

TZROY • COMET • NOGOA • MACKENZIE • ISAAC • DAWSON • C

Fitzroy Basin Report Card

JULY 2024 - JUNE 2025

fitzroy
partnership
for river health

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02

ABOUT THIS report card

The Fitzroy Basin Ecosystem Health Index Report Card provides an annual, science-based assessment of river and stream health across Central Queensland's Fitzroy Basin. It brings together data from multiple partners to evaluate water quality, ecosystem condition, and catchment influences, presenting the results in an easy-to-understand grading system. The report card helps communities, industry, and government track changes in waterway health over time and supports informed decisions to protect and improve the region's rivers and creeks.



The Fitzroy Basin

At over 142,600km², the Fitzroy Basin is the second largest seaward draining basin in Australia, and the largest draining into the Great Barrier Reef. Comprised of over 20,000 kilometres of waterways, the Fitzroy Basin possesses abundant natural assets and is a region of significant economic importance.

It includes six major river systems: Fitzroy, Dawson, Mackenzie, Nogoa, Comet and Isaac/Connors. Today, there are five regional report cards that work across the Great Barrier Reef catchment to inform management decisions, to improve water quality, ecosystem health, and raise awareness of waterway conditions.



A message from

ASSOCIATE PROFESSOR EVA ABAL

CHAIR OF THE INDEPENDENT SCIENCE PANEL

The Independent Science Panel (ISP) plays a crucial role in ensuring the Fitzroy Partnership for River Health's (FPRH) reporting is grounded in credible, up-to-date, and unbiased science. The panel has brought together experts in freshwater ecology, water quality, hydrology, environmental chemistry, and catchment management to rigorously review and validate the data and methods used in the Fitzroy Basin Report Card. Through this independent scientific scrutiny, the Panel helps maintain transparency, integrity, and confidence in the results presented to partners and the wider community.

I would like to acknowledge the ISP members, many who have provided independent advice to FPRH since its establishment in 2012.



About our Partnership

Fitzroy Partnership for River Health was formed in 2012 and includes organisations from government, industry, research and community, who all have an interest in the health of waterways across the Fitzroy Basin. Partners share a common goal of providing a more complete picture of river health in the Fitzroy Basin, providing funding, resources and water monitoring data, used to complete annual report cards that are accessible to everyone in the community.

Our role is to collate and assess the water quality data collected by organisations across the basin, develop the report cards on waterway health backed by the best available science and provide the community with the ongoing assurance that there is an independent assessment of waterway health year after year.



Want to know more?

DIVE INTO THE DATA



Explore
GRAPHS AND TRENDS



GRADING METHODS
explained
A B C



Acknowledgement

DATA SOURCES

Fitzroy Partnership for River Health acknowledges the many organisations that contribute data to support our annual reporting. By bringing together these diverse data sources, the Partnership is able to provide a more complete and transparent picture of river health than any single organisation could achieve alone. We sincerely thank all data partners for their ongoing collaboration and commitment to improving understanding of the Fitzroy Basin's waterways.





Report Card highlights



The Fitzroy Basin Ecosystem Health Index Report Card provides a snapshot of waterway health for the reporting year, summarising how our rivers and creeks are responding to the combined effects of climate, water flow, natural processes, and human activities. The results reflect the dynamic nature of our environment, from the movement of salt, nutrients and sediments across the landscape to the ecological changes that occur over time.

Rainfall is one of the most significant drivers of the environmental conditions captured in the report card results. Rainfall affects the concentration of soluble compounds and the mobilisation of sediments, nutrients and organic matter running off into streams. Rainfall triggers the flows that influence habitat quality and connectivity and recharge to groundwater that may intercept baseflow in streams. This year was slightly wetter than the previous years with more rain being recorded in most catchments. However, the Nogoa and Upper Dawson catchments were dryer than the previous year and some sites in the Callide and Comet catchments dried completely.

Overall, scores for this year's report card were similar to the previous year, indicating that waterway health across the Fitzroy Basin remained relatively stable. While scores for individual indicators shifted slightly, these changes were minor and within the range expected under the observed rainfall and flow conditions.

Across the basin eight catchments had lower toxicant scores than the previous year as a result of higher concentrations of Copper or Aluminium. However, The Connors, Mackenzie and Upper Isaac catchments all had improved scores for Toxicants in 2024-2025.





Overall ecological indicator values were similar to last year. Macroinvertebrate indicator values were slightly lower across much of the catchment while fish indicator scores were slightly higher. These Ecology indicators are strongly influenced by river flow and rainfall conditions.




Of note was the low number of introduced fish species recorded during the fish surveys comprising less than five percent of the fish identified.

As science evolves, so too will the indicators used in our report cards. The Independent Science Panel will continue to assess and refine existing report card indicators. For example, methods that take account of current flow conditions will be considered for determining water quality scores that reflect the prevailing conditions. Ongoing improvements in monitoring and reporting will ensure that our report cards continue to reflect the latest research, best practices, and the priorities and interests of our communities and partners.

CATCHMENT GRADES 2024-2025 at a glance

- A** Excellent
- B** Good
- C** Fair
- D** Poor
- E** Fail
- N** No data

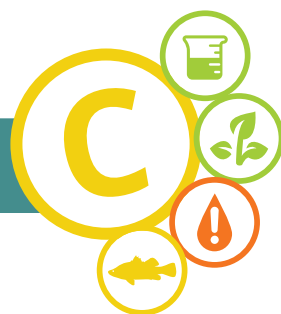
-  Phys-Chem
-  Nutrients
-  Toxicants
-  Ecology

-  Rivers and creeks
-  Catchment boundaries
-  Roads

COMET



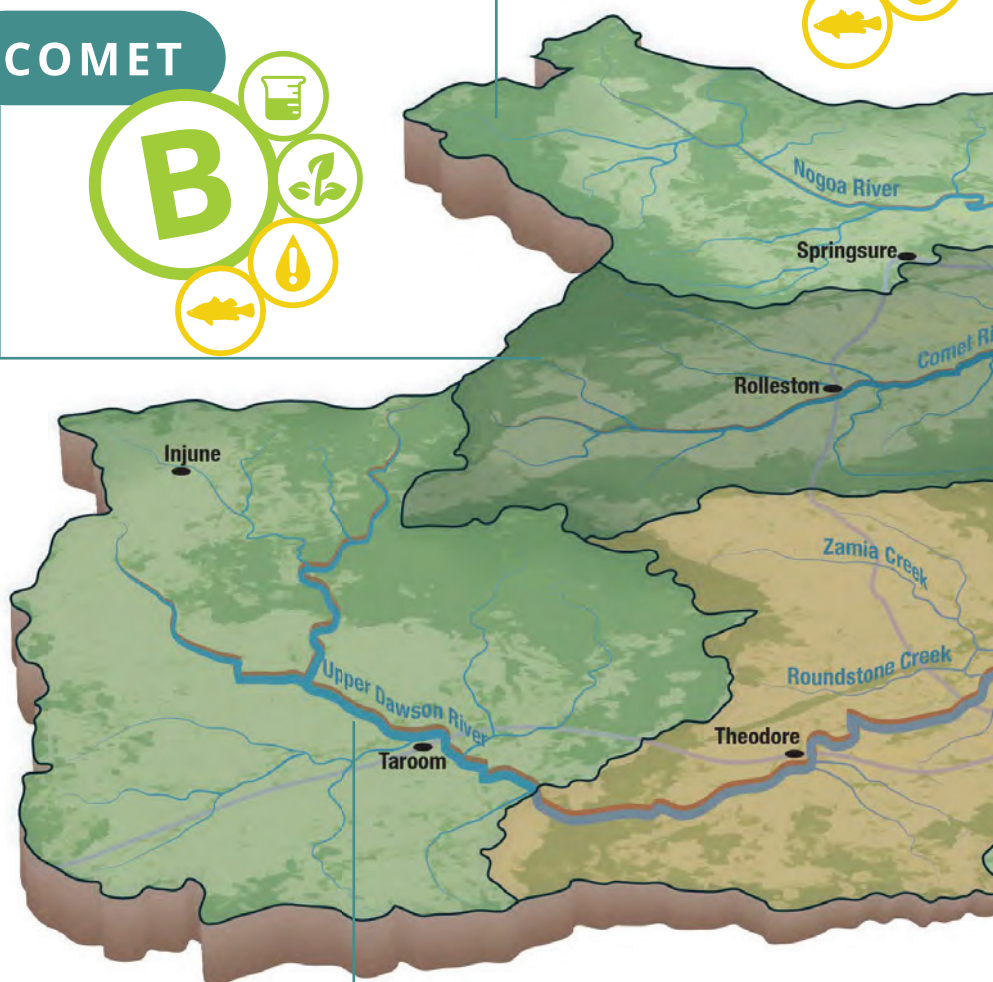
NOGOA



UPPER DAWSON



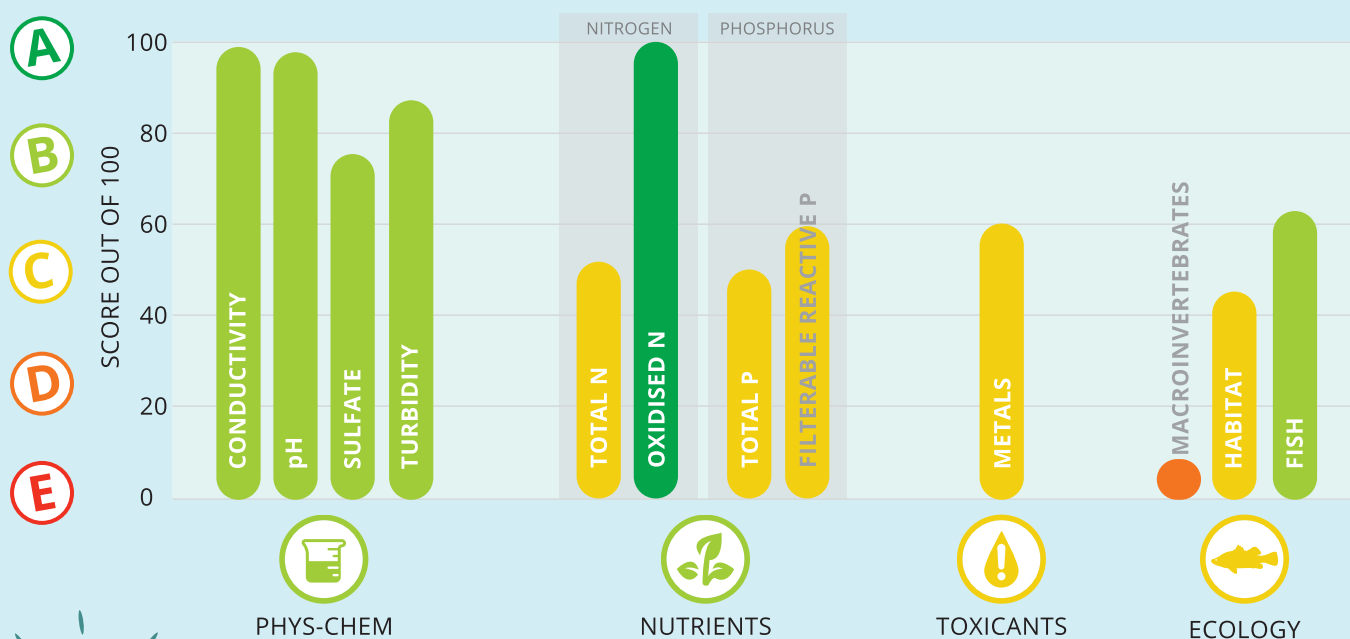
LOWER DAWSON





CALLIDE Catchment B

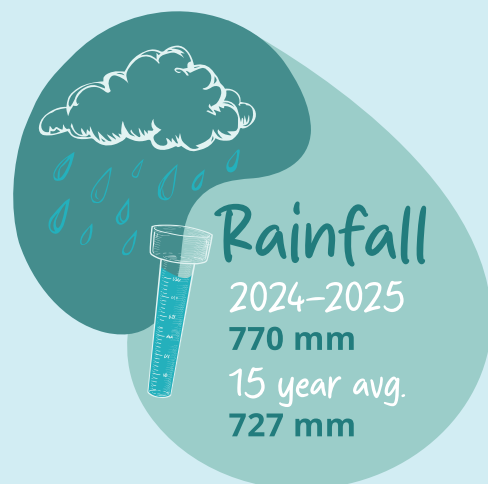
The Callide catchment, located in the south eastern most part of the region, encompasses the Dee River, Don River, and Callide Creek. At its centre lies Biloela, situated between the Callide and Kariboe creeks. Water from the catchment flows northward, ultimately joining the Dawson River just downstream of Baralaba. A fertile floodplain stretches from Biloela to the Dawson River's junction. Rainfall across the catchment varies, with the eastern ranges, including Kroombit Tops, receiving over 1000 mm annually, while the western areas experience around 600 mm.



Kreffft's River Turtle *Emydura krefftii* and the critically endangered White-throated Snapping Turtle *Elseya albagula* were sited using Baited Underwater Retrieval Video during fish sampling in March 2025. The White-throated Snapping Turtle is a large turtle which can grow to 45 cm carapace length. The species is endemic to south-eastern Queensland, Australia, in the Burnett, Mary, and Fitzroy River drainages.



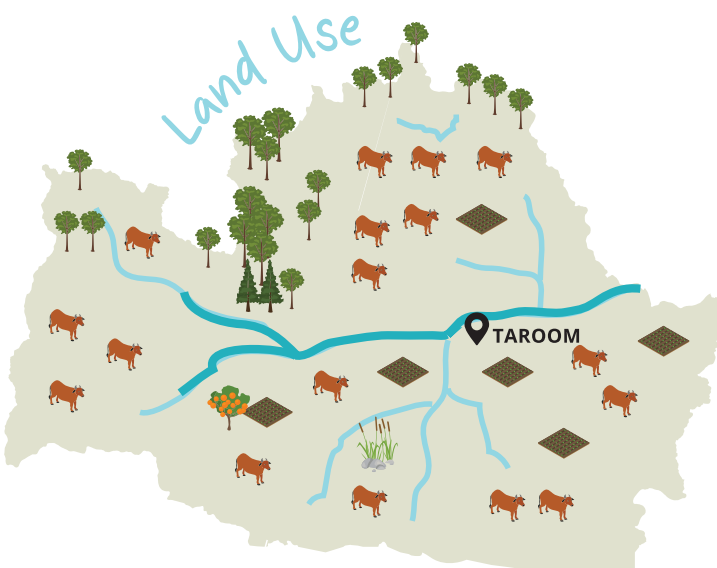
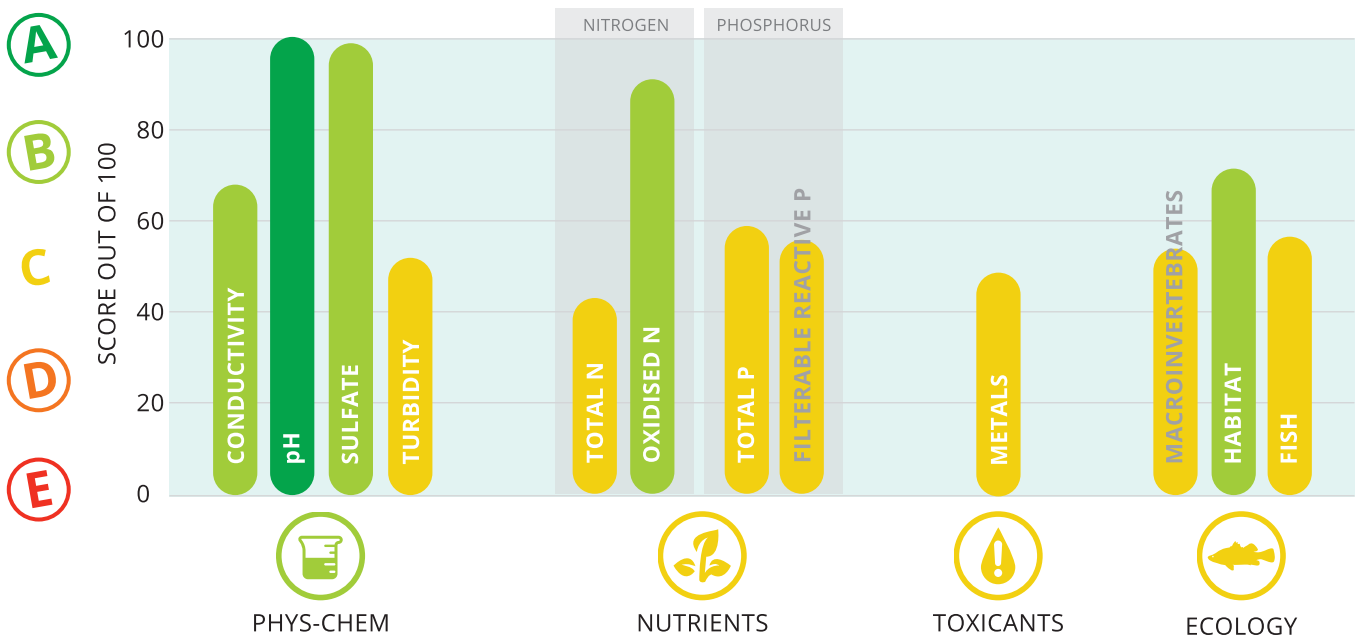
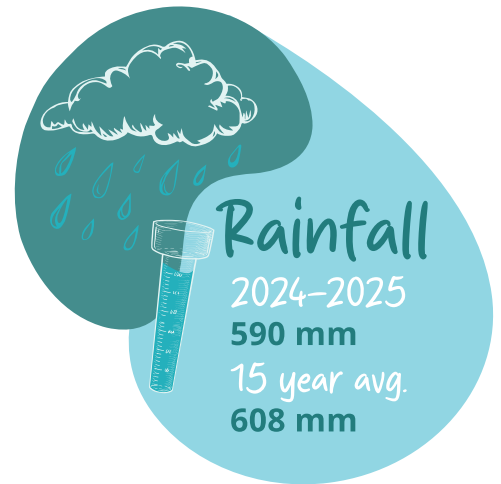
Credit: Australian Museum, David Ferry



UPPER DAWSON Catchment

B

The Upper Dawson catchment, located in the southern part of the Fitzroy Basin, sees the river flowing eastward from Injune, passing through Taroom before reaching the Lower Dawson catchment. Several major creeks from the eastern side of the catchment also flow northward, joining the Dawson near Taroom. Annual rainfall averages 800 mm in the eastern areas, gradually decreasing to around 600 mm in the southwest.



Ecology

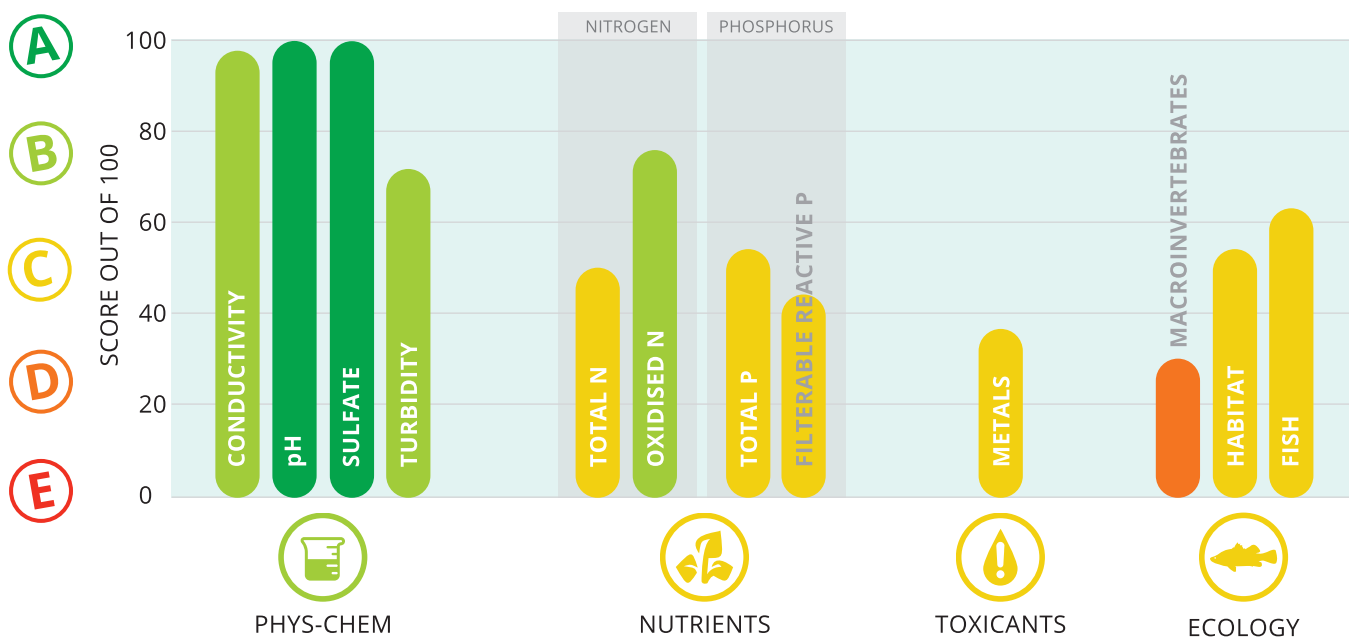


There was an increased score for Macroinvertebrates and habitat condition which both have been trending upwards since 2021-2022.

LOWER DAWSON Catchment



The Dawson River winds its way through the valley, passing the towns of Theodore, Moura, and Baralaba. Glebe Weir signals the transition from the Upper Dawson to the Lower Dawson catchment, just upstream of Isla Gorge. Running north to south, the Dawson Range divides the Lower Dawson catchment in two. The river converges with the Mackenzie northeast of Duaringa, where the Fitzroy catchment begins. Average annual rainfall across the region ranges between 600 and 800 mm.



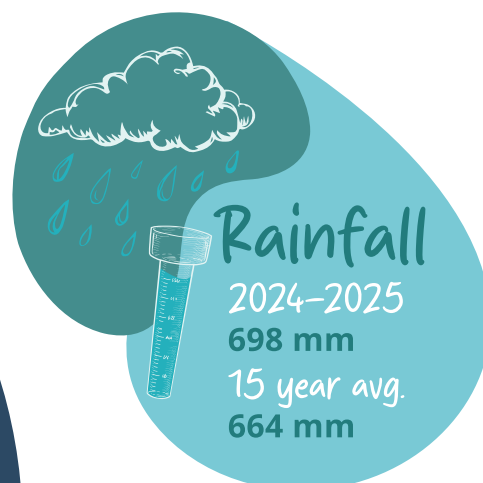
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Fe
Iron

Toxicants



Iron improved to an A grade this year - the first time this toxicant has met the guideline value since 2015-2016. Concentration of Copper and Aluminium have continued to exceed the guideline values over the same period.



LOWER ISAAC Catchment

B

The Lower Isaac catchment starts where the Connors River merges with the Isaac River in the northern part of the Basin, from which the Isaac flows southeast. Along this stretch, several creeks, including Clarke and Rolf creeks, feed into the heavily braided Isaac River from both the east and west. Annual rainfall exceeds 1000 mm in the Eastern Ranges, but decreases sharply to around 600 mm in the western areas.

Toxicants



The grade for Aluminium fell to a C this year, but still had a higher score than those recorded between 2021-2022 and 2022-2023.

Credit: Adam Dacey



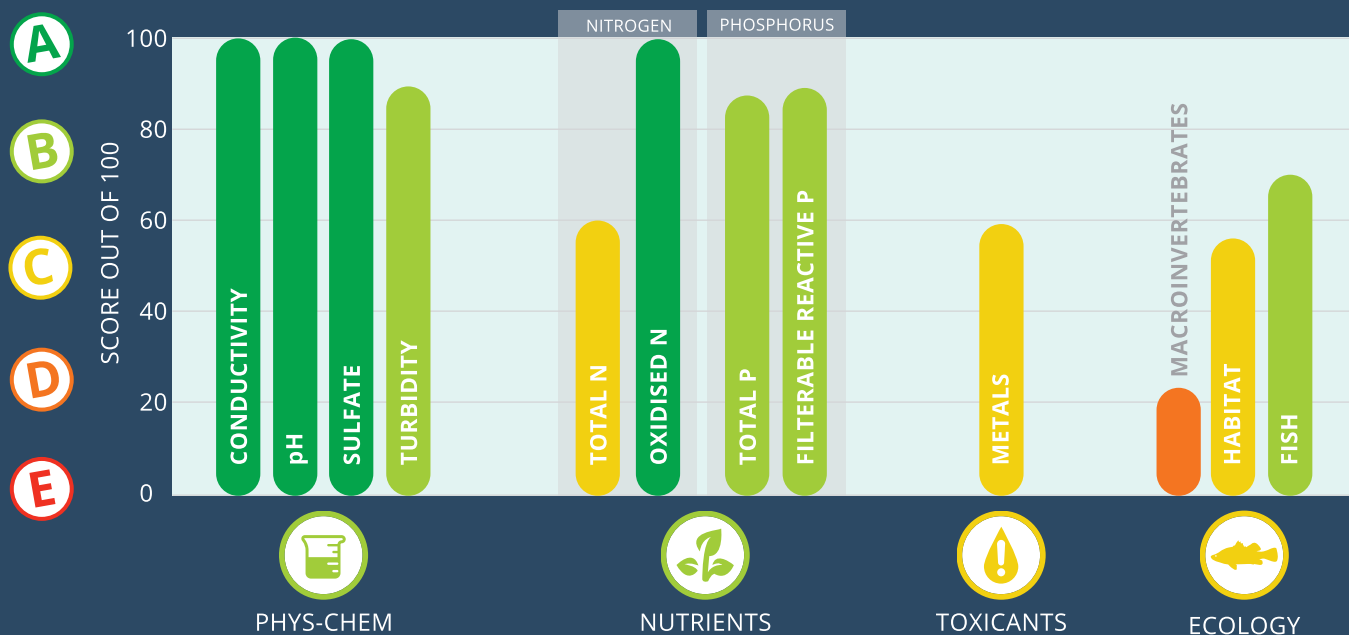
Rainfall

2024-2025

743 mm

15 year avg.

703 mm



Ecology

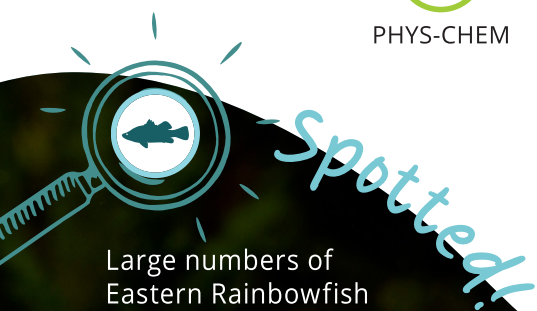
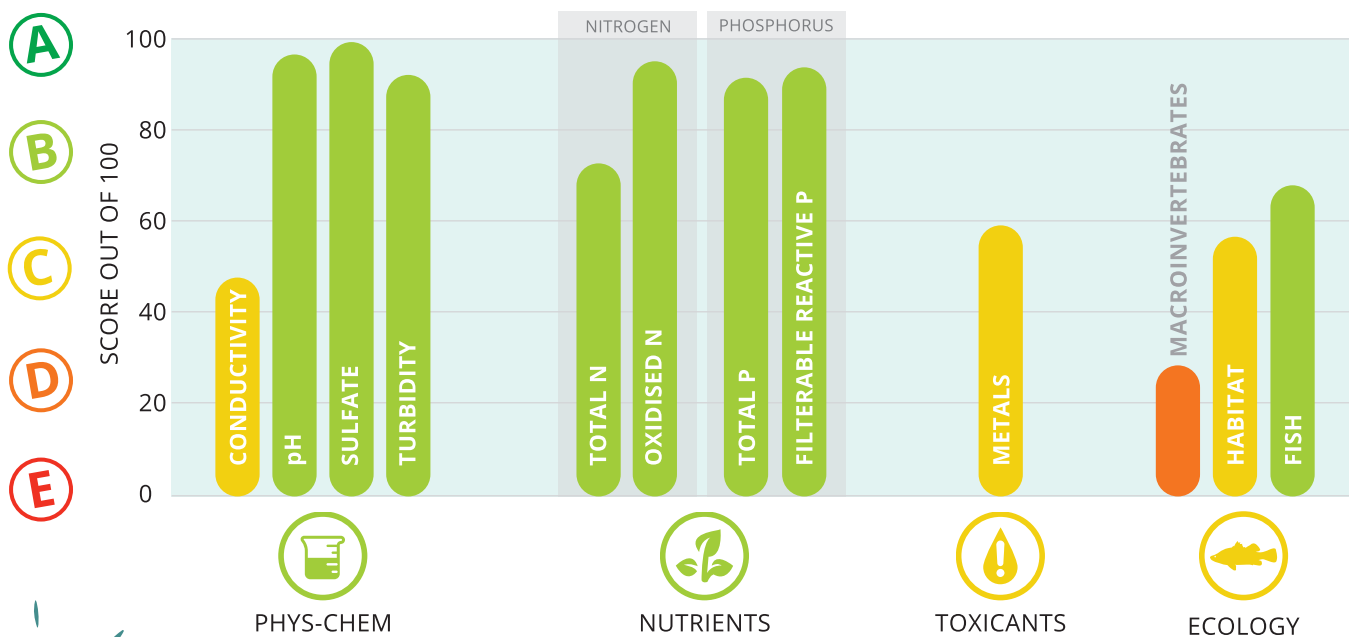
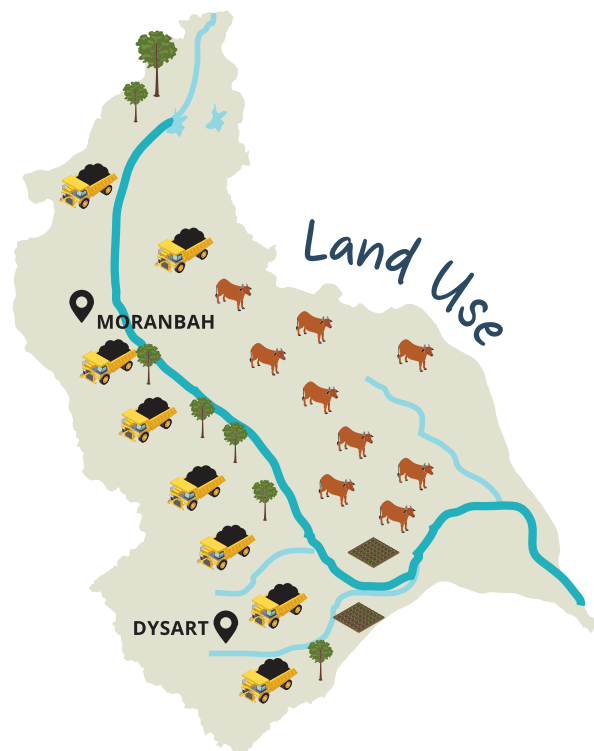


Four introduced fish; three Eastern Mosquito Fish and one Tilapia were detected during the fish surveys. However, like the rest of the basin the majority of fish detected were native species.

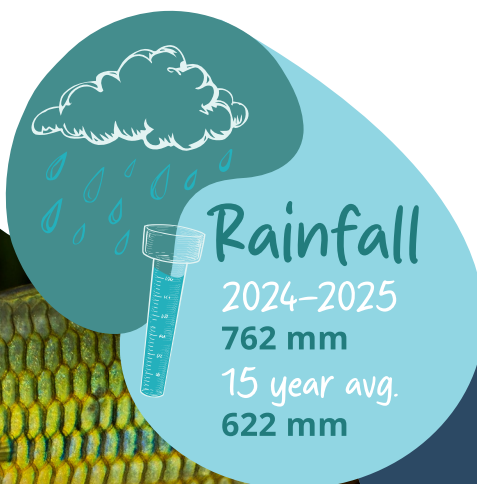


UPPER ISAAC Catchment B

The Upper Isaac catchment lies in the northwest of the Basin, with the Isaac River flowing roughly southward past Burton Dam and east of Moranbah. Along its course, the river is fed by several creeks, including Stephens Creek, which runs near Dysart, before the Isaac converges with the Connors River, marking the beginning of the Lower Isaac catchment. Annual rainfall averages less than 600 mm across most of the region, except for the northeastern ranges, which receive over 1000 mm.



Large numbers of Eastern Rainbowfish identified in the June fish surveys. Rainbowfish are a key indicator of good water quality and habitat condition.



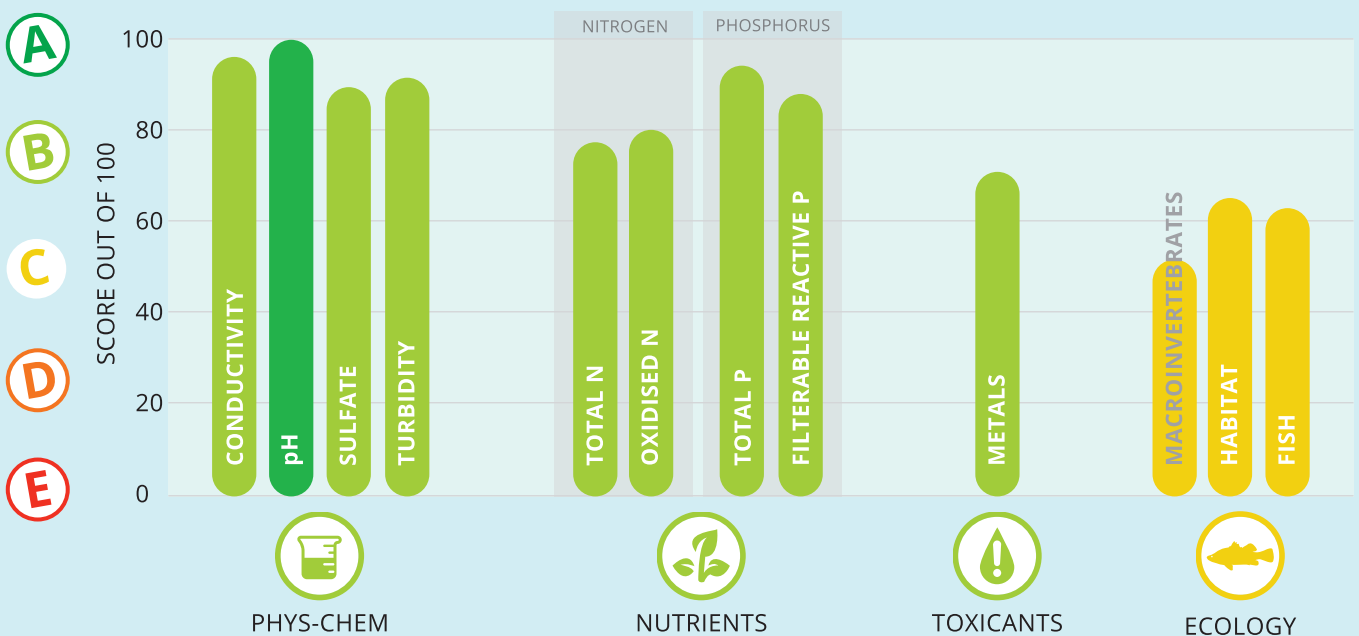
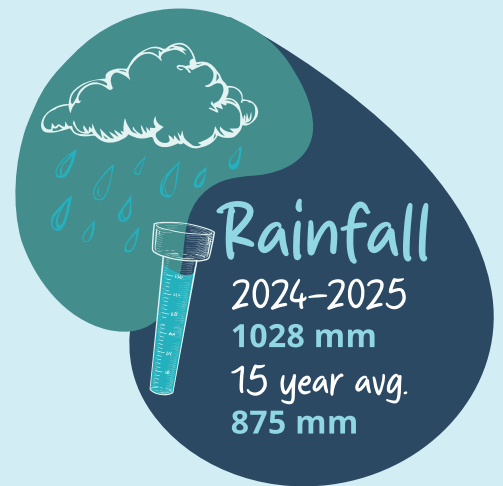
Toxicants

Improved scores for Aluminium and Copper compared to the previous year.

CONNORS Catchment

B

The Connors catchment, located in the northeast of the Fitzroy Basin, is bordered by the Connors Range to the east and the Upper Isaac catchment to the west. The Connors River flows southward, merging with the Isaac River just south of Pink Lagoon. The eastern range of the Connors catchment receives over 1000 mm of rainfall annually, contributing around 50% of the Fitzroy Basin's total average flow.



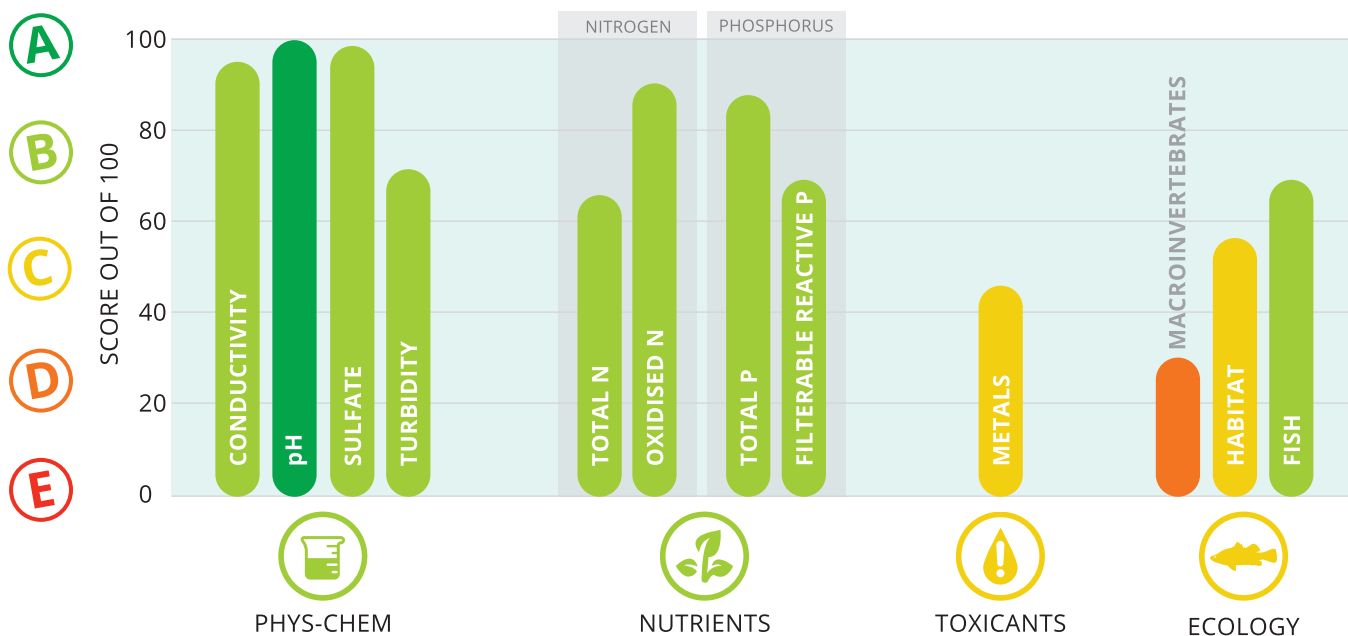
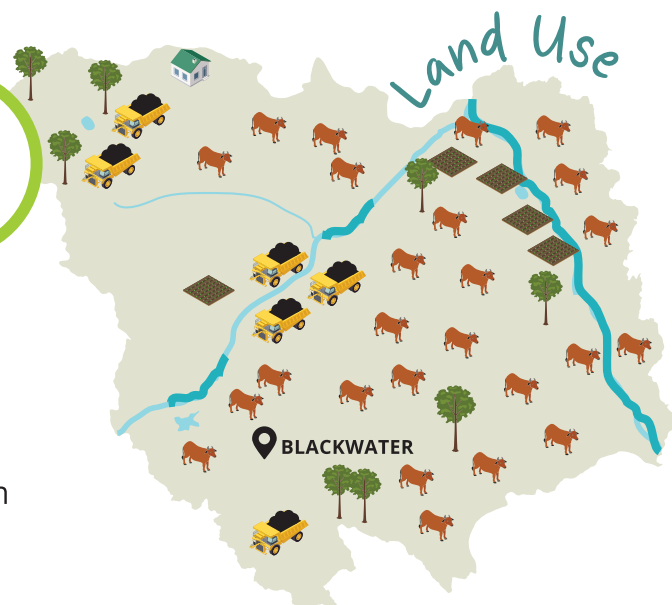
Spotted!

Platypus and the critically endangered White-throated Snapping Turtle were sighted in June 2024. Platypus need healthy waterways with permanent water, stable banks for burrows, sufficient food, and clean water free from pollution and predators.

MACKENZIE Catchment

B

The Mackenzie catchment is located in the heart of the Fitzroy Basin, starting at the junction of the Comet and Nogoa rivers. It flows past several major creeks, including Blackwater Creek, before joining the Isaac River. From there, it flows southeast and eventually merges with the Dawson River to create the Fitzroy River. The catchment receives over 1000 mm of annual rainfall in the northeastern ranges, which quickly decreases to about 500 mm in the west.



FISH AND habitat scores ON THE RISE

The scores for fish and habitat condition both improved this year leading to an improved overall score for ecology. Over 300 Bony Bream were recorded in the March fish surveys. This migratory fish is found in both fresh and estuarine waters and is an important part of the food source for predatory fish such as Barramundi.



Rainfall

2024-2025
729 mm
15 year avg.
650 mm



Toxicants

Copper continues to persist in high concentrations although this year's score was slightly better than last year's.

THERESA Catchment

B

The Theresa catchment is situated in the west-northwest of the Fitzroy Basin, flowing southeast toward its junction with the Nogoa River. It also encompasses the section of the Nogoa River downstream of Fairbairn Dam. Rainfall in this catchment is highly variable but in general tends to be relatively low.

Phys-chem

Turbidity improved strongly moving from a score of 45 in 2020-2021 to a score of 91 in 2024-2025.

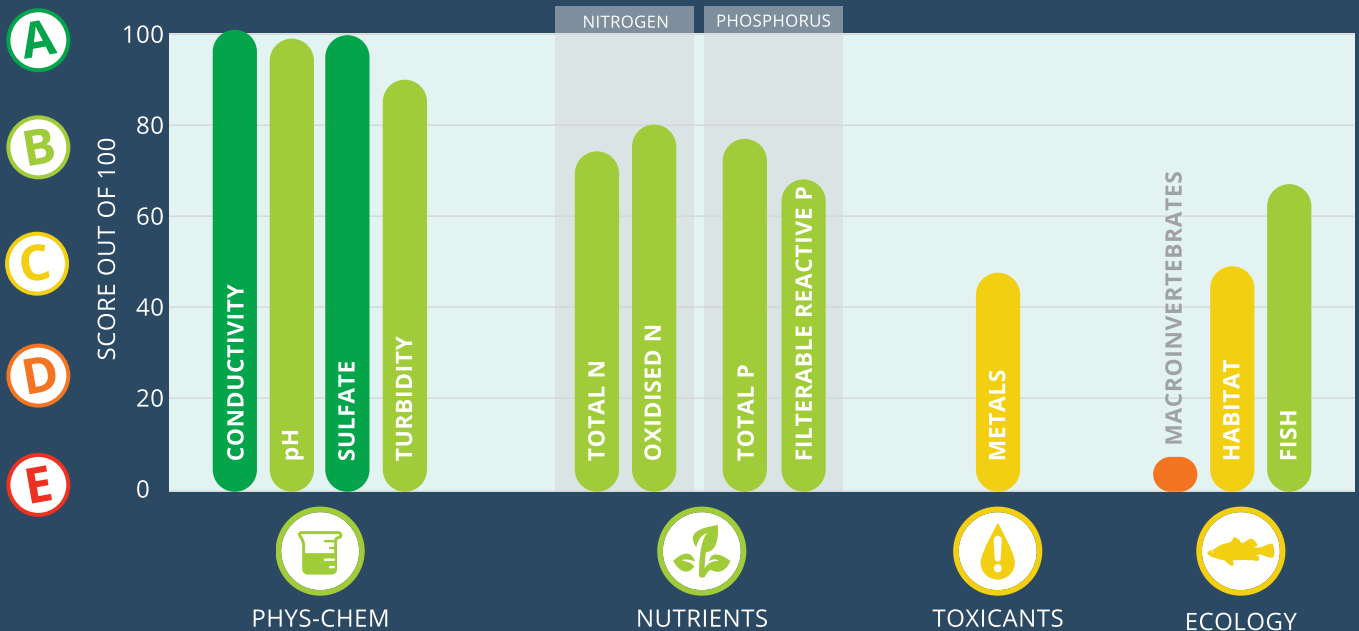
Rainfall

2024-2025

689 mm

15 year avg.

604 mm

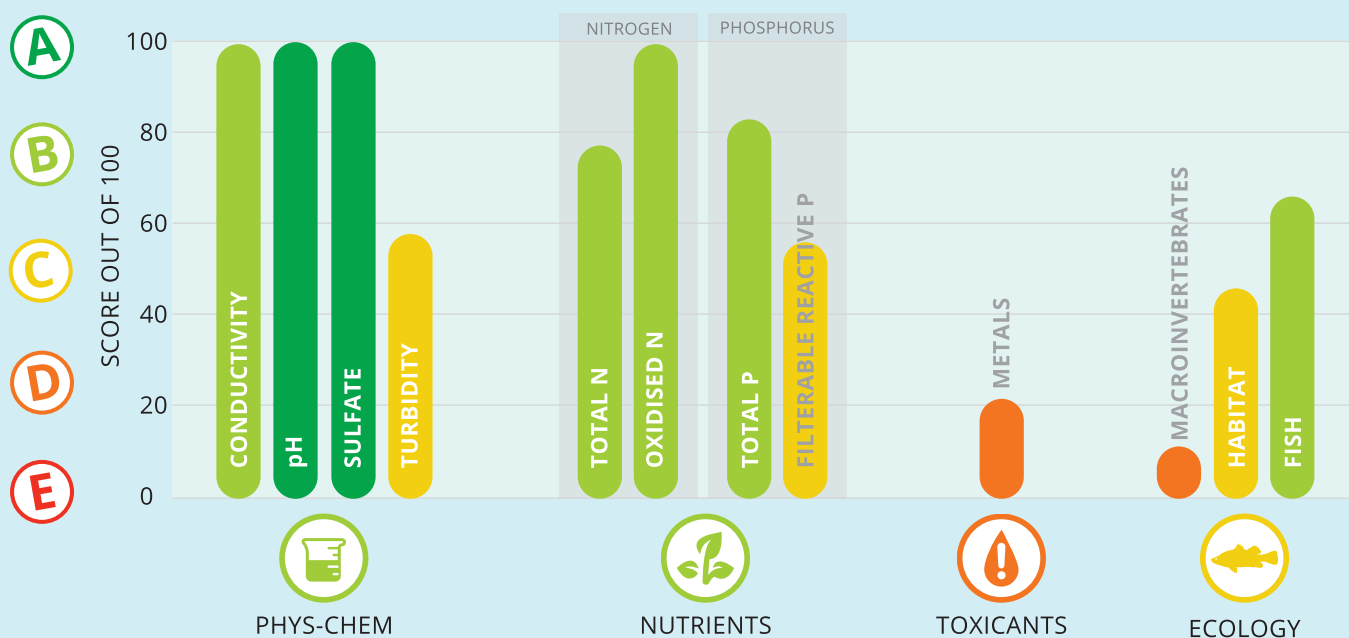


Spotted!

Fresh Water Catfish *Tandanus tandanus* and one introduced fish, the Eastern Mosquito Fish, were identified during fish sampling. As with the other catchments in the basin, numbers of introduced fish were very low.

NOGOA Catchment

The Nogoia catchment is located in the western part of the Fitzroy Basin, bordered by the Buckland Ranges to the south and the Drummond Ranges to the west. This fan-shaped catchment drains northeastward from Medway, Vandyke, Borilla, and Buckland creeks into Fairbairn Dam. The dam plays a vital role in supplying water for a significant area of irrigated agriculture downstream of the Theresa catchment. The average annual rainfall across most of the catchment is approximately 600 mm.



Nutrients

Nutrients improved compared to the previous year with the biggest improvements in Total Nitrogen and Total Phosphorus.

Both indicators had been declining since 2020-2021.



Rainfall

2024-2025

577 mm

15 year avg.

621 mm

Toxicants

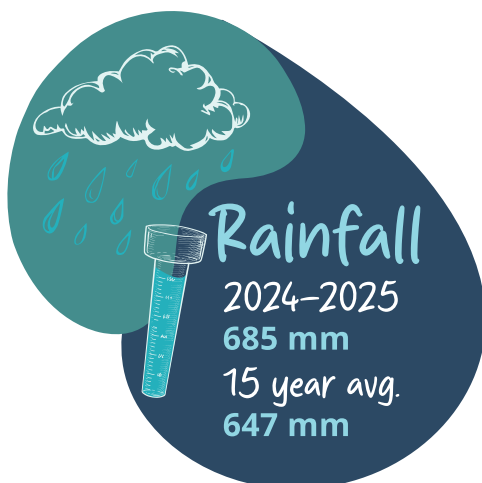
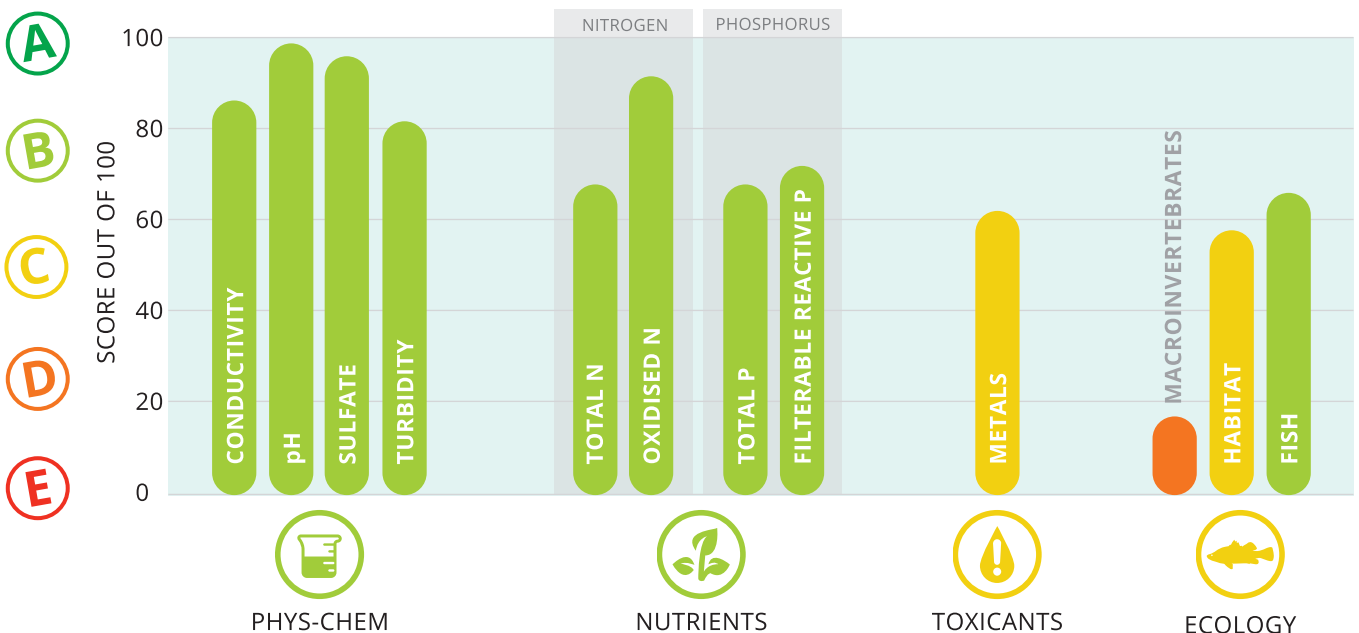
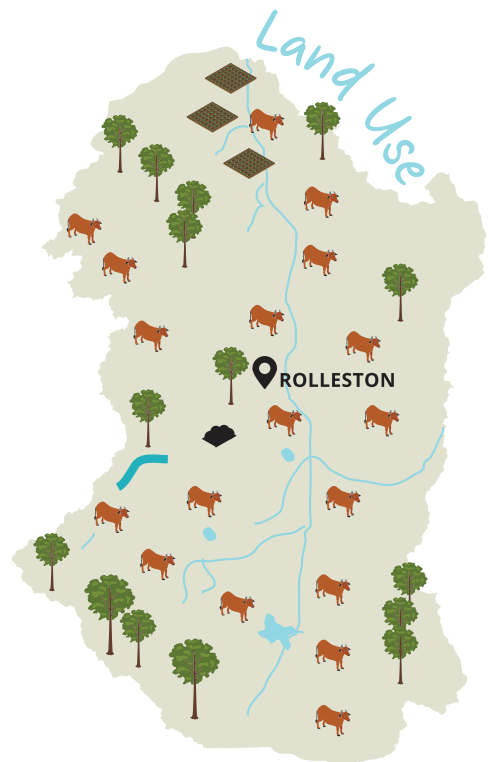
The score for toxicants was lower this year owing to higher concentrations of Aluminium. Aluminium concentrations have increased over the previous year although were not as high as those recorded between 2016 and 2018.

Aluminium grades in this catchment have fluctuated between excellent and very poor over 15 years of monitoring.

COMET Catchment

B

The Comet catchment is bordered by the Expedition Ranges to the east and the Carnarvon Ranges to the west. It flows through the Arcadia Valley, past Rolleston, and east of Springsure, before joining the Nogoa River near the town of Comet. This junction marks the beginning of the Mackenzie catchment. Annual rainfall averages 800 mm in the southern ranges, gradually decreasing to 500 mm in the north.



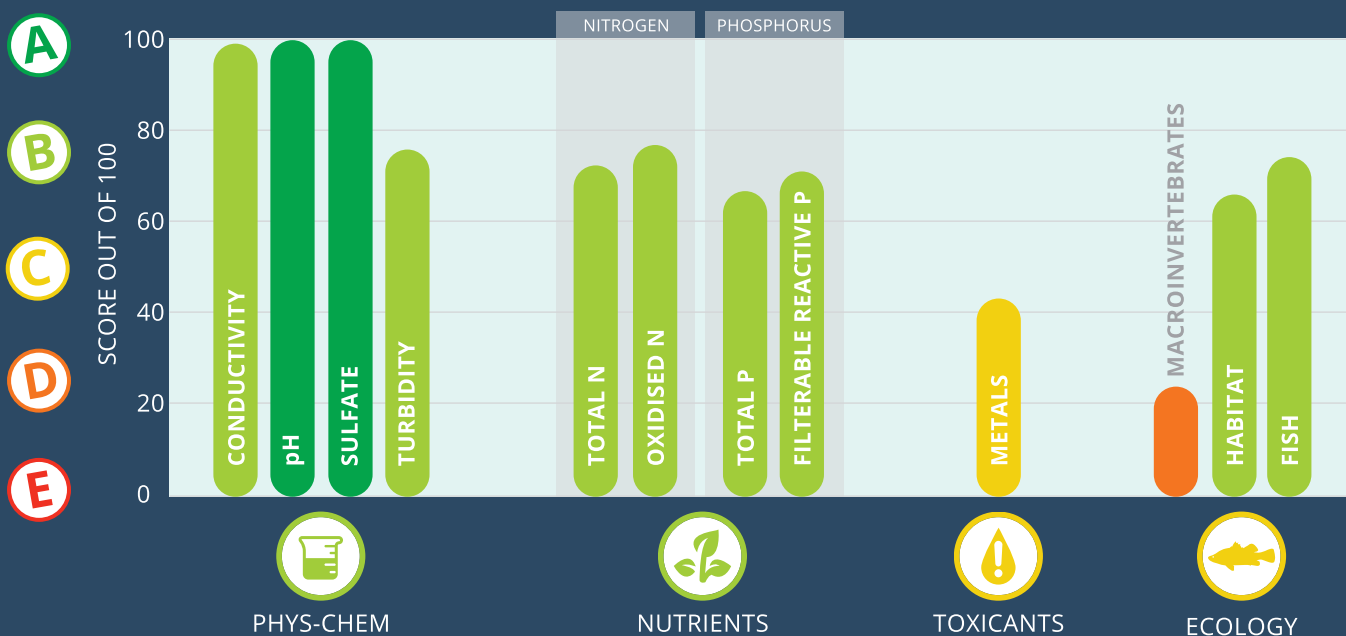
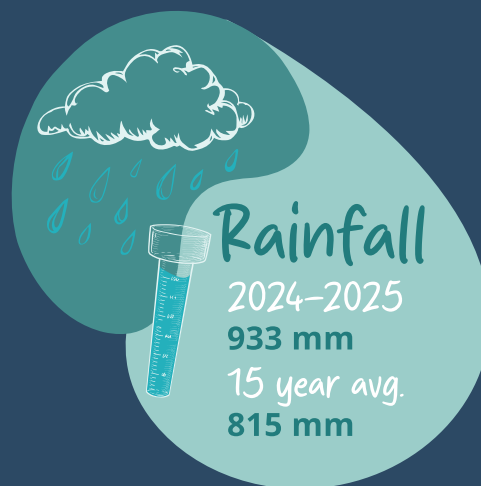
Spotted!

Hyrtl's Catfish *Neosilurus hyrtlii* was detected in the March fish sampling. This fish was first identified in the Fitzroy River in 1867. The grade for Macroinvertebrates declined from Fair in 2023-2024 to Poor in 2024-2025.

Credit: Government of South Australia
Department of Primary Industries and Regions

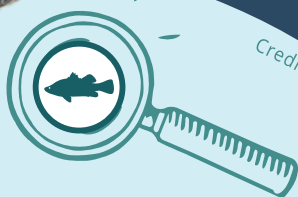
FITZROY Catchment B

The Fitzroy River, known as Tunuba in the Darumbal language, begins at the junction of the Dawson and Mackenzie rivers. The river flows northeast before turning southeast toward the Fitzroy River Barrage, which serves as Rockhampton's primary water supply. The barrage acts as a tidal barrier, marking the division between the freshwater catchment and the estuary. Annual rainfall exceeds 1000 mm in the Byfield and Berserker Ranges, gradually decreasing to 700 mm in the western parts of the catchment.



Spotted!

Saratoga *Scleropages leichardti* identified during fish sampling. Known for their prehistoric appearance Saratoga are a predatory freshwater fish native to the Fitzroy River system.

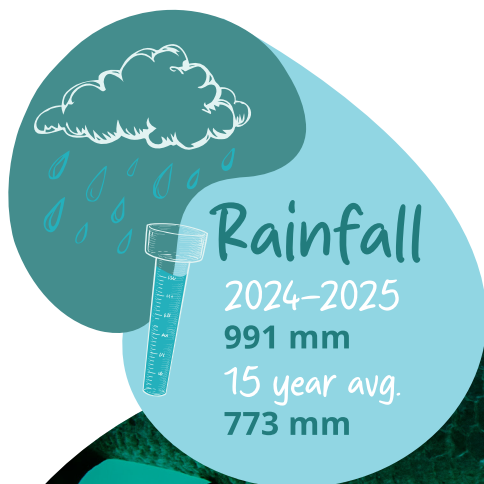


Credit: Native Fish Australia, Neil Armstrong



FITZROY Estuary C

The Fitzroy River estuary begins at the Fitzroy River barrage in Rockhampton and flows 56 kilometres before reaching Keppel Bay. It encompasses inner Keppel Bay, curving from Station Point on Curtis Island to Cattle Point near Keppel Sands. With a tidal range of five metres, the estuary includes Port Alma, Raglan Creek, Connor Creek, and Balaclava Island, stretching south to The Narrows. This vibrant estuary supports thriving recreational and commercial fishing industries and has been developed with port facilities and salt works.



Ecology

The overall grade for Chlorophyll-a was the same as last year (Fair). Barramundi recruitment scores in the estuary were very poor for the second consecutive year.

OUR partners

We thank our partners for being the change that is needed for Fitzroy Basin's water future;



Get in touch to
find out more

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Fitzroy Partnership for River Health

[fitzroypartnership4riverhealth](https://www.facebook.com/fitzroypartnership4riverhealth)

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