural Resource Management Index uses the best available public data to show how the South East Queensland region is recognising and advancing the leadership and role of First Nations and the protection of Aboriginal Cultural Heritage. The index comprises of four indicators.

Indicator 1: Recognition of Rights & Interests (% of catchment)	This indicator highlights where First Nation rights and interests are recognised to enable their ability to lead the stewardship of Country and culture through Native Title.
Indicator 2: Cultural Referral (% of catchment)	This indicator highlights where First Nation parties are identified and recognised to lead the decisions relating to Aboriginal Cultural Heritage.
Indicator 3: Cultural Surveys (% of catchment)	This indicator highlights where comprehensive archaeological studies that formally document and maximise the protection of Aboriginal Cultural Heritage have been completed and recognised within a catchment.
Indicator 4: Cultural Protection and Management (% of catchment)	This indicator highlights where Aboriginal Cultural Heritage Management Plans that enhance the protection of culture have been adopted over the formally recorded Aboriginal Cultural Heritage sites in South East Queensland.

3 2022 Key messages

3.1 Environmental Condition

The large areas of SEQ with poor catchment condition and high erosion risk generated extreme pollutant loads in 2022

The floods of February-March 2022 were followed by a second period of major floods in May 2022. Prior to this, in December 2021, the region had already experienced substantial rainfall and flooding. Flooding extent across SEQ, in terms of the number of rivers experiencing major flooding, was much greater than in 1974 and 2011.

Flooding is an important natural process for freshwater and coastal ecosystems. Floods recharge groundwater aquifers, deposit nutrients, support recruitment, growth and productivity of river and wetland species and facilitate the dispersal of animals and plant propagules. However heavy rainfall and runoff is faster, stronger, and higher in pollutants in landscapes cleared of trees, lacking groundcover, and affected by catchment urbanisation and stream modification. These human modifications of the catchment exacerbate flooding and can slow ecosystem recovery, and have long-term impacts on waterway health.

Healthy Land & Water pollutant load modelling estimated record high land-generated sediment loads for all catchments in 2022. There was substantial erosion of channel banks in streams of poor condition. This was worst in streams with minimal or no streambank vegetation, and with restricted floodplains upstream. Catchments such as Upper Brisbane, Mid-Brisbane, Stanley, Lockyer, Bremer, Logan and Pine have 30-45% of streambanks with no riparian vegetation.

In urban streams there was also widespread scouring and erosion due to catchment urbanisation, low infiltration capacity and stream modification. Construction and development sites in the region are also significant polluters when it rains, due to low compliance with erosion and sediment control requirements (only 15%).

Environmental condition declined across the region, with several catchments receiving an 'F' in 2022 while mud expanded across Moreton Bay

Extreme pollutant loads in 2022 led to declines in downstream estuarine and bay water quality. Notably, the Lower Brisbane catchment received an F in 2022, heavily impacted by the extreme sediment loads and poor water quality flowing from upstream catchments (Bremer, Lockyer, Mid Brisbane), which similarly received very poor grades.

Valuable agricultural soil from poorly managed upper catchments washed downstream to the coast, expanding the size of the 'mud patch' in Moreton Bay. Mud is increasing in eastern Moreton Bay, a place of significant value to migratory bird populations (Ramsar) and cultural heritage. Mud stimulates algal blooms and creates turbid waters that impact the health of seagrass meadows and intertidal habitats. These areas are critical for foraging migratory birds and supporting species of cultural significance, including fish, turtles and dugong.

There is concern over the legacy impact of sediments and nutrients deposited in the bays and estuaries that could stimulate nuisance algal blooms such as *Lyngbya majuscula* for many years to come.

Building climate resilience into SEQ catchments and waterways is urgent to protect people, environment and cultural resources; it will take time to be effective, so action must be taken now for the future

Habitats and aquatic communities of SEQ have evolved to tolerate drought and flood cycles; following the floods of 2011 and 2013 the estuaries of SEQ and Moreton Bay showed evidence of recovery within six years. However, climate change is impacting recovery windows and the consequences for waterways—already under pressure from land clearing, development, population growth and industrial inputs—are unknown.

Despite the current and legacy environmental pressures, there is evidence of resilience within the SEQ landscape:

- In 2021 many rural western catchments recorded the poorest freshwater condition since 2007, following several years of drought. Yet their condition improved in 2022 with the return of flows, indicating the freshwater communities of SEQ, particularly the fish, retain resilience and can recover. This demonstration of waterway resilience is strongest in freshwater streams with intact riparian cover and forested catchments upstream. Analysis of the Ecosystem Health Monitoring Program (EHMP) long-term freshwater data shows that freshwater streams with intact riparian cover and forested catchments upstream maintain their resilience throughout wet-dry cycles.
- Following 2011 and 2013 flood events, estuarine and bay water quality progressively improved in the following years, and the mud 'footprint' had contracted by 2019, highlighting that given sufficient 'respite' between extraordinary events, coastal health can recover.
- There is also the success story of this decade—the return of seagrass to Bramble Bay following a decade of improved water quality—which indicates that aquatic communities of Moreton Bay retain resilience and, with time, can recover.

Learning from and adapting to extreme events (floods, droughts, bushfires)

The extreme climatic conditions over the past decade (and a 22-year program of monitoring, modelling and science) has taught us where the priorities are in SEQ to protect our lifestyle, economy, environment and cultural heritage into the future. But there is lots we need to do. For many actions (such as revegetation), it will take time to be effective, so action must be taken now to reduce future impacts.

We need to slow water and reduce erosion in the upper catchment by protecting and increasing vegetation (especially along riparian zones) and engaging floodplains through policy, land-use planning and compliance. Note that clearing continues, with the highest annual rates of loss/clearing of riparian vegetation notable in Pumicestone (215ha), Caboolture (55ha), Bremer (188ha), and the total for the region was 1400ha (last measure for 2019)). For the downstream communities, conservation of existing riparian vegetation and revegetation of degraded areas will lower flood heights and reduce damage to roads, bridges and buildings. For the environment and cultural heritage, this will protect banks from erosion, resulting in cleaner floodwaters and enhanced protection of cultural heritage values.

In the existing and rapidly developing new urban landscape, we need to naturalise urban water flows and increase natural areas. This would require the 'buy-back' of land and restricting (and even stopping) development on floodplains. There is also an urgent need for increased erosion and sediment controls and compliance for new development, construction sites and private lands.

Science, modelling, and monitoring is needed to understand the 'new normal', to guide strategic planning and investment in priority areas.

Finally, and most importantly, we must take a regional collaborative approach to support community, First Nations, industry (including water utilities and service providers) and various levels of government to work together to coordinate knowledge sharing, planning, compliance and financial incentives and investment for the long-term protection of SEQ waterways and natural assets.

3.2 Waterway benefits

The waterways of SEQ support the local lifestyle and economy, and residents want their lifestyles protected

Fundamental to the South East Queensland lifestyle are the recreational, health, cultural, and economic benefits provided by the region's extensive, diverse, and scenic waterways (creeks, rivers, lakes, beaches, and bays). It's not surprising that the majority of South East Queensland residents (70-80%) have a deep connection with nature, reporting that it is an important part of their lives. This year 87% of residents surveyed used their local waterways for some form of recreation, including walking, cycling, swimming, picnics, and fishing.

Waterways in good condition provide the most social and economic benefits to the community. Protecting and investing in waterway health is much more than just environmental protection, it's about protecting the multiple benefits that nature and waterways give our community and economy.

A healthy catchment protects valuable agricultural soil, reduces various public health costs, protects our drinking water supply, supports productive fisheries and much more. Importantly it can also minimise flood risks to homes, businesses, and sites of cultural heritage significance.

The record-breaking floods of 2022 affected our community in different ways, not just water and debris in the homes. High levels of pathogens in waterways for weeks to months following flooding was a serious public health risk to all users, especially in urban areas. A portion of SEQ residents surveyed reported that the floods highly impacted their income/personal finances (14%) and their mental health (17%) or physical well-being (10%) of them or their family. 16.8% of officially recorded cultural heritage sites are located on floodplains and were potentially impacted.

3.3 Cultural Resource Management

Supporting First Nation leadership in the protection of natural and cultural values

We acknowledge the Traditional Custodians of Country throughout South East Queensland and their connections to land, sea and community. We pay our respects to their elders, past and present.

First Nation leadership in caring for Country has been vital to the health of land and waters for many thousands of years and continues to be critical for the future. Being actively and effectively included in decision-making about the environment, and directly involved in the management of Country, are important for both First Nations' self-determination and environmental outcomes.

As noted in the 2021 State of Environment Report, Australia holds evidence of the world's oldest society. The *Aboriginal Cultural Heritage Act 2003* has been in place for almost 20 years, yet the destruction of Cultural heritage is occurring at an unacceptable rate.

It is all our roles, from individuals to organisations, to protect cultural heritage and empower and support First Nations people through coordinated, collaborative and strategic approaches. Respect and recognise First Nations in daily work activities by getting to know and engaging with the appropriate First Nation group with a registered interest in your catchment.

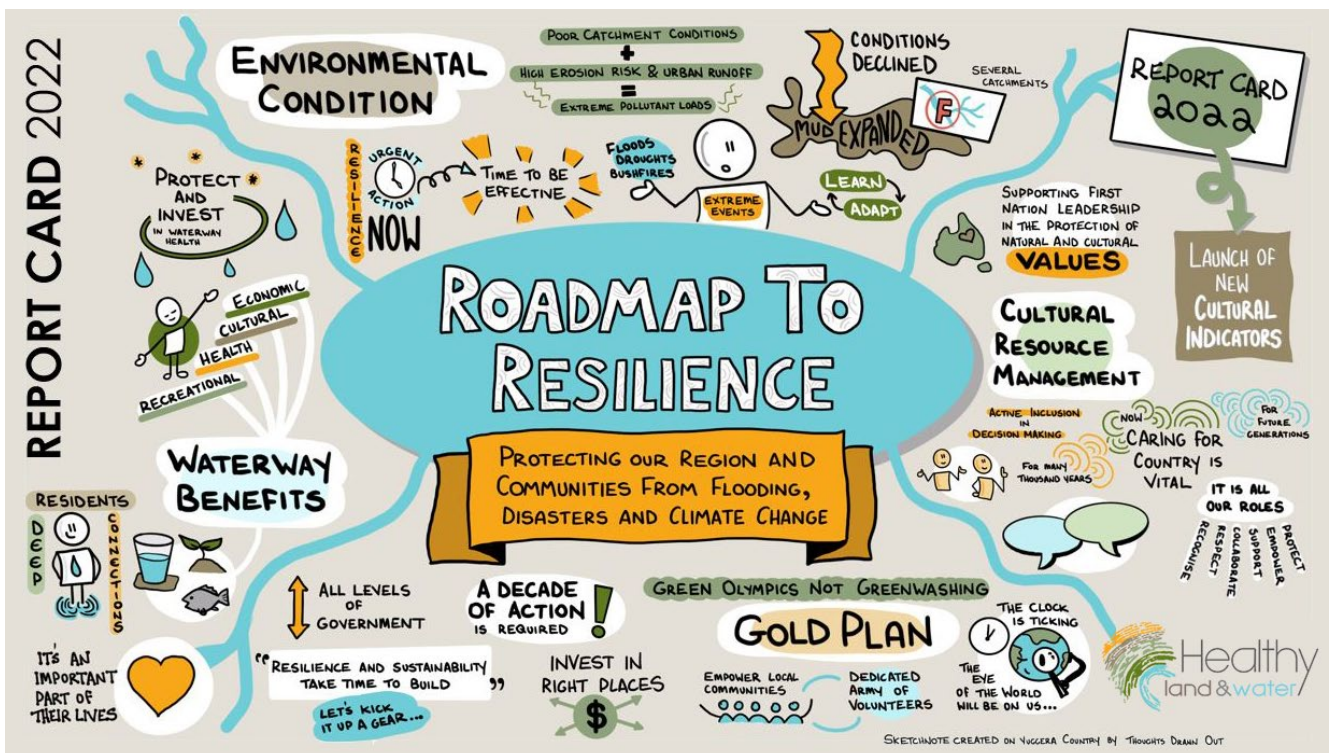
3.4 Regional priorities

- Protect and manage existing values from the pressures of population growth is a priority, with the population of Southeast Queensland projected to increase significantly over the next 25 years.
- Recognise and support First Nations and their aspirations to lead the stewardship of Country and culture.
- Support and create processes for the community, First Nations, industry and various levels of government to work together to coordinate planning, compliance and investment for the long-term protection and enhancement of natural assets.
- Support and create processes for the community, First Nations, industry and various levels of government to work together to develop new and enhance current regional and local land use planning mechanisms to enhance community and environmental resilience to extreme events, including floods.
- Support integrated catchment management approaches, such as multi-sector governance models for catchments with a core objective of improved river and waterway management.
- Implement integrated and forward planning for urban development and associated infrastructure to avoid all adverse effects on people and natural areas.
- Protect and restore native vegetation (especially along waterways) through policy, land-use planning and compliance.
- Ensure there is a strategic approach to minimising the contribution of nutrients from wastewater treatment plants and other point sources in response to projected population increases.
- Ensure current and future development is contained within the Urban Footprint (as designated in Map 2 of *ShapingSEQ 2017*) and incorporates green infrastructure and water sensitive urban design principles (as described in *ShapingSEQ 2017*).

- Increase the use of erosion and sediment controls and compliance for new development, construction sites and private lands.
- Enhance public awareness of the cultural significance of water and cultural flows, which encompass environmental flows required to maintain downstream waterway health and productivity.
- Enhance the community's emotional connection with waterways to foster a feeling of responsibility and willingness to engage in or support waterway protection activities.
- Support consistent investment in local community groups to deliver actions to improve catchment and waterway health.
- Develop and support citizen science initiatives to foster stewardship.
- Support sustainable and regenerative agricultural practices to maintain and enhance productivity, soil health, biodiversity and waterway health.
- Enhance Cultural Heritage compliance by improving development assessment processes and increasing education around compliance with the *Aboriginal Cultural Heritage Act 2003* and Best Practice Standards ([Heritage Chairs of Australia and New Zealand 2020, Dhawura Ngilan: A vision for Aboriginal and Torres Strait Islander heritage in Australia](#)).
- Get to know local stories and First Nations of where you live, work and recreate by visiting the library and researching online.

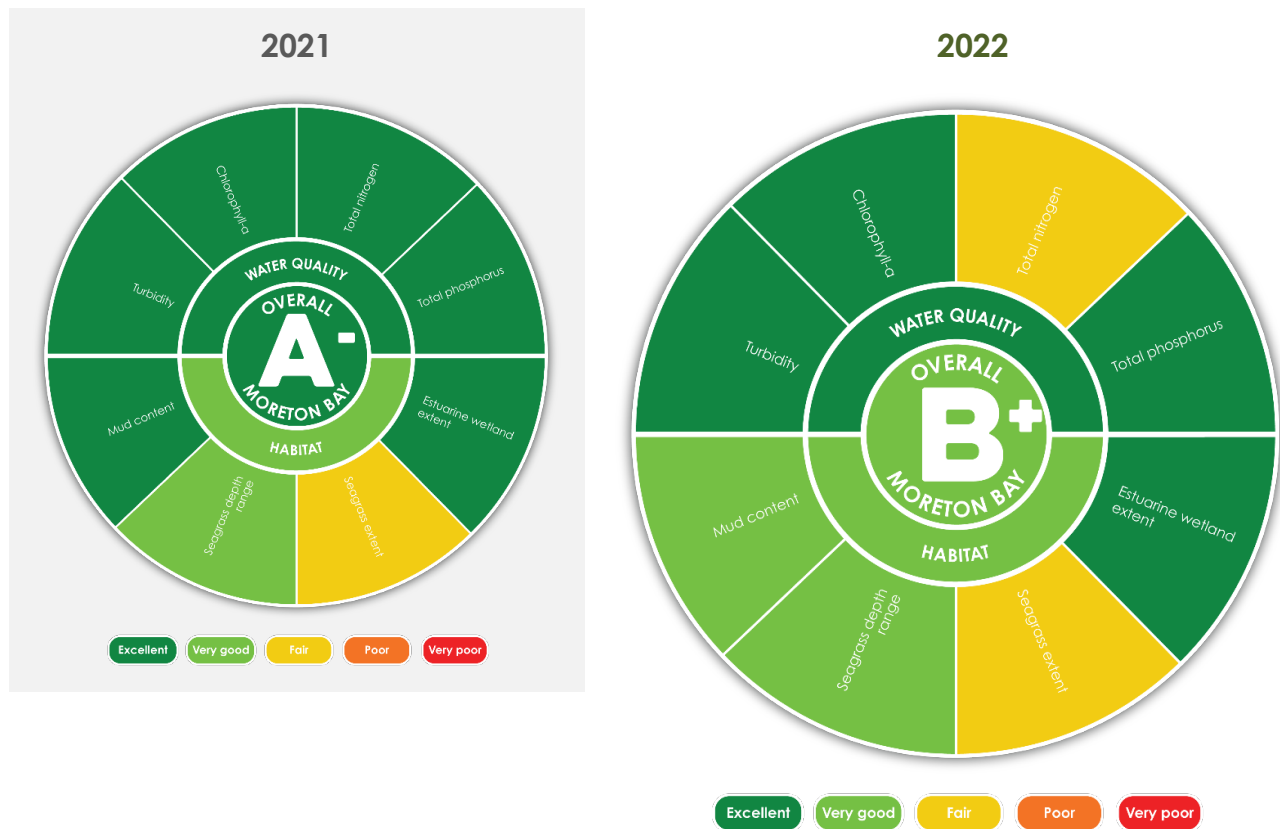
3.5 Roadmap to Resilience

- This year's Report Card is a strong signal that it is time to take action to build resilience into our landscapes so they are better able to handle climate change and things like this year's disaster-scale floods. The lack of resilience is impacted with heavy rainfall and this year it happened at record levels.
- While there are always yearly variations in grades as we see swings between wetter and drier periods, when a disaster like this year's rainfall and flooding rips through the region, it exposes where the region is under too much pressure.
- The below graphic summarises key messages coming out of this year's report card and how to build the resilience of our landscapes.



4 Overall Moreton Bay

4.1 Environmental Condition (B+)



Moreton Bay has declined to an overall good condition.

Why?

- Moreton Bay continues to receive inflows from degraded catchments with poor and very poor overall condition. This year a series of major floods within the catchment of Moreton Bay resulted in excessive sediments, nutrients and associated contaminants transported to the Bay.
- Water quality in all Bay regions declined due to the prolonged influence of catchment inputs in early to mid-2022.
- Mud increased from low to very low in 2022. The 2022 floods have resulted in a significant increase in the total area of mud within Moreton Bay, which have smothered previously sandy habitats. Over the long-term (1998 to present), the area of mud in Moreton Bay continues to expand, especially within Eastern and Southern Moreton Bay.
- Estuarine wetland habitat extent remains excellent.
- Losses of sensitive seagrass have been observed in response to the flood, while species resistant to poor water quality conditions have been able to persist across many regions of the Bay. The extent of seagrass within Moreton Bay remains fair.

4.2 Waterway Benefit Rating (N/A)

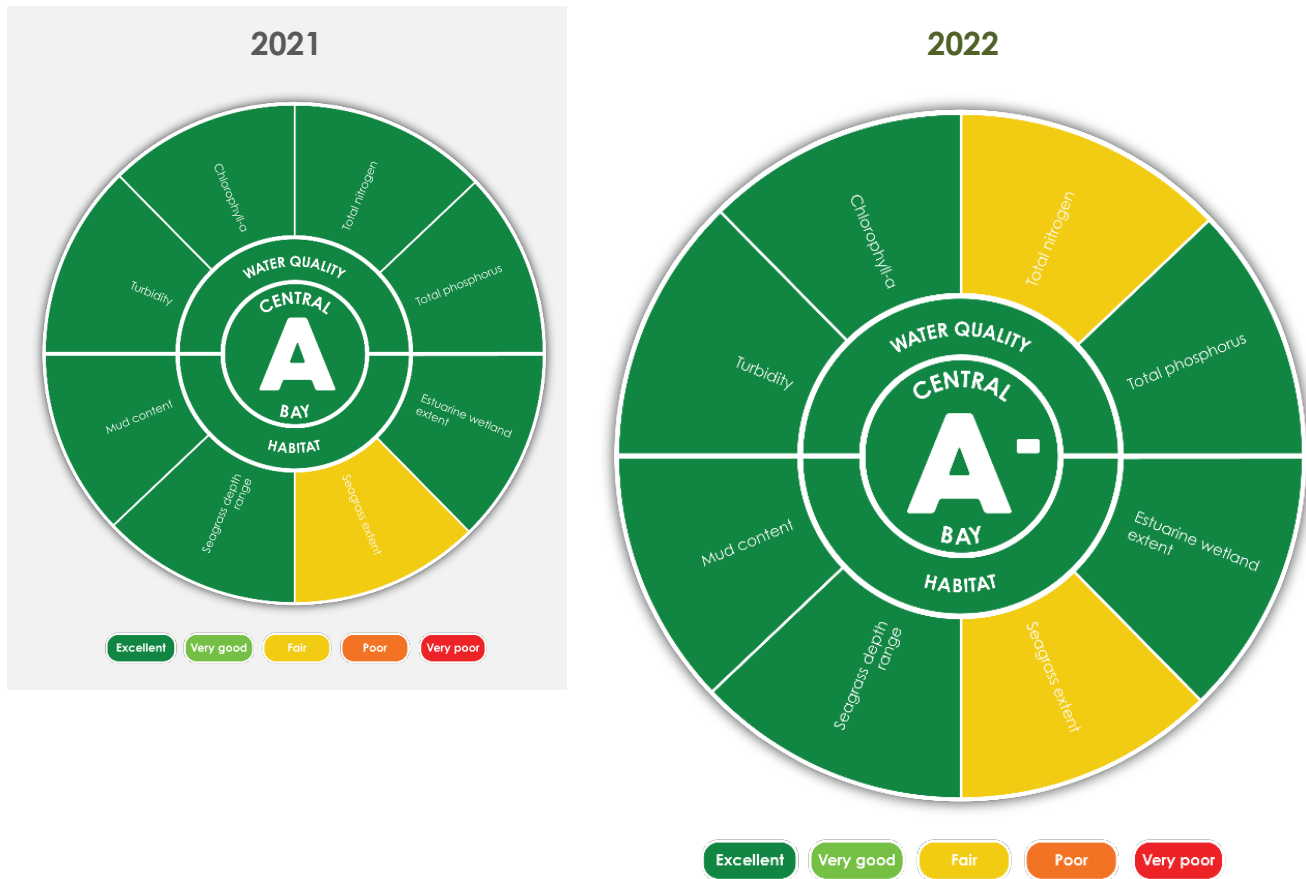
The Waterway Benefit Rating is not measured in this area.

4.3 Ways to improve waterway health and benefits

- Protect and enhance wetlands, and floodplain ecosystems and habitat that support biodiversity and provide important ecosystem services including sediment and nutrient retention and carbon sequestration.
- Protect and enhance coastal and marine habitats (seagrass, coral reefs, intertidal flats) by managing pollution, development, use, and access.
- Reduce catchment sediment pollution by targeting known areas of high stream bank erosion and gully erosion risk (e.g. in Lockyer, Bremer, Logan, and Albert catchments).
- Slow water down in the upper catchment to manage floodwater, reduce erosion, and rehydrate the landscape, by protecting and increasing vegetation (especially along riparian zones) and engaging floodplains through policy, land-use planning, incentives, and compliance.
- Support integrated catchment management approaches, such as a multi-sector governance model for catchments with a core objective of improved estuary and Bay health as a high priority.
- Ensure current and future development is contained within the Urban Footprint (as designated in Map 2 of *ShapingSEQ 2017*) and incorporates green infrastructure and water-sensitive urban design principles (as described in *ShapingSEQ 2017*).
- Increase erosion and sediment controls and compliance for new development, construction sites and private lands to reduce runoff when it rains.
- Ensure there is a strategic approach to minimising the contribution of nutrients from wastewater treatment plants and other point sources in response to projected population increases.
- Recognise and support First Nations and their aspirations to lead the stewardship of Country and culture.
- Respect and recognise First Nations in daily work activities by getting to know and engaging with the appropriate First Nation group who have a registered interest in your catchment. For assistance on engagement, please see the [Guidance for proponents on best practice Indigenous engagement for environmental assessments under the Environment Protection and Biodiversity Conservation Act 1999](#) and the [AIATSIS Principles for engagement in projects concerning Aboriginal and Torres Strait Islander peoples](#).
- Undertake comprehensive surveys of Moreton Bay to record, document and safeguard Cultural Heritage and protect sites through Cultural Heritage Management Plans.
- Support a regional approach to optimise regional coordination and collaboration to share knowledge and resources and guide investment.

5 Central Bay

5.1 Environmental Condition (A-)



Central Bay declined slightly and remains in excellent condition.

Why?

- Water quality declined slightly this year but remains excellent.
- Total nitrogen declined from excellent to fair, while total phosphorus, water clarity (turbidity), and algae (phytoplankton) declined slightly, though remain excellent.
- Central Bay retains a very high proportion of wetland habitat (mangroves and saltmarshes) compared to pre-cleared (95%).
- The extent of seagrass habitat remains fair, and the depth of water where seagrass is found remains excellent at Victoria Point.
- The deposition of fine sediments during the 2022 floods has increased the area of muddy sediments across Moreton Bay. Mud content in Central Moreton Bay has increased, though remains very low.

5.2 Waterway Benefit Rating (N/A)

The Waterway Benefit Rating is not measured in this area.

5.3 Cultural Resource Management

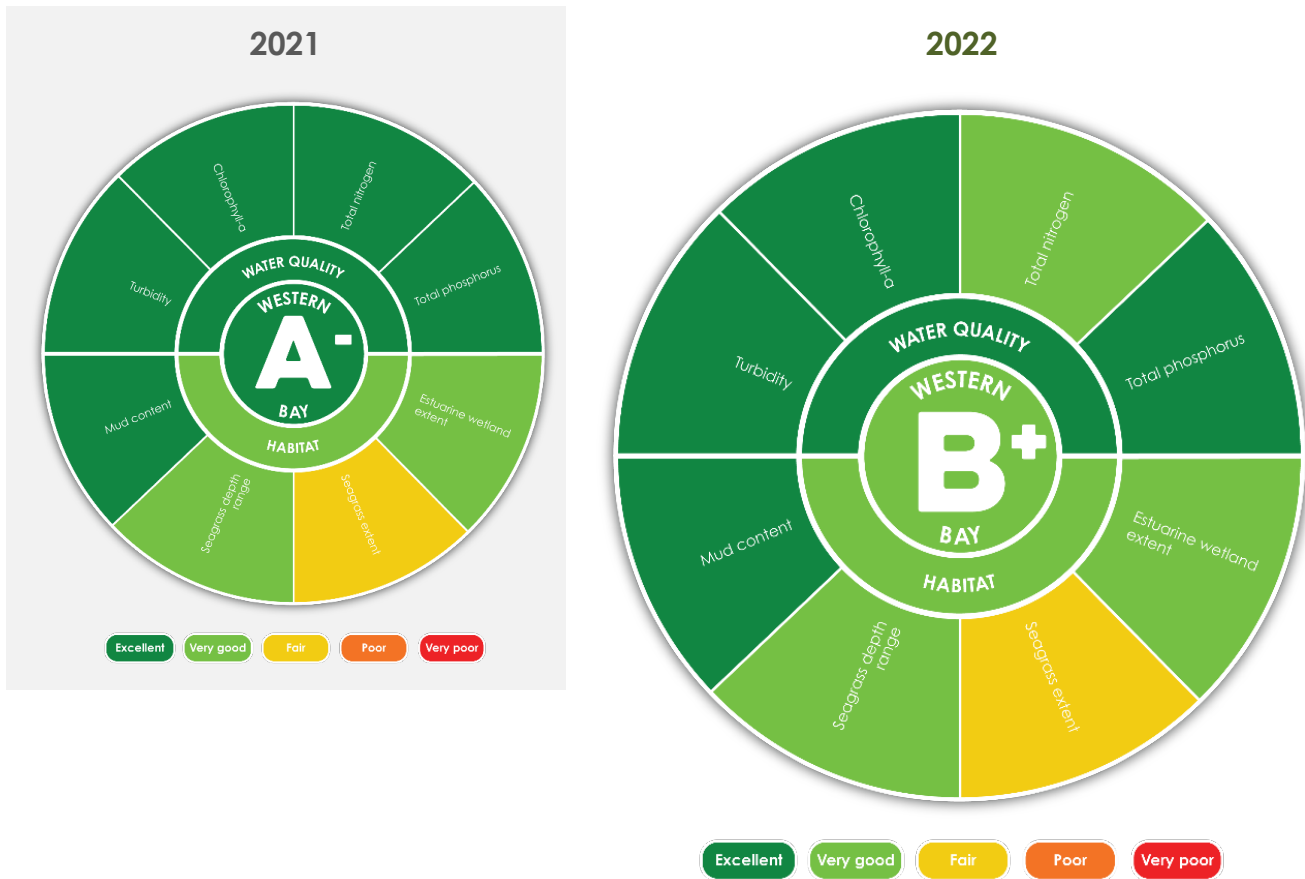
- First Nation rights and interests to lead the stewardship of Country and culture have been fully recognised through Native Title over 1.6% of the landscapes of the Central Bay where Native Title persists.
- First Nation parties are identified and recognised to lead the decisions relating to Aboriginal Cultural Heritage over 41% of the Central Bay.
- Comprehensive archaeological surveys that formally document and maximise the protection of Aboriginal Cultural Heritage have been completed and recognised over 7.72 ha (0.2%) of the Central Bay.
- Aboriginal Cultural Heritage Management Plans that enhance the protection of culture have been adopted over 0% of the formally recorded Aboriginal Cultural Heritage sites in the Central Bay.
- Note: the area monitored for the Cultural Resource Management Indicators for the Central Bay currently does not include the Moreton Bay islands. Please also refer to the results for “Smaller Moreton Bay Islands”.

5.4 Ways to improve waterway health and benefits

- Protect and enhance wetlands, floodplain ecosystems and habitats that support biodiversity and provide important ecosystem services, including sediment and nutrient retention and carbon sequestration.
- Protect and enhance coastal and marine habitats (seagrass, coral reefs, intertidal flats) by managing pollution, development, use, and access.
- Reduce catchment sediment pollution by targeting known areas of high stream bank erosion and gully erosion risk.
- Slow water down in the upper catchment to manage floodwater, reduce erosion, and rehydrate the landscape, by protecting and increasing vegetation (especially along riparian zones) and engaging floodplains through policy, land-use planning, incentives, and compliance.
- Support integrated catchment management approaches, such as a multi-sector governance model for catchments with a core objective of improved estuary and Bay health as a high priority.
- Increase erosion and sediment controls and compliance for new development, construction sites and private lands, to reduce runoff when it rains.
- Ensure there is a strategic approach to minimising the contribution of nutrients from wastewater treatment plants and other point sources in response to projected population increases.
- Recognise and support First Nations and their aspirations to lead the stewardship of Country and culture.
- Respect and recognise First Nations in daily work activities by getting to know and engaging with the appropriate First Nation group who have a registered interest in your catchment. For assistance on engagement, please see the [Guidance for proponents on best practice Indigenous engagement for environmental assessments under the Environment Protection and Biodiversity Conservation Act 1999](#) and the [AIATSIS Principles for engagement in projects concerning Aboriginal and Torres Strait Islander peoples](#).
- Undertake comprehensive surveys of Moreton Bay to record, document and safeguard Cultural Heritage and protect sites through Cultural Heritage Management Plans.

6 Western Bay

6.1 Environmental Condition (B+)



Western Bay, which includes Bramble, Deception, and Waterloo Bays has declined from excellent condition to good condition.

Why?

- Water quality in Western Bay declined slightly though remains excellent. Prolonged catchment inflows drove down water quality in Western Moreton Bay in 2022. All water quality indicators declined slightly with a significant decline in total nitrogen across Deception Bay, Bramble Bay and Waterloo Bay.
- Bramble Bay experienced the greatest decline in overall water quality in Western Moreton Bay due to its proximity to the Brisbane and Pine Rivers.
- The Western Bay retains a very high proportion of wetland habitat (mangroves and saltmarsh) compared to pre-cleared (100%).
- The 2022 floods have increased the area of muddy sediments across Moreton Bay, smothering previously sandy habitats. Mud content in Western Moreton Bay slightly increased, though remains very low.
- Seagrass depth range improved slightly and remains good. Losses of sensitive seagrass species have been observed in Western Moreton Bay following the late February flood event.

6.2 Waterway Benefit Rating (N/A)

The Waterway Benefit Rating is not measured in this area.

6.3 Cultural Resource Management

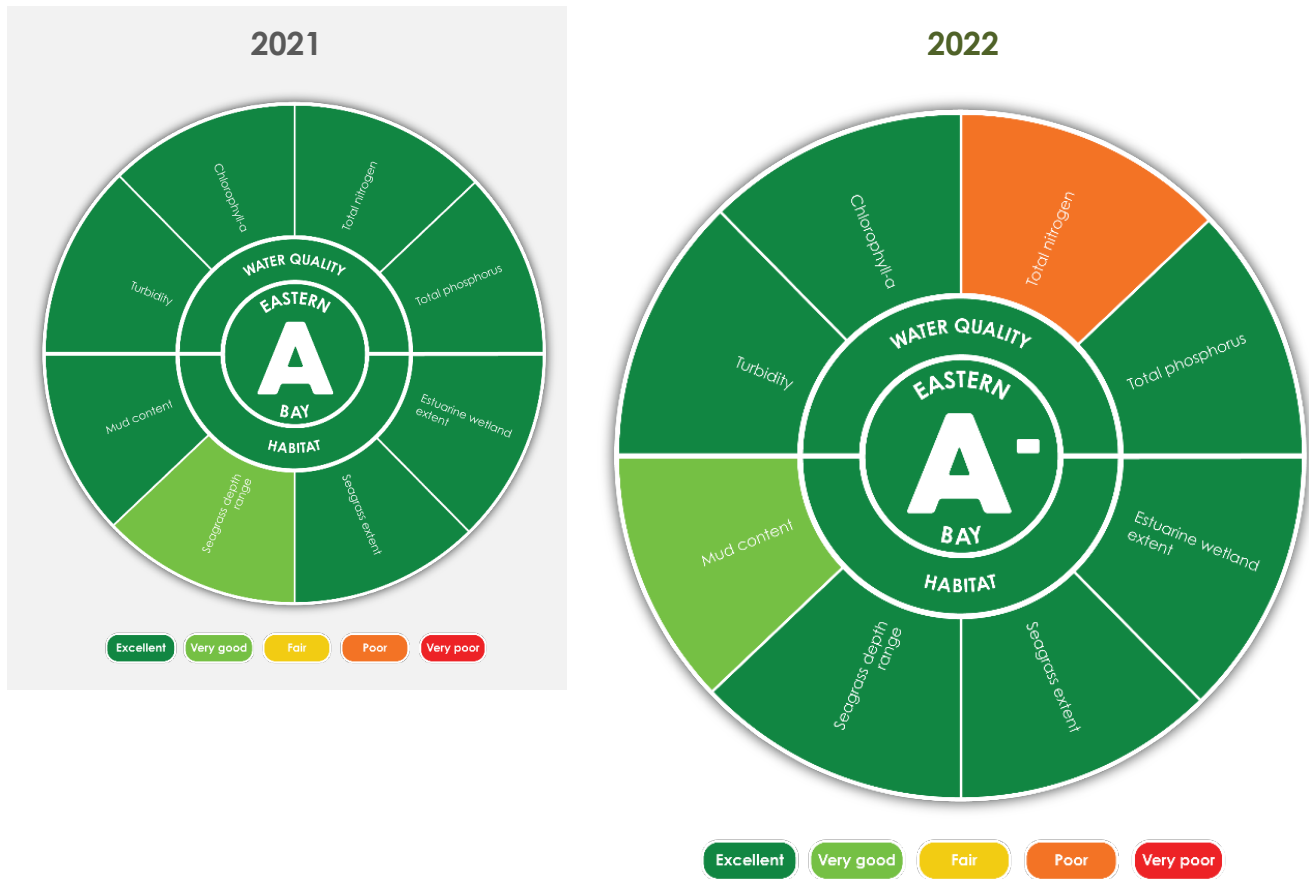
- First Nation rights and interests to lead the stewardship of Country and culture have been fully recognised through Native Title over 0% of the landscapes of the Western Bay where Native Title persists.
- First Nation parties are identified and recognised to lead the decisions relating to Aboriginal Cultural Heritage over 40% of the Western Bay.
- Comprehensive archaeological surveys that formally document and maximise the protection of Aboriginal Cultural Heritage have been completed and recognised over 0% of the Western Bay.
- Aboriginal Cultural Heritage Management Plans that enhance the protection of culture have been adopted over 15% of the formally recorded Aboriginal Cultural Heritage sites in the Western Bay.
- Note: the area monitored for the Cultural Resource Management Indicators for the Western Bay currently does not include the Moreton Bay islands. Please also refer to results for “Smaller Moreton Bay Islands”.

6.4 Ways to improve waterway health

- Protect and enhance wetlands, floodplain ecosystems, and habitats that support biodiversity and provide important ecosystem services, including sediment and nutrient retention and carbon sequestration.
- Protect and enhance coastal and marine habitats (seagrass, coral reefs, intertidal flats) by managing pollution, development and use and access.
- Reduce catchment sediment pollution by targeting known areas of high stream bank erosion and gully erosion risk.
- Slow water down in the upper catchment to manage floodwater, reduce erosion, and rehydrate the landscape, by protecting and increasing vegetation (especially along riparian zones) and engaging floodplains through policy, land-use planning, incentives, and compliance.
- Support integrated catchment management approaches, such as a multi-sector governance model for catchments with a core objective of improved estuary and Bay health as a high priority.
- Increase erosion and sediment controls and compliance for new development, construction sites and private lands, to reduce runoff when it rains.
- Ensure there is a strategic approach to minimising the contribution of nutrients from wastewater treatment plants and other point sources in response to projected population increases.
- Recognise and support First Nations and their aspirations to lead the stewardship of Country and culture.
- Respect and recognise First Nations in daily work activities by getting to know and engaging with the appropriate First Nation group who have a registered interest in your catchment. For assistance on engagement, please see the [Guidance for proponents on best practice Indigenous engagement for environmental assessments under the Environment Protection and Biodiversity Conservation Act 1999](#) and the [AIATSIS Principles for engagement in projects concerning Aboriginal and Torres Strait Islander peoples](#).
- Undertake comprehensive surveys of Western Bay to record, document and safeguard Cultural Heritage and protect sites through Cultural Heritage Management Plans.

7 Eastern Bay

7.1 Environmental Condition (A-)



Eastern Bay declined slightly but remains in excellent condition.

Why?

- Water quality declined slightly, though remains in excellent condition. Prolonged catchment inflows and flood plumes from the Logan and Brisbane Rivers drove down water quality in Eastern Moreton Bay in 2022. Turbidity, algae (phytoplankton), and total phosphorus declined slightly. Total nitrogen declined significantly from excellent to poor.
- 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, and the depth where seagrass grows significantly improved from good to excellent.
- The 2022 floods increased the area of muddy sediments across Moreton Bay and has smothered previously sandy habitats. Mud content increased from very low to low in Eastern Moreton Bay. Muddy sediments are beginning to encroach on the typically sandy habitats of Eastern Moreton Bay, with a trend of increase in mud content at many sites since 1998.

7.2 Waterway Benefit Rating (N/A)

The Waterway Benefit Rating is not measured in this area.

7.3 Cultural Resource Management

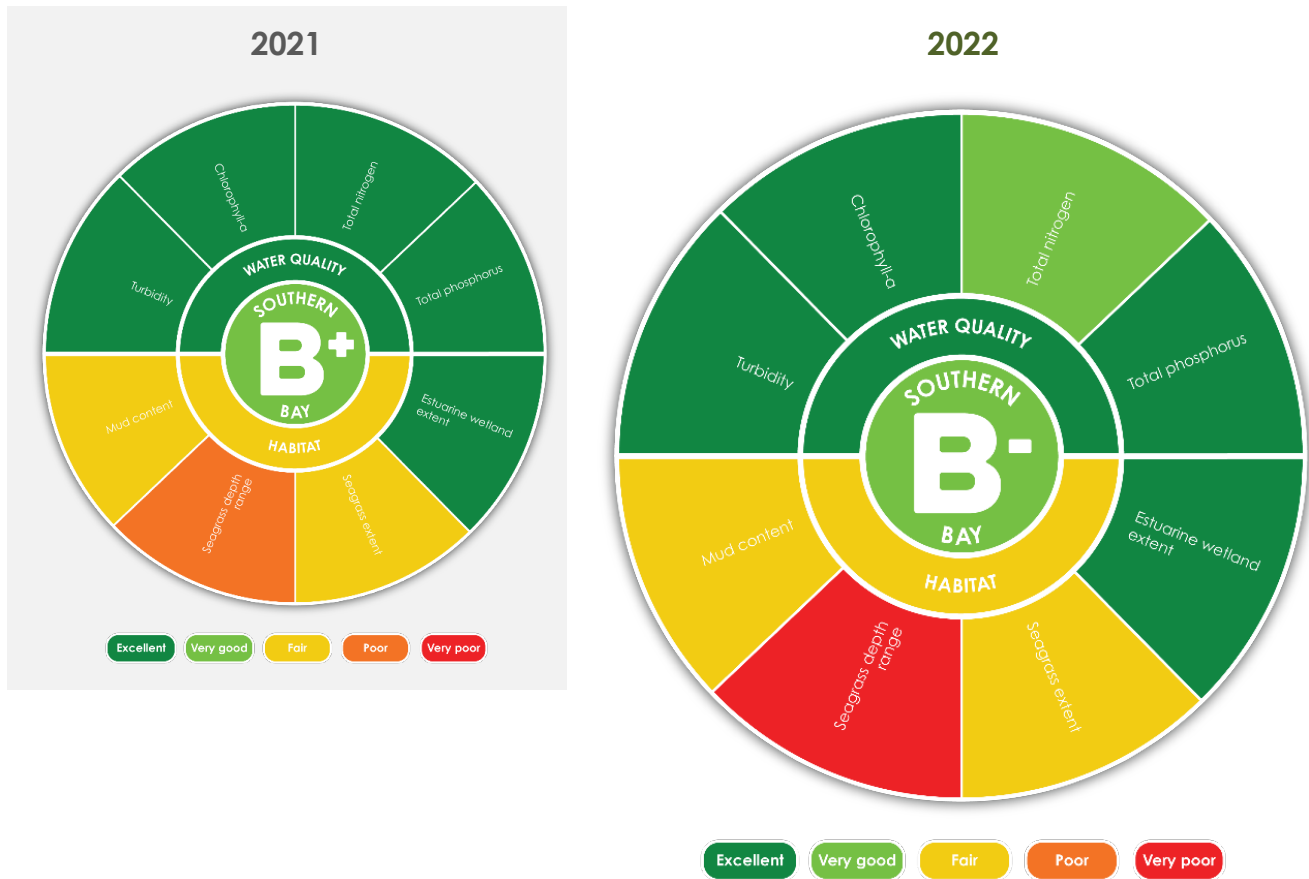
- First Nation rights and interests to lead the stewardship of Country and culture have been fully recognised through Native Title over 42.3% of the landscapes of the Eastern Bay where Native Title persists.
- First Nation parties are identified and recognised to lead the decisions relating to Aboriginal Cultural Heritage over 51% of the Eastern Bay.
- Comprehensive archaeological surveys that formally document and maximise the protection of Aboriginal Cultural Heritage have been completed and recognised over 27.28 ha (0.04%) of the Eastern Bay.
- Aboriginal Cultural Heritage Management Plans that enhance the protection of culture have been adopted over 12% of the formally recorded Aboriginal Cultural Heritage sites in the Eastern Bay.
- Note: the area monitored for the Cultural Resource Management Indicators for the Eastern Bay currently does not include the Moreton Bay islands. Please also refer to results for “Smaller Moreton Bay Islands”.

7.4 Ways to improve waterway health

- Protect and enhance wetlands, floodplain ecosystems, and habitat that support biodiversity and provide important ecosystem services, including sediment and nutrient retention and carbon sequestration.
- Protect and enhance coastal and marine habitats (seagrass, coral reefs, intertidal flats) by managing pollution, development and use and access.
- Reduce catchment sediment pollution by targeting known areas of high stream bank erosion and gully erosion risk.
- Slow water down in the upper catchment to manage floodwater, reduce erosion, and rehydrate the landscape, by protecting and increasing vegetation (especially along riparian zones) and engaging floodplains through policy, land-use planning, incentives, and compliance.
- Support integrated catchment management approaches, such as a multi-sector governance model for catchments with a core objective of improved estuary and Bay health as a high priority.
- Increase erosion and sediment controls and compliance for new development, construction sites and private lands, to reduce runoff when it rains.
- Ensure there is a strategic approach to minimising the contribution of nutrients from wastewater treatment plants and other point sources in response to projected population increases.
- Recognise and support First Nations and their aspirations to lead the stewardship of Country and culture.
- Respect and recognise First Nations in daily work activities by getting to know and engaging with the appropriate First Nation group who have a registered interest in your catchment. For assistance on engagement please see the [Guidance for proponents on best practice Indigenous engagement for environmental assessments under the Environment Protection and Biodiversity Conservation Act 1999](#) and the [AIATSIS Principles for engagement in projects concerning Aboriginal and Torres Strait Islander peoples](#).
- Undertake comprehensive surveys of Eastern Bay to record, document and safeguard Cultural Heritage and protect sites through Cultural Heritage Management Plans.

8 Southern Bay

8.1 Environmental Condition (B-)



Southern Bay slightly declined but remains in good condition.

Why?

- Water quality in Southern Bay declined slightly and remains excellent. Prolonged catchment inflows and the influence of the Logan River flood plume drove down water quality. Turbidity, algae (phytoplankton), and total phosphorus declined slightly. Total nitrogen declined significantly from excellent to good.
- 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 declined from poor to very poor as a result of poor water quality conditions experienced following the floods.
- The 2022 floods have increased the area of muddy sediments across Moreton Bay, smothering previously sandy habitats. Mud content increased slightly and remains moderate in Southern Moreton Bay.

8.2 Waterway Benefit Rating (N/A)

The Waterway Benefit Rating is not measured in this area.

8.3 Cultural Resource Management

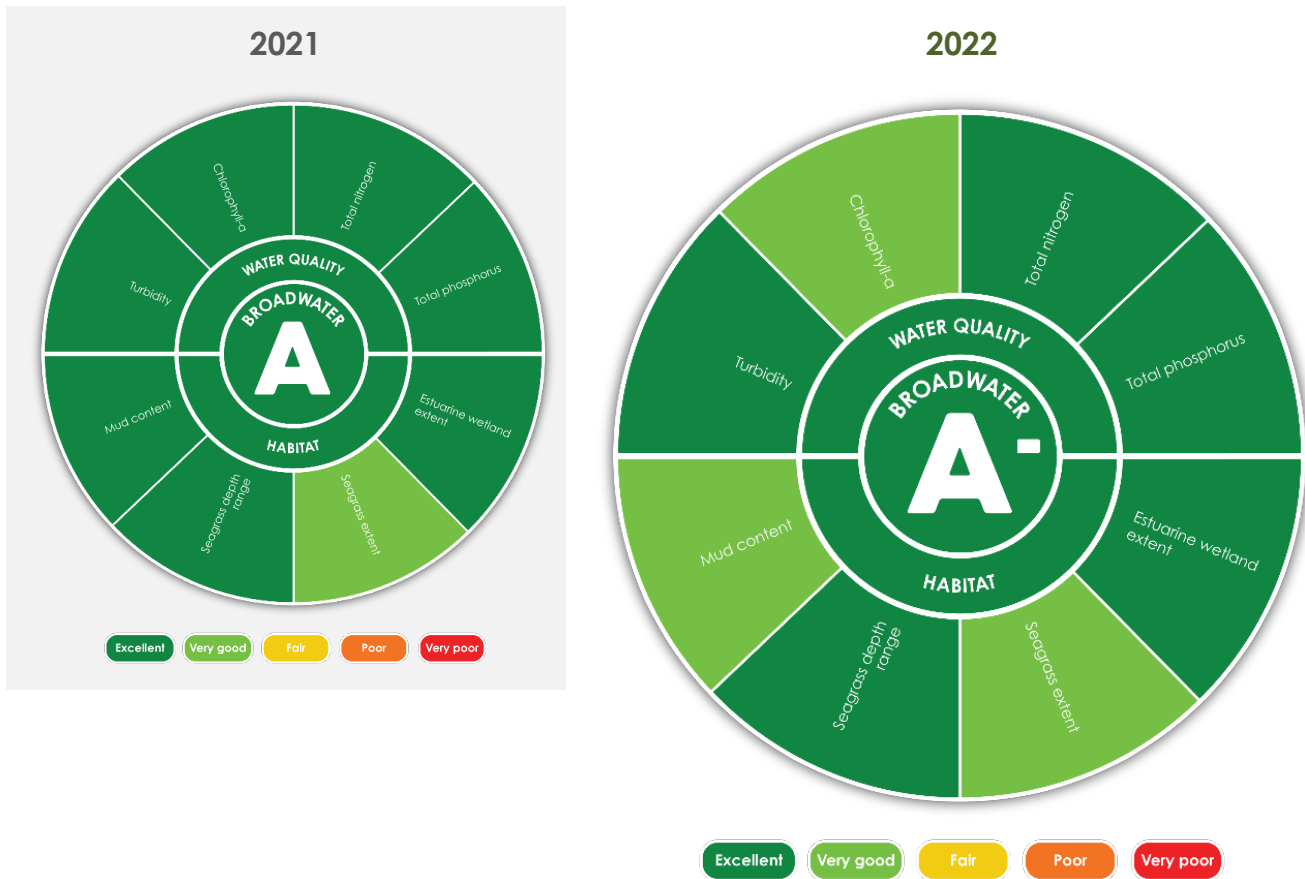
- First Nation rights and interests to lead the stewardship of Country and culture have been fully recognised through Native Title over 2.3% of the landscapes of the Southern Bay where Native Title persists.
- First Nation parties are identified and recognised to lead the decisions relating to Aboriginal Cultural Heritage over 60% of the Southern Bay.
- Comprehensive archaeological surveys that formally document and maximise the protection of Aboriginal Cultural Heritage have been completed and recognised over 10.40 ha (0.11%) of the Southern Bay.
- Aboriginal Cultural Heritage Management Plans that enhance the protection of culture have been adopted over 38% of the formally recorded Aboriginal Cultural Heritage sites in the Southern Bay.
- Note: the area monitored for the Cultural Resource Management Indicators for the Southern Bay currently does not include the Moreton Bay islands. Please also refer to results for “Smaller Moreton Bay Islands”.

8.4 Ways to improve waterway health

- Protect and enhance wetlands, floodplain ecosystems, and habitats that support biodiversity and provide important ecosystem services, including sediment and nutrient retention and carbon sequestration.
- Protect and enhance coastal and marine habitats (seagrass, coral reefs, intertidal flats) by managing pollution, development and use and access.
- Reduce catchment sediment pollution by targeting known areas of high stream bank erosion and gully erosion risk.
- Slow water down in the upper catchment to manage floodwater, reduce erosion, and rehydrate the landscape, by protecting and increasing vegetation (especially along riparian zones) and engaging floodplains through policy, land-use planning, incentives, and compliance.
- Support integrated catchment management approaches, such as a multi-sector governance model for catchments with a core objective of improved estuary and Bay health as a high priority.
- Increase erosion and sediment controls and compliance for new development, construction sites and private lands, to reduce runoff when it rains.
- Ensure there is a strategic approach to minimising the contribution of nutrients from wastewater treatment plants and other point sources in response to projected population increases.
- Recognise and support First Nations and their aspirations to lead the stewardship of Country and culture.
- Respect and recognise First Nations in daily work activities by getting to know and engaging with the appropriate First Nation group who have a registered interest in your catchment. For assistance on engagement, please see the [Guidance for proponents on best practice Indigenous engagement for environmental assessments under the Environment Protection and Biodiversity Conservation Act 1999](#) and the [AIATSIS Principles for engagement in projects concerning Aboriginal and Torres Strait Islander peoples](#).
- Undertake comprehensive surveys of Eastern Bay to record, document and safeguard Cultural Heritage and protect sites through Cultural Heritage Management Plans.

9 Broadwater

9.1 Environmental Condition (A-)



The Broadwater declined slightly, though remains in excellent condition.

Why?

- Water quality declined slightly but remains excellent.
- Turbidity, total nitrogen, and phosphorus declined slightly across the Broadwater. Increased nutrients stimulated algal blooms (phytoplankton) across the Broadwater. Algae declined from excellent to good.
- 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 slightly improved this year and remains excellent.
- Mud content increased from very low to low because of the delivery of fine sediments in floodwaters, which smothered sandy habitats within the Broadwater.

9.2 Waterway Benefit Rating (N/A)

The Waterway Benefit Rating is not measured in this area.

9.3 Cultural Resource Management

- First Nation rights and interests to lead the stewardship of Country and culture have been fully recognised through Native Title over 0% of the landscapes of Broadwater where Native Title persists.
- First Nation parties are identified and recognised to lead the decisions relating to Aboriginal Cultural Heritage over 100% of Broadwater.
- Comprehensive archaeological surveys that formally document and maximise the protection of Aboriginal Cultural Heritage have been completed and recognised over 0% of Broadwater.
- Aboriginal Cultural Heritage Management Plans that enhance the protection of culture have been adopted over 0% of the formally recorded Aboriginal Cultural Heritage sites in Broadwater.

9.4 Ways to improve waterway health

- Protect and enhance wetlands, floodplain ecosystems, and habitats that support biodiversity and provide important ecosystem services, including sediment and nutrient retention and carbon sequestration.
- Protect and enhance coastal and marine habitats (seagrass, coral reefs, intertidal flats) by managing pollution, development and use and access.
- Reduce catchment sediment pollution by targeting known areas of high stream bank erosion and gully erosion risk.
- Support all landholders (large and small properties) to improve local riparian management and restoration through education, collaboration and financial incentives.
- Slow water down in the upper catchment to manage floodwater, reduce erosion, and rehydrate the landscape, by protecting and increasing vegetation (especially along riparian zones) and engaging floodplains through policy, land-use planning, incentives, and compliance.
- Support integrated catchment management approaches, such as a multi-sector governance model for catchments with a core objective of improved estuary and Bay health as a high priority.
- 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.
- Respect and recognise First Nations in daily work activities by getting to know and engaging with the appropriate First Nation group who have a registered interest in your catchment. For assistance on engagement, please see the [Guidance for proponents on best practice Indigenous engagement for environmental assessments under the Environment Protection and Biodiversity Conservation Act 1999](#) and the [AIATSIS Principles for engagement in projects concerning Aboriginal and Torres Strait Islander peoples](#).
- Undertake comprehensive surveys of the Broadwater to record, document and safeguard Cultural Heritage and protect sites through Cultural Heritage Management Plans.

10 Yarun (Bribie Island)

10.1 Environmental Condition (N/A)

Refer to results for Pumicestone Passage catchment.

10.2 Waterway Benefit Rating (N/A)

Refer to results for Pumicestone Passage catchment.

10.3 Cultural Resource Management

- First Nation rights and interests to lead the stewardship of Country and culture have been fully recognised through Native Title over 0% of the landscapes of Yarun where Native Title persists.
- First Nation parties are identified and recognised to lead the decisions relating to Aboriginal Cultural Heritage over 100% of Yarun.
- Comprehensive archaeological surveys that formally document and maximise the protection of Aboriginal Cultural Heritage have been completed and recognised over 0% of Yarun.
- Aboriginal Cultural Heritage Management Plans that enhance the protection of culture have been adopted over 0% of the formally recorded Aboriginal Cultural Heritage sites on Yarun.

10.4 Ways to improve cultural resource management

- Recognise and support First Nations and their aspirations to lead the stewardship of Country and culture.
- As noted in the 2021 State of Environment Report, Australia holds evidence of the world's oldest society. The *Aboriginal Cultural Heritage Act 2003* has been in place for almost 20 years, yet the destruction of Cultural heritage is occurring at an unacceptable rate.
- It is all of our roles, from individuals to organisations, to protect cultural heritage and empower and support First Nations through coordinated, collaborative and strategic approaches.
- Respect and recognise First Nations in daily work activities by getting to know and engaging with the appropriate First Nation group who have a registered interest in your catchment. For assistance on engagement, please see the [Guidance for proponents on best practice Indigenous engagement for environmental assessments under the *Environment Protection and Biodiversity Conservation Act 1999*](#) and the [AIATSIS Principles for engagement in projects concerning Aboriginal and Torres Strait Islander peoples](#).
- Undertake comprehensive surveys of Yarun to contemporarily record, document and safeguard Cultural Heritage and protect sites through Cultural Heritage Management Plans. Target strategic areas for cultural surveys and cultural heritage protection, including high energy risk areas/areas affected by erosion and sea level rise along the coast.
- Enhance Cultural Heritage compliance by improving development assessment processes and increasing education around compliance with the *Aboriginal Cultural Heritage Act 2003* and Best Practice Standards ([Heritage Chairs of Australia and New Zealand 2020, Dhawura Ngilan: A vision for Aboriginal and Torres Strait Islander heritage in Australia](#)).
- Get to know local stories and First Nations of where you live, work and recreate by visiting the library and researching online.

11 Minjerribah (North Stradbroke Island)

11.1 Environmental Condition (N/A)

The Environmental Condition is not measured in this area.

11.2 Waterway Benefit Rating (N/A)

The Waterway Benefit Rating is not measured in this area.

11.3 Cultural Resource Management

- First Nation rights and interests to lead the stewardship of Country and culture have been fully recognised through Native Title over 91.3% of the landscapes of Minjerribah where Native Title persists.
- First Nation parties are identified and recognised to lead the decisions relating to Aboriginal Cultural Heritage over 100% of Minjerribah.
- Comprehensive archaeological surveys that formally document and maximise the protection of Aboriginal Cultural Heritage have been completed and recognised over 14,515.57 ha (53.6%) of Minjerribah.
- Aboriginal Cultural Heritage Management Plans that enhance the protection of culture have been adopted over 49% of the formally recorded Aboriginal Cultural Heritage sites on Minjerribah.

11.4 Ways to improve cultural resource management

- Recognise and support First Nations and their aspirations to lead the stewardship of Country and culture.
- As noted in the 2021 State of Environment Report, Australia holds evidence of the world's oldest society. The *Aboriginal Cultural Heritage Act 2003* has been in place for almost 20 years, yet the destruction of Cultural heritage is occurring at an unacceptable rate.
- It is all of our roles, from individuals to organisations, to protect cultural heritage and empower and support First Nations through coordinated, collaborative and strategic approaches.
- Respect and recognise First Nations in daily work activities by getting to know and engaging with the appropriate First Nation group who have a registered interest in your catchment. For assistance on engagement, please see the [Guidance for proponents on best practice Indigenous engagement for environmental assessments under the Environment Protection and Biodiversity Conservation Act 1999](#) and the [AIATSIS Principles for engagement in projects concerning Aboriginal and Torres Strait Islander peoples](#).
- Safeguard and document Cultural Heritage through increased comprehensive surveys of Minjerribah that contemporarily record and protect sites through Cultural Heritage Management Plans. Target strategic areas for cultural surveys and cultural heritage protection, including high energy risk areas/areas affected by erosion and sea level rise along the coast.
- Enhance Cultural Heritage compliance by improving development assessment processes and increasing education around compliance with the *Aboriginal Cultural Heritage Act 2003* and Best Practice Standards ([Heritage Chairs of Australia and New Zealand 2020, Dhawura Ngilan: A vision for Aboriginal and Torres Strait Islander heritage in Australia](#)).
- Get to know local stories and First Nations of where you live, work and recreate by visiting the library and researching online.

12 Mulgumpin (Moreton Island)

12.1 Environmental Condition (N/A)

The Environmental Condition is not measured in this area.

12.2 Waterway Benefit Rating (N/A)

The Waterway Benefit Rating is not measured in this area.

12.3 Cultural Resource Management

- First Nation rights and interests to lead the stewardship of Country and culture have been fully recognised through Native Title over 98% of the landscapes of Mulgumpin where Native Title persists.
- First Nation parties are identified and recognised to lead the decisions relating to Aboriginal Cultural Heritage over 96% of Mulgumpin.
- Comprehensive archaeological surveys that formally document and maximise the protection of Aboriginal Cultural Heritage have been completed and recognised over 0% of Mulgumpin.
- Aboriginal Cultural Heritage Management Plans that enhance the protection of culture have been adopted over 0% of the formally recorded Aboriginal Cultural Heritage sites on Mulgumpin.

12.4 Ways to improve cultural resource management

- Recognise and support First Nations and their aspirations to lead the stewardship of Country and culture.
- As noted in the 2021 State of Environment Report, Australia holds evidence of the world's oldest society. The *Aboriginal Cultural Heritage Act 2003* has been in place for almost 20 years, yet the destruction of Cultural heritage is occurring at an unacceptable rate.
- It is all of our roles, from individuals to organisations, to protect cultural heritage and empower and support First Nations through coordinated, collaborative and strategic approaches.
- Respect and recognise First Nations in daily work activities by getting to know and engaging with the appropriate First Nation group who have a registered interest in your catchment. For assistance on engagement, please see the [Guidance for proponents on best practice Indigenous engagement for environmental assessments under the Environment Protection and Biodiversity Conservation Act 1999](#) and the [AIATSIS Principles for engagement in projects concerning Aboriginal and Torres Strait Islander peoples](#).
- Safeguard and document Cultural Heritage through increased comprehensive surveys of Mulgumpin that contemporarily record and protect sites through Cultural Heritage Management Plans. Target strategic areas for cultural surveys and cultural heritage protection, including high energy risk areas/areas affected by erosion and sea level rise along the coast.
- Enhance Cultural Heritage compliance by improving development assessment processes and increasing education around compliance with the *Aboriginal Cultural Heritage Act 2003* and Best Practice Standards ([Heritage Chairs of Australia and New Zealand 2020, Dhawura Ngilan: A vision for Aboriginal and Torres Strait Islander heritage in Australia](#)).
- Get to know local stories and First Nations of where you live, work and recreate by visiting the library and researching online.

13 Small Moreton Bay Islands

13.1 Environmental Condition (N/A)

Refer to results for Western Bay, Central Bay, Eastern Bay and Western Bay.

13.2 Waterway Benefit Rating (N/A)

The Waterway Benefit Rating is not measured in this area.

13.3 Cultural Resource Management

- First Nation rights and interests to lead the stewardship of Country and culture have been fully recognised through Native Title over 12% of the landscapes of the Small Moreton Bay Islands where Native Title persists.
- First Nation parties are identified and recognised to lead the decisions relating to Aboriginal Cultural Heritage over 69% of the Small Moreton Bay Islands.
- Comprehensive archaeological surveys that formally document and maximise the protection of Aboriginal Cultural Heritage have been completed and recognised over 635.77 ha (6.98%) of the Small Moreton Bay Islands.
- Aboriginal Cultural Heritage Management Plans that enhance the protection of culture have been adopted over 17% of the formally recorded Aboriginal Cultural Heritage sites on the Small Moreton Bay Islands.

13.4 Ways to improve cultural resource management

- Recognise and support First Nations and their aspirations to lead the stewardship of Country and culture.
- As noted in the 2021 State of Environment Report, Australia holds evidence of the world's oldest society. The *Aboriginal Cultural Heritage Act 2003* has been in place for almost 20 years, yet the destruction of Cultural heritage is occurring at an unacceptable rate.
- It is all of our roles, from individuals to organisations, to protect cultural heritage and empower and support First Nations through coordinated, collaborative and strategic approaches.
- Respect and recognise First Nations in daily work activities by getting to know and engaging with the appropriate First Nation group who have a registered interest in your catchment. For assistance on engagement, please see the [Guidance for proponents on best practice Indigenous engagement for environmental assessments under the *Environment Protection and Biodiversity Conservation Act 1999*](#) and the [AIATSIS Principles for engagement in projects concerning Aboriginal and Torres Strait Islander peoples](#).
- Safeguard and document Cultural Heritage through increased comprehensive surveys of the Small Moreton Bay Islands that contemporarily record and protect sites through Cultural Heritage Management Plans. Target strategic areas for cultural surveys and cultural heritage protection, including high energy risk areas/areas affected by erosion and sea level rise along the coast.
- Enhance Cultural Heritage compliance by improving development assessment processes and increasing education around compliance with the *Aboriginal Cultural Heritage Act 2003* and Best Practice Standards ([Heritage Chairs of Australia and New Zealand 2020, Dhawura Ngilan: A vision for Aboriginal and Torres Strait Islander heritage in Australia](#)).
- Get to know local stories and First Nations of where you live, work and recreate by visiting the library and researching online.

14 South Stradbroke Island

14.1 Environmental Condition (N/A)

The Environmental Condition is not measured in this area.

14.2 Waterway Benefit Rating (N/A)

The Waterway Benefit Rating is not measured in this area.

14.3 Cultural Resource Management

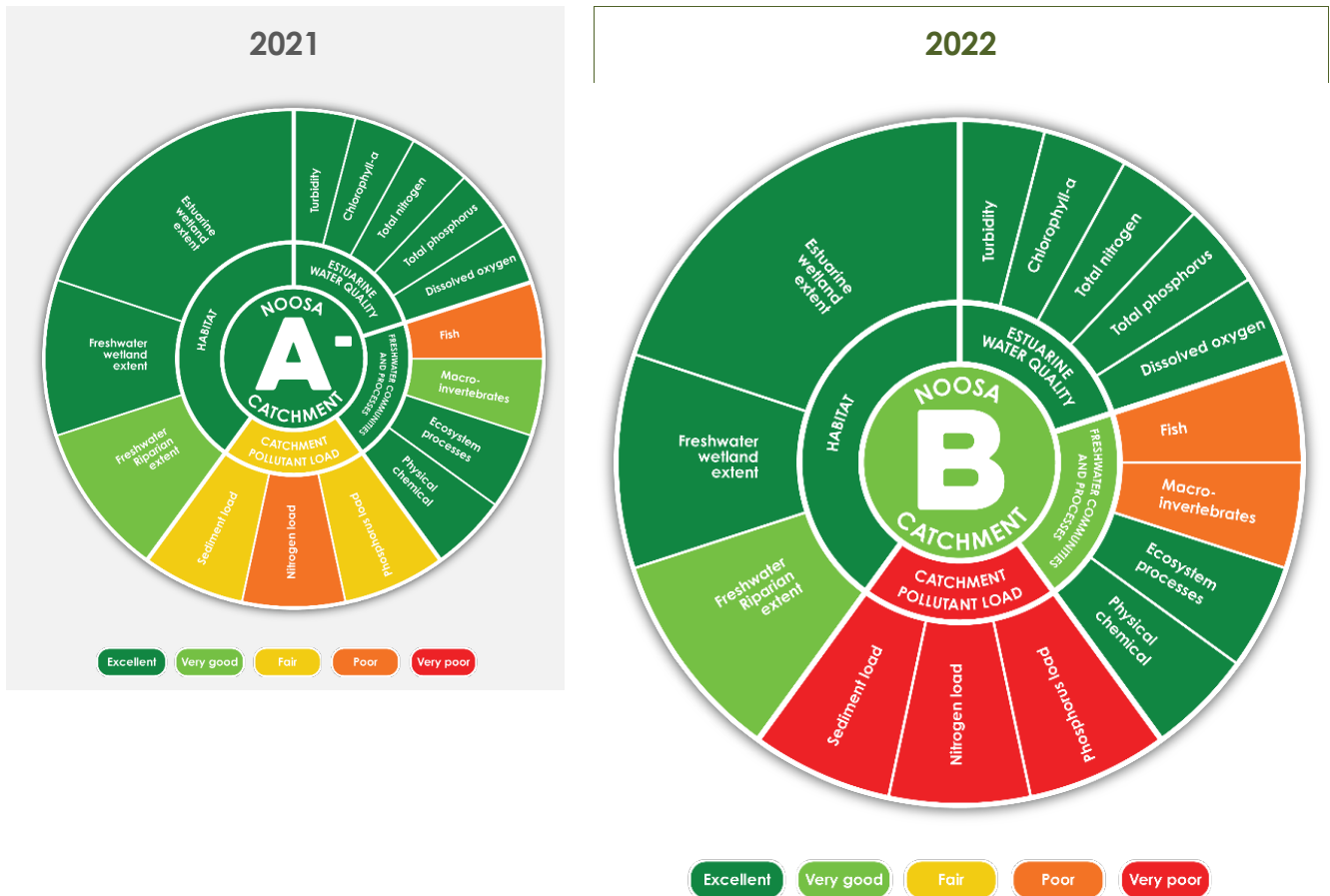
- First Nation rights and interests to lead the stewardship of Country and culture have been fully recognised through Native Title over 0% of the landscapes of South Stradbroke Island where Native Title persists.
- First Nation parties are identified and recognised to lead the decisions relating to Aboriginal Cultural Heritage over 99% of South Stradbroke Island.
- Comprehensive archaeological surveys that formally document and maximise the protection of Aboriginal Cultural Heritage have been completed and recognised over 0% of South Stradbroke Island.
- Aboriginal Cultural Heritage Management Plans that enhance the protection of culture have been adopted over 0% of the formally recorded Aboriginal Cultural Heritage sites on South Stradbroke Island.

14.4 Ways to improve cultural resource management

- Recognise and support First Nations and their aspirations to lead the stewardship of Country and culture.
- There is still much to do to recognize and support First Nations and their aspirations to lead the stewardship of Country and culture.
- As noted in the 2021 State of Environment Report, Australia holds evidence of the world's oldest society. The *Aboriginal Cultural Heritage Act 2003* has been in place for almost 20 years, yet the destruction of Cultural heritage is occurring at an unacceptable rate.
- It is all of our roles, from individuals to organisations, to protect cultural heritage and empower and support First Nations through coordinated, collaborative and strategic approaches.
- Respect and recognise First Nations in daily work activities by getting to know and engaging with the appropriate First Nation group who have a registered interest in your catchment. For assistance on engagement, please see the [Guidance for proponents on best practice Indigenous engagement for environmental assessments under the Environment Protection and Biodiversity Conservation Act 1999](#) and the [AIATSIS Principles for engagement in projects concerning Aboriginal and Torres Strait Islander peoples](#).
- Undertake comprehensive surveys of South Stradbroke to contemporarily record, document and safeguard Cultural Heritage and protect sites through Cultural Heritage Management Plans. Target strategic areas for cultural surveys and cultural heritage protection, including high energy risk areas/areas affected by erosion and sea level rise along the coast.
- Enhance Cultural Heritage compliance by improving development assessment processes and increasing education around compliance with the *Aboriginal Cultural Heritage Act 2003* and Best Practice Standards ([Heritage Chairs of Australia and New Zealand 2020, Dhawura Ngilan: A vision for Aboriginal and Torres Strait Islander heritage in Australia](#)).
- Get to know local stories and First Nations of where you live, work and recreate by visiting the library and researching online.

15 Noosa catchment

15.1 Environmental Condition (B)



The catchment has declined from excellent to good condition.

Why?

- Pollutant loads increased significantly from moderate to very high, with sediment (mud) load increasing from 349kg/ha in 2021 to 1,112kg/ha in 2022. Run-off also delivered very high loads of nitrogen (19.3 kg/ha) and phosphorus (1.6 kg/ha) to waterways. This was due to very high rainfall and river flows experienced over the summer months, transporting pollutants from, agricultural peri-urban urban areas downstream.
- The freshwater creeks declined from excellent to good condition, with a decline in macroinvertebrate community health at Cooloola Way.
- Stream bank vegetation in the catchment remains good (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 the erosion of sediments into the waterways.
- Estuarine water quality declined slightly but remains in excellent condition. Turbidity within Lake Coorobah and Lake Cootharaba declined slightly this year; nutrients (total nitrogen & total phosphorus) and chlorophyll a also declined slightly, though remains excellent.

15.2 Waterway Benefit Rating ★ ★ ★ ★ ★

- Good catchment condition results in very high numbers of residents satisfied (78%) with their local waterways, and very high levels of personal benefits local residents gain from using their waterways (74% compared to 57% for all of South East Queensland).
- Residents report that they highly value their local waterways for recreation. 53% 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 (107 days/year per resident), enjoying nature (76 days/year per resident), swimming (28 days/year per resident), and picnics/BBQs (28 days/year per resident).
- The average recreational value of the waterways was \$2,865 per person/year. This value was comprised mostly of picnics and BBQs (35% of value), boating and sailing (26% of value) and recreational swimming (10% of value).

15.3 Cultural Resource Management

- First Nation rights and interests to lead the stewardship of Country and culture have been fully recognised through Native Title over 0% of the landscapes of the Noosa Catchment where Native Title persists.
- First Nation parties are identified and recognised to lead the decisions relating to Aboriginal Cultural Heritage over 100% of the Noosa Catchment.
- Comprehensive archaeological surveys that formally document and maximise the protection of Aboriginal Cultural Heritage have been completed and recognised over 0% of the Noosa Catchment.
- Aboriginal Cultural Heritage Management Plans that enhance the protection of culture have been adopted over 0% of the formally recorded Aboriginal Cultural Heritage sites in the Noosa Catchment.

15.4 Ways to improve waterway health and benefits

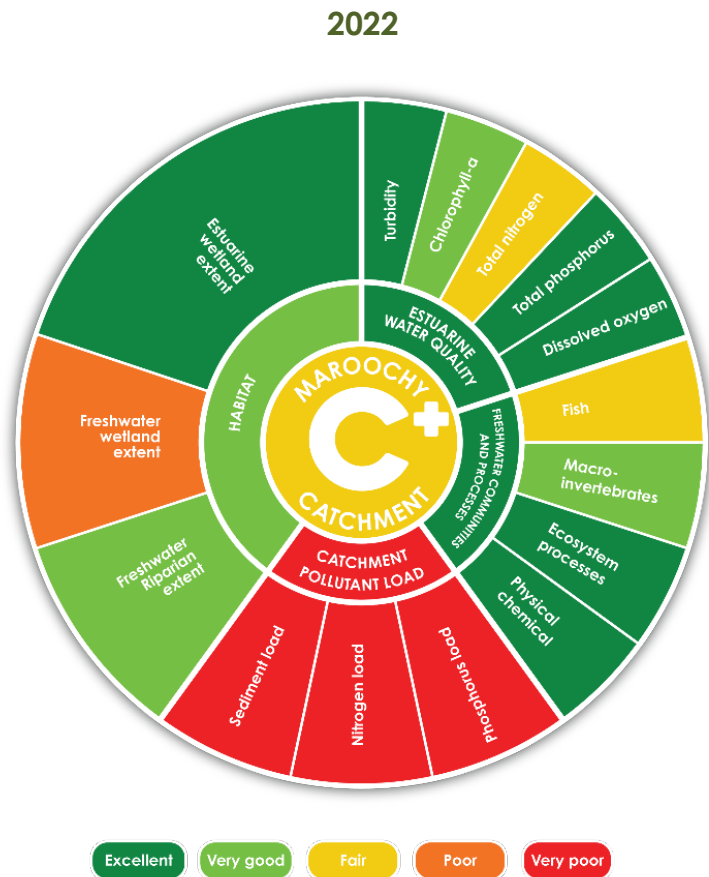
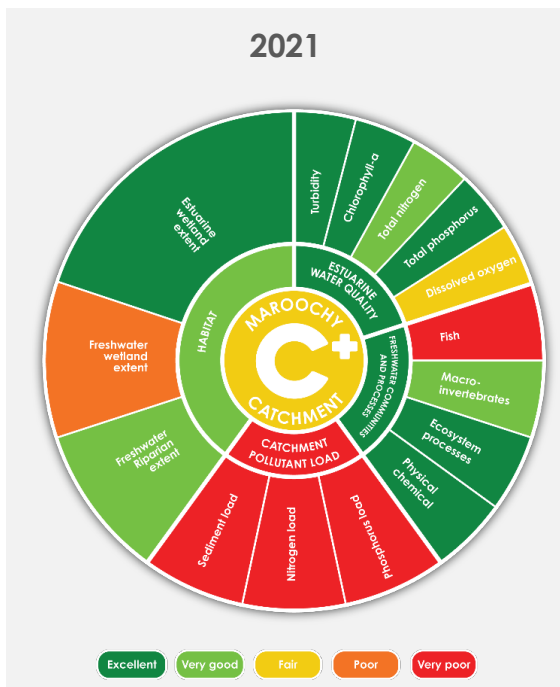
- Protecting and managing existing values from the pressures of population growth is a priority, with the population in the Noosa Catchment projected to increase significantly over the next 25 years.
- Reduce sediment loads and nutrients entering waterways by implementing activities in priority catchments (e.g. Ringtail Creek and creeks flowing into Lake Cootharaba, including Kin Kin Creek) and continue to support catchment management as outlined in the "Keeping it in Kin Kin" plan. Focus on engagement and compliance within industries with high soil disturbance, such as agriculture and development.
- Continued investment in minimising wastewater treatment plant and other industrial discharges (point sources) is critical to keep up with population increases and maintaining condition (e.g. Burgess Creek)
- 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.
- Support consistent investment in local community groups to deliver these actions to improve catchment and waterway health.
- Provide education campaigns on the respectful use of beaches, State Forests and greenspace areas.
- Support projects that strengthen Kabi Kabi connection with sea, such as re-establishing extinct Oyster Reefs in the Noosa River estuary, historically a culturally important food source.
- Respect and recognise First Nations in daily work activities by getting to know and engaging with the appropriate First Nation group who have a registered interest in your catchment. For

assistance on engagement, please see the [Guidance for proponents on best practice Indigenous engagement for environmental assessments under the *Environment Protection and Biodiversity Conservation Act 1999*](#) and the [AIATSIS Principles for engagement in projects concerning Aboriginal and Torres Strait Islander peoples](#).

- Undertake comprehensive surveys of the Noosa catchment to contemporarily record, document and safeguard Cultural Heritage and protect sites through Cultural Heritage Management Plans. Target strategic areas for cultural surveys and cultural heritage protection, including high energy risk areas/areas affected by erosion and sea level rise along the coast.

16 Maroochy catchment

16.1 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 1,023kg/ha in 2021 to 3,041kg/ha in 2022. Run-off also delivered very high loads of nitrogen (28.8 kg/ha) and phosphorus (3.6 kg/ha) to waterways. This was due to very 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 significant rainfall events potentially activating these high-risk areas.
- The health of freshwater creeks remained excellent, with an improvement in fish health. Water quality and ecosystem processes remain excellent, while macroinvertebrates remain good.
- 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 the erosion of sediments into waterways.
- Estuarine water quality declined slightly but remains excellent. Slight declines in total phosphorus and turbidity were observed in the mid to upper estuary compared to 2021. Algae (phytoplankton) and total nitrogen declined significantly across the estuary. Dissolved oxygen improved from fair to good, despite the post-flood low oxygen event (DO < 10% saturation) observed in March 2022.

16.2 Waterway Benefit Rating ★★★★★

- Despite fair catchment condition, very high numbers of residents are satisfied (67%) with their local waterways. This is likely tied to the very high satisfaction with their ability to access and use local waterways (71% compared to 63% for all of South East Queensland).
- Residents report that they value their local waterways for recreation very highly. 67% of residents recreate in or alongside their local waterways weekly or more. The top activities include walking or running (84 days/year per resident), enjoying nature (40 days/year per resident), cycling (19 days/year per resident), picnics and BBQs (18 days/year per resident), and swimming (14 days/year per resident).
- The waterway recreational value per person was \$2,483/year. The activities that made up this value include picnics and BBQs (36% of value), boating and sailing (18% of value) and recreational fishing (15% of value).
- The catchment contributed to the supply of over 3,600ML of drinking water to SEQ residents in 2021-2022. High levels of sludge relative to other drinking water catchments were removed from water treatment plants, at a cost to the community.

16.3 Cultural Resource Management

- First Nation rights and interests to lead the stewardship of Country and culture have been fully recognised through Native Title over 36.6% of the landscapes of the Maroochy Catchment where Native Title persists.
- First Nation parties are identified and recognised to lead the decisions relating to Aboriginal Cultural Heritage over 100% of the Maroochy Catchment.
- Comprehensive archaeological surveys that formally document and maximise the protection of Aboriginal Cultural Heritage have been completed and recognised over 0% of the Maroochy Catchment.
- Aboriginal Cultural Heritage Management Plans that enhance the protection of culture have been adopted over 1% of the formally recorded Aboriginal Cultural Heritage sites in the Maroochy Catchment.

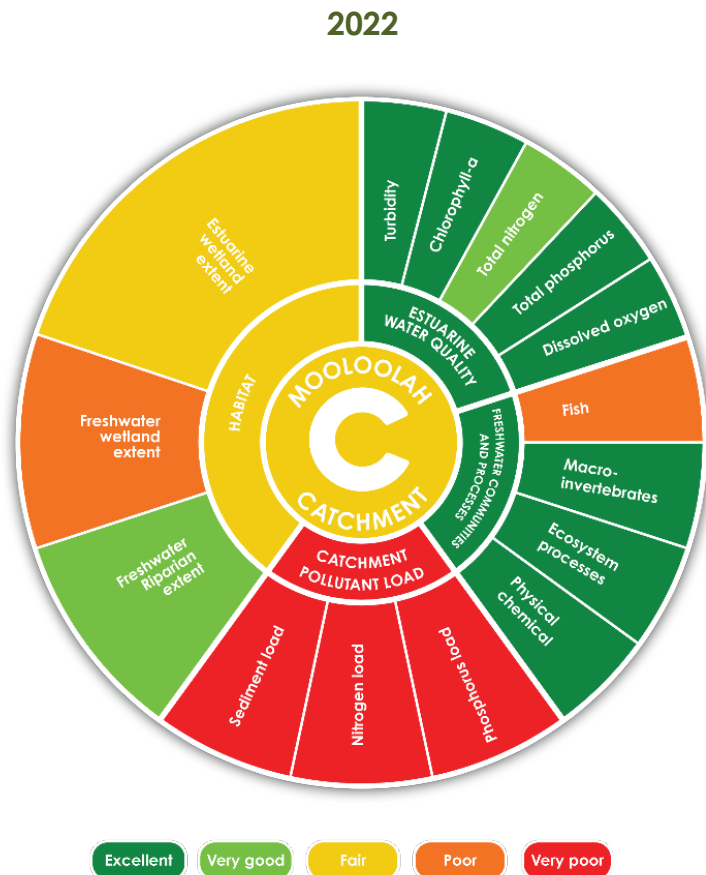
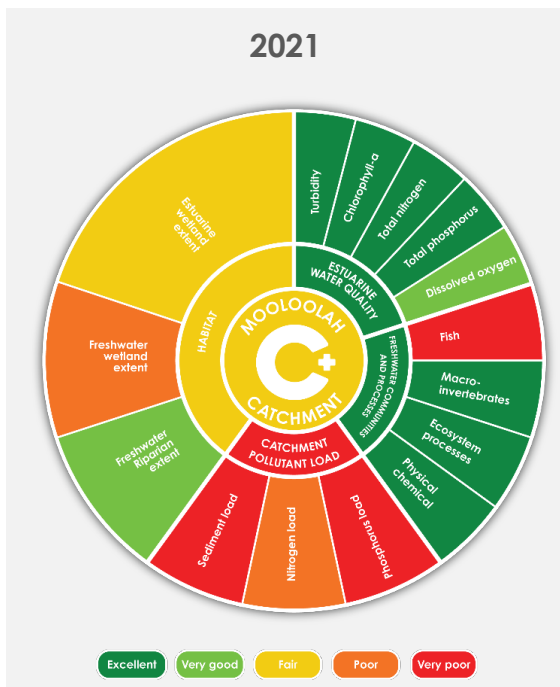
16.4 Ways to improve waterway health and benefits

- 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 of the Yandina Creek Wetlands has increased the value to fish communities.
- Implement integrated catchment management and water planning as a means to solve complex water issues, improve waterway health outcomes and provide water security.
- 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.
- Support land managers, including private properties, to:
 - Manage and preserve bushland.
 - Manage regrowth vegetation.
 - Revegetate.
 - Manage pests and weeds.
 - Manage for fire.

- Respect and recognise First Nations in daily work activities by getting to know and engaging with the appropriate First Nation group who have a registered interest in your catchment. For assistance on engagement, please see the [Guidance for proponents on best practice Indigenous engagement for environmental assessments under the Environment Protection and Biodiversity Conservation Act 1999](#) and the [AIATSIS Principles for engagement in projects concerning Aboriginal and Torres Strait Islander peoples](#).
- Undertake comprehensive surveys of the Maroochy catchment to contemporarily record, document and safeguard Cultural Heritage and protect sites through Cultural Heritage Management Plans. Target strategic areas for cultural surveys and cultural heritage protection, including high energy risk areas/areas affected by erosion and sea level rise along the coast.
- Enhance Cultural Heritage compliance by improving development assessment processes and increasing education around compliance with the *Aboriginal Cultural Heritage Act 2003* and Best Practice Standards ([Heritage Chairs of Australia and New Zealand 2020, Dhawura Ngilan: A vision for Aboriginal and Torres Strait Islander heritage in Australia](#)).

17 Mooloolah catchment

17.1 Environmental Condition (C)



The catchment has declined slightly and remains in fair condition.

Why?

- Pollutant loads remain very high within the Mooloolah Catchment, with sediment (mud) load increasing from 723kg/ha in 2021 to 2,169kg/ha in 2022. Run-off also delivered very high loads of nitrogen (20.2 kg/ha) and phosphorus (3.1 kg/ha) to waterways. This was due to very high rainfall and river flows experienced over the summer months, transporting pollutants from peri-urban and urban areas downstream. Mooloolah is susceptible to hillslope erosion and landslips in the upper catchment, with the significant rainfall events potentially activating these high-risk areas.
- Freshwater health remained excellent, with an improvement in fish health from very poor to poor. Ecosystem processes, water quality and macroinvertebrate health remain in excellent condition.
- Stream bank vegetation remains good (85% cover), with high levels of stream bank vegetation preventing the 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 declined slightly, though remains excellent. Total nitrogen declined significantly across the Mooloolah estuary in 2022, while dissolved oxygen improved from good to excellent.

17.2 Waterway Benefit Rating ★ ★ ★ ★ ★

- Despite only fair catchment condition, very high numbers of residents are satisfied with their local waterways (74% compared with 59% 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 (72%).
- Residents value their local waterways for recreation very highly. 65% enjoy recreating in or alongside their local waterway at least monthly. The most frequent recreation activities include walking/running (73 days/year per resident), enjoying nature (39 days/year per resident), swimming (12 days/year per resident), and picnics/BBQs (11 days/year per resident). They are also 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 \$1,078/year. The most valuable activities, based on costs per visit, were picnics and BBQs (44 % of value), swimming (13% of value) and boating and sailing (7% of value).
- The catchment supplied over 3,500ML of drinking water to residents in 2021-2022. Very high levels of sludge relative to other drinking water catchments were removed from the local water treatment plant, at a cost to the community.

17.3 Cultural Resource Management

- First Nation rights and interests to lead the stewardship of Country and culture have been fully recognised through Native Title over 4% of the landscapes of the Mooloolah Catchment where Native Title persists.
- First Nation parties are identified and recognised to lead the decisions relating to Aboriginal Cultural Heritage over 100% of the Mooloolah Catchment.
- Comprehensive archaeological surveys that formally document and maximise the protection of Aboriginal Cultural Heritage have been completed and recognised over 0% of the Mooloolah Catchment.
- Aboriginal Cultural Heritage Management Plans that enhance the protection of culture have been adopted over 0% of the formally recorded Aboriginal Cultural Heritage sites in the Mooloolah Catchment.

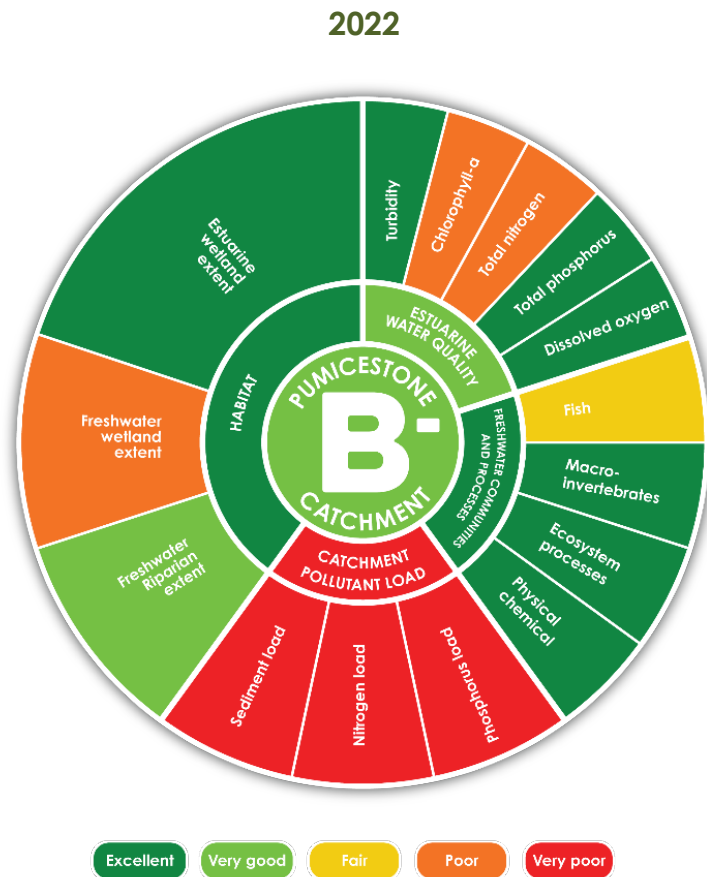
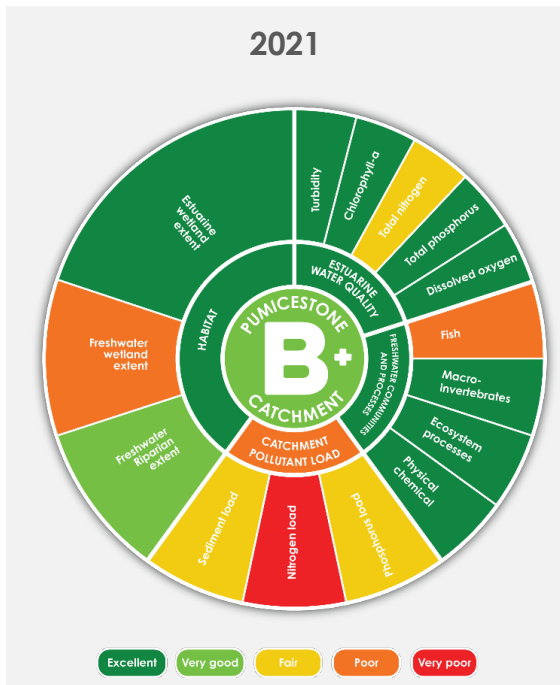
17.4 Ways to improve waterway health and benefits

- 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.
- Implement integrated catchment management and water planning as a means to solve complex water issues, improve waterway health outcomes and provide water security.
- 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, and protecting and restoring riparian habitats, wetlands and freshwater refugia. This also includes strengthening local planning and policy instruments to halt the further decline of freshwater wetlands.
- Maintain and enhance streambank vegetation to reduce sediment entering waterways. Seek and provide support for private landholders, particularly in the Upper Mooloolah River catchment.
- Provide extensions, workshops and field days that support community groups.
- Reduce and avoid light pollution impacting priority coastal areas and habitats, particularly for turtle nesting at Caloundra (particularly the high-energy beach zone around Alexandra Headlands and Point Cartwright).

- Protect and restore Sub-Tropical Lowland Rainforest linkages associated with waterway corridors in the Southern Blackall Range and Petrie Creek flowing into the Maroochy and Mooloolah Rivers.
- It is all of our roles, from individuals to organisations, to protect cultural heritage and empower and support First Nations through coordinated, collaborative and strategic approaches.
- Respect and recognise First Nations in daily work activities by getting to know and engaging with the appropriate First Nation group who have a registered interest in your catchment. For assistance on engagement, please see the [Guidance for proponents on best practice Indigenous engagement for environmental assessments under the Environment Protection and Biodiversity Conservation Act 1999](#) and the [AIATSIS Principles for engagement in projects concerning Aboriginal and Torres Strait Islander peoples](#).
- Undertake comprehensive surveys of the Mooloolah catchment to contemporarily record, document and safeguard Cultural Heritage and protect sites through Cultural Heritage Management Plans. Target strategic areas for cultural surveys and cultural heritage protection, including high energy risk areas/areas affected by erosion and sea level rise along the coast.
- Enhance Cultural Heritage compliance by improving development assessment processes and increasing education around compliance with the *Aboriginal Cultural Heritage Act 2003* and Best Practice Standards ([Heritage Chairs of Australia and New Zealand 2020, Dhawura Ngilan: A vision for Aboriginal and Torres Strait Islander heritage in Australia](#)).

18 Pumicestone catchment

18.1 Environmental Condition (B-)



The catchment has declined slightly but remains in good condition.

Why?

- Pollutant loads increased significantly from high to very high, with sediment (mud) load increasing from 378kg/ha in 2021 to 2,040kg/ha in 2022. Run-off also delivered very high loads of nitrogen (48.4 kg/ha) and phosphorus (2.3 kg/ha) to waterways. This was due to very high rainfall, and river flows experienced over the summer months, transporting pollutants from rural, peri-urban and urban areas downstream.
- The health of freshwater creeks remained excellent, with an improvement in fish health at Bluegum Creek and Cochin Creek. Water quality, ecosystem processes and macroinvertebrate health remain in excellent condition.
- Stream bank vegetation in the catchment remains good (90% cover), and wetland extent remains poor (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 support valuable commercial and recreational fisheries and stops the erosion of sediments into the waterways.
- Estuarine water quality declined from excellent to good. Prolonged catchment inputs resulted in significant declines in algae (phytoplankton) and total nitrogen.

18.2 Waterway Benefit Rating ★ ★ ★ ★ ★

- Good catchment condition results in very high numbers of residents (77%) satisfied with their local waterways (compared with 59% for all of South East Queensland). Pumicestone residents reported very high levels of personal connection with nature (70%) and received very high amounts of emotional benefits from their local waterways (70%).
- Residents report they value their local waterways for recreation. 60% of residents recreate in or alongside their local waterway at least weekly. Very high numbers value them as a place of rest and relaxation (77%) or for social interaction with friends and family (65%). The top activities include walking/running (74 days/year per resident), enjoying nature (50 days/year per resident), picnics/BBQs (11 days/year per resident), recreational fishing (10 days/year per resident), and swimming (10 days/year per resident).
- The waterway value per person was calculated as \$1,704/year. The most valuable activities, based on costs per visit, were recreational fishing (29% of value), boating and sailing (23% of value) and picnics and BBQs (24% of value).

18.3 Cultural Resource Management

- First Nation rights and interests to lead the stewardship of Country and culture have been fully recognised through Native Title over 10.7% of the landscapes of the Pumicestone Catchment where Native Title persists.
- First Nation parties are identified and recognised to lead the decisions relating to Aboriginal Cultural Heritage over 100% of the Pumicestone Catchment.
- Comprehensive archaeological surveys that formally document and maximise the protection of Aboriginal Cultural Heritage have been completed and recognised over 0% of the Pumicestone Catchment.
- Aboriginal Cultural Heritage Management Plans that enhance the protection of culture have been adopted over 9% of the formally recorded Aboriginal Cultural Heritage sites in the Pumicestone Catchment.
- Note: the area monitored for the Cultural Resource Management Indicators for the Pumicestone currently does not include the Yarun (Bribie Island). Please also refer to the results for Yarun (Bribie Island).

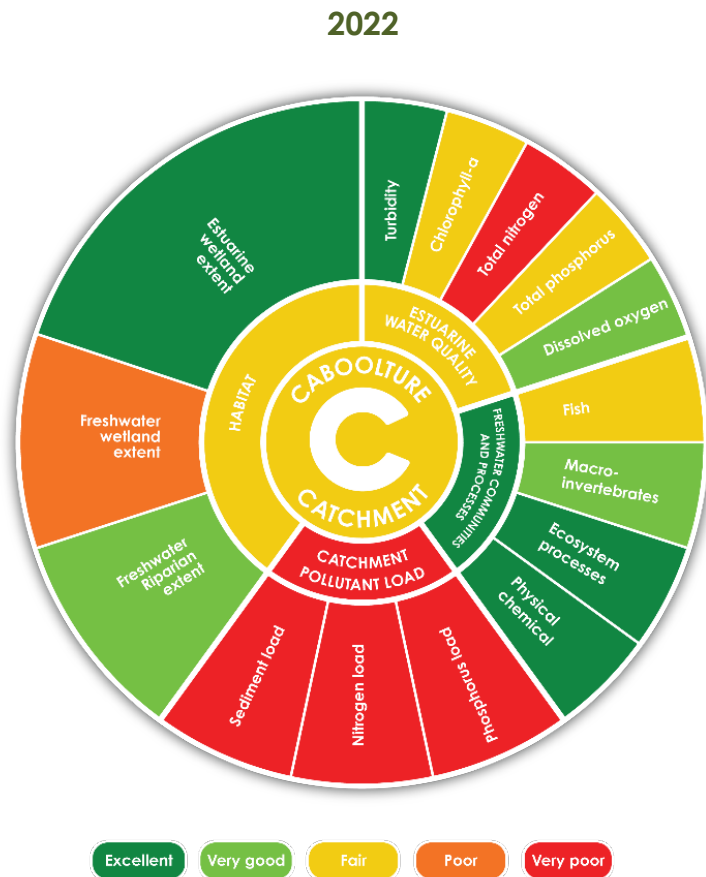
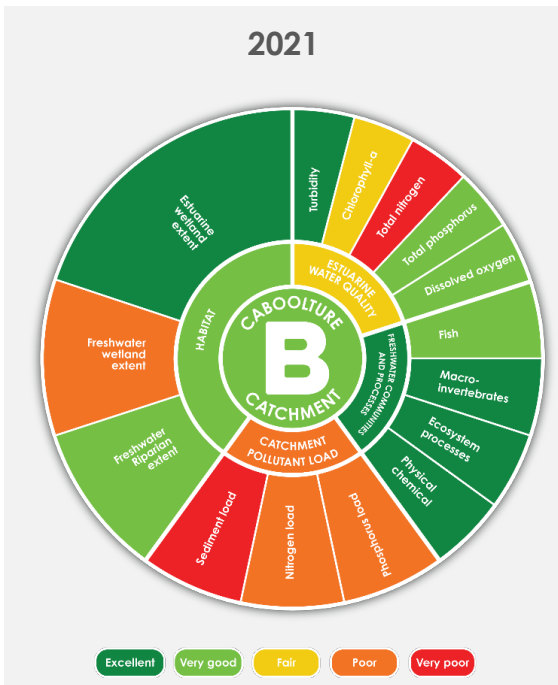
18.4 Ways to improve waterway health and benefits

- 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.
- Protect and manage critical habitats within the Pumicestone catchment, including coastal saltmarsh and mangrove communities and existing critical streambank vegetation and wetlands.
- Increase the use of erosion and sediment controls and compliance for new development, construction sites and private lands, particularly in the peri-urban landscape.
- Reduce sediment loads and nutrients entering waterways through stormwater management, property management, and restoration of areas of high erosion risk across the catchment. Focus on engagement and compliance within industries with high soil disturbance, such as agriculture and development.
- Reduce excess nutrient run-off from agricultural and agroforestry land by adopting best practice fertiliser use and management. Implement best management practices for unsealed roads and 4WD in the Pumicestone catchment.
- Develop and implement management strategies to minimise the impact of increasing visitation and recreational use of the Passage.

- Provide education campaigns on the respectful use of waterways and greenspace areas.
- Community, First Nations, Industry, research and academia and government work together to better understand what the Bribie Island “breakthrough” means for the health of the Pumicestone Passage. Hold a Community Science and Planning Forum aimed at understanding what the changes brought forward by this event mean for the Region.
- Maintain the northern inter-urban break as part of the Pumicestone Passage Catchment to prevent urban coalescence and maintain biodiversity corridors (this priority is supported by a Regional Policy in *ShapingSEQ 2017*).
- Restore depleted shellfish reefs to enhance natural filtration and improve water clarity for the benefit of other species.
- Respect and recognise First Nations in daily work activities by getting to know and engaging with the appropriate First Nation group who have a registered interest in your catchment. For assistance on engagement, please see the [Guidance for proponents on best practice Indigenous engagement for environmental assessments under the Environment Protection and Biodiversity Conservation Act 1999](#) and the [AIATSIS Principles for engagement in projects concerning Aboriginal and Torres Strait Islander peoples](#).
- Undertake comprehensive surveys of the Pumicestone Catchment to contemporarily record, document and safeguard Cultural Heritage and protect sites through Cultural Heritage Management Plans. Target strategic areas for cultural surveys and cultural heritage protection, including high energy risk areas/areas affected by erosion and sea level rise along the coast.
- Enhance Cultural Heritage compliance by improving development assessment processes and increasing education around compliance with the *Aboriginal Cultural Heritage Act 2003* and Best Practice Standards ([Heritage Chairs of Australia and New Zealand 2020, Dhawura Ngilan: A vision for Aboriginal and Torres Strait Islander heritage in Australia](#)).

19 Caboolture catchment

19.1 Environmental Condition (C)



The catchment has declined from good to fair condition.

Why?

- Pollutant loads remain very high within the Caboolture Catchment, with sediment (mud) load increasing from 603 kg/ha in 2021 to 2,869 kg/ha in 2022. Run-off also delivered very high loads of nitrogen (26.6 kg/ha) and phosphorus (3.7 kg/ha) to waterways. This was due to very high rainfall and river flows experienced over the summer months, transporting pollutants from rural, peri-urban and urban areas downstream.
- Freshwater health declined slightly, though remains in excellent condition. Fish community health and macroinvertebrates declined while ecosystem processes and water quality remain in excellent condition.
- 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 the erosion of sediments into the waterways.
- Estuarine water quality declined slightly, but remains fair due to declines in nutrients (total nitrogen and total phosphorus) in the mid to lower estuary.

19.2 Waterway Benefit Rating ★ ★ ★ ★ ★

- Despite fair catchment condition, high numbers of residents (54%) are satisfied with their local waterways (the average for South East Queensland is 59%). Caboolture residents reported high levels of personal connection with nature (57%) with high levels of motivation to use and protect local waterways (57%).
- Residents report that they value their local waterways for recreation. 46% of residents recreate in or alongside their local waterway at least monthly. High numbers value them as a place of rest and relaxation (57%) or for social interaction with friends and family (60%). The top activities include walking or running (44 days/year per resident) and enjoying nature (23 days/year per resident).
- The waterway value per person was calculated as \$1,239/year. The most valuable activities, based on costs per visit, were picnics and BBQs (40% of value) and recreational fishing (24% of value).

19.3 Cultural Resource Management

- First Nation rights and interests to lead the stewardship of Country and culture have been fully recognised through Native Title over 12.7% of the landscapes of the Caboolture Catchment where Native Title persists.
- First Nation parties are identified and recognised to lead the decisions relating to Aboriginal Cultural Heritage over 100% of the Caboolture Catchment.
- Comprehensive archaeological surveys that formally document and maximise the protection of Aboriginal Cultural Heritage have been completed and recognised over 0% of the Caboolture Catchment.
- Aboriginal Cultural Heritage Management Plans that enhance the protection of culture have been adopted over 25% of the formally recorded Aboriginal Cultural Heritage sites in the Caboolture Catchment.

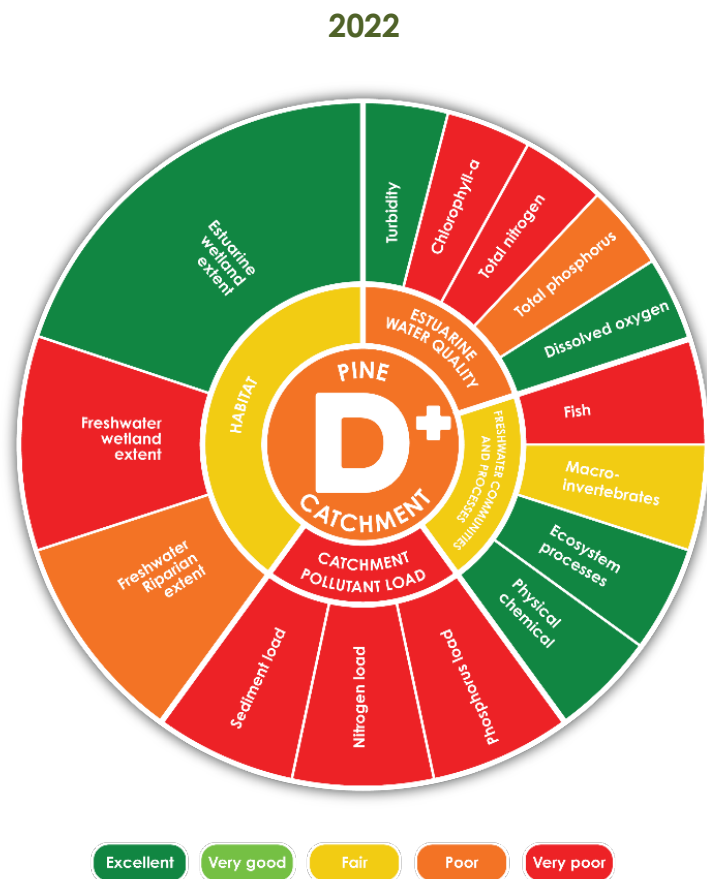
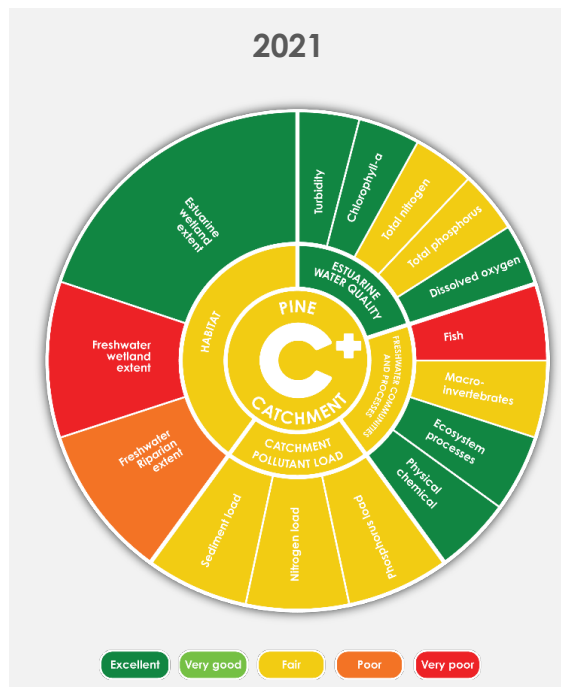
19.4 Ways to improve waterway health and benefits

- 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.
- Support integrated catchment management planning and investment that manages the flow of flood water to enhance environmental, social and economic resilience.
- Maintain levels of vegetation and groundcover along stream banks and in other priority areas such as hillslopes to reduce sediment pollution.
- Manage wastewater treatment plants and other point sources to maintain or improve water quality as the population grows.
- Increase the use of erosion and sediment controls and compliance for new development, construction sites and private lands.
- Reduce sediment loads and nutrients entering waterways through stormwater management, property management, and restoration of areas of high erosion risk across the catchment. Focus on engagement and compliance within industries with high soil disturbance, such as agriculture and development.
- Implement integrated and forward planning for urban development and associated infrastructure to avoid all adverse effects on people and natural areas.
- Reduce threats to key wetland areas, particularly the Moreton Bay Ramsar Site.
- Provide education campaigns on the respectful use of greenspace areas.
- Deliver urban backyard wildlife programs to support corridors for habitat, particularly waterways.

- Deliver education programs for rural residential landholders (including Landholder Guides) for improved natural resource management outcomes.
- In conjunction with key stakeholders, develop and implement management plans for koalas, particularly the protection of large and connected areas of habitat.
- Respect and recognise First Nations in daily work activities by getting to know and engaging with the appropriate First Nation group who have a registered interest in your catchment. For assistance on engagement, please see the [Guidance for proponents on best practice Indigenous engagement for environmental assessments under the Environment Protection and Biodiversity Conservation Act 1999](#) and the [AIATSIS Principles for engagement in projects concerning Aboriginal and Torres Strait Islander peoples](#).
- Undertake comprehensive surveys of the Caboolture Catchment to contemporarily record, document and safeguard Cultural Heritage and protect sites through Cultural Heritage Management Plans. Target strategic areas for cultural surveys and cultural heritage protection, including risk areas/areas affected by erosion and sea level rise along the coast and along the river and creek systems.
- Enhance Cultural Heritage compliance by improving development assessment processes and increasing education around compliance with the *Aboriginal Cultural Heritage Act 2003* and Best Practice Standards ([Heritage Chairs of Australia and New Zealand 2020, Dhawura Ngilan: A vision for Aboriginal and Torres Strait Islander heritage in Australia](#)).

20 Pine catchment

20.1 Environmental Condition (D+)



The catchment has declined from fair to poor condition.

Why?

- Pollutant loads increased significantly from high to very high, with sediment (mud) load increasing from 320 kg/ha in 2021 to 1,350 kg/ha in 2022. Run-off also delivered very high loads of nitrogen (19.8 kg/ha) and phosphorus (2.1 kg/ha) to waterways. This was due to very high rainfall and river flows experienced over the summer months, transporting pollutants from rural, peri-urban and urban areas downstream.
- The health of freshwater creeks slightly improved though remains fair. Fish community health slightly improved, affected by large flows and a lower proportion of alien fish species at South Pine River and Sideling Creek in 2022.
- 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 the erosion of sediments into the waterways.
- Estuarine water quality declined significantly from excellent to poor this year due to significant declines in total nutrients (total nitrogen and total phosphorus) algae (phytoplankton). Dissolved oxygen and turbidity declined slightly, though remains excellent.

20.2 Waterway Benefit Rating ★★☆☆☆

- Despite poor catchment condition, high numbers of residents are satisfied (60%) with their local waterways. This is 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. 65% of residents recreate in or alongside their local waterway at least monthly. The top activities include walking/running (58 days/year per resident), enjoying nature (19 days/year per resident), cycling (23 days/year per resident), and picnics/BBQs (14 days/year per resident).
- The waterway value per person was calculated as \$1,323/person. The most valuable activities, based on costs per visit, were picnics and BBQs (45% of value), boating and sailing (21% of value) and recreational fishing (13% of value).
- The catchment supplied over 37,000ML of drinking water to residents in 2021-2022. Moderate levels of sludge relative to other drinking water catchments were removed from the local water treatment plant, at a cost to the community.

20.3 Cultural Resource Management

- First Nation rights and interests to lead the stewardship of Country and culture have been fully recognised through Native Title over 2.5% of the landscapes of the Pine Catchment where Native Title persists.
- First Nation parties are identified and recognised to lead the decisions relating to Aboriginal Cultural Heritage over 100% of the Pine Catchment.
- Comprehensive archaeological surveys that formally document and maximise the protection of Aboriginal Cultural Heritage have been completed and recognised over 0% of the Pine Catchment.
- Aboriginal Cultural Heritage Management Plans that enhance the protection of culture have been adopted over 1% of the formally recorded Aboriginal Cultural Heritage sites in the Pine Catchment.

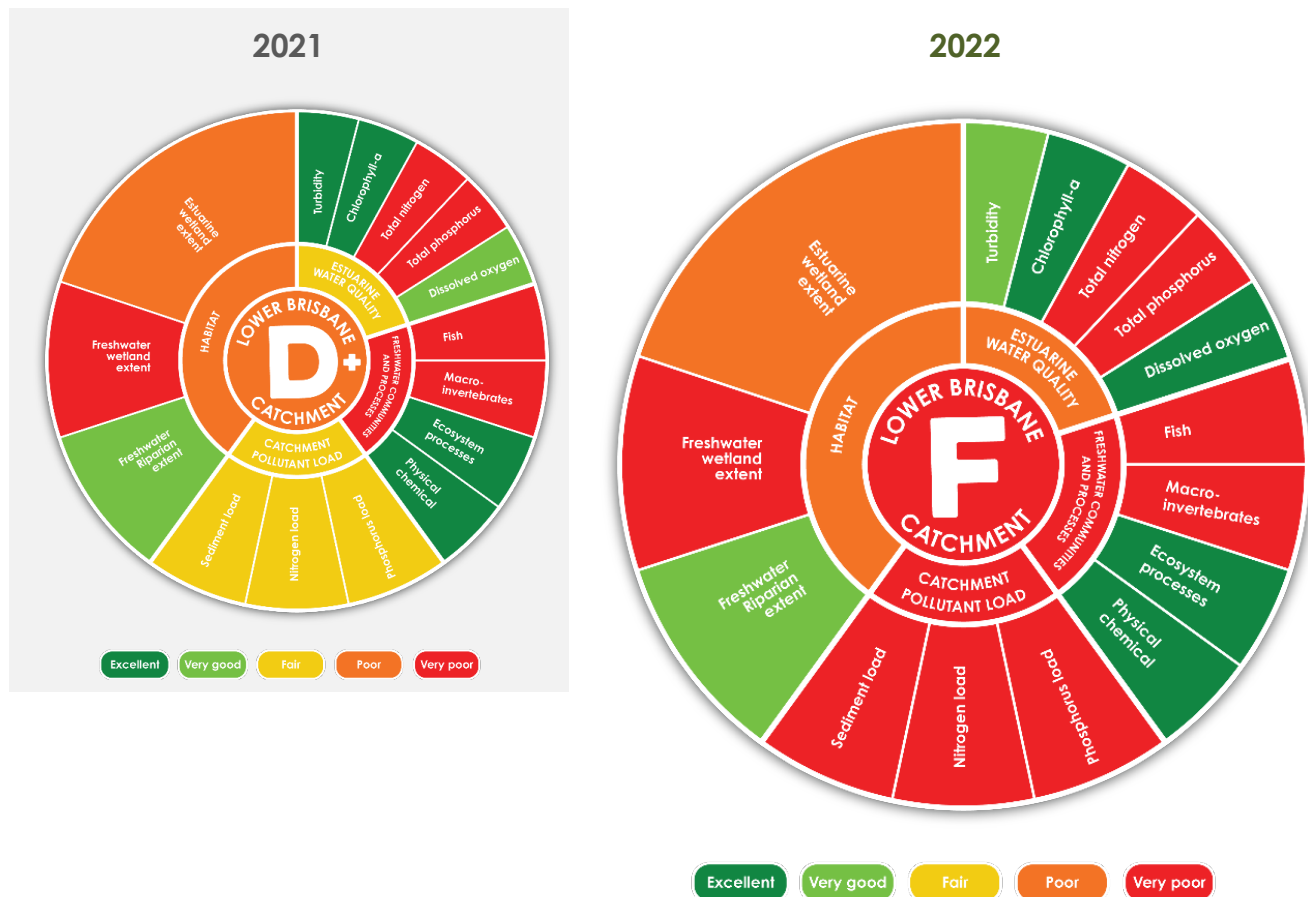
20.4 Ways to improve waterway health and benefits

- 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.
- Support integrated catchment management planning and investment that manages the flow of flood water to enhance environmental, social and economic resilience.
- Implement integrated and forward planning for urban development and associated infrastructure to avoid all adverse effects on people and natural areas.
- Manage wastewater treatment plants and other point source inputs to maintain or improve water by maximising pollutant removal.
- Minimise nutrient inputs from the urban landscape through maintenance and enhancement of stormwater quality treatment infrastructure.
- Increase the use of erosion and sediment controls and compliance for new development, construction sites and private lands.
- Protect natural habitats, including wetlands that process excess nitrogen delivered to waterways.
- Implement regenerative agricultural practices and grazing land management to enhance soil health and carbon levels.
- Invest in programs to support land managers including private properties to:
 - Manage and preserve bushland.

- Manage regrowth vegetation.
- Revegetate.
- Identify and manage pests and weeds.
- Manage for fire.
- Respect and recognise First Nations in daily work activities by getting to know and engaging with the appropriate First Nation group who have a registered interest in your catchment. For assistance on engagement, please see the [Guidance for proponents on best practice Indigenous engagement for environmental assessments under the Environment Protection and Biodiversity Conservation Act 1999](#) and the [AIATSIS Principles for engagement in projects concerning Aboriginal and Torres Strait Islander peoples](#).
- Undertake comprehensive surveys of the Pine Catchment to contemporarily record, document and safeguard Cultural Heritage and protect sites through Cultural Heritage Management Plans. Target strategic areas for cultural surveys and cultural heritage protection, including risk areas/areas affected by erosion and sea level rise along the coast and along river and creek systems.
- Enhance Cultural Heritage compliance by improving development assessment processes and increasing education around compliance with the *Aboriginal Cultural Heritage Act 2003* and Best Practice Standards ([Heritage Chairs of Australia and New Zealand 2020, Dhawura Ngilan: A vision for Aboriginal and Torres Strait Islander heritage in Australia](#)).

21 Lower Brisbane catchment

21.1 Environmental Condition (F)



The catchment has declined from poor to very poor condition.

Why?

- Pollutant loads increased significantly from moderate to very high, with relatively high contributions from urban areas. Sediment (mud) load increased from 310 kg/ha in 2021 to 1,087 kg/ha in 2022. Run-off also delivered very high loads of nitrogen (15 kg/ha) and phosphorus (2.2 kg/ha) to waterways. This was due to very high rainfall, and river flows experienced over the summer months, transporting pollutants from peri-urban and urban areas downstream. Major flooding in the Upper Brisbane, Bremer, Mid-Brisbane and Lockyer catchments also delivered mud and nutrients to the Brisbane estuary, Western Moreton Bay and Central Moreton Bay.
- Freshwater health remains in very poor condition despite a slight improvement in fish health. The proportion of alien fish species decreased from 73% in 2021 to 34% in 2022 across the catchment. Water quality and ecosystem processes remain in excellent condition.
- 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 poor with 43% of mangroves and saltmarshes remaining.
- Estuarine water quality, including at Oxley and Cabbage Tree Creek, declined from fair to poor. Dissolved oxygen improved within the Brisbane River estuary, while turbidity declined across all estuaries of the Lower Brisbane.

21.2 Waterway Benefit Rating ★ ★ ★ ★ ★

- High numbers of residents (53%) were satisfied with the condition of their local waterways (compared with 58% for all of South East Queensland). Lower Brisbane residents also report high levels of personal connection with nature (54%).
- Residents particularly value their local waterways for recreation. 59% of residents enjoy recreating in or alongside their local waterway at least monthly or more. The most frequent recreation activities include walking/running (50 days/year per resident), enjoying nature (22 days/year per resident), picnics/BBQs (12 days/year per resident), and cycling (11 days/year per resident).
- The waterway value per person was calculated as \$1,056/year. The most valuable activities, based on costs per visit, was picnics and BBQs (40% of value) and recreational fishing (17% of value).

21.3 Cultural Resource Management

- First Nation rights and interests to lead the stewardship of Country and culture have been fully recognised through Native Title over 4.6% of the landscapes of the Lower Brisbane Catchment where Native Title persists.
- First Nation parties are identified and recognised to lead the decisions relating to Aboriginal Cultural Heritage over 98% of the Lower Brisbane Catchment.
- Comprehensive archaeological surveys that formally document and maximise the protection of Aboriginal Cultural Heritage have been completed and recognised over 0% of the Lower Brisbane Catchment.
- Aboriginal Cultural Heritage Management Plans that enhance the protection of culture have been adopted over 15% of the formally recorded Aboriginal Cultural Heritage sites in the Lower Brisbane Catchment.

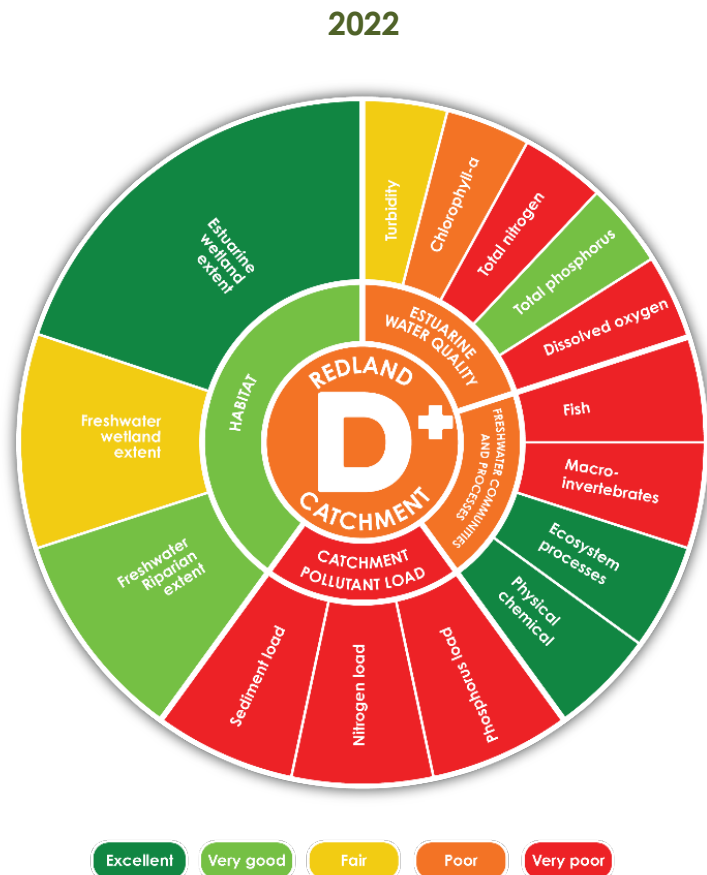
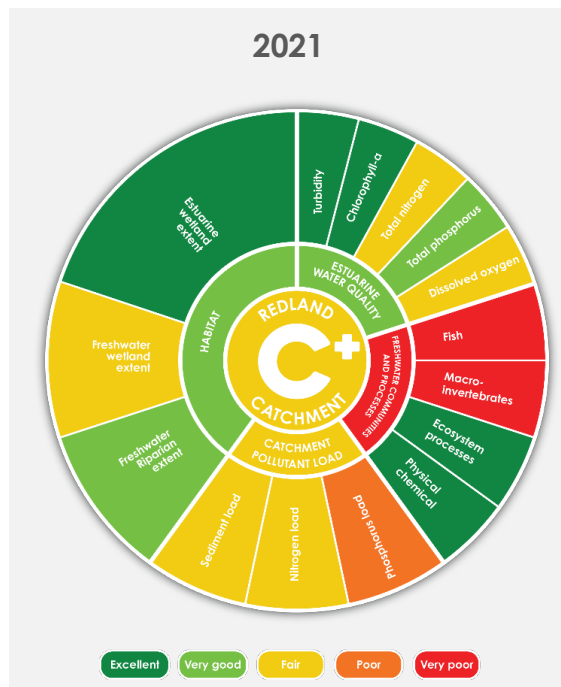
21.4 Ways to improve waterway health and benefits

- Protecting and managing existing values from the pressures of population growth is a priority, with the population in the Brisbane City Council projected to increase to approximately 1.5 million people over the next 25 years.
- Ensure there is a strategic approach to minimising the contribution of nutrients from wastewater treatment plants and other point sources in response to projected population increases.
- Minimise nutrient inputs from the urban landscape through maintenance and enhancement of stormwater quality treatment infrastructure.
- Enhance nature conservation outcomes in waterways and wetlands by addressing fish barriers, naturalising channels, and clearing weeds in priority areas.
- Actively undertake revegetation activities to reconnect fragmented landscapes and waterways to provide climate refugia, and buffers and reduce erosion.
- In conjunction with key stakeholders, develop and implement management plans for koalas, particularly the protection of large and connected areas of habitat.
- Deliver urban backyard wildlife programs to support habitat corridors.
- Implement fauna management solutions to reduce the impacts of infrastructure on habitat fragmentation (regional policy in ShapingSEQ 2017).
- Manage greenspace recreational activities to reduce negative ecological and community impacts.
- Reduce threats to key wetland areas, particularly the Moreton Bay Ramsar Wetland of International Significance.

- Support local events that combine art, music, and culture to celebrate the environment and attract local investment to improve catchment, wetland and waterway health.
- Respect and recognise First Nations in daily work activities by getting to know and engaging with the appropriate First Nation group who have a registered interest in your catchment. For assistance on engagement, please see the [Guidance for proponents on best practice Indigenous engagement for environmental assessments under the *Environment Protection and Biodiversity Conservation Act 1999*](#) and the [AIATSIS Principles for engagement in projects concerning Aboriginal and Torres Strait Islander peoples](#).
- Undertake comprehensive surveys of the Lower Brisbane Catchment to contemporarily record, document and safeguard Cultural Heritage and protect sites through Cultural Heritage Management Plans. Target strategic areas for cultural surveys and cultural heritage protection, including risk areas/areas affected by erosion and sea level rise along the coast and along river and creek systems.
- Enhance Cultural Heritage compliance by improving development assessment processes and increasing education around compliance with the *Aboriginal Cultural Heritage Act 2003* and Best Practice Standards ([Heritage Chairs of Australia and New Zealand 2020, Dhawura Ngilan: A vision for Aboriginal and Torres Strait Islander heritage in Australia](#)).

22 Redland catchment

22.1 Environmental Condition (D+)



The catchment has declined from fair to poor condition.

Why?

- Pollutant loads increased significantly from moderate to very high, with sediment (mud) load increasing from 367 kg/ha in 2021 to 1,133 kg/ha in 2022. Run-off also delivered high loads of nitrogen (13.9 kg/ha) and phosphorus (1.9 kg/ha) to waterways. This was due to very high rainfall, and river flows experienced over the summer months, transporting pollutants from peri-urban and urban areas downstream. Major floodings in the catchment also delivered mud and nutrients to Moreton Bay.
- Freshwater health improved from very poor to poor, with slight improvements in fish community health affected by large flows at Hilliards Creek and Moogurrapum Creek. Water quality and ecosystem processes remain excellent.
- 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 the erosion of sediments into the waterways.
- Estuarine water quality (Erapah and Tingalpa Creeks) declined from good to poor. Declines in water clarity (turbidity), nutrients (total nitrogen and phosphorus), algae (phytoplankton) and dissolved oxygen were observed across both estuaries.

22.2 Waterway Benefit Rating ★★☆☆☆

- Despite poor catchment condition, high numbers of residents (66%) 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. 63% 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 (69%) or for social interaction with friends and family (60%). The top activities include walking/running (70 days/year per resident), enjoying nature (21 days/year per resident), picnics/BBQs (10 days/year per resident), and cycling (7 days/year per resident).
- The recreational value per person was valued at \$1,296/person. The most valuable activities, based on number of visitors multiplied by costs per visit were, picnics and BBQs (42% of value), boating/sailing (17% of value) and recreational fishing (16% of value).
- The catchment supplied over 2,600ML of drinking water to residents in 2021-2022. Very high levels of sludge relative to other drinking water catchments was removed from Capalaba water treatment plant.

22.3 Cultural Resource Management

- First Nation rights and interests to lead the stewardship of Country and culture have been fully recognised through Native Title over 0% of the landscapes of the Redland Catchment where Native Title persists.
- First Nation parties are identified and recognised to lead the decisions relating to Aboriginal Cultural Heritage over 100% of the Redland Catchment.
- Comprehensive archaeological surveys that formally document and maximise the protection of Aboriginal Cultural Heritage have been completed and recognised over 21.38 ha (0.08%) of the Redland Catchment.
- Aboriginal Cultural Heritage Management Plans that enhance the protection of culture have been adopted over 19% of the formally recorded Aboriginal Cultural Heritage sites in the Redland Catchment.

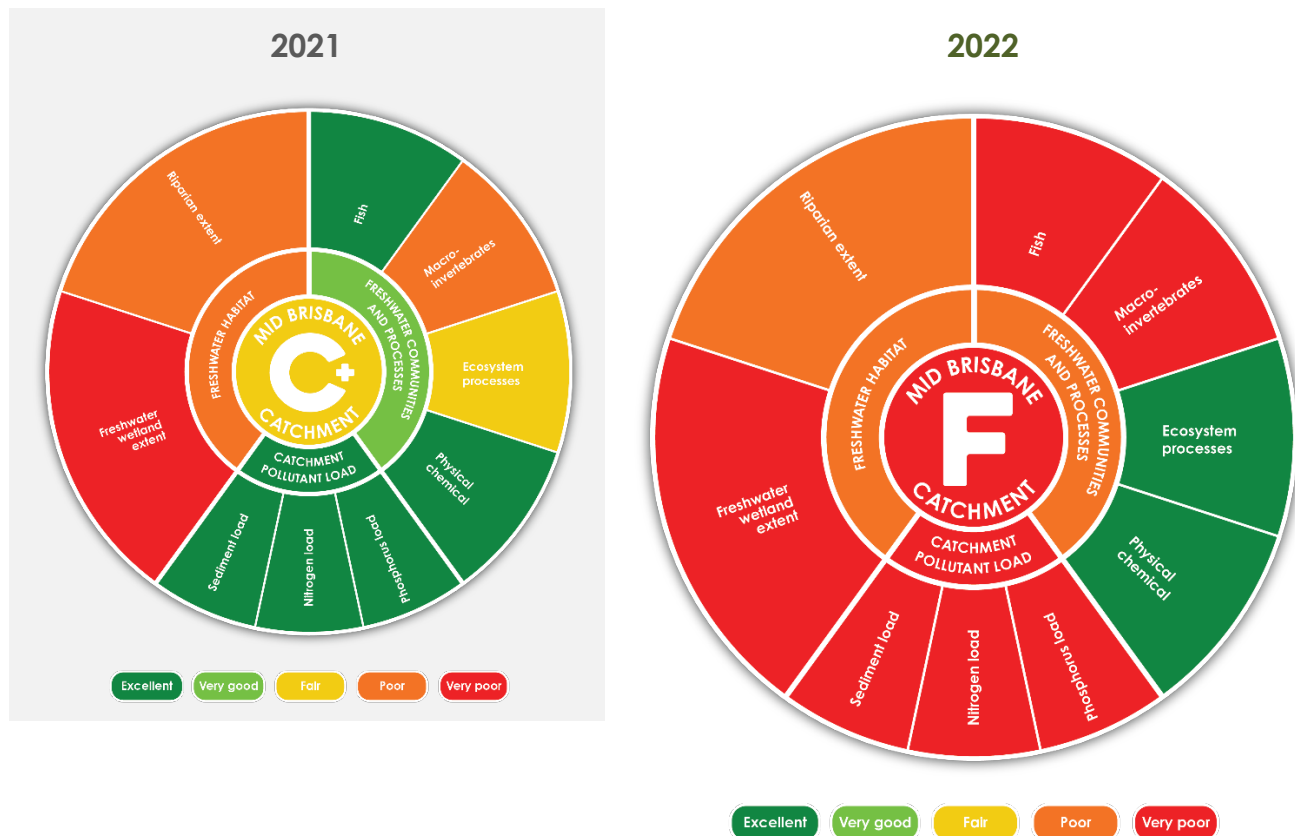
22.4 Ways to improve waterway health and benefits

- Protecting and managing existing values from the pressures of population growth is a priority, with the population of Redland's Coast projected to increase.
- Protect and manage critical habitats within the Redlands catchment, including remnant vegetation throughout Mount Cotton and existing critical streambank vegetation and wetlands.
- Continue to implement actions from the Redland City Councils Bay and Creeks Plan in partnership with internal and external stakeholders, including the community.
- Ensure there is a strategic approach to minimising the contribution of nutrients from wastewater treatment plants and other point sources in response to projected population increase.
- Increase the use of erosion and sediment controls and compliance for new development, construction sites and private lands.
- Support integrated catchment management planning and investment that manages the flow of flood water to enhance environmental, social and economic resilience.
- Enhance nature conservation outcomes in waterways by addressing fish barriers, naturalising channels, clearing and weeds in priority areas.
- Actively undertake restoration activities to reconnect fragmented landscapes and waterways to provide climate refugia, buffers and reduce erosion.
- Reduce threats to key freshwater and estuarine wetlands areas, including the Moreton Bay Ramsar Wetland of International Significance.

- Implement fauna management solutions to reduce the impacts of infrastructure on habitat fragmentation (regional policy in *ShapingSEQ 2017*).
- Protect and enhance access for residents to enjoy their local waterways.
- Minimise the negative impacts of recreational activities on waterways and 'greenspace' areas through management actions. Provide education campaigns on the respectful use of greenspace areas.
- In partnership with the community and other stakeholders, continue to deliver Redland City Council's Koala Conservation Plan and implement priority actions.
- Continue to provide opportunities for the community to be actively involved in bushland and waterway restoration projects and citizen science projects
- Continue to deliver landholder engagement programs through Redland City Council's Environmental Partnerships program to support the reinstatement of habitat, undertaking of natural resource management activities and fire management works on private property
- Respect and recognise First Nations in daily work activities by getting to know and engaging with the appropriate First Nation group who have a registered interest in your catchment. For assistance on engagement, please see the [Guidance for proponents on best practice Indigenous engagement for environmental assessments under the Environment Protection and Biodiversity Conservation Act 1999](#) and the [AIATSIS Principles for engagement in projects concerning Aboriginal and Torres Strait Islander peoples](#).
- Undertake comprehensive surveys of the Redland Catchment to contemporarily record, document and safeguard Cultural Heritage and protect sites through Cultural Heritage Management Plans. Target strategic areas for cultural surveys and cultural heritage protection, including high energy risk areas/areas affected by erosion and sea level rise along the coast and along river and creek systems.
- Enhance Cultural Heritage compliance by improving development assessment processes and increasing education around compliance with the *Aboriginal Cultural Heritage Act 2003* and Best Practice Standards ([Heritage Chairs of Australia and New Zealand 2020](#), [Dhawura Ngilan: A vision for Aboriginal and Torres Strait Islander heritage in Australia](#)).

23 Mid Brisbane catchment

23.1 Environmental Condition (F)



The catchment has declined from fair to very poor condition.

Why?

- Pollutant loads increased significantly from very low to very high, with sediment (mud) load increasing from 16.1 kg/ha in 2021 to 1,490 kg/ha in 2022. Run-off also delivered high loads of nitrogen (15.7 kg/ha) and phosphorus (7.9 kg/ha) to waterways. This was due to very high rainfall and river flows over the summer months, resulting in high pollutant run-off from areas in poor condition and with high erosion risk.
- Freshwater health declined from good to poor condition with a significant decline in macroinvertebrates, fish community health and ecosystem processes at both sites with elevated stream height due to regular floodings and ongoing release from Wivenhoe Dam. Water quality remains excellent.
- Stream bank vegetation in the catchment remains poor (71% cover), and the extent of freshwater wetlands remains very poor (23% cover).

23.2 Waterway Benefit Rating ★★★★★

- Despite very poor catchment condition, high numbers of residents (59%) are satisfied with their local waterways. Residents reported very high satisfaction with their ability to access and use local waterways (71% 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 with nature (83%) are some of the highest in South East Queensland.

- Residents report that they value their local waterways for recreation. 60% of residents recreate in or alongside their local waterway at least monthly or more. The top activities include walking and running (33 days/year per resident), enjoying nature (27 days/year per resident), and picnics and BBQ's (16 days/year per resident).
- The recreational value per person was valued at \$1,647/person and primarily comprised of picnics/BBQs (52%).
- The catchment contributed to the supply of over 119,000ML of drinking water to SEQ residents in 2021-2022. Moderate levels of sludge relative to other drinking water catchments were removed from Lowood, Mount Crosby Eastbank, and Mount Crosby Westbank water treatment plants, at a cost to the community.

23.3 Cultural Resource Management

- First Nation rights and interests to lead the stewardship of Country and culture have been fully recognised through Native Title over 74.5% of the landscapes of the Mid Brisbane Catchment where Native Title persists.
- First Nation parties are identified and recognised to lead the decisions relating to Aboriginal Cultural Heritage over 100% of the Mid Brisbane Catchment.
- Comprehensive archaeological surveys that formally document and maximise the protection of Aboriginal Cultural Heritage have been completed and recognised over 0% of the Mid Brisbane Catchment.
- Aboriginal Cultural Heritage Management Plans that enhance the protection of culture have been adopted over 51% of the formally recorded Aboriginal Cultural Heritage sites in the Mid Brisbane Catchment.

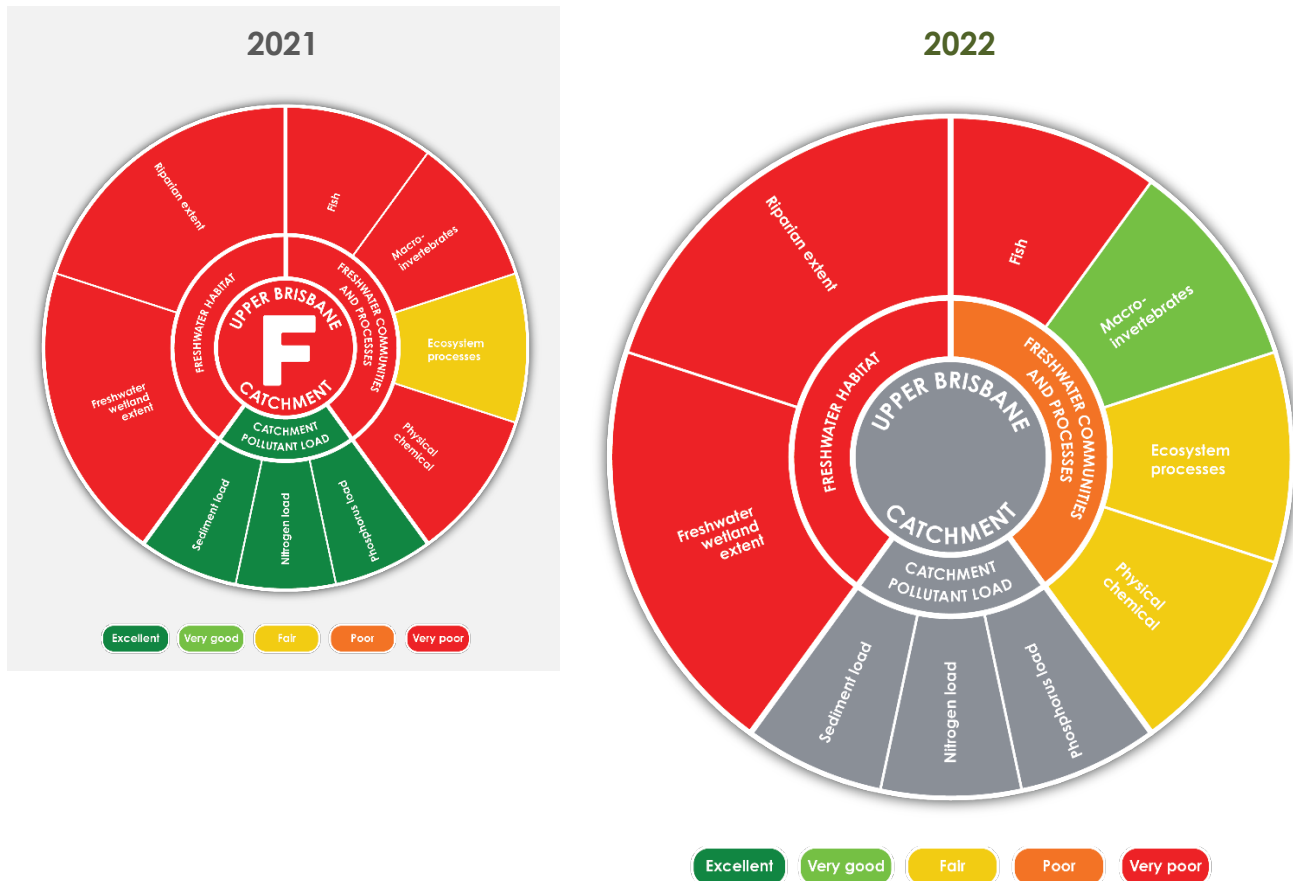
23.4 Ways to improve waterway health and benefits

- The western catchments of South East Queensland are impacted by the historic loss of vegetation and riparian cover, as such the priority is to protect, manage and restore catchment vegetation and wetlands.
- Slow water down in the upper catchment to manage floodwater, reduce erosion, and rehydrate the landscape, by protecting and increasing vegetation (especially along riparian zones) and engaging floodplains through policy, land-use planning, incentives, and compliance.
- Implement integrated and forward planning for urban development and associated infrastructure to avoid all adverse effects on people and natural areas.
- 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.
- Maintain levels of vegetation and groundcover in priority areas such as hillslopes to reduce erosion and sediment pollution entering waterways.
- Address channel and gully erosion in priority to reduce erosion and sediment pollution entering waterways.
- Focus on engagement and compliance within industries with high soil disturbance such as agriculture and development.
- Recognise and support landholders providing ecosystem services to the wider community through their stewardship and management of land, water and biodiversity assets.
- In conjunction with key stakeholders, develop and implement management plans for koalas, particularly the protection of large and connected areas of habitat.

- Create opportunities and incentives for residents to make changes around their homes, their businesses or in their local waterway to improve waterway condition. 47% of residents are motivated to use and protect local waterways.
- Respect and recognise First Nations in daily work activities by getting to know and engaging with the appropriate First Nation group who have a registered interest in your catchment. For assistance on engagement, please see the [Guidance for proponents on best practice Indigenous engagement for environmental assessments under the Environment Protection and Biodiversity Conservation Act 1999](#) and the [AIATSIS Principles for engagement in projects concerning Aboriginal and Torres Strait Islander peoples](#).
- Undertake comprehensive surveys of the Mid Brisbane Catchment to contemporarily record, document and safeguard Cultural Heritage and protect sites through Cultural Heritage Management Plans. Target strategic areas for cultural surveys and cultural heritage protection, including risk areas/areas affected by erosion along river and creek systems.
- Enhance Cultural Heritage compliance by improving development assessment processes and increasing education around compliance with the *Aboriginal Cultural Heritage Act 2003* and Best Practice Standards ([Heritage Chairs of Australia and New Zealand 2020, Dhawura Ngilan: A vision for Aboriginal and Torres Strait Islander heritage in Australia](#)).

24 Upper Brisbane catchment

24.1 Environmental Condition (no grade)



The catchment received a very poor (F) in 2021; no grade given in 2022 due to high uncertainty in the pollutant loads for this record rainfall year.

Why?

- Freshwater health significantly improved this year from very poor to fair. Water quality, ecosystem processes, macroinvertebrates and fish community health improved at multiple sites. A series of high rainfall events broke drought conditions in the Upper Brisbane catchment. Freshwater health condition in 2022 was comparable to post-flood condition in 2011. High rainfall restores flow connectivity and improves freshwater habitat. The proportion of alien fish decreased from 58% in 2021 to 6% in 2022. The number of macroinvertebrate taxa (annual median) increased from 19 taxa in 2021 to 23 taxa in 2022.
- Stream bank vegetation in the catchment remains very poor, with 59% woody vegetation cover 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 wetlands will be critical in mitigating the projected increases in pressures from climate extremes like floods and drought.

24.2 Waterway Benefit Rating ★★★★★

- High numbers of residents (63%) are satisfied with their local waterways. Residents reported very high satisfaction with their ability to access and use local waterways (78% compared to 67% for

all of South East Queensland). Very high numbers of residents value them as a place of rest and relaxation (72%) or for social interaction with friends and family (65%). Levels of personal connection with nature (79%) are some of the highest in South East Queensland.

- Residents report that they value their local waterways for recreation. 60% of residents recreate in or alongside their local waterway at least monthly or more. The top activities include walking or running (33 days/year per resident), enjoying nature (27 days/year per resident), and picnics and BBQ's (16 days/year per resident).
- The recreational value per person was valued at \$1,647/person and primarily comprised of picnics/BBQs (52%).
- The catchment contributed to the supply of over 119,000ML of drinking water to SEQ residents in 2021-2022. Moderate levels of sludge relative to other drinking water catchments were removed from downstream water treatment plants (Lowood, Mount Crosby Eastbank, Mount Crosby Westbank and Esk), at a cost to the community.

24.3 Cultural Resource Management

- First Nation rights and interests to lead the stewardship of Country and culture have been fully recognised through Native Title over 9% of the landscapes of the Upper Brisbane Catchment where Native Title persists.
- First Nation parties are identified and recognised to lead the decisions relating to Aboriginal Cultural Heritage over 43% of the Upper Brisbane Catchment.
- Comprehensive archaeological surveys that formally document and maximise the protection of Aboriginal Cultural Heritage have been completed and recognised over 0% of the Upper Brisbane Catchment.
- Aboriginal Cultural Heritage Management Plans that enhance the protection of culture have been adopted over 0% of the formally recorded Aboriginal Cultural Heritage sites in the Upper Brisbane Catchment.

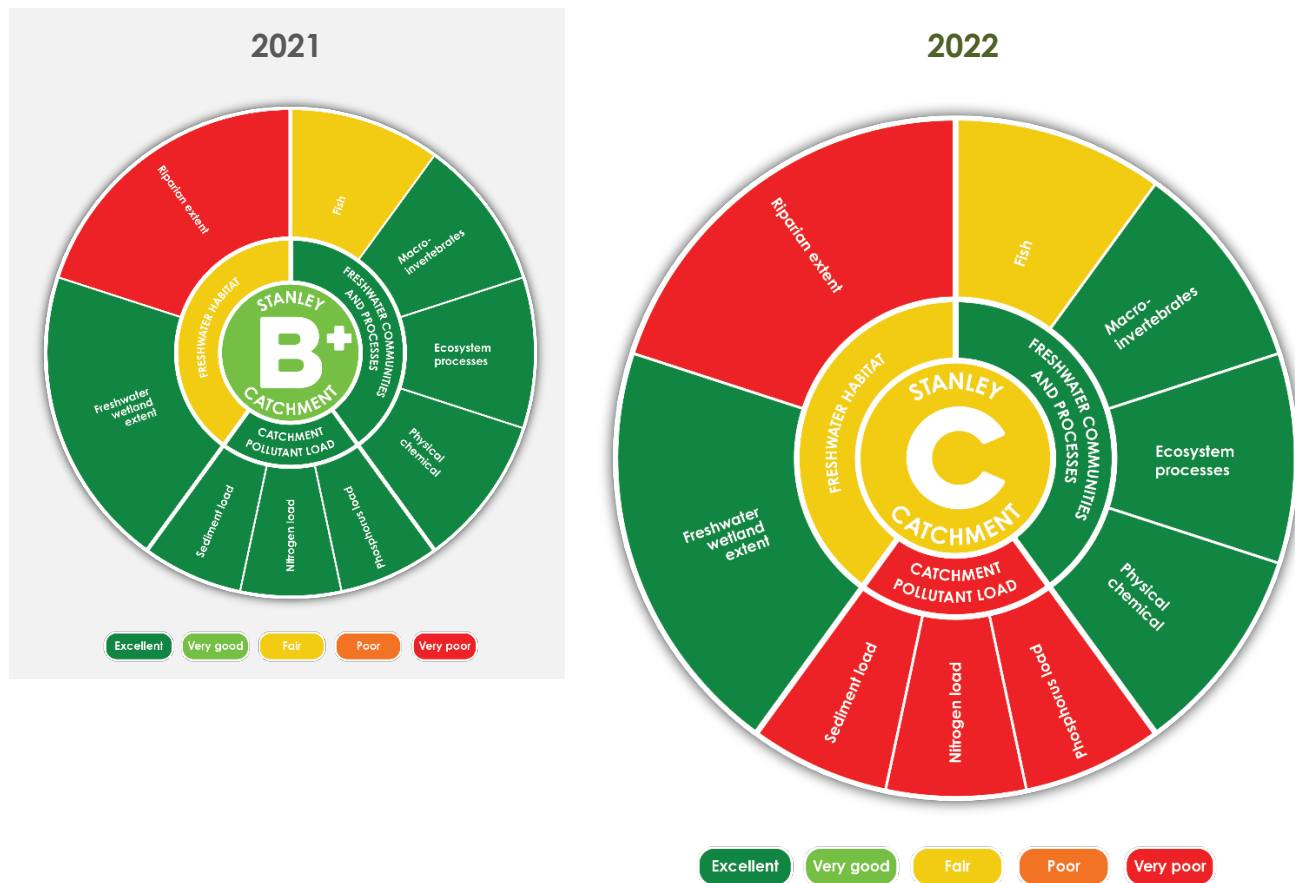
24.4 Ways to improve waterway health and benefits

- The western catchments of South East Queensland are impacted by a historic loss of vegetation and riparian cover. As such, the priority is to protect, manage and restore catchment vegetation and wetlands.
- Slow water down in the upper catchment to manage floodwater, reduce erosion, and rehydrate the landscape, by protecting and increasing vegetation (especially along riparian zones) and engaging floodplains through policy, land-use planning, incentives, and compliance.
- Improve riparian zone management by addressing clearing, weeds and cattle access in priority areas.
- 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.
- In conjunction with key stakeholders, develop and implement management plans for koalas, particularly the protection of large and connected areas of habitat with a focus on the lowland areas of the catchment.
- Enhance understanding and management of groundwater and groundwater-dependent ecosystems and wetlands, to better understand the role groundwater plays in supporting habitats and how it interacts with surface water.
- Maintain levels of vegetation and groundcover in priority areas such as hillslopes to reduce erosion and sediment pollution entering waterways.

- Address channel and gully erosion in priority to reduce erosion and sediment pollution entering waterways.
- 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.
- Deliver education for rural residential landholders (including Landholder Guides) for improved natural resource management outcomes, particularly in the Ravensbourne, Dundas, Blackbutt North, South Burnett/Toowoomba, Blackbutt/Benarkin and Googa areas.
- Support and invest in community groups to improve catchment and waterway health, including administration and grant writing by providing extension, workshops and field days.
- Support land managers, including private properties (encourage absentee landholders) to:
 - Manage and preserve bushland.
 - Maintain ground cover in priority areas such as hillslopes to reduce sediment pollution.
 - Manage regrowth vegetation.
 - Revegetate.
 - Manage pests and weeds.
 - Manage for fire.
- Implement management and education programs for weeds, pests and fire, both fire preparedness and use of fire for ecological and environmental management, particularly in Upper Cooyar Creek.
- Coordinate regional and local strategies and programs to avoid, control and manage pest plants and animals and other biosecurity issues.
- Support sustainable and regenerative agricultural practices to maintain agricultural production (food and fibre) and enhance soil health, biodiversity and waterway health.
- Promote and support local food production and marketing, e.g. local and sustainably produced food, buy and eat local produce. The 2032 Olympics will provide an opportunity to internationally showcase the food and fibre bowls of the Lockyer Valley, Somerset and Scenic Rim.
- Recognise and support landholders providing ecosystem services to the wider community through their stewardship and management of land, water and biodiversity assets.
- Actively restore wildlife and biodiversity corridors through mapping, revegetation and reconnection of fragmented landscapes, including the Neurum Connection Corridor.
- Respect and recognise First Nations in daily work activities by getting to know and engaging with the appropriate First Nation group who have a registered interest in your catchment. For assistance on engagement, please see the [Guidance for proponents on best practice Indigenous engagement for environmental assessments under the Environment Protection and Biodiversity Conservation Act 1999](#) and the [AIATSIS Principles for engagement in projects concerning Aboriginal and Torres Strait Islander peoples](#).
- Undertake comprehensive surveys of the Upper Brisbane Catchment to contemporarily record, document and safeguard Cultural Heritage and protect sites through Cultural Heritage Management Plans. Target strategic areas for cultural surveys and cultural heritage protection, including risk areas/areas affected by erosion along river and creek systems.
- Enhance Cultural Heritage compliance by improving development assessment processes and increasing education around compliance with the *Aboriginal Cultural Heritage Act 2003* and Best Practice Standards ([Heritage Chairs of Australia and New Zealand 2020, Dhawura Ngilan: A vision for Aboriginal and Torres Strait Islander heritage in Australia](#)).

25 Stanley catchment

25.1 Environmental Condition (C)



The catchment has declined from good to fair condition.

Why?

- Pollutant loads increased significantly from very low to very high, with sediment (mud) load increasing from 100 kg/ha in 2021 to 1,125 kg/ha in 2022. Run-off also delivered high loads of nitrogen (11.9 kg/ha) and phosphorus (1.4 kg/ha) to waterways. This was due to very high rainfall, and river flows over the summer months, resulting in high pollutant run-off from areas in poor condition and with high erosion risk.
- Freshwater stream health remains excellent. Fish community health declined slightly at Stony Creek and Stanley River and remains fair. Water quality, ecosystem processes and macroinvertebrates remain in excellent 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 wetlands remaining.

25.2 Waterway Benefit Rating ★★☆☆☆

- Very high numbers of Stanley residents (63%) are satisfied with their local waterways. Residents reported very high satisfaction with their ability to access and use local waterways (71% compared to 63% for all of South East Queensland). Very high numbers of residents value them as a place of rest and relaxation (72%) or for social interaction with friends and family (65%).

Levels of personal connection with nature (79%) are some of the highest in the South East Queensland region.

- Residents report that they value their local waterways for recreation. 60% of residents recreate in or alongside their local waterway at least monthly. The top activities include walking or running (33 days/year per resident), enjoying nature (26 days/year per resident), and picnics and BBQ's (16 days/year per resident).
- The recreational value per person was valued at \$1,647/person and primarily comprised of picnics/BBQs (52%).
- The catchment contributed to the supply of over 1,300ML of drinking water to residents in 2021-2022. Moderate levels of sludge relative to other drinking water catchments were removed from the Kilcoy water treatment plant, at a cost to the community.

25.3 Cultural Resource Management

- First Nation rights and interests to lead the stewardship of Country and culture have been fully recognised through Native Title over 78.8% of the landscapes of the Stanley Catchment where Native Title persists.
- First Nation parties are identified and recognised to lead the decisions relating to Aboriginal Cultural Heritage over 100% of the Stanley Catchment.
- Comprehensive archaeological surveys that formally document and maximise the protection of Aboriginal Cultural Heritage have been completed and recognised over 0% of the Stanley Catchment.
- Aboriginal Cultural Heritage Management Plans that enhance the protection of culture have been adopted over 0% of the formally recorded Aboriginal Cultural Heritage sites in the Stanley Catchment.

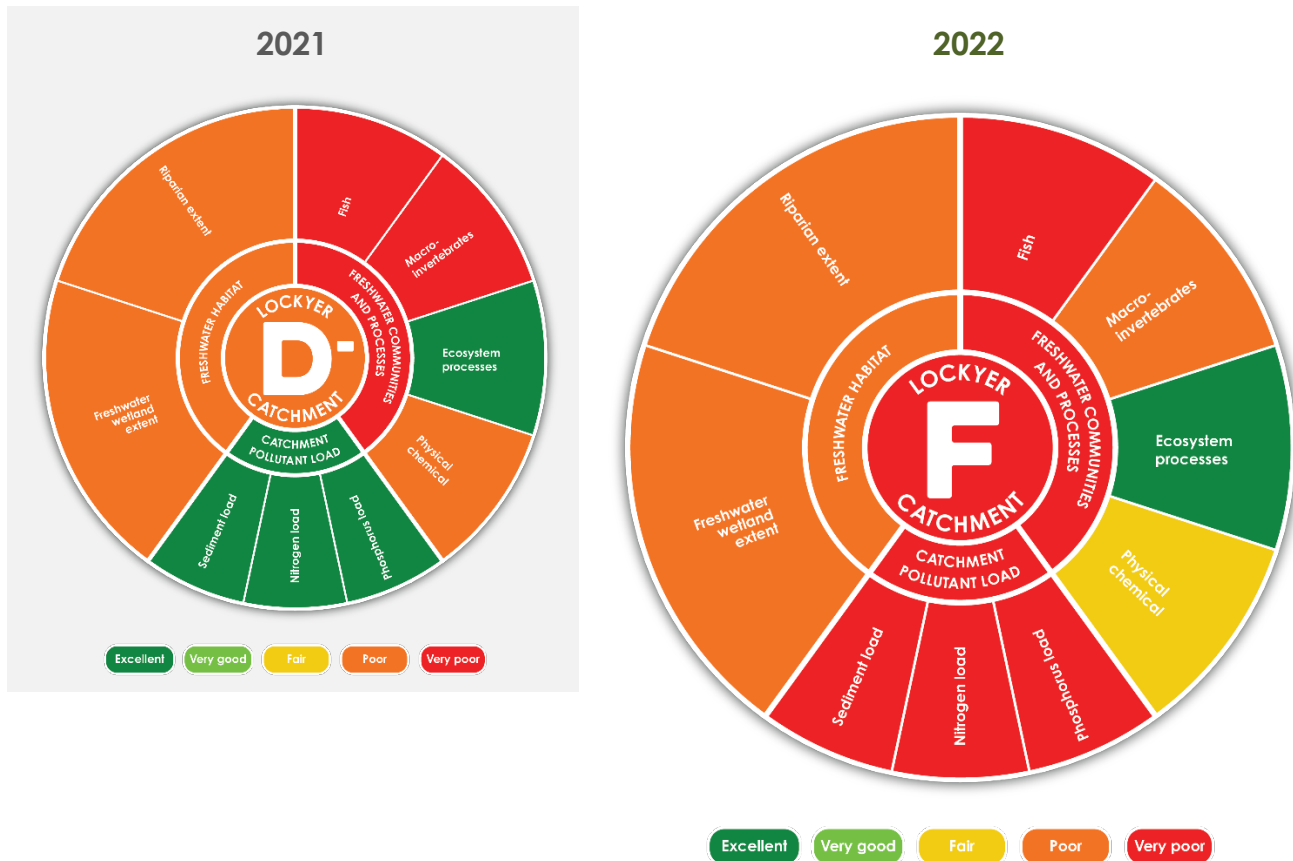
25.4 Ways to improve waterway health and benefits

- The western catchments of South East Queensland are impacted by a historic loss of vegetation and riparian cover. As such, the priority is to protect, manage and restore catchment vegetation and wetlands.
- Slow water down in the upper catchment to manage floodwater, reduce erosion, and rehydrate the landscape, by protecting and increasing vegetation (especially along riparian zones) and engaging floodplains through policy, land-use planning, incentives, and compliance.
- Protect natural habitats, including wetlands and stream bank vegetation, from clearing and loss of connectivity. Currently 64% of streambanks in the Stanley catchment are vegetated, and 72% of freshwater wetlands remain. Improve riparian zone management by addressing weeds and cattle access in priority areas.
- Enhance understanding and management of groundwater and groundwater-dependent ecosystems and wetlands, to better understand the role groundwater plays in supporting habitats and how it interacts with surface water.
- In conjunction with key stakeholders, develop and implement management plans for koalas, particularly the protection of large and connected areas of habitat with a focus on the lowland areas of the catchment.
- Maintain and increase levels of vegetation and groundcover on stream banks and other priority areas such as hillslopes to reduce erosion and sediment pollution entering waterways.
- Deliver education for rural residential landholders (including Landholder Guides) for improved natural resource management outcomes, particularly in the Ravensbourne, Dundas, Blackbutt North, South Burnett/Toowoomba, Blackbutt/Benarkin and Googa 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.
- Support sustainable and regenerative agricultural practices to maintain agricultural production (food and fibre) and enhance soil health, biodiversity and waterway health.
- Respect and recognise First Nations in daily work activities by getting to know and engaging with the appropriate First Nation group who have a registered interest in your catchment. For assistance on engagement, please see the [Guidance for proponents on best practice Indigenous engagement for environmental assessments under the Environment Protection and Biodiversity Conservation Act 1999](#) and the [AIATSIS Principles for engagement in projects concerning Aboriginal and Torres Strait Islander peoples](#).
- Undertake comprehensive surveys of the Stanley Catchment to contemporarily record, document and safeguard Cultural Heritage and protect sites through Cultural Heritage Management Plans. Target strategic areas for cultural surveys and cultural heritage protection, including risk areas/areas affected by erosion along river and creek systems.
- Enhance Cultural Heritage compliance by improving development assessment processes and increasing education around compliance with the *Aboriginal Cultural Heritage Act 2003* and Best Practice Standards ([Heritage Chairs of Australia and New Zealand 2020, Dhawura Ngilan: A vision for Aboriginal and Torres Strait Islander heritage in Australia](#)).

26 Lockyer catchment

26.1 Environmental Condition (F)



The catchment has declined from poor to very poor condition.

Why?

- Pollutant loads increased significantly from very low to very high, with sediment (mud) load increasing from 4kg/ha in 2021 to 3,771 kg/ha in 2022. Run-off also delivered high loads of nitrogen (14.7 kg/ha) and phosphorus (7.7 kg/ha) to waterways. This was due to very high rainfall and river flows over the summer months, resulting in high pollutant run-off from areas in poor condition and with high erosion risk.
- Freshwater stream **health** has improved but remains in very poor condition. A series of high rainfall events broke drought conditions in the Lockyer catchment. Freshwater health condition in 2022 was comparable to post-flood condition in 2011. High rainfall restores flow connectivity and improves freshwater habitat. Proportion of alien fish decreased and the number of macroinvertebrates taxa increased. Ecosystem processes remain in excellent condition.
- 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 remains poor with 32% of vegetated freshwater swamps.

26.2 Waterway Benefit Rating ★★☆☆☆

- Despite very poor catchment condition, residents highly value their local waterways as a place for social interaction with friends and family (62%). 49% of residents enjoy recreating in or

alongside their local waterway at least monthly or more. The most frequent recreation activities include walking or running (39 days/year per resident), enjoying nature (19 days/year per resident), picnics and BBQs (17 days/year per resident).

- The recreational value per person was valued at \$1,873/year and was primarily composed of boating (36% of value), picnics/BBQs (35% of value) and recreational fishing activities (10% of value).
- Residents report very high levels of personal connection with nature (75%), and high numbers are motivated to use and protect their local waterways (47%).
- The catchment contributed to the supply of over 119,000ML of drinking water to SEQ residents in 2021-2022. Moderate levels of sludge relative to other drinking water catchments were removed from downstream water treatment plants (Lowood, Mount Crosby Eastbank, and Mount Crosby Westbank) at a cost to the community.

26.3 Cultural Resource Management

- First Nation rights and interests to lead the stewardship of Country and culture have been fully recognised through Native Title over 0% of the landscapes of the Lockyer Catchment where Native Title persists.
- First Nation parties are identified and recognised to lead the decisions relating to Aboriginal Cultural Heritage over 100% of the Lockyer Catchment.
- Comprehensive archaeological surveys that formally document and maximise the protection of Aboriginal Cultural Heritage have been completed and recognised over 0% of the Lockyer Catchment.
- Aboriginal Cultural Heritage Management Plans that enhance the protection of culture have been adopted over 44% of the formally recorded Aboriginal Cultural Heritage sites in the Lockyer Catchment.

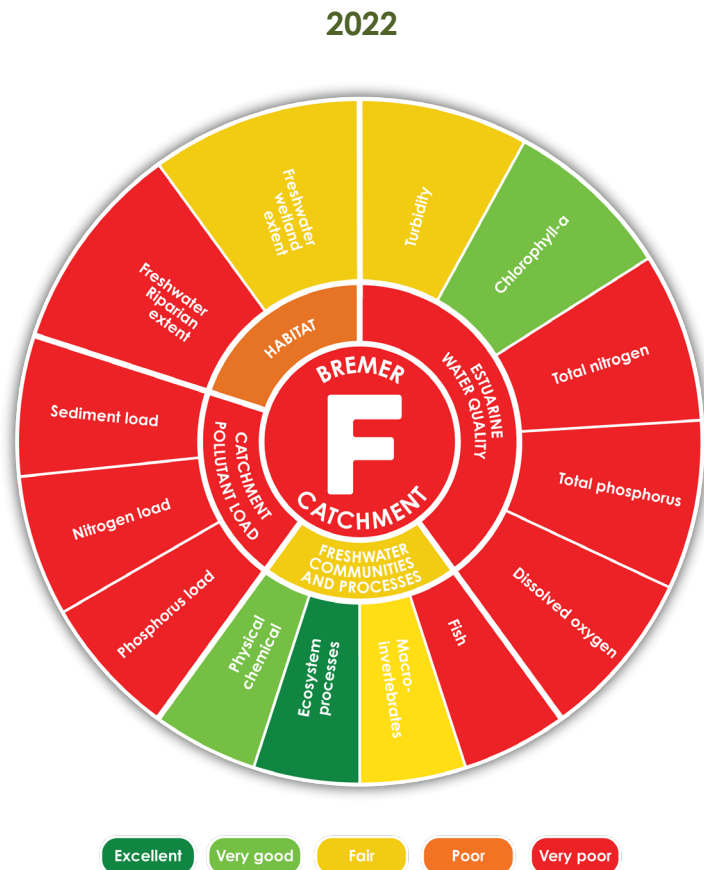
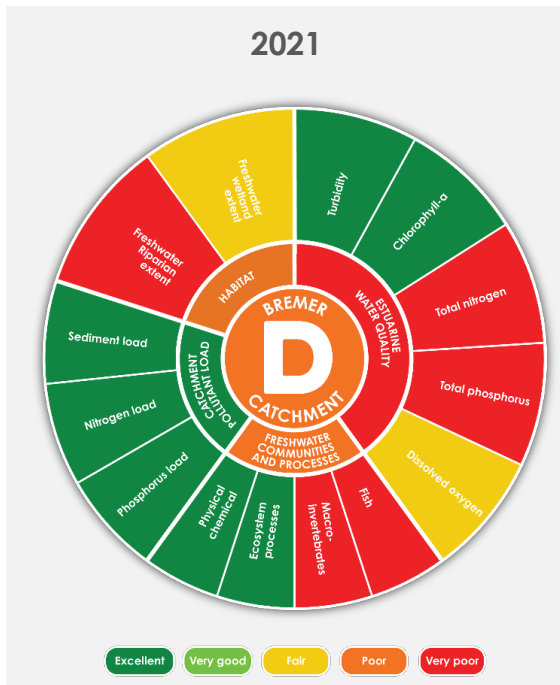
26.4 Ways to improve waterway health and benefits

- 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 and loss of connectivity. Currently 70% of streambanks in the Lockyer catchment are vegetated and only 32% of freshwater wetland extent remains. Improve riparian zone management by addressing weeds and cattle access in priority areas.
- Slow water down in the upper catchment to manage floodwater, reduce erosion, and rehydrate the landscape, by protecting and increasing vegetation (especially along riparian zones) and engaging floodplains through policy, land-use planning, incentives, and compliance.
- Increase the proportion of remnant vegetation cover, by protecting and enhancing significant high value regrowth in high risk areas.
- Enhance understanding and management of groundwater and groundwater dependent ecosystems and wetlands, to better understand the role groundwater plays in supporting habitats and how it interacts with surface water.
- In conjunction with key stakeholders, develop and implement management plans for koalas particularly the protection of large and connected areas of habitat with a focus on the lowland areas of the catchment.
- Maintain levels of vegetation and groundcover on stream banks and in other priority areas, such as hillslopes to reduce erosion and sediment pollution entering waterways.

- Address channel and gully erosion in priority to reduce erosion and sediment pollution entering waterways.
- 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.
- Deliver education for rural residential landholders (including Landholder Guides) for improved natural resource management outcomes.
- Promote the positive community actions underway in catchments with water quality issues (e.g. Lockyer) to share knowledge about what works to improve waterway health.
- Support sustainable and regenerative agricultural practice to maintain and enhance production, soil health, biodiversity and waterway health.
- Identify priority areas for best value investment for reducing pollutant loads using integrated biophysical and economic mapping and modelling.
- Apply and align long-term monitoring and modelling to support the Lockyer Valley Regional Council Environment Strategy 2021-2026 and Strategic Priorities
- Respect and recognise First Nations in daily work activities by getting to know and engaging with the appropriate First Nation group who have a registered interest in your catchment. For assistance on engagement, please see the [Guidance for proponents on best practice Indigenous engagement for environmental assessments under the Environment Protection and Biodiversity Conservation Act 1999](#) and the [AIATSIS Principles for engagement in projects concerning Aboriginal and Torres Strait Islander peoples](#).
- Undertake comprehensive surveys of the Lockyer Catchment to contemporarily record, document and safeguard Cultural Heritage and protect sites through Cultural Heritage Management Plans. Target strategic areas for cultural surveys and cultural heritage protection, including risk areas/areas affected by erosion along river and creek systems.
- Enhance Cultural Heritage compliance by improving development assessment processes and increasing education around compliance with the *Aboriginal Cultural Heritage Act 2003* and Best Practice Standards ([Heritage Chairs of Australia and New Zealand 2020, Dhawura Ngilan: A vision for Aboriginal and Torres Strait Islander heritage in Australia](#)).

27 Bremer catchment

27.1 Environmental Condition (F)



The catchment has declined from poor to very poor condition.

Why?

- Pollutant loads increased significantly from very low to very high, with sediment (mud) load increasing from 105 kg/ha in 2021 to 1,071 kg/ha in 2022. Run-off also delivered high loads of nitrogen (12.4 kg/ha) and phosphorus (1.9 kg/ha) to waterways. This was due to very high rainfall and river flows over the summer months, resulting in high pollutant run-off from areas in poor condition and with high erosion risk. The 2022 major flood events delivered mud and nutrients to the Bremer and Brisbane estuaries.
- Freshwater health improved from poor to fair condition, with significant improvements in macroinvertebrates and water quality.
- Freshwater health condition in 2022 was comparable to post-flood condition in 2011. High rainfall restores flow connectivity and improves freshwater habitat. The proportion of alien fish decreased from 31% in 2021 to 23% in 2022.
- 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 declined slightly and remains very poor. Total nutrients (total nitrogen and total phosphorus) remain very poor, while algae (phytoplankton) and turbidity significantly declined.

27.2 Waterway Benefit Rating ★★☆☆☆

- Despite very poor catchment condition results, residents expressed high levels of satisfaction (49%) with their local waterways.
- Residents highly value their local waterways for recreation, with 45% 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 (31 days/year), enjoying nature (26 days/year), and cycling (7 days/year).
- The recreational value per person was \$1,086/year. The most valuable activities, based on costs per visit, were picnics and BBQs (51% of value), and recreational fishing (15% of value).
- While residents have very high levels of personal connection with nature in general (72%), only 34% of residents were motivated to use and protect their local waterways.
- The catchment contributed to the supply of over 460ML of drinking water to residents in 2021-2022. Moderate levels of sludge relative to other drinking water catchments were removed from the Boonah-Kalbar water treatment plant, at a cost to the community.

27.3 Cultural Resource Management

- First Nation rights and interests to lead the stewardship of Country and culture have been fully recognised through Native Title over 0% of the landscapes of the Bremer Catchment where Native Title persists.
- First Nation parties are identified and recognised to lead the decisions relating to Aboriginal Cultural Heritage over 100% of the Bremer Catchment.
- Comprehensive archaeological surveys that formally document and maximise the protection of Aboriginal Cultural Heritage have been completed and recognised over 0% of the Bremer Catchment.
- Aboriginal Cultural Heritage Management Plans that enhance the protection of culture have been adopted over 38% of the formally recorded Aboriginal Cultural Heritage sites in the Bremer Catchment.

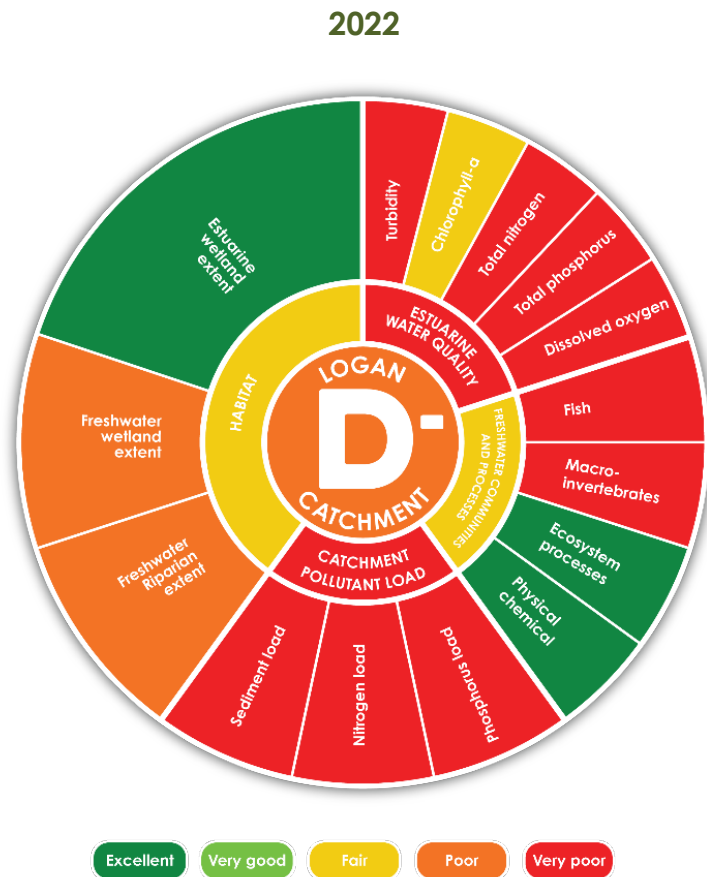
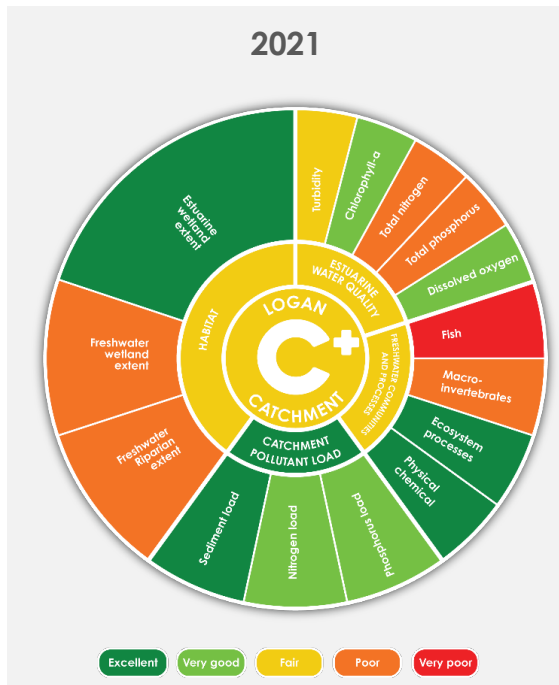
27.4 Ways to improve waterway health and benefits

- 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.
- 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.
- Slow water down in the upper catchment to manage floodwater, reduce erosion, and rehydrate the landscape, by protecting and increasing vegetation (especially along riparian zones) and engaging floodplains through policy, land-use planning, incentives, and compliance.
- Increase the use of erosion and sediment controls and compliance for new development, construction sites and private lands.
- Minimise nutrient inputs from the urban landscape through maintenance and enhancement of stormwater quality treatment infrastructure.

- Enhance understanding and management of groundwater and groundwater dependent ecosystems and wetlands, to better understand the role it plays in supporting habitats and how it interacts with surface water.
- Undertake freshwater protection and restoration activities including removing fish barriers, restoring instream habitat, naturalising channels, protecting and restoring riparian habitats and freshwater refugia.
- In conjunction with key stakeholders, develop and implement management plans for koalas particularly the protection of large and connected areas of habitat with a focus on the lowland areas of the catchment.
- Deliver education for rural residential landholders (including Landholder Guides) for improved natural resource management outcomes.
- Support land managers including private properties (encourage absentee landholders) to:
 - Manage and preserve bushland.
 - Maintain ground cover in priority areas such as hillslopes to reduce sediment pollution.
 - Manage regrowth vegetation.
 - Revegetate.
 - Manage pests and weeds.
 - Manage for fire.
- Create opportunities and incentives for residents to make changes around their homes, their businesses or in their local waterway to improve waterway condition. 65% of residents are motivated to use and protect local waterways.
- Respect and recognise First Nations in daily work activities by getting to know and engaging with the appropriate First Nation group who have a registered interest in your catchment. For assistance on engagement, please see the [Guidance for proponents on best practice Indigenous engagement for environmental assessments under the Environment Protection and Biodiversity Conservation Act 1999](#) and the [AIATSIS Principles for engagement in projects concerning Aboriginal and Torres Strait Islander peoples](#).
- Undertake comprehensive surveys of Bremer Catchment to contemporarily record, document and safeguard Cultural Heritage and protect sites through Cultural Heritage Management Plans. Target strategic areas for cultural surveys and cultural heritage protection, including risk areas/areas affected by erosion along river and creek systems.
- Enhance Cultural Heritage compliance by improving development assessment processes and increasing education around compliance with the *Aboriginal Cultural Heritage Act 2003* and Best Practice Standards ([Heritage Chairs of Australia and New Zealand 2020, Dhawura Ngilan: A vision for Aboriginal and Torres Strait Islander heritage in Australia](#)).

28 Logan catchment

28.1 Environmental Condition (D-)



Catchment condition has declined from fair to poor condition.

Why?

- Pollutant loads increased significantly from very low to very high, with sediment (mud) load increasing from 103 kg/ha in 2021 to 8,113 kg/ha in 2022. Run-off also delivered high loads of nitrogen (22.4 kg/ha) and phosphorus (11.3 kg/ha) to waterways. This was due to very high rainfall, and river flows over the summer months, resulting in high pollutant run-off from areas in poor condition and with high erosion risk. The 2022 major flood events delivered mud and nutrients to the Southern Bay.
- Freshwater health remains in fair condition. Water quality and ecosystem processes remain excellent, while macroinvertebrate and fish communities are very poor in 2022.
- 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 water quality declined from fair to very poor. All indicators declined to very poor condition, except for algae (phytoplankton) which declined from good to fair.

28.2 Waterway Benefit Rating ★★☆☆☆

- Despite poor catchment condition results, high numbers of residents (47%) 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 (67%) report a personal connection with nature, however, only 30% of residents felt motivated to use and protect their local waterways. Residents' personal connection is lower than the regional average at 71%.
- Residents report they value their local waterways for recreation. 45% of people recreate in or alongside their local waterway on a monthly basis or more. The top activities include walking or running (39 days/year per resident), enjoying nature (22 days/year per resident), cycling (8 days/year per resident), and picnicking (7 days/year per resident).
- The recreational value per person is \$1,102/year and is comprised mostly of picnic/BBQ activities (30%) and recreational fishing (34%). Residents typically spend a greater number of days fishing (6.5 days per year) than the SEQ average (4.7 days per year).
- The catchment supplied over 711ML of drinking water to residents in 2021-2022. Moderate levels of sludge relative to other drinking water catchments were removed from the Beaudesert water treatment plant, at a cost to the community.

28.3 Cultural Resource Management

- First Nation rights and interests to lead the stewardship of Country and culture have been fully recognised through Native Title over 0.3% of the landscapes of the Logan Catchment where Native Title persists.
- First Nation parties are identified and recognised to lead the decisions relating to Aboriginal Cultural Heritage over 97% of the Logan Catchment.
- Comprehensive archaeological surveys that formally document and maximise the protection of Aboriginal Cultural Heritage have been completed and recognised over 104.39 ha (0.03%) of the Logan Catchment.
- Aboriginal Cultural Heritage Management Plans that enhance the protection of culture have been adopted over 29% of the formally recorded Aboriginal Cultural Heritage sites in the Logan Catchment.

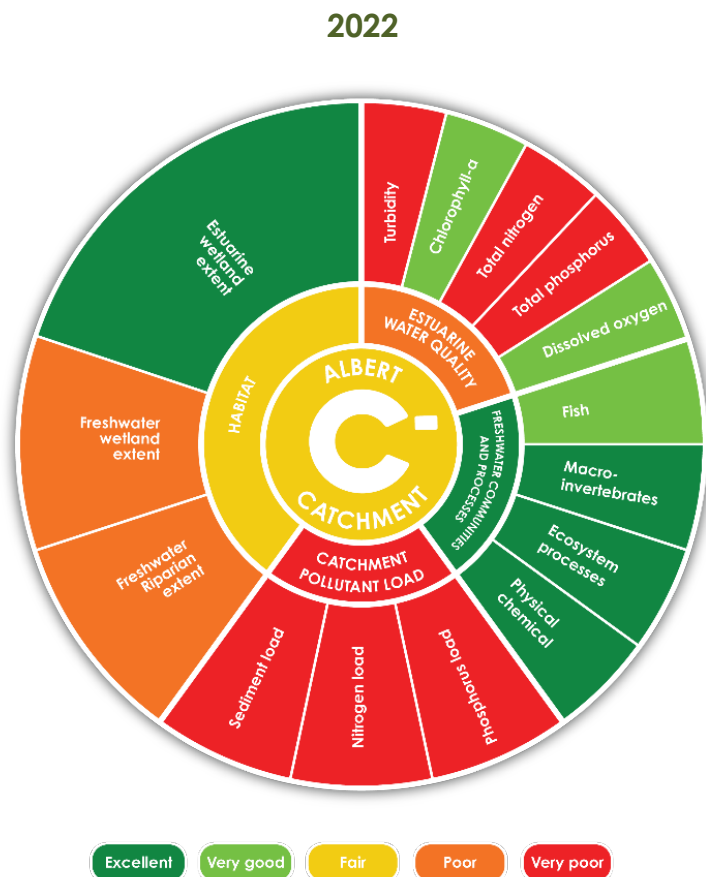
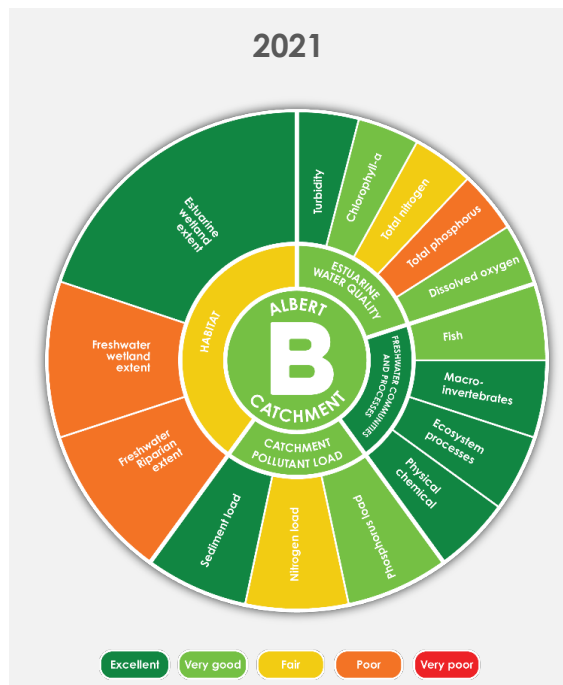
28.4 Ways to improve waterway health and benefits

- 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.
- Restore stream bank vegetation and wetlands to restore resilience across the region, through urban areas, including Slacks and Scrubby Creeks. 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.
- Support and create processes for the community, First Nations, industry and various levels of government to work together to invest in whole of catchment (land and water) stewardship.
- Increase the 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 as a priority and naturalise urban flow pathways where appropriate.
- Ensure there is a strategic approach to minimising the contribution of nutrients from wastewater treatment plants and other point sources in response to projected population increases.
- 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, and protecting and restoring riparian habitats and freshwater refugia.
- Promote waterway use and access, such as promoting local tidal estuaries as valuable recreational fishing and nature experience. Enhance urban waterways and wetlands in a way that provides cooling, green corridors that residents can access throughout the city.
- Implement management and education programs like Landholder Guides that cover weeds, pests and fire, both fire preparedness and use of fire for ecological and environmental management.
- In conjunction with key stakeholders, develop and implement management plans for koalas, particularly the protection of habitat.
- Consider urban design and infrastructure, including roads, bridges and rail, hard rock quarries and other large-scale development, to come up with strategies to manage potential adverse effects on floodplain management, wildlife movement and habitat fragmentation (regional policy in ShapingSEQ 2017). Flinders Karawatha Corridor, Bahrs Scrub (corridors and connectivity), Spring Mountain Reserve, Undullah (corridors and connectivity), Munruben (regional ecosystem corridor), Chambers Flat (landscape corridor), Logan Village, Greenbank Military Reserve and Veresdale Scrub are priorities for this action.
- Create opportunities and incentives for residents to make changes around their homes, their businesses or in their local waterway to improve waterway condition. 28% of residents are motivated to use and protect local waterways.
- Respect and recognise First Nations in daily work activities by getting to know and engaging with the appropriate First Nation group who have a registered interest in your catchment. For assistance on engagement, please see the [Guidance for proponents on best practice Indigenous engagement for environmental assessments under the Environment Protection and Biodiversity Conservation Act 1999](#) and the [AIATSIS Principles for engagement in projects concerning Aboriginal and Torres Strait Islander peoples](#).
- Undertake comprehensive surveys of the Logan Catchment to contemporarily record, document and safeguard Cultural Heritage and protect sites through Cultural Heritage Management Plans. Target strategic areas for cultural surveys and cultural heritage protection, including risk areas/areas affected by erosion along river and creek systems.
- Enhance Cultural Heritage compliance by improving development assessment processes and increasing education around compliance with the *Aboriginal Cultural Heritage Act 2003* and Best Practice Standards ([Heritage Chairs of Australia and New Zealand 2020, Dhawura Ngilan: A vision for Aboriginal and Torres Strait Islander heritage in Australia](#)).

29 Albert catchment

29.1 Environmental Condition (C-)



Catchment condition has declined from good to fair condition.

Why?

- Pollutant loads increased significantly from low to very high, with sediment (mud) load increasing from 111 kg/ha in 2021 to 1,065 kg/ha in 2022. Run-off also delivered high loads of nitrogen (17.3 kg/ha) and phosphorus (0.9 kg/ha) to waterways. This was due to very high rainfall and river flows over the summer months, resulting in high pollutant run-off from areas in poor condition and with high erosion risk. The 2022 major flood events delivered mud and nutrients to the Southern Bay.
- Freshwater health remains in excellent condition. Water quality, ecosystem processes and macroinvertebrate community health remain excellent, while fish community health condition remains in good condition.
- 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 declined from good to poor. Nutrients (total nitrogen and phosphorus) significantly declined across the estuary, while algae (phytoplankton) and dissolved oxygen remained good. Turbidity declined from excellent to very poor.

29.2 Waterway Benefit Rating ★ ★ ★ ★ ★

- Despite fair catchment condition results, high numbers of people (48%) were satisfied with their local waterways (compared with 58% for all of South East Queensland). High numbers of residents (48%) valued their local waterway as a place of rest and relaxation or for social interaction with friends and family (41%).
- Residents report that they value their local waterways for recreation. 45% recreate 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 (40 days/year per resident), enjoying nature (22 days/year per resident), and picnics and BBQs (8 days/year per resident). The recreational value per person was valued at \$997.23/year. The most valuable activities, based on costs per visit, were picnics and BBQs (40% of value) and boating and sailing (23%).
- The catchment supplied over 119ML of drinking water to residents in 2021-2022. Low levels of sludge relative to other drinking water catchments were removed from the Canungra water treatment plant, at a cost to the community.

29.3 Cultural Resource Management

- First Nation rights and interests to lead the stewardship of Country and culture have been fully recognised through Native Title over 0% of the landscapes of the Albert Catchment where Native Title persists.
- First Nation parties are identified and recognised to lead the decisions relating to Aboriginal Cultural Heritage over 100% of the Albert Catchment.
- Comprehensive archaeological surveys that formally document and maximise the protection of Aboriginal Cultural Heritage have been completed and recognised over 307.60 ha (0.39%) of the Albert Catchment.
- Aboriginal Cultural Heritage Management Plans that enhance the protection of culture have been adopted over 1% of the formally recorded Aboriginal Cultural Heritage sites in the Albert Catchment.

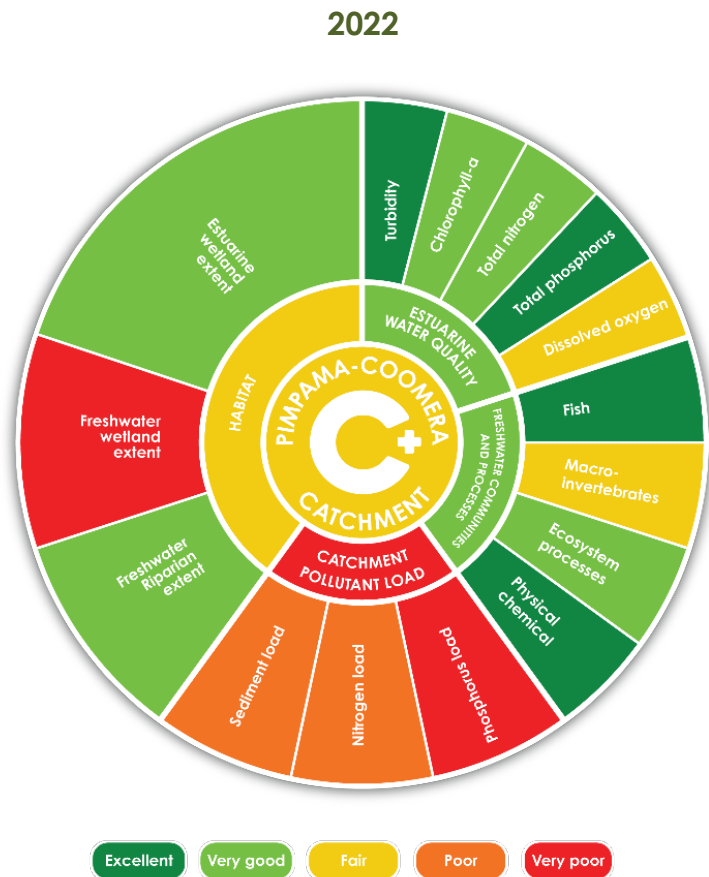
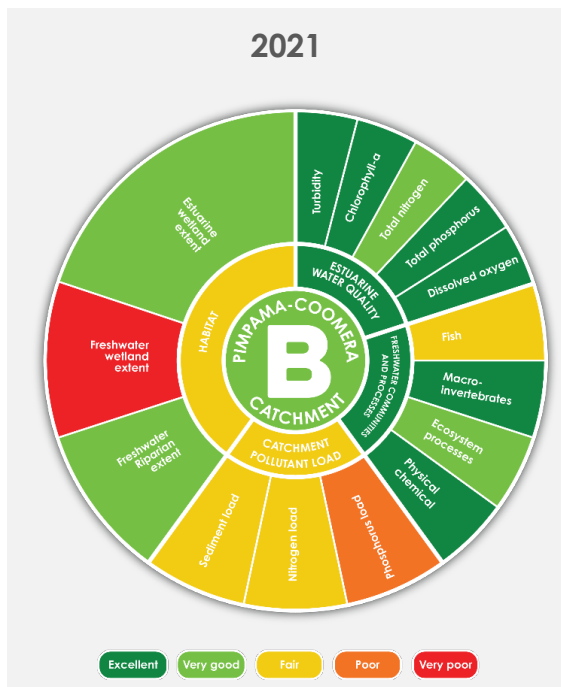
29.4 Ways to improve waterway health and benefits

- Protecting and managing existing values from the pressures of population growth is a priority.
- 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.
- Slow water down in the upper catchment to manage floodwater, reduce erosion, and rehydrate the landscape, by protecting and increasing vegetation (especially along riparian zones) and engaging floodplains through policy, land-use planning and compliance.
- Enhance understanding and management of groundwater and groundwater-dependent ecosystems and wetlands to better understand the role groundwater plays in supporting habitats and how it interacts with surface water.
- Increase the use of erosion and sediment controls and compliance for new development, construction sites and private lands.
- Enhance waterway corridors and instream habitats and stabilise eroding gullies and channels to improve water quality, especially in new urban development areas.
- Focus on engagement and compliance within industries with high soil disturbance, such as agriculture and development.
- Implement management and education programs like Landholder Guides that cover weeds, pests and fire, both fire preparedness and use of fire for ecological and environmental management.

- In conjunction with key stakeholders, develop and implement management plans for koalas, particularly the protection of habitat.
- Reduce threats to key areas, including the Gondwana Rainforests World Heritage Area.
- Provide targeted invasive species management to reduce threats to UNESCO-designated or World Heritage listed areas, including the Queensland components of the Gondwana Rainforests of Australia and other listed properties.
- 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.
- Respect and recognise First Nations in daily work activities by getting to know and engaging with the appropriate First Nation group who have a registered interest in your catchment. For assistance on engagement, please see the [Guidance for proponents on best practice Indigenous engagement for environmental assessments under the Environment Protection and Biodiversity Conservation Act 1999](#) and the [AIATSIS Principles for engagement in projects concerning Aboriginal and Torres Strait Islander peoples](#).
- Undertake comprehensive surveys of the Albert Catchment to contemporarily record, document and safeguard Cultural Heritage and protect sites through Cultural Heritage Management Plans. Target strategic areas for cultural surveys and cultural heritage protection, including risk areas/areas affected by erosion along river and creek systems.
- Enhance Cultural Heritage compliance by improving development assessment processes and increasing education around compliance with the *Aboriginal Cultural Heritage Act 2003* and Best Practice Standards ([Heritage Chairs of Australia and New Zealand 2020, Dhawura Ngilan: A vision for Aboriginal and Torres Strait Islander heritage in Australia](#)).

30 Pimpama-Coomera catchment

30.1 Environmental Condition (C+)



Catchment condition has declined from good to fair condition.

Why?

- Pollutant loads increased significantly from high to very high, with sediment (mud) load increasing from 434 kg/ha in 2021 to 563 kg/ha in 2022. Run-off also delivered high loads of nitrogen (7.2 kg/ha) and phosphorus (1.1 kg/ha) to waterways. This was due to major rainfall, which transported sediment (mud) and nutrients from urban and rural areas to waterways. The 2022 major flood events delivered mud and nutrients to the Broadwater.
- The health of freshwater creeks declined from excellent to good. Fish community health improved at Pimpama River; however, this was offset by a decline in ecosystem processes and macroinvertebrate community health at Back Creek.
- 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 declined from excellent to good. In the Pimpama, nutrients (total nitrogen and total phosphorus) declined across the estuary. Algal (phytoplankton) blooms were observed in the lower estuary, while dissolved oxygen declined in the upper Pimpama estuary above the weir. Dissolved oxygen remained stable within the Coomera, with declines in nutrients (total nitrogen and phosphorus) and algal (phytoplankton) blooms observed in the lower estuary.

30.2 Waterway Benefit Rating ★ ★ ★ ★ ★

- Despite fair catchment condition, very high numbers of residents (68%) are satisfied with their local waterways (compared with 58% 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 (75%).
- Residents value their local waterways for recreation with 60% recreating in or alongside their local waterway on a monthly basis. The top activities include walking or running (63 days/year per resident), enjoying nature (30 days/year per resident) and picnics and BBQ's (13 days/year per resident).
- The recreational value per person was valued at \$1,890/year. The most valuable activities, based on costs per visit, were picnics and BBQs (38% of value), boating and sailing (20% of value) and recreational fishing (25% of value).

30.3 Cultural Resource Management

- First Nation rights and interests to lead the stewardship of Country and culture have been fully recognised through Native Title over 0% of the landscapes of the Pimpama-Coomera Catchment where Native Title persists.
- First Nation parties are identified and recognised to lead the decisions relating to Aboriginal Cultural Heritage over 100% of the Pimpama-Coomera Catchment.
- Comprehensive archaeological surveys that formally document and maximise the protection of Aboriginal Cultural Heritage have been completed and recognised over 0% of the Pimpama-Coomera Catchment.
- Aboriginal Cultural Heritage Management Plans that enhance the protection of culture have been adopted over 8% of the formally recorded Aboriginal Cultural Heritage sites in the Pimpama-Coomera Catchment.

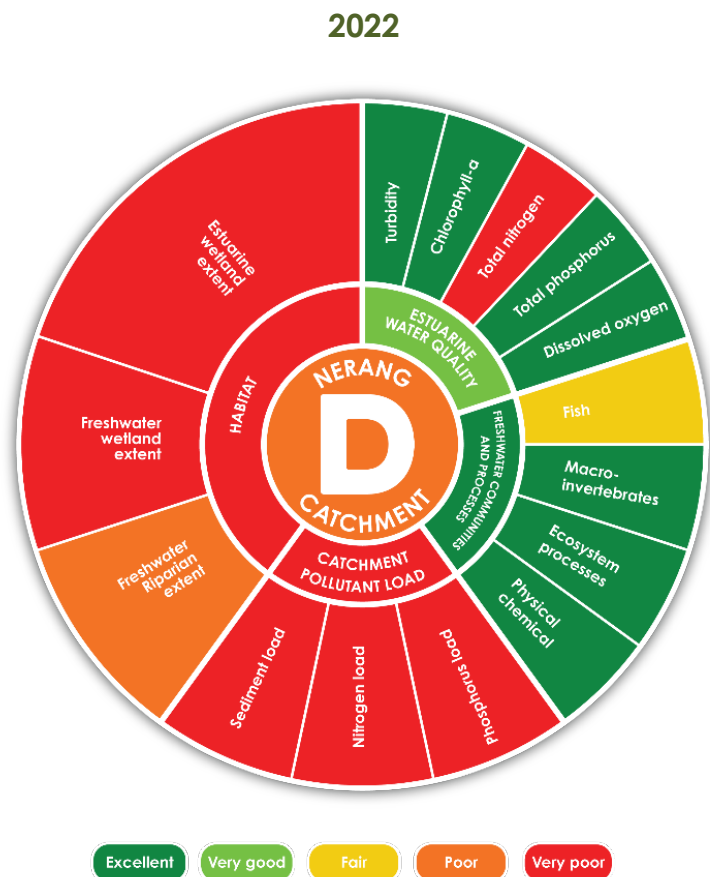
30.4 Ways to improve waterway health and benefits

- 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 over the next 25 years.
- Slow water and reduce erosion in the upper catchment by protecting and increasing vegetation (especially along riparian zones) and engaging floodplains through policy, land-use planning and compliance.
- Implement integrated and forward planning for urban development and associated infrastructure to avoid all adverse effects on people and natural areas.
- Manage land-use change and increase the 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.
- Develop Gold Coast catchment and waterways models for water quality, catchment sediment/nutrient load, sea level rise, scenario testing and future planning.
- Improve priority waterway corridors and instream habitats by addressing vegetation clearing, weeds management and cattle access.
- Identify barriers to fish passage and develop and implement solutions in priority areas.
- Enhance the awareness and use of planning tools and regulatory structures that promote collaborative action for biosecurity, particularly weed and pest management.

- Implement management and education programs for weeds, pests and fire, both fire preparedness and use of fire for cultural/ecological/environmental outcomes.
- Support capacity building across government, industry, and the broader community of the rights, interests, knowledge and critical role of First Nations and Traditional Owners in caring for Country.
- 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 homes, their businesses or in their local waterway to improve waterway condition. 46% of residents are motivated to use and protect local waterways.
- Respect and recognise First Nations in daily work activities by getting to know and engaging with the appropriate First Nation group who have a registered interest in your catchment. For assistance on engagement, please see the [Guidance for proponents on best practice Indigenous engagement for environmental assessments under the Environment Protection and Biodiversity Conservation Act 1999](#) and the [AIATSIS Principles for engagement in projects concerning Aboriginal and Torres Strait Islander peoples](#).
- Undertake comprehensive surveys of the Pimpama-Coomera Catchment to contemporarily record, document and safeguard Cultural Heritage and protect sites through Cultural Heritage Management Plans. Target strategic areas for cultural surveys and cultural heritage protection, including high energy risk areas/areas affected by erosion and sea level rise along the coast.
- Enhance Cultural Heritage compliance by improving development assessment processes and increasing education around compliance with the *Aboriginal Cultural Heritage Act 2003* and Best Practice Standards ([Heritage Chairs of Australia and New Zealand 2020, Dhawura Ngilan: A vision for Aboriginal and Torres Strait Islander heritage in Australia](#)).

31 Nerang catchment

31.1 Environmental Condition (D)



The catchment declined from fair to poor condition.

Why?

- Pollutant loads increased significantly from high to very high, with relatively high contributions from urban areas. Sediment (mud) load increasing from 454 kg/ha in 2021 to 754 kg/ha in 2022. Run-off also delivered high loads of nitrogen (8.7 kg/ha) and phosphorus (1.4 kg/ha) to waterways. This was due to major rainfall, which transported sediment (mud) and nutrients from urban and rural areas to waterways.
- The health of freshwater creeks remains excellent. Water quality, ecosystem processes and macroinvertebrate community health 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 and developments.
- Estuarine water quality declined from excellent to good. Total nitrogen declined significantly from excellent to very poor, while total phosphorus, algae (phytoplankton), turbidity, and dissolved oxygen declined slightly, though remains excellent.

31.2 Waterway Benefit Rating ★★★★★

- Despite poor catchment condition, very high numbers of residents (74%) are satisfied with their local waterways (compared with 58% for all South East Queensland). Very high numbers of residents reported that they utilised their local waterway for rest and relaxation (74%).
- Residents report that they very highly value their local waterways for recreation. 67% of residents recreate in or alongside their local waterway on a weekly basis. The top activities include walking or running (86 days/year per resident), enjoying nature (28 days/year per resident), picnics/BBQs (21 days/year per resident), and swimming (16 days/year per resident).
- The recreational value per person was valued at \$2,158/year. The most valuable activities, based on costs per visit, were picnics and BBQs (38% of value), boating and sailing (24% of value)
- The catchment supplied over 78,000ML of drinking water to residents in 2021-2022. Very Low levels of sludge relative to other drinking water catchments was removed from Molendinar and Mudgeeraba water treatment plants at a cost to the community.

31.3 Cultural Resource Management

- First Nation rights and interests to lead the stewardship of Country and culture have been fully recognised through Native Title over 0% of the landscapes of the Nerang Catchment where Native Title persists.
- First Nation parties are identified and recognised to lead the decisions relating to Aboriginal Cultural Heritage over 100% of the Nerang Catchment.
- Comprehensive archaeological surveys that formally document and maximise the protection of Aboriginal Cultural Heritage have been completed and recognised over 0% of the Nerang Catchment.
- Aboriginal Cultural Heritage Management Plans that enhance the protection of culture have been adopted over 9% of the formally recorded Aboriginal Cultural Heritage sites in the Nerang Catchment.

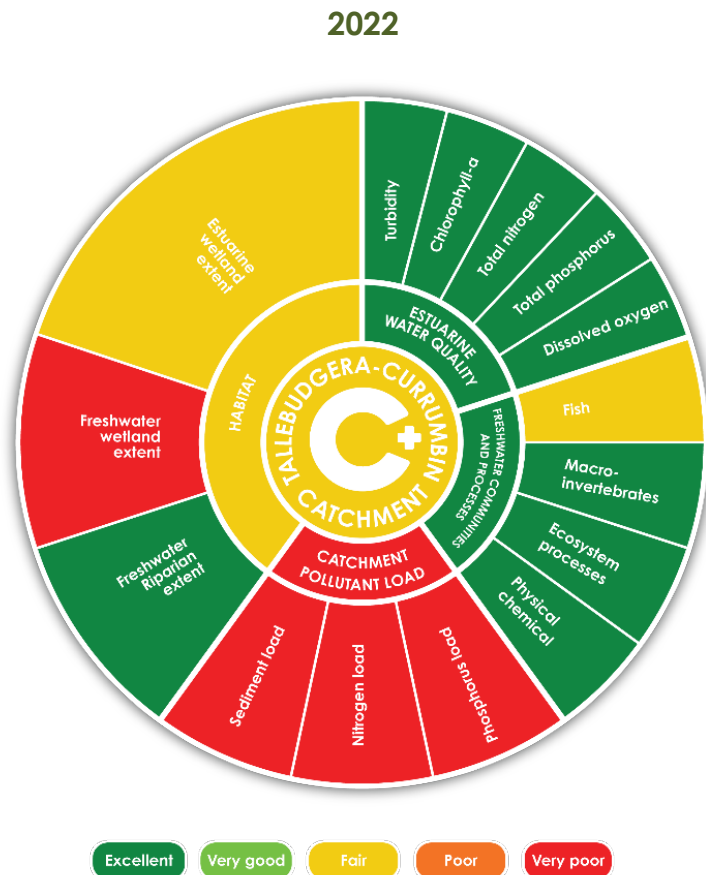
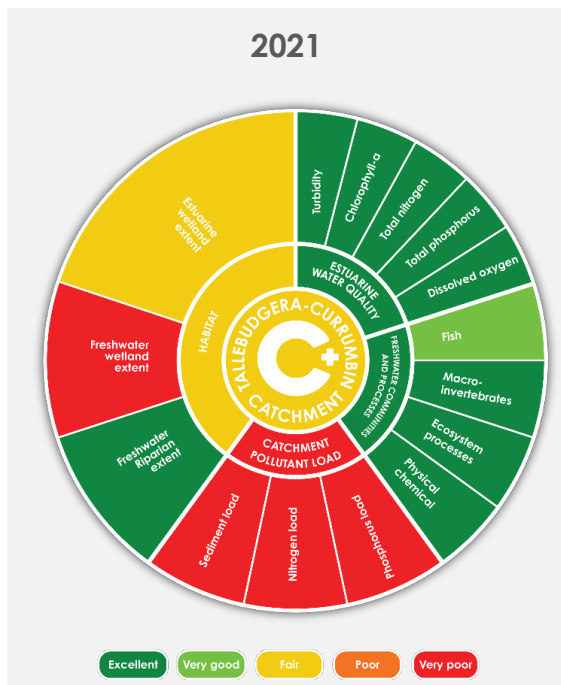
31.4 Ways to improve waterway health and benefits

- Protecting and managing existing values from the pressures of population growth is a priority, with the population of the City of Gold Coast area projected to nearly double to approximately 930,000 over the next 25 years.
- Slow water down in the upper catchment to manage floodwater, reduce erosion, and rehydrate the landscape, by protecting and increasing vegetation (especially along riparian zones) and engaging floodplains through policy, land-use planning and compliance.
- Implement integrated and forward planning for urban development and associated infrastructure to avoid all adverse effects on people and natural areas.
- 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.
- Improve priority waterway corridors and instream habitats by addressing clearing, weeds and cattle access. Currently less than 5% of freshwater and estuarine wetland extent remains, and only 73% of freshwater stream banks have riparian cover
- Identify barriers to fish passage and develop and implement solutions in priority areas.

- Implement management and education programs for weeds, pests and fire, both fire preparedness and use of fire for cultural/ecological/environmental outcomes. First Nations to lead on cultural burning programs.
- 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 homes, their businesses or in their local waterway to improve waterway condition. 46% of residents are motivated to use and protect local waterways.
- Respect and recognise First Nations in daily work activities by getting to know and engaging with the appropriate First Nation group who have a registered interest in your catchment. For assistance on engagement, please see the [Guidance for proponents on best practice Indigenous engagement for environmental assessments under the Environment Protection and Biodiversity Conservation Act 1999](#) and the [AIATSIS Principles for engagement in projects concerning Aboriginal and Torres Strait Islander peoples](#).
- Undertake comprehensive surveys of the Nerang Catchment to contemporarily record, document and safeguard Cultural Heritage and protect sites through Cultural Heritage Management Plans. Target strategic areas for cultural surveys and cultural heritage protection, including high energy risk areas/areas affected by erosion and sea level rise along the coast.
- Enhance Cultural Heritage compliance by improving development assessment processes and increasing education around compliance with the *Aboriginal Cultural Heritage Act 2003* and Best Practice Standards ([Heritage Chairs of Australia and New Zealand 2020, Dhawura Ngilan: A vision for Aboriginal and Torres Strait Islander heritage in Australia](#)).

32 Tallebudgera-Currumbin catchment

32.1 Environmental Condition (C+)



The catchment remains in fair condition.

Why?

- Pollutant loads remain very high, with sediment (mud) load increasing from 584 kg/ha in 2021 to 1,148 kg/ha in 2022. Run-off also delivered high loads of nitrogen (13.1 kg/ha) and phosphorus (2.1 kg/ha) to waterways. This was due to major rainfall, which transported sediment (mud) and nutrients from urban and rural areas to waterways.
- The health of freshwater creeks remains excellent. Water quality, ecosystem processes and macroinvertebrate load community health remain excellent, and fish community health declined from good to fair condition.
- 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 the erosion of sediments into the waterways.
- Estuarine water quality remains excellent, with little change observed across all water quality indicators (nutrients, algae (phytoplankton), water clarity, and dissolved oxygen).

32.2 Waterway Benefit Rating ★ ★ ★ ★ ★

- Despite fair catchment condition, extremely high numbers of residents (81.6%) are satisfied with their local waterways (compared with 58% for all of South East Queensland). The Tallebudgera-Currumbin catchment has some of the highest levels of personal connection with nature (77%) in South East Queensland, with very high numbers of residents (73%) motivated to use and protect their waterways.
- Residents report they value their local waterways for recreation. 78% of residents recreate in or alongside their local waterway on a monthly basis, with 58% of residents recreating weekly. Very high numbers value them as a place of rest and relaxation (79%) and a place which provides emotional benefit (79%).
- The top activities include walking/running (131 days/year per resident), enjoying nature (46 days/year per resident) and swimming (33 days/year per resident). The recreational value per person was valued at \$2,499/year. The most valuable activities, based on costs per visit, were picnics and BBQs (28% of value), recreational fishing (28% of value), and recreational fishing (15% of value).

32.3 Cultural Resource Management

- First Nation rights and interests to lead the stewardship of Country and culture have been fully recognised through Native Title over 0% of the landscapes of the Tallebudgera-Currumbin Catchment where Native Title persists.
- First Nation parties are identified and recognised to lead the decisions relating to Aboriginal Cultural Heritage over 100% of the Tallebudgera-Currumbin Catchment.
- Comprehensive archaeological surveys that formally document and maximise the protection of Aboriginal Cultural Heritage have been completed and recognised over 0% of the Tallebudgera-Currumbin Catchment.
- Aboriginal Cultural Heritage Management Plans that enhance the protection of culture have been adopted over 31% of the formally recorded Aboriginal Cultural Heritage sites in the Tallebudgera-Currumbin Catchment.

32.4 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.
- Slow water down in the upper catchment to manage floodwater, reduce erosion, and rehydrate the landscape, by protecting and increasing vegetation (especially along riparian zones) and engaging floodplains through policy, land-use planning and compliance.
- Implement integrated and forward planning for urban development and associated infrastructure to avoid all adverse effects on people and natural areas.
- 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.
- Identify barriers to fish passage and develop and implement solutions in priority areas. Undertake freshwater protection and restoration activities, including removing fish barriers, restoring instream habitat, naturalising channels, protecting and restoring riparian habitats and freshwater refugia.
- Enhance waterway corridors and instream habitats and stabilise eroding gullies and channels to improve water quality, especially in new urban development areas.

- Protect natural habitats, including wetlands and stream bank vegetation, from clearing, weed infestation and loss of connectivity.
- Implement management and education programs like Landholder Guides that cover weeds, pests and fire, both fire preparedness and use of fire for ecological and environmental management.
- Recognise and support landholders providing ecosystem services to the wider community (particularly mental and physical health) through their stewardship and management of land, water and biodiversity assets.
- Deliver capacity-building programs to support landholders, including rural residential, to achieve good NRM outcomes, particularly in the buffer zones adjacent to conservation areas.
- Develop integrated weed and pest management programs for rural landholders.
- Deliver fire education for rural landholders (both fire preparedness and use of fire for cultural/ecological/environmental management).
- 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 homes, their businesses or in their local waterway to improve waterway condition. 69% of residents are motivated to use and protect local waterways.
- Respect and recognise First Nations in daily work activities by getting to know and engaging with the appropriate First Nation group who have a registered interest in your catchment. For assistance on engagement, please see the [Guidance for proponents on best practice Indigenous engagement for environmental assessments under the Environment Protection and Biodiversity Conservation Act 1999](#) and the [AIATSIS Principles for engagement in projects concerning Aboriginal and Torres Strait Islander peoples](#).
- Undertake comprehensive surveys of the Tallebudgera-Currumbin Catchment to contemporarily record, document and safeguard Cultural Heritage and protect sites through Cultural Heritage Management Plans. Target strategic areas for cultural surveys and cultural heritage protection, including high energy risk areas/areas affected by erosion and sea level rise along the coast.
- Enhance Cultural Heritage compliance by improving development assessment processes and increasing education around compliance with the *Aboriginal Cultural Heritage Act 2003* and Best Practice Standards ([Heritage Chairs of Australia and New Zealand 2020, Dhawura Ngilan: A vision for Aboriginal and Torres Strait Islander heritage in Australia](#)).

33 Appendix 1: Summary of Environmental Condition Grades and Waterway Benefit Rating scores from 2015 to 2022

Catchment/Bay zone	Environmental Condition Grade								Waterway Benefit Rating							
	2015	2016	2017	2018	2019	2020	2021	2022	2015	2016	2017	2018	2019	2020	2021	2022
Noosa	A-	A-	A-	A-	A-	A-	A-	B	4.5	4	4.5	4.5	5	4.5	5	5
Maroochy	C+	B	B-	B-	B-	C+	C+	C+	4	4	4	3.5	4	4.5	4	4
Mooloolah	C+	B	B-	C+	C+	C	C+	C	4	4.5	4	3.5	4	4.5	4.5	3.5
Pumicestone	B-	B+	A-	B+	A-	A-	B+	B-	4.5	4.5	4	4	4	4.5	4.5	4.5
Caboolture	C+	B	B	B+	B+	B+	B	C	3.5	3	3	3	3.5	3.5	3.5	3.5
Pine	C	B-	B-	B-	B	B	C+	D+	3	3	3.5	3.5	3.5	4	4	3.5
Lower Brisbane	C-	C-	D+	D+	C-	D+	D+	F	2.5	3	2.5	2.5	3	3	3	3.5
Redland	C+	C+	C+	C	C+	C+	C+	D+	3.5	3.5	3.5	3.5	3.5	3.5	3	3
Mid Brisbane	D	D+	B-	C-	C+	C	C+	F	2.5	3	3	3	3.5	2.5	3.5	4
Upper Brisbane	D	D	D	D	D	D	F	/	3.5	3	3	2.5	3	2.5	3.5	4
Stanley	B	B	B-	B	B-	B	B+	C	2.5	3	3.5	3.5	3.5	3.5	4	3.5
Lockyer	D+	D+	D+	D+	D	D-	D-	F	2.5	2.5	2.5	2.5	3	2.5	3	3.5
Bremer	D-	D+	D-	D+	D+	D	D	F	2.5	2.5	2.5	2.5	2.5	3	3.5	3
Logan	D	C-	C-	C-	C	C+	C+	D-	2.5	2.5	2	2	2.5	2.5	2.5	3
Albert	C-	C+	C	C	B-	B-	B	C-	3	3.5	3	2.5	3.5	3.5	4	3.5
Pimpama-Coomera	C+	B	B-	B	B-	B	B	C+	3.5	3.5	3.5	3.5	4	4	4	4
Nerang	C-	C	C-	C+	C	C	C	D	4	4	4	4	4	4.5	4.5	4.5
Tallebudgera-Currumbin	C+	B	B-	B	B+	B	C+	C+	4	4	4.5	4	4.5	5	4.5	5
Western Bay	B	B	B	B+	A-	A-	A-	B+	Not applicable							
Central Bay	B+	B+	A-	A-	A-	A-	A	A-								
Eastern Bay	A	A-	A	A-	A	A	A	A-								
Southern Bay	B+	B	B	B	B+	B+	B+	B-								
Broadwater	A-	B+	A-	A	A	B+	A	A-								
Moreton Bay	A-	A-	B+	A-	A-	A-	A-	B+								



Level 19, 160 Ann St, Brisbane QLD 4000 | PO BOX 13204 George St, Brisbane QLD 4003
T. 07 3177 9100 | F. 07 3177 9190 | hlw.org.au | reportcard.hlw.org.au