



**Noosa Integrated Catchment
Association**

**Water Quality Monitoring
Annual Report
January-December 2025**

And

January 2024-December 2025 Score Cards

Noosa River Catchment of Southeast
Queensland

Part of Basin 140

March 2026

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Executive Summary

This report provides an overview of water quality conditions across the Noosa River Catchment for January–December 2025 as well as score cards for 2024-2025 and offers feedback to Noosa Integrated Catchment Association (NICA), Noosa Council, Water watch volunteers, local monitoring groups, and regional stakeholders. The program continues to rely on the dedication of trained volunteers and staff, whose consistent efforts ensure high-quality, long-term data collection. In 2025, the Noosa River Catchment again achieved a ‘very good’ rating in Healthy Land & Water’s Annual Report Card, with estuarine water quality assessed as excellent, reflecting the resilience of the lower system and the value of the preserved natural environment in the Noosa region.

Water quality patterns in 2025 were strongly shaped by a wetter-than-average year, with Tewantin RSL gauge recording 2110.8 mm of rainfall, well above the long-term mean of 1609.2 mm. Several intense rainfall events early in the year led to widespread increases in turbidity and reductions in dissolved oxygen as higher volumes of sediments and organic matter were flushed through the system, particularly affecting freshwater tributaries such as Wooroi Creek, Eenie Creek, and Murdering Creek. These freshwater sites continued to show persistent acidity and oxygen stress, driven by acid sulphate soils, organic-rich sediments, and low-gradient hydrology. In contrast, estuarine sites remained stable and resilient, while canal sites showed mixed results—from well-flushed reaches with good water quality to chronically low-oxygen areas such as Tronson’s Canal discharge.

Although several sites did not meet the current Department of Environment, Tourism, Science and Innovation (DETSI) Water Quality Objectives (WQOs), work is underway to develop locally relevant WQOs that better reflect the catchment’s natural water chemistry. Continued support from Noosa Council, including program coordination funding and the purchase of new Horiba U-52 meters, has strengthened data reliability. Nutrient sampling has been refined to three key sites, with Noosa Council expanding broader nutrient monitoring across the catchment. Overall, the 2025 results highlight the importance of targeted management actions, water-sensitive urban design, and ongoing long-term monitoring to protect the ecological integrity of the Noosa River system.

1. Introduction

The Noosa Integrated Catchment Association (NICA) Water watch program conducts monthly water quality testing across the Noosa River Catchment in Southeast Queensland. Data is collected by trained volunteers and NICA staff using Horiba U-52 water quality meters, with 27 routine water quality sites and three nutrient sampling sites tested monthly. Nutrient samples are analysed by Unitywater, and the data from in-situ measurements of temperature, pH, dissolved oxygen (DO), electrical conductivity (EC), turbidity (NTU), total dissolved solids (TDS), and salinity are uploaded onto the Swim Local platform.

This report presents an analysis of water quality data collected from January to December 2025, comparing results to historical trends and the Department of Environment, Tourism, Science and Innovation (DETSI) Water Quality Objective (WQO) guideline values for the Noosa Shire. Site-specific *score cards* summarise the past two years of data, providing insight into compliance with guideline values and highlighting long-term patterns. The assessment supports the identification of potential pollution sources, evaluation of catchment health, and ongoing monitoring of ecosystem condition. As Noosa Council and regional NRM partners work toward developing locally relevant WQOs, the 2024-2025 dataset contributes valuable evidence to guide future management and protect the ecological values of the Noosa River Catchment.

2. Methodology

Water sampling is carried out in accordance with the DETSI WQ manual ([Water monitoring and sampling manual | Environment | Department of the Environment, Tourism, Science and Innovation, Queensland](#)). Two Horiba U52 Water Quality Meters were used to collect the data across the following measurement parameters:

- Temperature (°C)
- pH
- Dissolved Oxygen (DO)
- Electrical Conductivity (EC)
- Turbidity (NTU)
- Total Dissolved Solids (TDS)
- Salinity (ppt)



Figure 1: Equipment used at site MUR060

Readings are either tested directly from the water body or as a collected bucket sample representative of the water body. Estuarine readings are taken late on the outgoing tide to ensure river water is collected, without a major influence of incoming ocean water.

The two water quality meters used January-July 2025 were manufactured in 2014 and were replaced by new Horiba U-52 meters used from July 2025 onwards. The meters are calibrated every second month. An additional air calibration for dissolved oxygen is carried out before each day of testing.

Other Water Quality Assessment

Two nutrient samples are collected for laboratory analysis. Nutrient samples test for Total Nitrogen, Total Phosphorus, Ammonia as N, Phosphate as P and Nitrate + Nitrite. These are analysed directly through Noosa Council.

Considerations

All efforts are made to collect accurate data, but there is still the chance of equipment errors, errors in data collection, legibility of testing sheet and/or the data entry process as well as errors during the data analysis process. Medians of the data were used to analyse and compare the data and outliers were identified and removed from the analysis. Rainfall data was used from a centralised location as reliable data for rainfall

closer to each site was unavailable. Tests aim to be taken mid-month and at a similar time of the day and tide (for key sites), but this can vary based on availability of water testers or weather conditions.

Sites have been chosen based on significant locations across the Noosa Catchment to give a picture of the main creeks and river systems, with many sites chosen as they pose cause for concern- for example near large stormwater drains, golf courses, residential areas and boat ramps. Sites were also chosen based on safe accessibility. This should be noted when analysing results compared to Health Land and Water's water quality assessments who use different methods for site selection.

Some sites fit into multiple Environmental Value Zones (EVZs) or have historically been compared to Environmental Protection (water) Policy 2010. Best efforts have been made to categorise each site to compare them to the relevant WQOs. To gauge the site's flow rate, low flow is used when rainfall in the past 30 days is less than 70mm, high flow is used for greater than 70mm. In analysing the median values of two years' (or more) worth of data, score cards all used high flow rate WQOs as on average, 75% of readings were above 70mm of rain in the past 30 days.

Noosa Shire Council and Natural resource Management (NRM) groups are currently working on developing local water quality objectives, specific to the Noosa Catchment.

3. Sampling Sites

For ease of reporting, this summary report divides the 27 water quality sites into 6 sub-categories based on the DETSI Environmental Protection (Water and Wetland Biodiversity) Policy (EPP) water types. Sites were categorised using the Queensland Globe mapping (<https://qldglobe.information.qld.gov.au/>).

Each site's Water Quality Objective range is taken from the Department of Environment, Tourism, Science and Innovation (DETSI). Environmental Protection (Water and Wetland Biodiversity) Policy 2019: Noosa River Environmental Values and Water Quality Objectives.

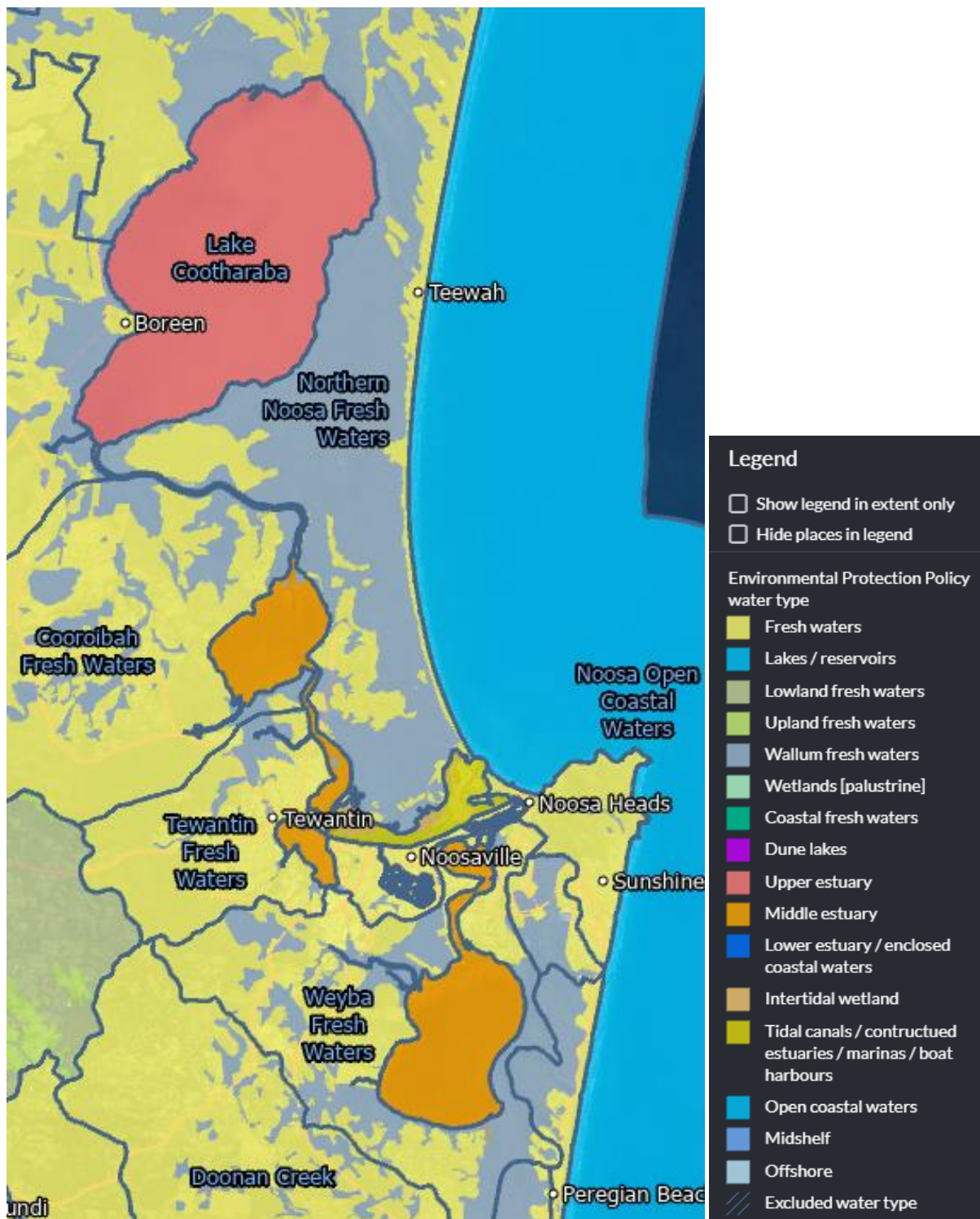


Figure 2: Environmental Policy (EPP) water types. Taken from Queensland Globe mapping (<https://qldglobe.information.qld.gov.au/>)

NICA Water Monitoring Site Names, Code and Location:

Northern Noosa Freshwaters:

Noosa River, above Lake Como	NOO300	S 26.21972 E 153.0350
Eenie Creek Small Drain, Rene St	EEN010	S 26.419200, E 153.04195
Kin Kin Creek, upstream	KIN990	S 26.23028 E 153.02583

Lowland Freshwaters:

Coolloothin Creek	COO050	S 26.31222 E 152.97556
Kinaba Centre	KIN997	S 26.234242 E 153.026354
Murdering Creek, Clarendon Road	MUR060	S 26.45988 E 153.0804
Wooroi Creek, George St	WOO550	S 26.38175 E 153.02543
Murdering creek Woodland Drive	MUR050	S 26.47230 E 153.0790

Upper Estuary:

Boreen Point	COT200	S 26.2845 E 152.9982
Lake Cootharaba mid lake	COT205	S 26 16'23.9 E 153 01'00.5
Tronson's Canal Upstream	NOO401	S 26.31768 E 152.99524

Middle Estuary:

Cranks Creek, Hooper Crescent	CRA900	S 26.400121 E 153.032009
Cooroibah Creek, Noosa Banks Jetty	CBH020	S 26.371905 E 153.015944
Weyba Creek, Lake Weyba Drive	WEY550	S 26.421839 E 153.074022
Weyba Creek Kayser Island	WEY900	S 26.399895 E 153.076877
Mid-Lake Cooroibah	CBH010	S 26.35462 E 153.03400
Wooroi Creek Mouth	WOO980	S 26.373314 E 153.038109
Makepeace Island	NOO500	S 26.377739 E 153.042413
Lake Doonella	NOO650	S 26.395289 E 153.042336
Eenie Creek Large Drain, Rene St	EEN020	S 26.420118, E 153.0455
Eenie Creek, Walter Hay Drive Bridge	EEN030	S 26.422855 E 153.049194

Canals:

Noosa Sounds West Reef Site	TNC02	S 26.393551 E 153.081725
Noosa Canal Inflow at waterfall	NOW780	S 26.404475 E 153.066928
Noosa Canal Outflow, above lock	NOW070	S 26.403594 E 153.056168
Tronson's Canal Discharge	NOO400	S 26.31768 E 152.99527

Lower estuary:

Munna Point	NOO820	S 26.392617 E 153.075074
TNC Oysterbed Goat Island	TNC01	S 26.394973 E 153.048501

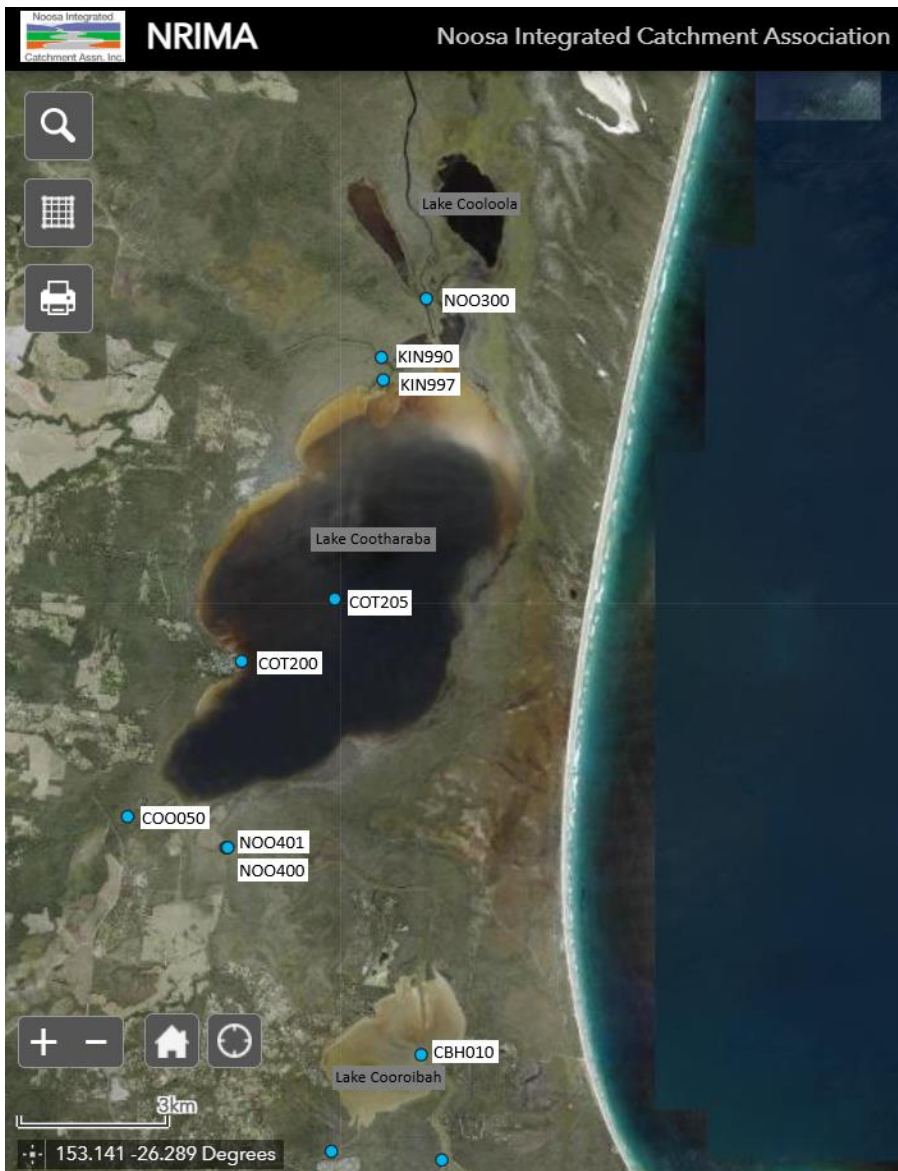


Figure 3: Upper River Sites taken from NICA's NRIMA mapping software

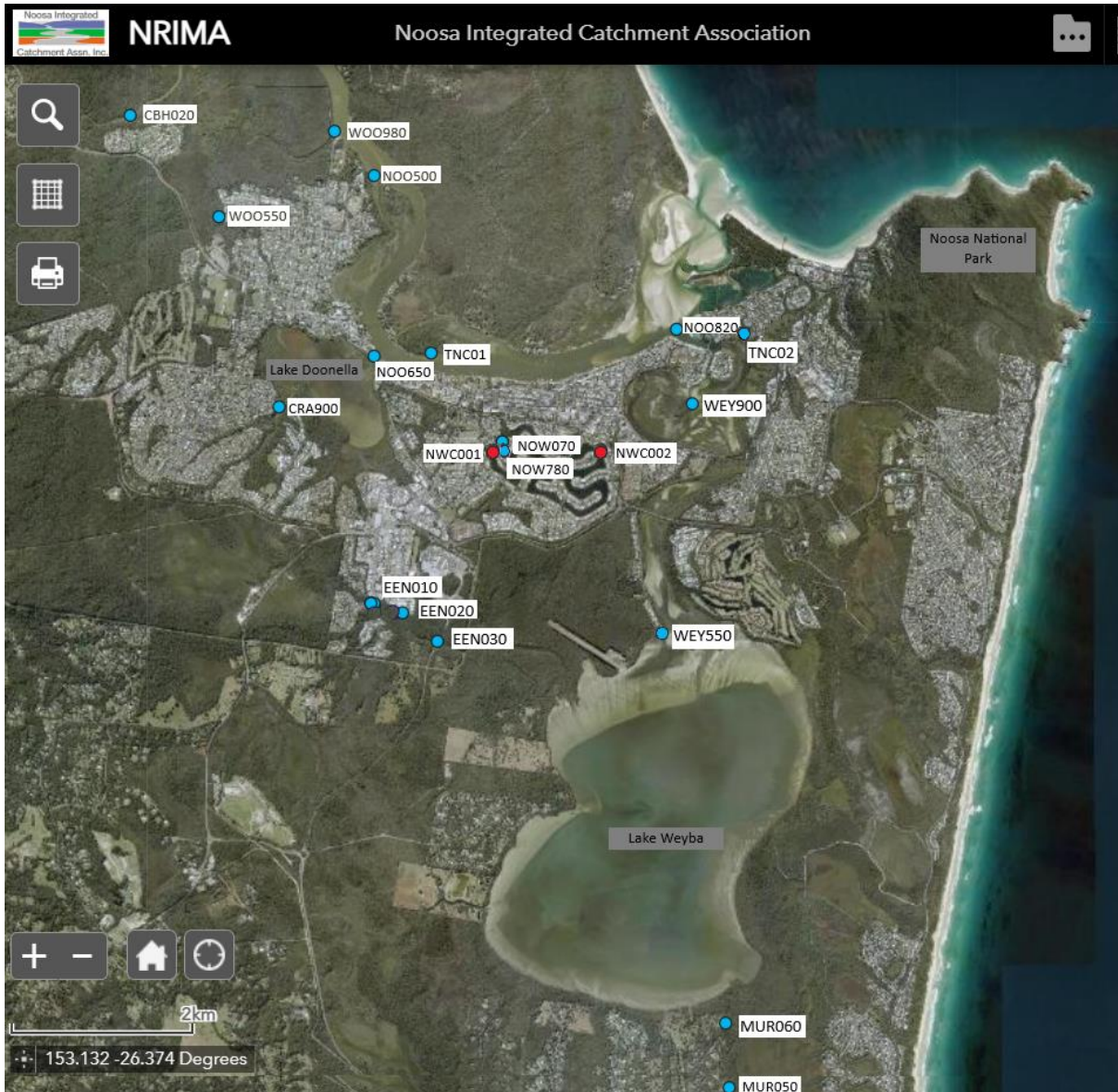


Figure 4: Lower River Sites taken from NICA's NRIMA mapping software.

Red: Nutrient Sites, Blue: Water Testing sites

4. Environmental Guidelines

Water Quality Outcomes (WQOs)

Environmental Value Zone (EVZ)	NICA Sites	Water Quality Outcomes (WQOs)			
		Dissolved Oxygen %	pH	Turbidity	Electrical Conductivity mS/cm
HEV/SD Northern Noosa Fresh Waters; Southern Noosa Fresh Waters	NOO300 EEN010	Low flow: 85-100-110 High flow: 85-100-110	5.0-6.0-7.0 5.0-6.0-7.0	01-01-02 01-02-08	0.08-0.09-0.1 0.07-0.08-0.09
MD Northern Noosa Fresh Waters	KIN990	Low flow: 85-110 High flow: 85-110	5.0-7.0 5.0-7.0	2 8	0.08-0.12 0.08-0.12
HEV Kin Kin Creek and Cootharaba Fresh Waters	COO050 KIN997	Low flow: 85-100-110 High flow: 85-100-110	6.8-7.1-7.7 6.4-7.0-7.5	01-02-04 03-06-11	0.16-0.21-0.28 0.11-0.12-0.18
HEV Cooroibah Fresh Waters; Tewantin Fresh Waters; Weyba Fresh Waters	MUR060 WOO550 MUR050	Low flow: 85-100-110 High flow: 85-100-110	6.8-7.1-7.7 6.4-7.0-7.5	01-02-04 03-06-11	0.16-0.21-0.28 0.11-0.12-0.18
HEV Noosa Upper Estuary	COT200 COT205 NOO401	Low Flow: 85-100-110 High Flow: 85-95-105	7.7-7.9-8.1 7.0-7.4-7.6	08-11-16 35	
HEV Lake Cooroibah	CBH010 CBH020	Low Flow: 85-95-105 High Flow: 85-95-105	7.9-8.1-8.2 7.1-7.6-7.9	07-11-14 9-14-30	
HEV Weyba Creek Estuary	EEN020 EEN030 WEY550 WEY900	Low Flow: 85-95-105 High Flow: 85-95-105	8.0-8.1-8.2 7.5-7.9-8.1	02-03-05 03-06-13	
HEV Doonella Lake and Noosa Middle Estuary	CRA900 NOO500 NOO650 WOO980	Low Flow: 85-95-105 High Flow: 85-95-105	8.0-8.2-8.3 7.4-7.8-8.1	03-04-06 06-11-25	
HEV Noosa Lower Estuary and Enclosed Coastal Waters	NOO820 TNC01	All Flow: 90-95-105	8.1-8.2-8.3	01-02-03	
MD All canals and marinas	NOW780 NOW070 NOO400 TNC02	All Flow: 85-105	7.8-8.3	6	

5. 2025 Annual Year Rainfall

To better understand water quality patterns, recent rainfall and tidal data were incorporated into the analysis. Rainfall records from the Bureau of Meteorology’s Tewantin RSL Park station show that 2025 received 2110.8 mm, and 2024 received 2300mm, both substantially higher than the long-term average of 1609.2 mm (1997–2026) (http://www.bom.gov.au/climate/averages/tables/cw_040908.shtml). Several heavy rainfall events (>70 mm in 24 hours) occurred early in the year and December, contributing to elevated turbidity, reduced dissolved oxygen, and increased organic and sediment loads across multiple sites. These hydrological conditions are important for interpreting the variability observed in the score cards that follow.

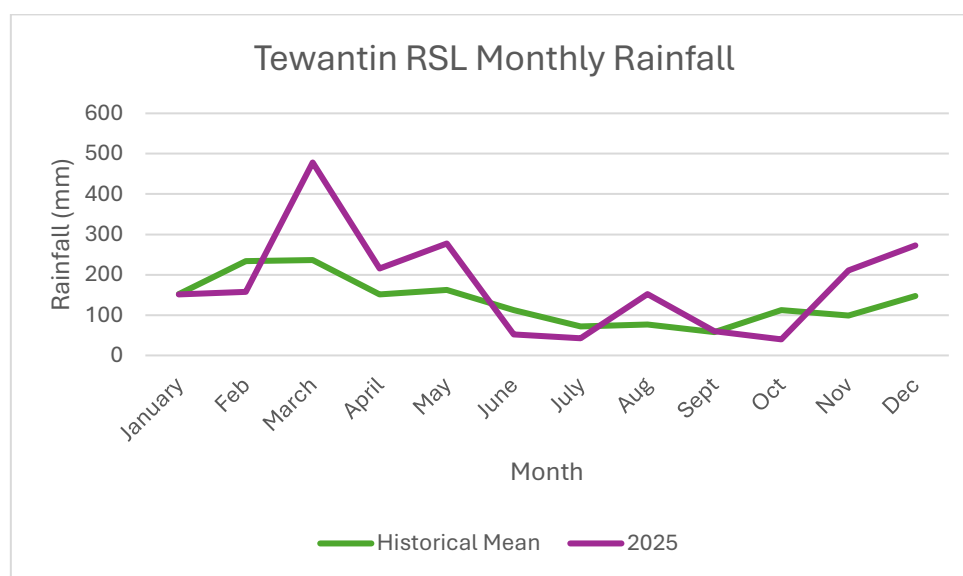


Figure 6: Monthly rainfall 2025 and historical averages for Tewantin RSL

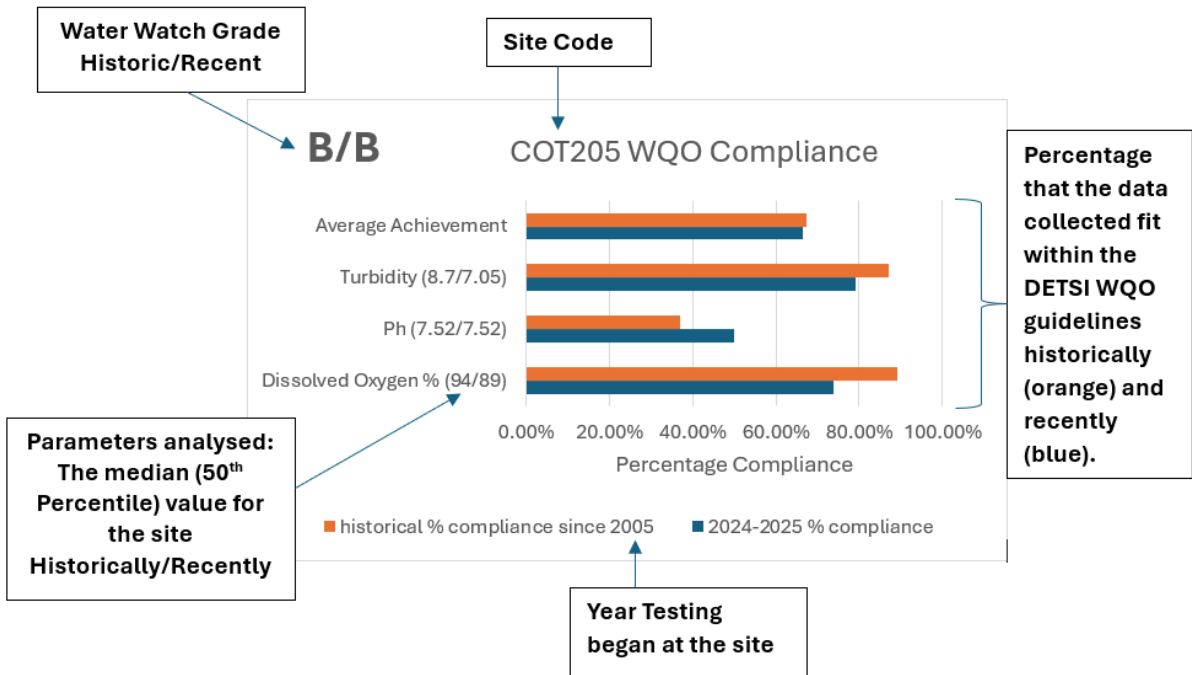
6. 2024-2025 Score Cards

The following section presents the water quality results collected across the Noosa River Catchment from January 2024 to December 2025. To assess site condition, *Score Cards* have been generated for each monitoring location, comparing the past two years of data (24 data points) with long-term historical results. These score cards provide a clear visual summary of how frequently each site met the relevant Aquatic Ecosystem guideline values.

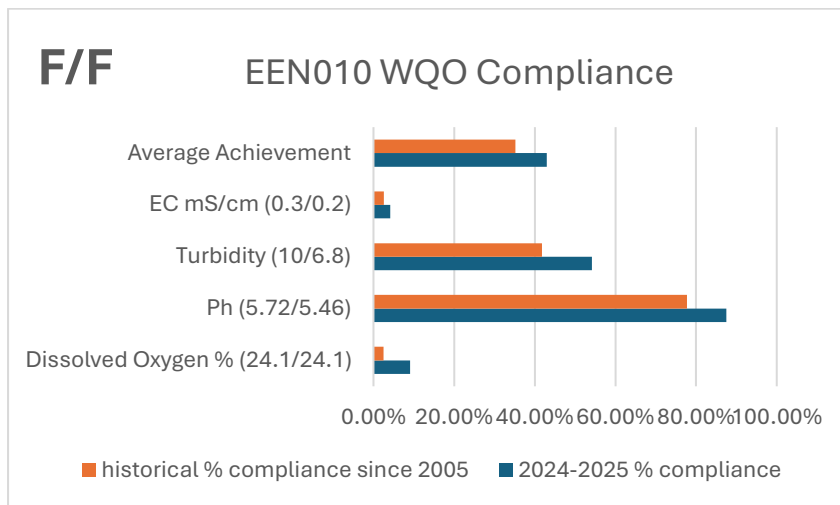
Score card grades are based on compliance with the DETSI Environmental Protection (Water and Wetland Biodiversity) Policy 2019: Noosa River Environmental Values and Water Quality Objectives (parameters are listed above for each site). Grades reflect the percentage of monthly samples that met the applicable WQOs. Average achievement only uses half of the Dissolved Oxygen % compliance to buffer the high guidelines compared to locally expected:

- **A** – >80% compliance: excellent water quality
- **B** – 66–80% compliance: good water quality
- **C** – 50–66% compliance: average water quality
- **F** – <50% compliance: poor water quality

This diagram explains how to interpret the score cards and understand how each parameter contributes to the overall grade.

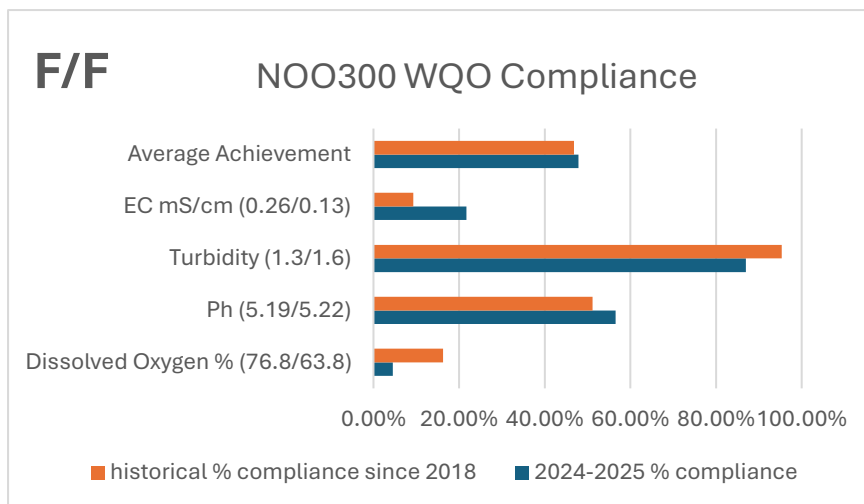


Northern Noosa Freshwaters



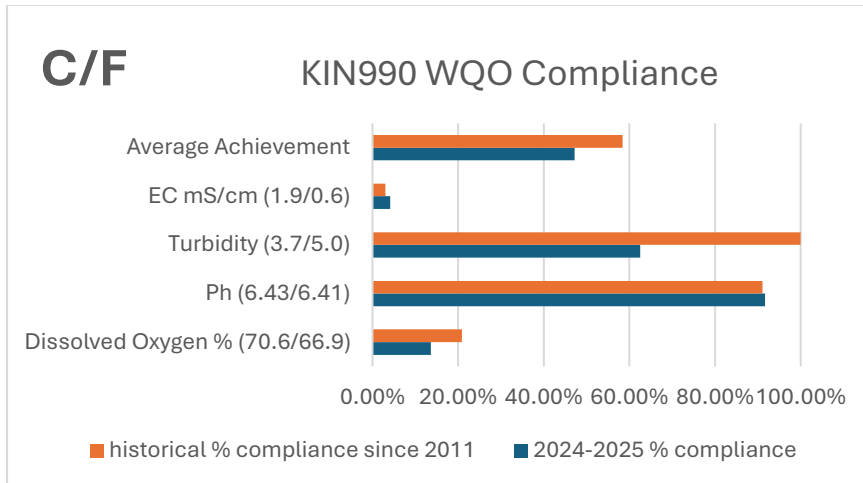
EEN010 continues to show severely degraded water quality, dominated by very low dissolved oxygen and acidic conditions. The site can have very low flow at dryer times of the year or month. Dissolved oxygen compliance is very poor, with a median level of 24% not supporting fish life. A makeshift bridge built by the community blocks the flow of the creek, contributing to the low dissolved oxygen compliance. Acid sulphate releases could explain the non-compliance with DO% and pH guidelines. These conditions are typical of acid sulphate soil drainage with high organic loads and limited reaeration.

Historically, this site has had an F grade, and the two-year average achievement is indicating little improvement over time. Here is has been analysed under HEV/SD Northern Noosa Fresh Waters; Southern Noosa Fresh Waters EVZ, although 2010 guidelines have been used in the past. While the guideline may not perfectly reflect the natural chemistry of this drain, the extremely low DO% clearly indicates ecological stress. A locally revised WQO is appropriate, but so too is targeted management of this area.



At NOO300, dissolved oxygen and EC are the main limiting parameters, with DO% frequently below guideline ranges. The two-year compliance shows relatively good turbidity performance (87%) but low DO% and EC compliance, giving an overall average achievement of about 48%, which is similar to the historical value. This suggests persistent low-oxygen, low-pH conditions upstream of Lake Como. Low EC compliance may be due to some salinity influence.

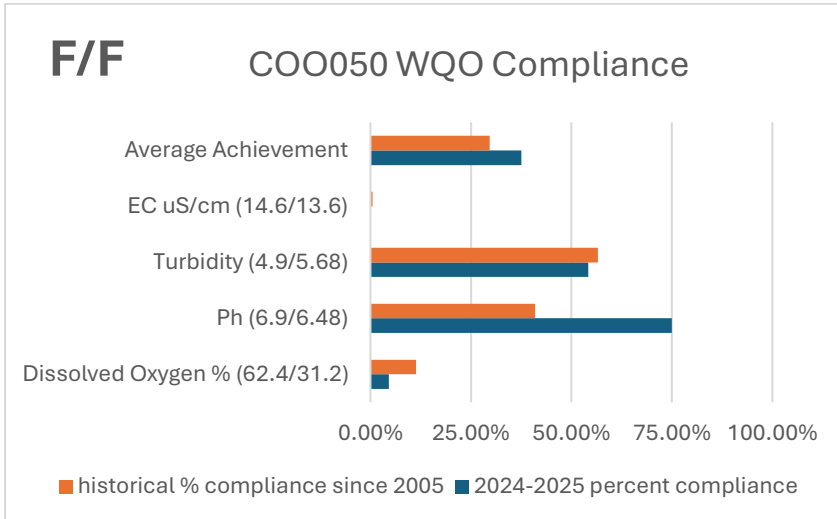
The site's F grade reflects continuing oxygen stress and acidity, likely influenced by upstream wetlands, acid sulphate soils, and organic matter inputs.



KIN990 shows mixed performance, with strong pH and turbidity compliance but weaker dissolved oxygen and EC results. The two-year average achievement of 47% is lower than the historical average of 58%, indicating some decline in overall compliance during the recent wetter period. EC compliance can be very low due to some tidal saltwater influence which complicates interpretation of conductivity against freshwater guidelines.

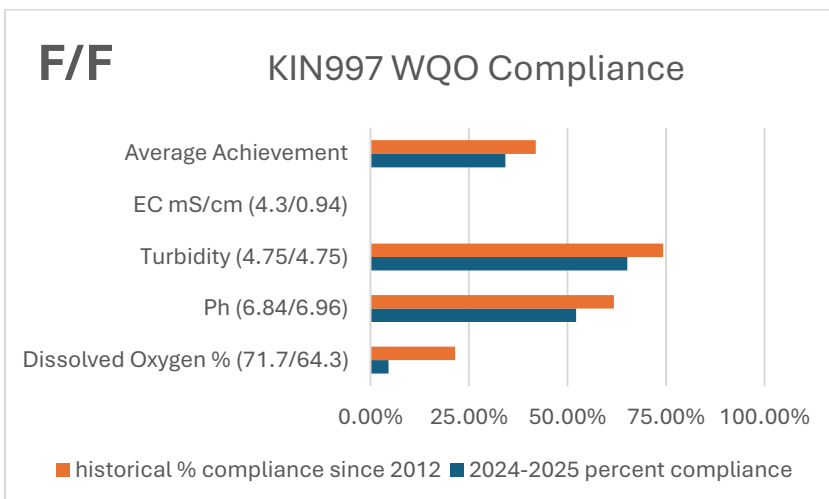
Despite good pH and turbidity, low DO% remains a concern, particularly during periods of high organic loading and reduced mixing. The C/F grading reflects this tension between generally good physical clarity and problematic oxygen conditions, but is not accurate grades due to the salinity influence on EC. Continued monitoring is important to distinguish between natural variability (including tidal influence) and emerging catchment pressures such as land use change and erosion.

Lowland freshwater



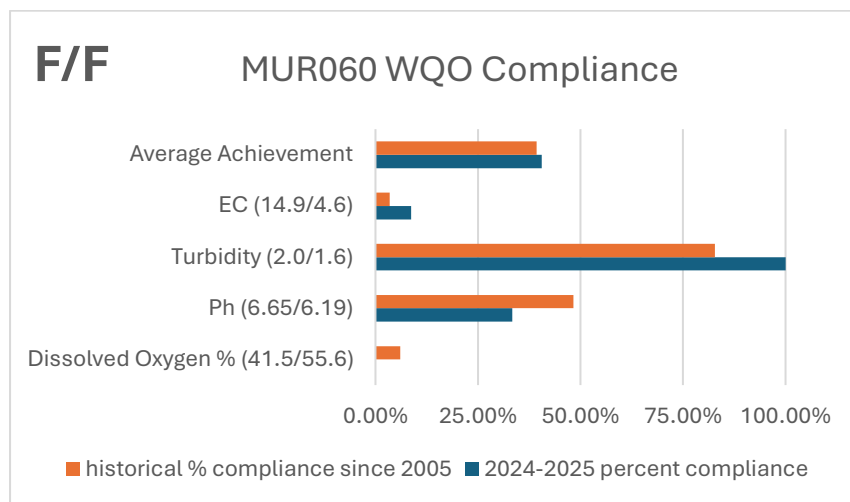
COO050 continues to perform poorly overall, with dissolved oxygen the key limiting factor. The two-year average achievement 38% is slightly higher than the long-term value, but DO% compliance remains very low at 5%, indicating persistent oxygen stress. pH and turbidity show moderate compliance, while EC is almost never within guideline ranges, reflecting the tidal saltwater influence which complicates interpretation of conductivity against freshwater guidelines. Therefore this site’s grade is not accurate.

High rainfall in early 2025 likely exacerbated oxygen depletion through increased organic loading. The F grade is consistent with a low-gradient, tannin-rich creek where natural conditions may already be marginal for DO%, but the current levels are still concerning for aquatic life. This site would benefit from local WQOs that better reflect natural brackish conditions, alongside catchment actions to reduce fine sediment and organic inputs.



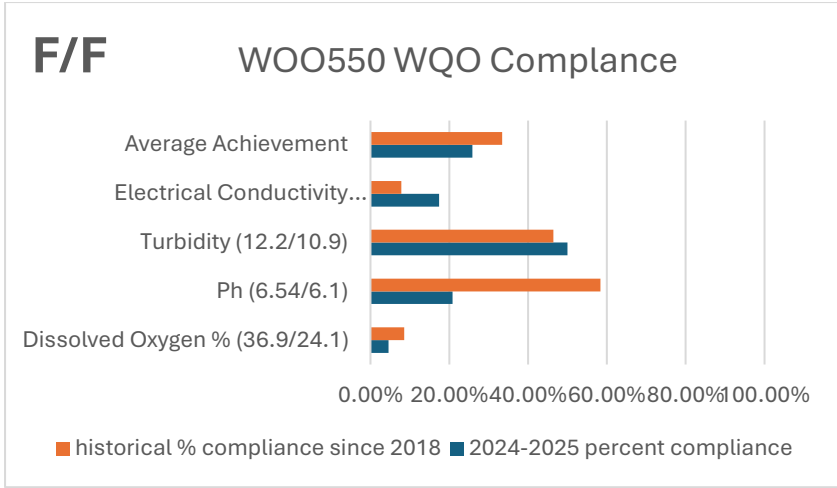
KIN997 shows consistently poor performance for dissolved oxygen and EC, with only moderate compliance for pH and turbidity. The two-year average achievement 34% is lower than the historical average 42%, suggesting a decline in recent years, likely linked to wetter conditions and increased organic loading. DO% compliance is particularly low indicating frequent oxygen stress, while EC is almost never within guideline ranges, reflecting the tidal saltwater influence which complicates interpretation of conductivity against freshwater guidelines.

The F grade is inaccurate due to the EC non-compliance, but otherwise reflects a system with limited buffering capacity and saltwater influence, where acidity and low DO% are persistent features. Continued monitoring and refinement of local WQOs will help distinguish natural background conditions.



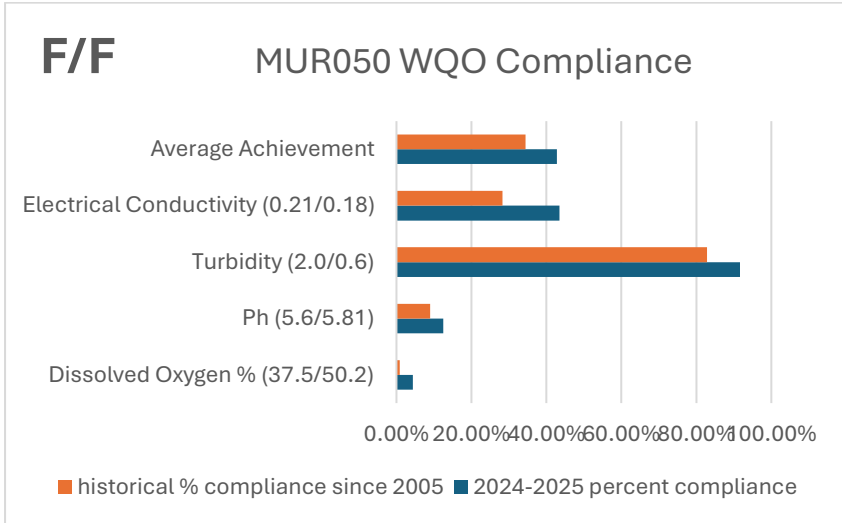
MUR060 remains a low graded site, with very low dissolved oxygen and pH compliance. The two-year average achievement 41% is similar to the long-term value, indicating persistent issues rather than short-term anomalies. Turbidity compliance is 100% suggesting that clarity is not the primary concern, while EC is low because of salt water tidal influence.

The F grade is driven by chronic oxygen and pH non-compliance, likely linked to acid sulphate soils, Wallum areas upstream, organic-rich sediments, and low gradient flow. High rainfall events in early 2025 would have mobilised additional organic matter, further depressing DO%.



WOO550 shows very poor dissolved oxygen and pH compliance, with turbidity frequently elevated during wet periods. The two-year average achievement 26% is lower than the historical value 33%, indicating a deterioration in recent years. The site often notes visibly murky water with low flow and stagnation. Rainfall-driven erosion and organic loading is apparent and a change from HEV to Moderately Disturbed (MD) WQO is more applicable. Low flow WQOs should possibly be used to analyse this site despite rainfall records.

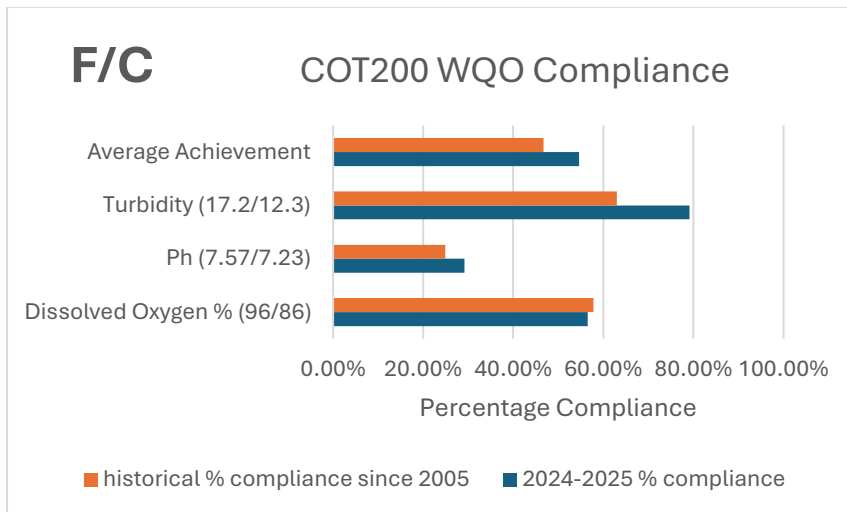
EC remains low, consistent with tidal influenced creek, not freshwater. The F grade highlights stress and anthropogenic influence, particularly during high-flow events when sediments and organic matter are flushed through the system. This site is a priority for investigating upstream sediment sources, bank stability, and potential urban runoff contributions.



At MUR050, dissolved oxygen and pH are the main drivers of 'poor' performance, while turbidity compliance is high. The two-year average achievement 43% is higher than the long-term value 34%, suggesting some recent improvement, particularly in EC and turbidity. However, DO% remains very low 4%, indicating ongoing oxygen stress.

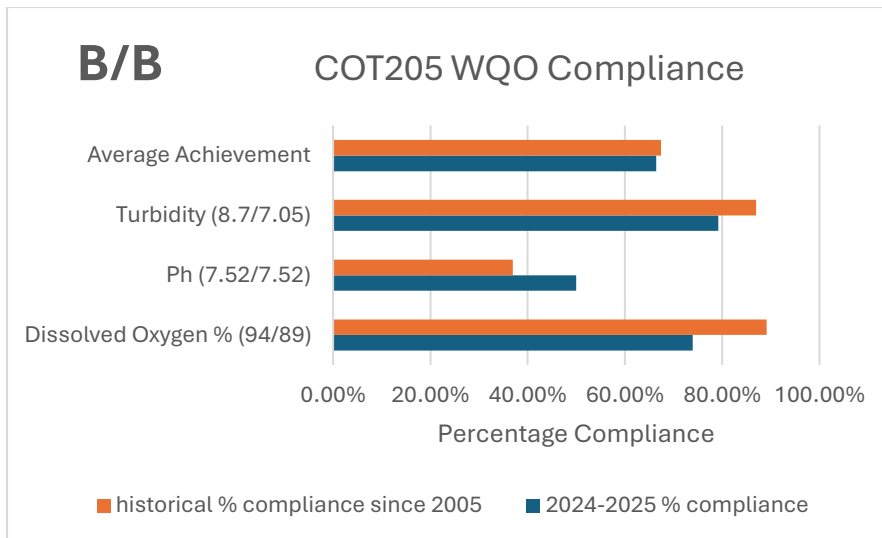
The F grade suggests imbalance: good clarity and conductivity but poor oxygenation and low acidity. The site is likely influenced by upstream Wallum vegetation, acid sulphate soils and organic-rich sediments, with rainfall events further depress DO%. Continued monitoring will help determine whether the recent improvement is sustained or simply reflects inter-annual variability. A more reflective WQO is required for this site as the water catchment is through remnant native vegetation. Low flow should possibly be used to analyse this site.

Upper estuary



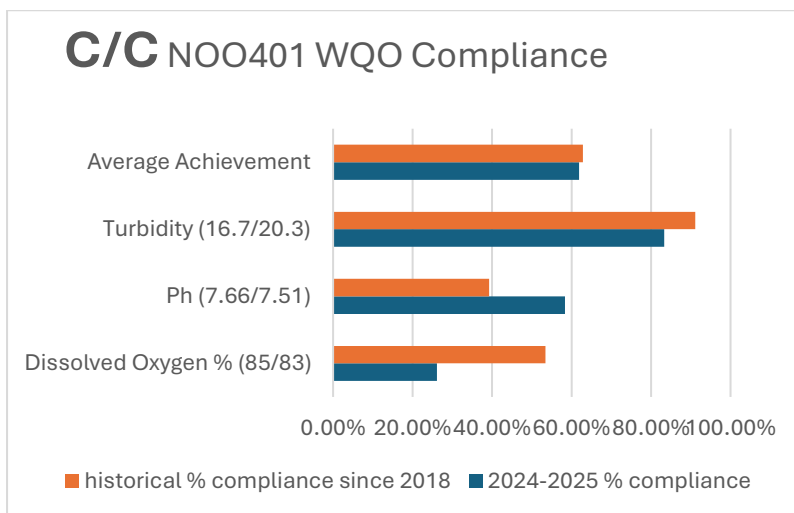
COT200 shows mixed performance, with relatively good turbidity compliance but weaker pH and dissolved oxygen results. The two-year average achievement of 55% is slightly higher than the long-term value 47%, suggesting improvement in recent years. DO% compliance is 57%, with a median reading of 96 DO%, one of the highest of all the sites but pH compliance remains low 29%, suggesting inaccuracies in the guideline.

The F/C grading reflects this variability: the site can meet guidelines under stable conditions but is sensitive to high-rainfall events and organic inputs. As an upper estuary location, it is influenced by both freshwater inflows and lake dynamics, which can affect mixing and oxygen levels. Ongoing monitoring will clarify whether the recent improvement is part of a positive trend.



COT205 continues to perform well, with strong compliance for dissolved oxygen and turbidity and moderate pH compliance. The two-year average achievement closely matches the long-term value indicating a stable, resilient system. DO% compliance is high at 74%, and turbidity remains within guideline ranges most of the time.

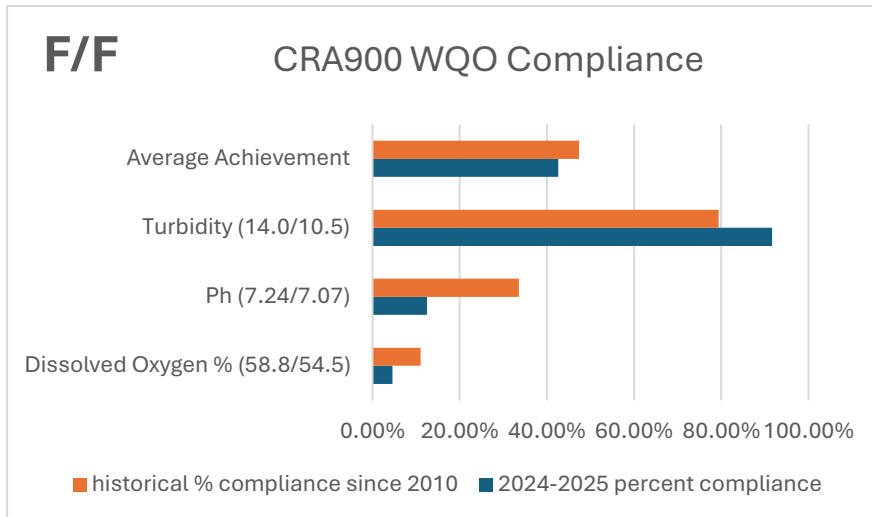
The B/B grade reflects a healthy, well-mixed lake environment with good ecological condition. Seasonal changes in rainfall and temperature are evident but do not significantly compromise water quality. This site remains an important reference for upper estuary and lake health in the Noosa system.



NOO401 shows generally good turbidity and pH compliance but more variable dissolved oxygen performance. The two-year average achievement of 62% is very similar to the historical value, indicating stable conditions over time. DO% compliance has decreased compared to earlier years, while turbidity remains high-compliance, reflecting good clarity but occasional oxygen stress.

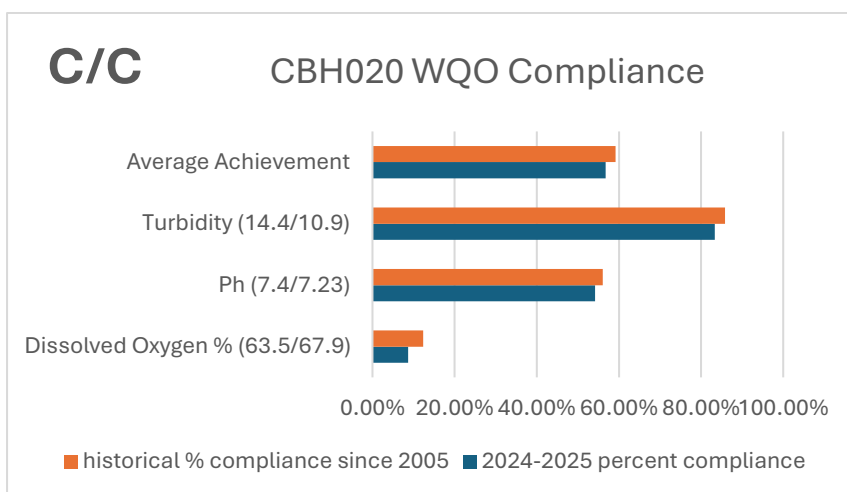
The C grade suggests that while water quality is generally acceptable, there are periods of reduced oxygenation, particularly during calm, warm conditions. Minimising organic inputs will be important for sustaining current condition.

Middle estuary



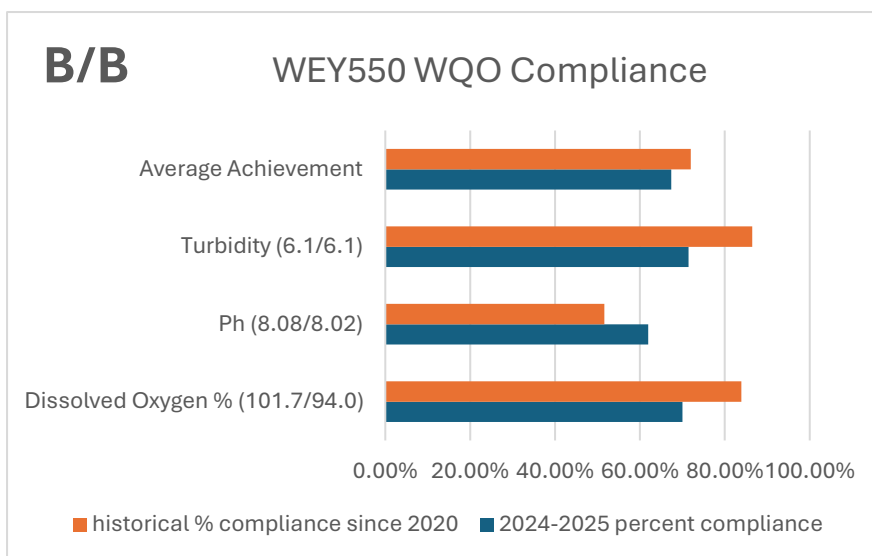
CRA900 continues to show poor overall performance, with dissolved oxygen and pH the main limiting parameters. The two-year average achievement 43% is slightly lower than the historical value. Turbidity compliance is high at 92%, suggesting that clarity is generally good. DO% compliance is very low at 5%, with a median of 58% DO, although fish are often seen at this site, so potentially the guidelines need amendment here.

The F grade may not be representative of the health of the creek, although it does have high influence from the surrounding area. As an estuarine creek, CRA900 is likely sensitive to local runoff, organic inputs, and limited mixing. Management should focus on reducing organic and nutrient loads and protecting riparian vegetation to improve shading and habitat complexity.



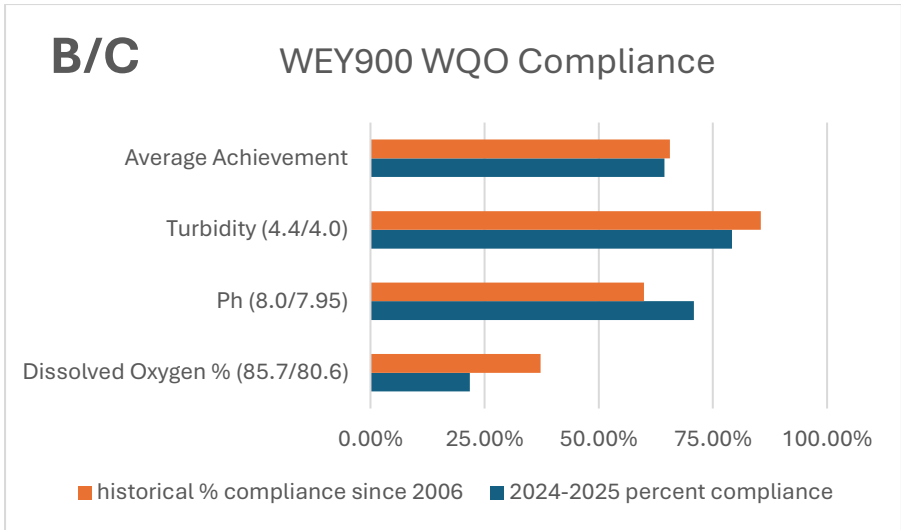
CBH020 shows moderate to good performance, with strong turbidity compliance and reasonable pH, but weaker dissolved oxygen. The two-year average achievement suggests stable conditions. DO% compliance remains relatively low with a median measurement of 67%DO, indicating periodic oxygen stress, particularly during warm, low-flow periods.

The C grade reflects this balance: good clarity and pH, but DO% that does not consistently meet HEV guidelines. As a creek entering Lake Cooroibah, CBH020 is influenced by both catchment runoff and lake water levels. Continued monitoring will help identify whether targeted riparian or flow management could improve oxygen conditions.



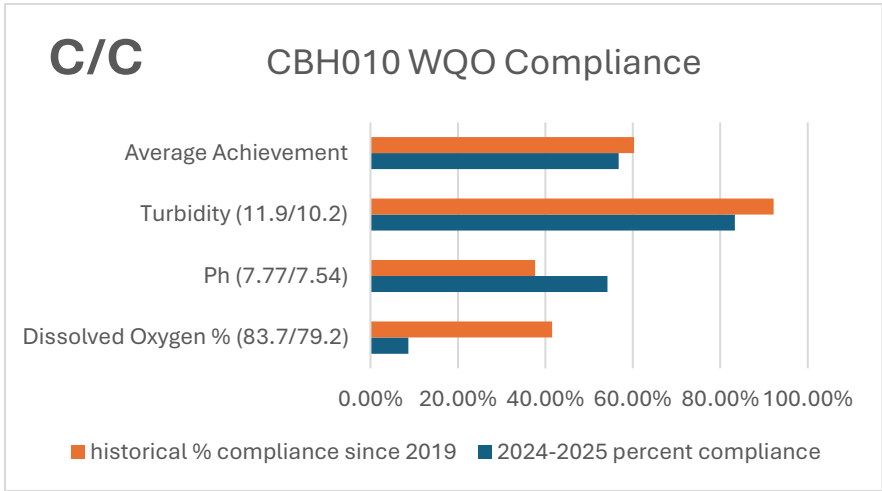
WEY550 performs well overall, with strong compliance for dissolved oxygen, pH, and turbidity. The two-year average achievement is slightly lower than the historical value, but still firmly within the B range. DO% compliance is high, and turbidity remains low, reflecting a well-flushed, high-value estuarine system.

The B grade indicates good ecological condition with only minor departures from HEV guidelines. Seasonal rainfall and tidal dynamics drive natural variability, but there is no clear evidence of long-term decline. Protecting surrounding mangroves and limiting urban runoff will be important to maintain this status.



WEY900 shows good pH and turbidity compliance but more variable dissolved oxygen. The two-year average achievement is slightly lower than the long-term value. DO% compliance has dropped from 85 to 80% DO, suggesting more frequent low-oxygen events, possibly linked to organic loading or reduced mixing in this more sheltered location. Although a revised guideline may be appropriate here.

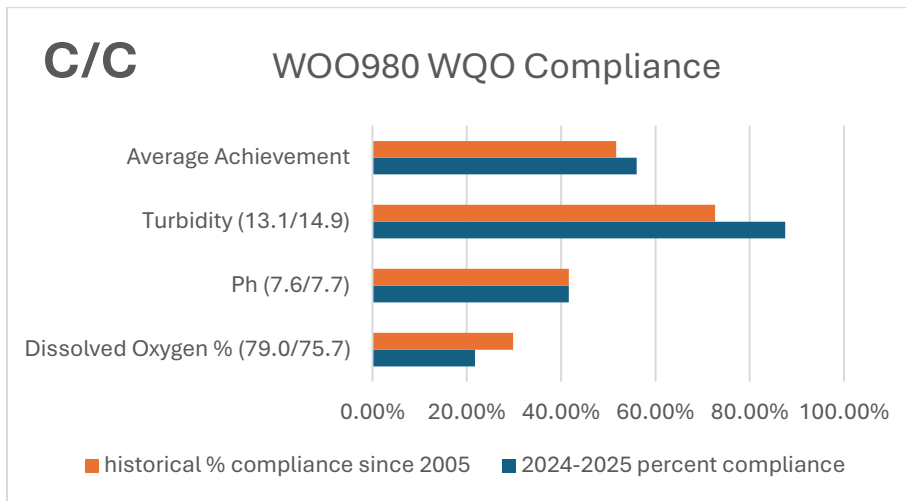
Overall WEY900 has generally good water quality, but with emerging oxygen concerns. As a mid-estuary site, WEY900 is sensitive to both catchment inputs and estuarine circulation. Ongoing monitoring will help determine whether this is a short-term response to recent wet years or a longer-term trend.



CBH010 shows moderate performance, with strong turbidity compliance but weaker dissolved oxygen and pH compliance. The two-year average achievement is slightly lower than the historical value, reflective of the higher rainfall. DO% compliance is very low for 2024-25, but still with a median of 79%DO. A revision of the guideline her is necessary.

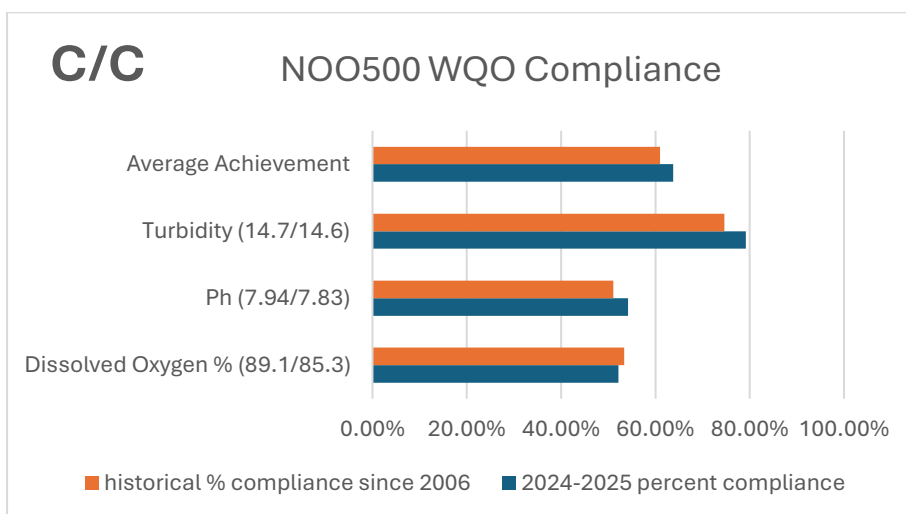
The C grade reflects a system that is generally clear and well-buffered but occasionally experiences lower DO%, particularly during calm, warm periods. As a shallow lake,

Cooroibah is sensitive to sediment stirring up from the lakebed and organic loading from upstream. Maintaining riparian vegetation and minimising nutrient inputs will help reduce the risk of further oxygen decline.



WOO980 shows moderate to good performance, with strong turbidity compliance and reasonable pH, but variable dissolved oxygen. The two-year average achievement is only slightly higher than the historical value. DO% compliance 22% remains low, indicating that oxygen stress still occurs, particularly during low-flow conditions, although median measurement of 75-79%DO suggest an amendment to the guidelines.

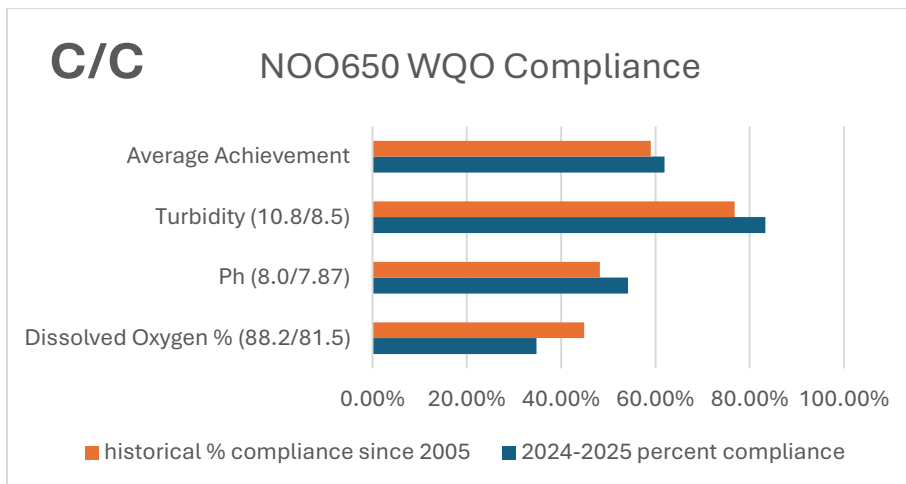
The C grade reflects a transitional zone where creek water mixes with estuarine water, leading to variable conditions. Improvements may be linked to better flushing or upstream management, but the site remains sensitive to high-rainfall events and organic inputs. Continued monitoring will help confirm whether the recent improvement is sustained.



NOO500 shows generally good turbidity and pH compliance, with moderate dissolved oxygen performance. DO% compliance is reasonable, but medians of 85-89%DO

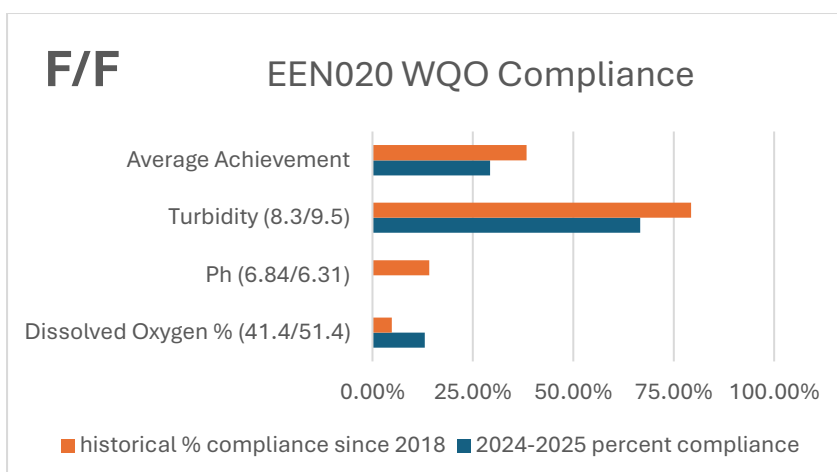
suggest an amendment to the guidelines. Turbidity remains within guideline ranges most of the time.

The C grade reflects a healthy but dynamic mid-estuary environment, where tidal mixing and freshwater inflows interact. While conditions are generally good, occasional low-oxygen events may occur during calm or high-temperature periods. Protecting surrounding mangroves and limiting nutrient inputs will help maintain current condition.



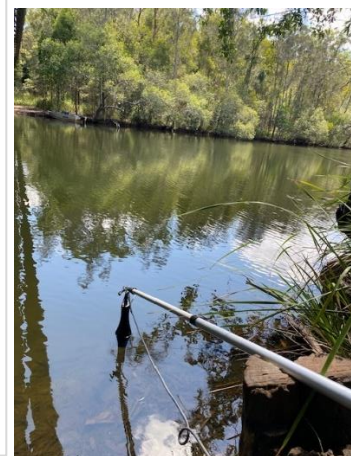
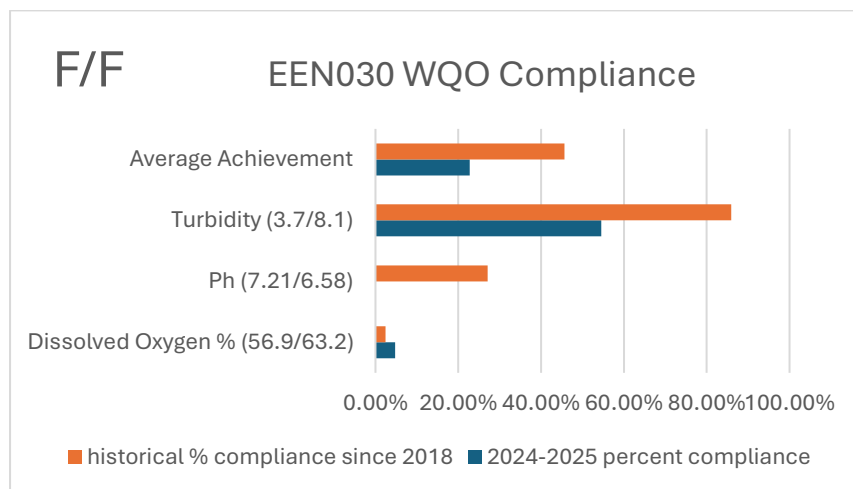
NOO650 performs moderately well, with strong turbidity compliance and reasonable pH, but variable dissolved oxygen. The two-year average achievement is slightly higher than the historically. DO% compliance indicates some periods of low oxygen, although the median recordings are 81-88%DO suggesting locally relevant guidelines could change the compliance.

Readings for this site are taken at the outflow from Lake Doonella, (under the Tewantin bridge near the marina) which may affect readings. While overall water quality is acceptable, ongoing monitoring is important to detect any emerging oxygen decline or high sediment loads. Maintaining vegetated buffers and managing urban runoff around the lake will be critical.



EEN020 shows poor overall performance, with very low pH and dissolved oxygen compliance. These results indicate a high level of freshwater influence or potentially acid sulphate releases. Dissolved oxygen compliance is very poor, with a median level of 51% DO which has improved in 2024–25 from 41% historically. The two-year average achievement of 29% is lower than the historical value 38% indicating a reasonable decline in compliance.

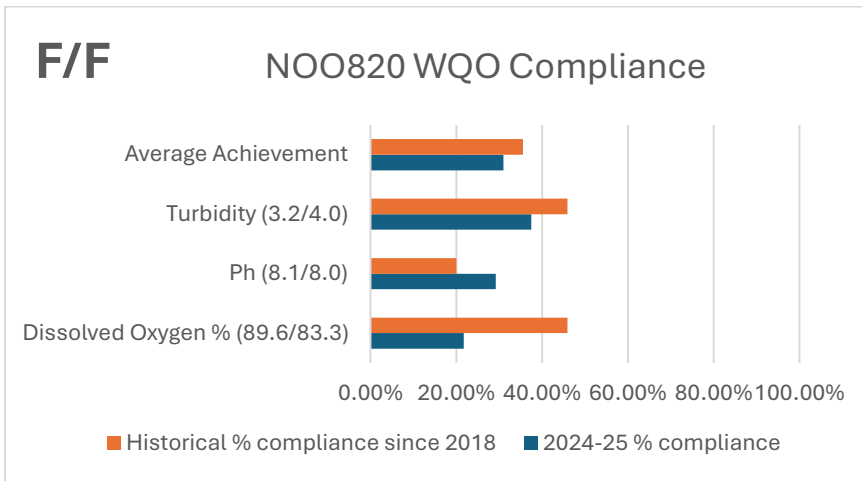
The F grade reflects acidity and oxygen stress in this drain, possibly driven by acid sulphate soils and urban runoff from the industrial estate. While turbidity compliance is moderate, the underlying chemistry remains problematic for aquatic life. This site still requires local WQO revision and targeted management.



EEN030 (downstream from EEN020) also performs poorly, with very low pH and dissolved oxygen compliance and only moderate turbidity performance. The two-year average achievement of 23% is much lower than the historical value 46%, indicating a significant decline in recent years. DO% compliance remains very low with medians of 57-63% DO, and pH is frequently below guideline ranges.

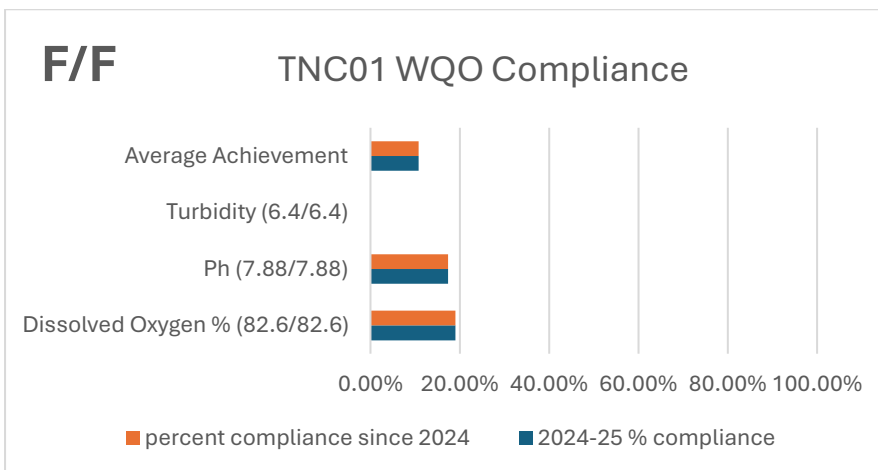
The F grade reflects an influence of acid sulphate from upstream catchment and urban influence, with oxygen stress. As a downstream reach of Eenie Creek, EEN030 integrates impacts from upstream drains and catchment runoff. Management should focus on catchment-wide acid sulphate mitigation, stormwater quality improvement, and riparian restoration.

Lower Estuary



NOO820 shows surprisingly low overall compliance for a lower estuary HEV site, with moderate DO% but poor pH and turbidity performance. The two-year average achievement of 31% is slightly lower than the historical value. DO% compliance is very low although median readings are between 83-89% DO. Turbidity often exceeds the very tight HEV guideline range, again suggesting locally relevant guidelines are required here.

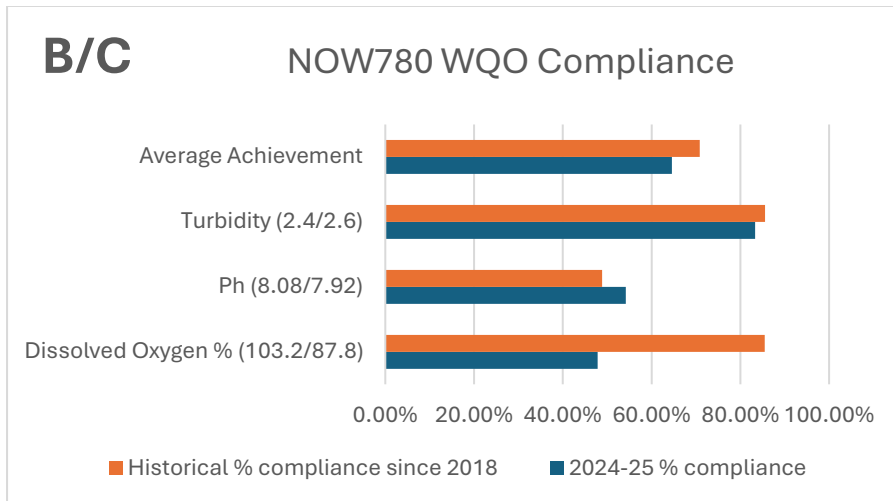
The F grade doesn't seem accurately reflective of the site, instead likely reflects the stringency of the lower estuary WQOs as much as actual ecological condition. As a highly dynamic tidal site, NOO820 experiences strong mixing, boat traffic, and variable sediment resuspension. While guideline compliance is low, the system may still function well ecologically; local WQO refinement would help contextualise these results.



TNC01 shows very low overall compliance, driven mainly by turbidity exceeding the very tight HEV lower estuary guideline. The two-year (and historical) average achievement is only about 11%, with DO% and pH compliance very low. Turbidity compliance is effectively zero, reflecting frequent resuspension in this shallow, high-energy environment near the oyster reefs.

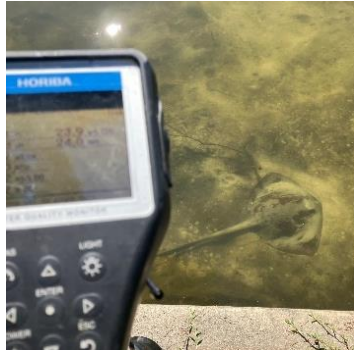
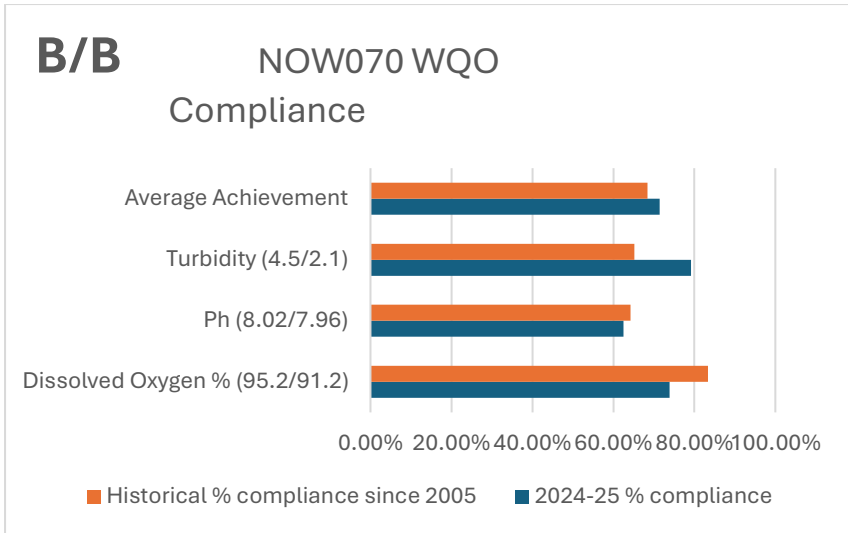
The F grade highlights the mismatch between guideline expectations and the natural dynamics of an oyster-bed, sandbank-dominated channel. While water quality rarely meets the WQOs, this does not necessarily indicate poor ecological condition. This site is a strong candidate for locally derived WQOs that better reflect natural turbidity regimes and habitat function.

Canals



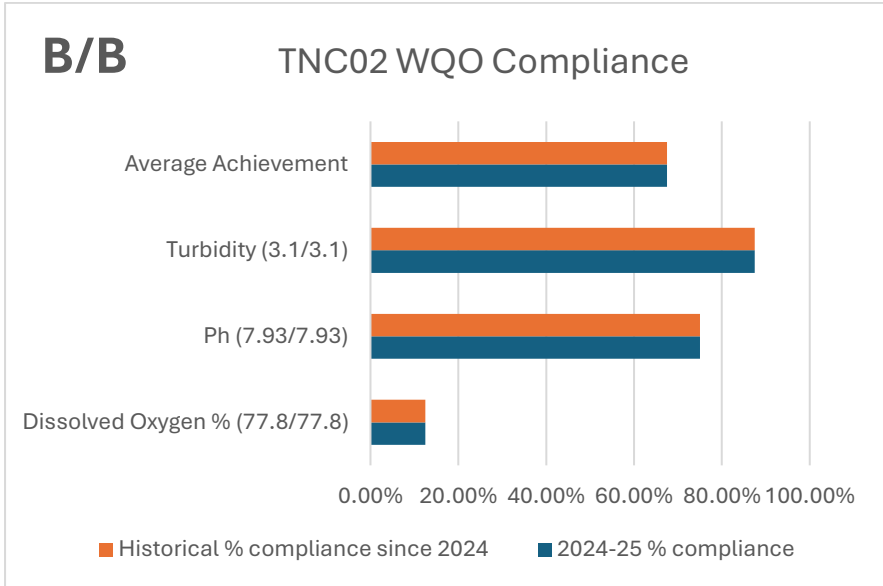
NOW780 shows generally good performance, with strong turbidity and pH compliance and moderate dissolved oxygen. The two-year average achievement of 65% is slightly lower than the historical value. DO% compliance suggests occasional low-oxygen events, likely during warm, low-flow periods, although medians still sit between 103 and 87% DO.

The B/C grading reflects a canal system that is mostly meeting MD WQOs but is sensitive to organic loading urban runoff, also influenced by Noosa Civic urban runoff. As an inflow point, NOW780 integrates upstream catchment and canal influences. Maintaining good flushing, managing stormwater quality, and limiting nutrient inputs will be important to prevent further decline.



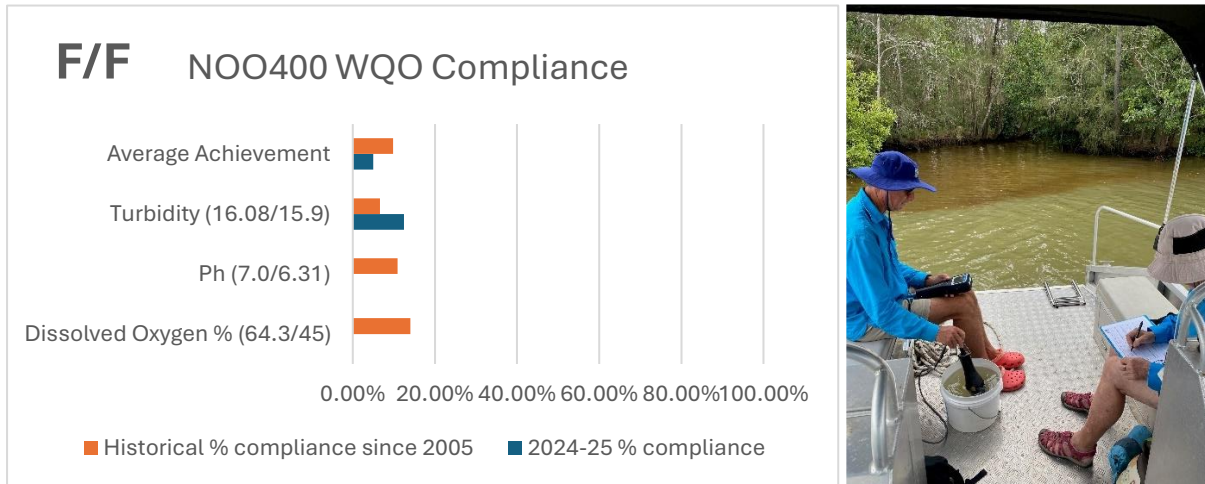
NOW070 performs well, with strong compliance for dissolved oxygen, pH, and turbidity. The two-year average achievement 71% is similar to the long-term value, indicating stable, good-quality conditions. DO% compliance is high with median reading for 2024-25 at 91% DO, and turbidity remains low, reflecting effective flushing and mixing at the canal outflow.

The B/B grade indicates a well-functioning canal reach that generally meets MD WQOs. Continued attention to stormwater management and canal maintenance will help sustain this condition. This site can serve as a useful benchmark for other canal locations in the system.



TNC02 shows good overall performance, with strong pH and turbidity compliance and moderate dissolved oxygen. This site only has 2 years of data, so can't be compared to longer term historical records. DO% compliance is lower than other parameters, suggesting occasional low-oxygen events and suggests a revision to guidelines.

The B grade reflects a generally healthy canal/oyster reef with good clarity and pH but some oxygen variability. As a relatively new monitoring site, longer-term data will be needed to confirm trends. Protecting nearby seagrass and reef habitats from sediment and nutrient inputs will be important.



NOO400 is one of the poorest-performing canal sites as it is an unmanaged man-made canal upstream near Lake Cootharaba and NOO401. Water runoff is always visibly murky and dark, and little is known about the catchment as it is on private land. Dissolved oxygen % has decreased from a median of 64% historically to 45% at this site over 2024-25. Turbidity has increased and pH has also decreased from 7.0 to 6.31.

In using canal WQOs the F grade reflects a highly impacted location where canal water discharges to the upper estuary, concentrating organic matter and low-oxygen water. This site is a clear priority for management, including investigating what is occurring on the catchment that is running into the canal, and what opportunities for bank restoration for organic load reduction could be done on the land. It also underscores the need for locally relevant WQOs for canal discharge zones.

7. Discussion

2025 Focused Analysis

January to March recorded heavy rainfall, strong winds, and flooding—linked to Cyclone Alfred and major inland rain—which caused high turbidity and low dissolved oxygen (DO%) across sites as sediments and organic matter were flushed through the system. Water appeared darker, especially in Tronson’s Canal and Wooroi Creek, from tannin and sediment inputs.

Late March heavy rain events as well as persistent rainfall through April, May and June led to elevated turbidity and low pH and DO%, particularly in April. Sediment

disturbance and runoff were widespread. These conditions indicate rainfall-driven erosion and organic loading. WOO550 (Wooroi Creek, George St) showed notable impact, warranting targeted monitoring and sediment source investigations to guide management and reduce long-term effects.

As rainfall eased by the July-September quarter, temperatures rose and turbidity declined, resulting in clearer, more stable conditions. DO% remained variable, with very low levels at stagnant sites indicating ongoing oxygen stress during dry periods. Several sites also recorded below-average pH, suggesting continued acidic influence from soils and organic inputs. Overall, water clarity improved toward spring, though low-flow oxygen depletion remains a key concern.

For the last quarter of 2025, the catchment shifted rapidly from dry, stagnant conditions to intense wet-season flushing. October's very low rainfall led to slow-moving, oxygen-poor freshwater creeks, with organic matter building up in low-gradient systems. November's rain brought the first meaningful flushing, lifting turbidity as accumulated sediments and organics were mobilised. December rainfall including a major rainfall event, caused widespread catchment flushing, sharp rises in turbidity, and reduced dissolved oxygen in freshwater sites as large organic loads moved through the system. Overall, the quarter reflects a transition from dry-season stagnation to wet-season disturbance, with the strongest impacts in freshwater tributaries and continued resilience in estuarine areas.

2024-2025 WQO Compliance

Water quality across the Noosa River Catchment from 2025 reflected a system strongly influenced by seasonal rainfall patterns, catchment characteristics, and the inherent differences between freshwater, estuarine, and canal environments. These conditions also shaped many of the patterns observed in the two-year compliance results.

Freshwater systems: persistent acidity and oxygen stress

The northern and lowland freshwater sites continued to show the most consistent water quality challenges, with many sites receiving F grades driven by low dissolved oxygen and acidic pH. Sites such as EEN010, MUR060, WOO550 and KIN997 exhibited oxygen depletion, often with median DO% values far below guideline ranges. In several locations, this was compounded by acidity linked to acid sulphate soils and Wullum influence, particularly in the Eenie Creek system. These conditions were exacerbated during the high-rainfall months, when organic matter and sediments were mobilised, further depressing oxygen levels.

Despite these challenges, turbidity compliance was often moderate to high in freshwater sites, suggesting that clarity alone is not a reliable indicator of ecological

health in these systems. Instead, the combination of low gradient, low flow and high organic loads, appears to influence poor compliance. This reinforces the need for locally relevant WQOs that better reflect the natural chemistry of these creeks, while still identifying genuinely degraded conditions.

Upper and middle estuary: generally stable with rainfall-driven variability

Estuarine sites performed more strongly overall, with many achieving B or C grades and showing stable long-term trends. Lake Cootharaba (COT205) remained one of the best-performing sites, with consistently high dissolved oxygen and turbidity compliance. Other upper estuary sites, such as COT200 and NOO401, showed moderate performance with some sensitivity to rainfall-driven changes in pH and DO%.

In the middle estuary, sites such as WEY550 and WEY900 continued to demonstrate good ecological condition, supported by strong tidal flushing and extensively preserved surrounding natural bush. However, several sites showed reduced DO% compliance during the wetter months, reflecting the influence of catchment runoff and organic loading.

Lower estuary: guideline mismatch and natural variability

The lower estuary sites (NOO820 and TNC01) again recorded low compliance, but this appears to reflect the stringency of the HEV guideline values rather than poor ecological condition. Turbidity guidelines are extremely tight for these dynamic, high-energy environments, where natural sediment resuspension is common. These results highlight the need for revised local WQOs that better represent natural variability in the lower estuary.

Canal systems: mixed performance with clear management implications

The canal sites showed a wide range of results, from consistently good performance at NOW070 and TNC02 to very poor compliance at NOO400, the Tronson's Canal discharge point. The report identifies NOO400 as a clear outlier and a clear priority for management.

In contrast, sites such as NOW070 and NOW780 performed well, reflecting effective tidal exchange and lower organic loading. These results demonstrate that canal water quality is highly sensitive to local hydrodynamics, stormwater inputs, and maintenance practices. Improving flushing and reducing organic loads in poorly performing canal reaches should be a management priority.

8. Observations and Key Findings

Despite the challenges observed in some freshwater and canal sites, the broader Noosa River system continues to perform well, with the Healthy Land & Water Report Card again rating the estuary as excellent. The patterns observed in 2025 underscore the resilience of the estuarine system and the importance of protecting upstream catchments to maintain this condition. Key findings included;

- Rainfall was the dominant driver of variability, with early-year events causing widespread increases in turbidity and decreases in DO% and pH.
- Freshwater sites remain the most vulnerable, particularly those influenced by acid sulphate soils and organic-rich sediments.
- Estuarine sites are generally resilient, with strong tidal mixing supporting good water quality despite episodic declines.
- The Tronson's Canal system requires targeted management.
- Current WQOs do not always reflect natural conditions, particularly in tidal creeks, lower estuary channels, and canal discharge zones.
- Many 'freshwater' sites have tidal influence, which make EC readings have very low compliance- these site classifications need revision.

These findings reinforce the importance of the ongoing work by Noosa Council and NRM groups to develop locally relevant water quality objectives, which is currently underway. The 2025 dataset provides strong evidence to support this process, highlighting where guideline mismatches occur and where genuine ecological risks persist.

9. Management Recommendations

- Address acid sulphate soil impacts in freshwater sites by improving drainage design, stabilising exposed soils, and enhancing riparian shading to reduce acidity and oxygen stress.
- Reduce sediment and organic inputs through erosion control, riparian restoration, and improved stormwater treatment in urban and rural sub-catchments.
- Improve flushing in poorly performing canals, particularly at Tronson's Canal discharge, by investigating hydrodynamics, catchment influences and reducing organic accumulation
- Support development of locally relevant WQOs to better reflect natural tidal chemistry, estuarine turbidity regimes, and canal conditions.
- Protect and restore riparian and wetland habitats to maintain the strong ecological resilience observed in estuarine sites.
- Continue long-term monitoring, with emphasis on high-flow event sampling

- Integration of biological indicators, such as macroinvertebrate, fish and riparian vegetation conditions to complement physicochemical data
- Investigate stormwater impacts along Eenie Creek near EEN020
- Investigate the feasibility of building a bridge over the creek at EEN010

Together, these actions will support a more accurate understanding of waterway health and guide effective management across the Noosa Catchment.

10. Conclusion

Water quality conditions across the Noosa River Catchment in 2025 were strongly shaped by an unusually wet year, with rainfall well above the long-term average driving widespread increases in turbidity, organic loading, and dissolved oxygen stress in many freshwater systems. These hydrological conditions particularly affected low-gradient creeks such as Wooroi, Eenie, and Murdering Creeks, where acidity and low oxygen remained persistent features. In contrast, the estuarine and lower river environments continued to demonstrate resilience, maintaining generally good to excellent water quality despite elevated flows. The stability of these estuarine sites highlights the buffering capacity of the lower Noosa system and the value of its largely intact natural landscapes. Continued investment in reliable monitoring equipment and targeted nutrient sampling has strengthened data quality and supports ongoing refinement of locally relevant Water Quality Objectives.

The 2024–2025 score cards reinforce these patterns, showing a clear divide between the consistently stressed freshwater tributaries and the more stable estuarine and lake environments. Many freshwater sites received F grades due to EC, dissolved oxygen and pH non-compliance, conditions strongly influenced by acid sulphate soils, organic-rich sediments, and limited mixing. Some of these ‘freshwater’ sites have tidal influence, dramatically influencing EC readings, severely bringing down the overall grade, so these site classifications need revision.

Several sites also showed declining compliance compared to long-term trends, reflecting the influence of consecutive wet years and the mobilisation of sediments and organic matter. In contrast, upper and middle estuary sites generally maintained C–B grades, with strong turbidity performance and moderate to high dissolved oxygen compliance. These results emphasise the need for targeted management in vulnerable freshwater sub-catchments, continued refinement of guideline values to reflect natural chemistry, and sustained long-term monitoring to track ecological condition and support adaptive management across the Noosa River Catchment.
