Reef Credits

Wastewater Methodology Guide

Reef Credits is a voluntary environmental market designed to incentivise landholders and wastewater management facilities to adopt additional practices that improve water quality in the Great Barrier Reef catchment. Poor water quality, primarily from pollutants such as sediment and nitrogen runoff, poses a significant threat to the Reef's health. Reef Credits provide a clear and accountable way to address this challenge through measurable, independently verified pollutant reductions.

Each Reef Credit project follows an approved Standard and Methodology, which sets clear guidelines on how to conduct projects, the eligible activities, and how pollutant reductions are measured and verified. This ensures that every Reef Credit generated represents a credible, tangible improvement in water quality.

These credits can be purchased by investors such as governments, philanthropists, and private sector organisations committed to safeguarding this iconic ecosystem. By supporting Reef Credits, they contribute to the long-term preservation of the Great Barrier Reef, while encouraging sustainable land and water management practices.

This guide provides an overview of the Reef Credit Scheme, how it works, and the benefits it offers to organisations, landholders, and communities striving to protect one of the world's most precious natural assets.

Reef Credits Snapshot

- A voluntary Australian environmental market focused on improving water quality in the Great Barrier Reef catchment.
- Reef Credits are generated through verified sustainable land management and wastewater treatment practices that reduce harmful pollutants.
- Each Reef Credit represents a measurable reduction in pollutants, preventing them from entering the Great Barrier Reef catchment.
- Administered by Eco-Markets Australia, an independent administrator, ensuring rigorous governance, transparency, and the integrity of both the program and its verified environmental benefits.
- Reef Credits can be purchased by governments, philanthropists, and private sector organisations, providing financial returns for project proponents while supporting critical environmental outcomes.
- Organisations can purchase Reef Credits as part of their Nature Strategy and Nature Finance Plan, especially if their business operations have a footprint in the Reef catchment or impact water quality.

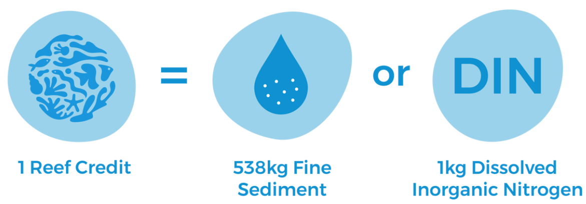
What is a Reef Credit?

A Reef Credit quantifies the volume of pollutants, such as nitrogen or fine sediment, that are prevented from entering waterways of the Great Barrier Reef catchment. These credits play a crucial role in supporting water-quality improvement initiatives.

Types of Reef Credits

There are two types of Reef Credits, depending on the water-quality improvement project and methodology used to generate credits. Each credit represents a specific amount of reduction in pollutant and can attract different prices when sold to investors.

- **One 'fine sediment' Reef Credit** is earned for every **538 kilograms** of fine sediment prevented from entering the Reef catchment.
- **One 'DIN' Reef Credit** is earned for **every kilogram** of Dissolved Inorganic Nitrogen (DIN) prevented from entering the Reef catchment.



Verification Process

Reef Credits can only be generated when a Project Proponent undertakes an approved Reef Credit project and achieves verified water quality improvements. The verification process is overseen by Eco-Markets Australia, ensuring transparency and accountability throughout.

Generating Reef Credits

The number of Reef Credits a project can generate varies depending on the specific practices implemented. Once verified and issued, these credits can be sold to a range of investors, including governments, businesses, and philanthropists, committed to supporting efforts that enhance the health of the Great Barrier Reef.

Reef Credit project rules and requirements are available on the website or via the QR code.

Unpacking the Reef Credits

Reef Credits is overseen by Eco-Markets Australia, a not-for-profit organisation that manages the administration of the program, providing a robust framework for environmental market activities.

The program consists of a comprehensive set of rules and requirements guiding the development and implementation of Reef Credit projects. These components include:

- **Reef Credit Guide** – This document provides an overarching explanation of the program's purpose, governance, operations, and management.
- **Reef Credit Standard** – This establishes the rules and requirements for Reef Credit projects. It outlines the processes for validating, registering, monitoring, and verifying projects, as well as for issuing, trading, and utilising Reef Credits.
- **Methodology Approval Procedure** – This procedure describes the process for submitting methodologies for approval. A Methodology specifies the water-quality improvements to be achieved and details the requirements for measuring these reductions to generate Reef Credits. While each Reef Credit project is unique, methodologies provide a consistent framework for implementation.
- **Project Crediting Procedure** – The procedure outlines the specific activities and action plans necessary to generate Reef Credits. Projects must align with the requirements of the Reef Credit Standard and applicable Methodology.
- **Reef Credit Registry** – This secure online ledger tracks Reef Credit issuance, transactions, retirement, and ownership, ensuring transparency and accountability of the market.

Why do we need Reef Credits?

Reef Credits provide an innovative, market-based solution to address one of the most pressing threats to the Great Barrier Reef: poor water quality.

Second only to climate change, declining water quality, driven by both land-based runoff and wastewater discharging, is a critical factor affecting the long-term health and resilience of the Reef.

Sediment, nutrients, and contaminants entering the Reef's waters from agricultural land use and wastewater discharge create an ongoing threat to marine biodiversity, water clarity, and ecosystem health. Reef Credits help in addressing these challenges by incentivising both landholders and wastewater treatment facilities to reduce pollutants entering the Great Barrier Reef catchment.

Addressing Water Quality: A Dual Opportunity

The water quality challenge facing the Reef is twofold: sediment and nutrient runoff from agricultural activities, and contaminants discharged from wastewater facilities. Together, they contribute to deteriorating water conditions that threaten the Reef's health. Reef Credits offer a solution that allows both landholders and wastewater treatment operators to take direct action.

For wastewater facilities, Reef Credits represent an opportunity to go beyond standard compliance by investing in infrastructure upgrades and implementing enhanced treatment processes that reduce nutrient discharge, such as dissolved inorganic nitrogen. By verifying and quantifying these pollutant reductions, facilities can generate Reef Credits that can be sold to investors, providing financial returns while delivering measurable environmental outcomes.

Landholders generate Reef Credits by implementing land management practices that reduce sediment and dissolved inorganic nitrogen runoff from agricultural activities.

Both land-based and wastewater treatment projects are critical to improving water quality and safeguarding the long-term health of the Great Barrier Reef.

A Global and National Priority: Meeting Biodiversity and Water Quality Targets

Australia has committed to a range of global and national environmental targets aimed at protecting biodiversity and improving ecosystems.

Reef Credits contribute to the following:

- **Reef 2050 Plan:** The Reef 2050 Water Quality Improvement Plan is Australia's flagship strategy for protecting the Great Barrier Reef. By reducing pollutants through verified environmental projects, Reef Credits play a pivotal role in helping Australia meet its water quality targets and ensure the resilience of this iconic ecosystem.
- **Global Biodiversity Framework:** This framework seeks to halt biodiversity loss and restore ecosystems. By improving water quality in the Great Barrier Reef, Reef Credits directly support key biodiversity goals, including the conservation of marine ecosystems and the reduction of pollution impacts.
- **UN Sustainable Development Goals (SDGs):** Reef Credits align with several SDGs, especially SDG 14 (Life Below Water) and SDG 15 (Life on Land). These goals emphasise the importance of protecting both water and land based ecosystems while tackling pollution and restoring degraded environments.
- **Paris Agreement:** Recognising the crucial role of ecosystems like the Great Barrier Reef in climate change, the Paris Agreement underscores the importance of safeguarding these environments. Reef Credits contribute to climate change efforts by protecting the health of the Reef, supporting Australia's broader environmental and climate objectives.

What does participation in Reef Credits involve?

There are currently four approved methodologies that can be used to generate Reef Credits. This guide outlines the Wastewater Methodology:

Wastewater Methodology

The Wastewater Method, otherwise known as the Method for Accounting for Nutrient Reduction in Municipal Wastewater Treatment Plants through Managed Bioremediation Operations outlines the approach required to achieve and quantify the reduction in Dissolved Inorganic Nitrogen (DIN) in wastewater discharged from a site or facility through managed algal bioremediation solutions, within the catchments of the Great Barrier Reef.

How it works:

The Methodology allows for any wastewater treatment using live algae (microalgae or macroalgae), where wastewater-effluent is captured, leading to a reduction in DIN across the project area. There are a number of ways an operator can remove DIN within the project area, extracting DIN in wastewater through managed algal bioremediation solutions, and removing DIN from the system.

Maximum Project Crediting Period:

The maximum amount of time that credits can be generated by a project is 15 years.

Independent Audit & Credit Issuance:

Outcomes are measured and Credits issued quarterly.

eco markets AUSTRALIA | reef credits

Methodologies

1 Reef Credit = 538kg Fine Sediment or 1kg Dissolved Inorganic Nitrogen

Methodology	Nitrogen Use Efficiency Method	Gully Method	Wastewater Method	Grazing Land Management Method	Constructed Wetlands Method (Draft Method Under Assessment)
Pollutant	DIN	Sediment	DIN	Sediment	DIN
Activities	Soil and nutrient practice change	Landscape rehabilitation and construction	Algal bioremediation at sewerage treatment plant	Fine sediment savings through improved grazing land management practices	Utilise constructed wetlands to prevent dissolved inorganic nitrogen from entering waterways
Maximum Project Period	10 years	25 years	15 years	25 years	25 years
Independent Audit & Credit Issuance	Annually	On rainfall event	Quarterly	On rainfall event	On rainfall event

Reef Credits: Qualifying Activities for Wastewater Treatment Plants

To qualify for Reef Credits, wastewater treatment plants must implement a series of structured activities aimed at enhancing water quality and reducing nutrient loads entering the Great Barrier Reef.

The following steps outline the necessary actions to generate Reef Credits under this methodology:

- **Baseline Assessment:** Establish a baseline condition of nutrient loads and water quality parameters prior to any intervention. This involves collecting historical data on inflow and effluent quality to quantify the existing environmental impact.

- **Implementation of Improvements:** Identify and implement specific interventions aimed at improving the efficiency of the wastewater treatment process. These may include:
  - Upgrading treatment technologies to enhance nutrient removal.
  - Optimising operational practices to reduce energy consumption and chemical use.
  - Regular maintenance of infrastructure to ensure optimal performance.

- **Monitoring and Reporting:** Establish a rigorous monitoring program to measure the effectiveness of implemented improvements. This includes:
  - Regular sampling and analysis of influent and effluent water quality.
  - Documentation of operational changes and their impact on nutrient loads.
  - Submission of monitoring reports to verify compliance with the established performance criteria.

- **Credit Generation Calculation:** Calculate the credits generated based on the reduction in nutrient loads achieved through the improvements. This involves:
  - Applying the approved credit calculation methodology, which compares post-implementation data against the established baseline.
  - Ensuring all calculations adhere to the specified guidelines and reporting standards of the methodology.

- **Verification Process:** Engage an approved independent verifier to assess the monitoring and reporting outcomes. The verification process ensures the integrity and credibility of the generated credits.

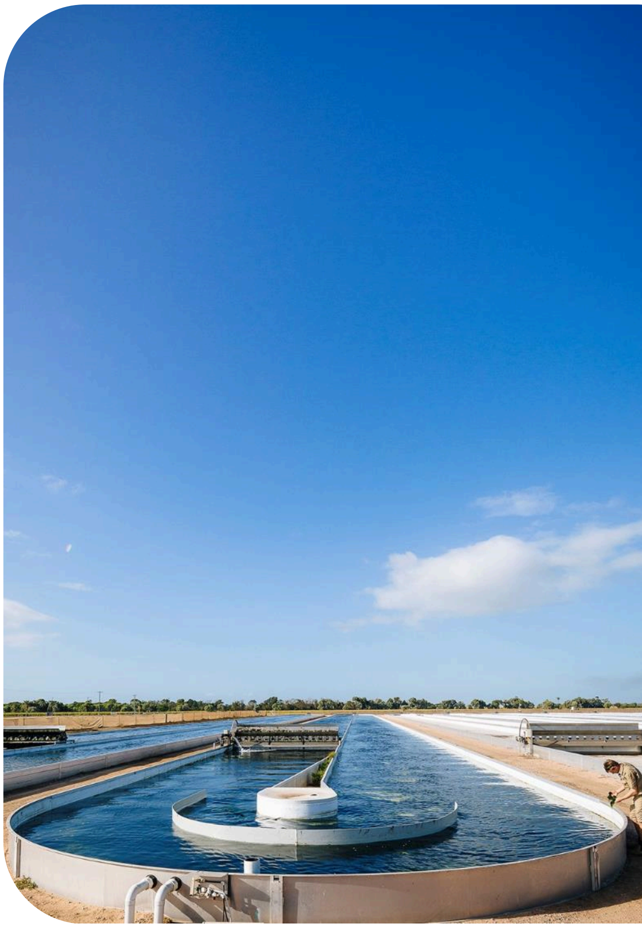
- **Credit Issuance:** Once verified, the credits can be issued and registered on the Reef Credit registry, making them available for sale to corporate investors committed to improving the health of the Great Barrier Reef.

By following these steps, wastewater treatment plants can not only contribute to the preservation of our marine environment but also participate in a sustainable market that rewards proactive efforts to reduce nutrient pollution.

Who's who in Reef Credits?

The generation of Reef Credits involves a number of key stakeholders, with different roles, purposes and interests.

- **Project Proponents** – individuals or organisations that have overall responsibility to carry out a Reef Credit Project and to whom Reef Credits may be issued. A Project Proponent may be an individual landowner, land manager, utility company, wastewater facility or work in partnership with an environmental project developer.
- **Environmental Project Developers** – individuals or organisations experienced with implementing environmental projects. They work with Project Proponents to assess the feasibility and help develop a Reef Credit Project. They can also help with the implementation and delivery of the project activities and provide support throughout the life of the project. They may also assist with and manage the sale of Reef Credits.
- **Verifiers** – are independent third parties or agencies that audit and confirm Reef Credits are accurately calculated. Verifiers must be appropriately trained and accredited.
- **Buyers or Investors** – include any public or private entity that purchase Reef Credits and has an interest in contributing to water quality improvement to protect the Great Barrier Reef. See below 'Top reasons investors like Reef Credits'.
- **Eco-Markets Australia** – independent environmental market administrator that manages the governance, administration, issuance and tracking of Reef Credits in order to ensure the highest standards of environmental and financial integrity.



Top reasons investors value Reef Credits

- **Trust** – Credit buyers can have confidence that the environmental outcomes they are purchasing and claiming are real, already achieved, measured and risk free.
- **Support water treatment stewardship** – investing in innovation and best practice management to deliver water quality improvements that contribute to the health of the Reef.
- **Market demand for sustainability** – demonstrating a commitment to the protection and conservation of the Great Barrier Reef in response to investor expectation and consumer demand.
- **Alignment with environmental, social and governance (ESG) strategies. Use of Reef Credits as part of an organisations Nature Strategy and Nature Finance Plan** – particularly where business operations have a footprint in the Reef catchment.
- **Simplicity** – a Reef Credit is a verified environmental outcome that contributes to real and measurable water quality improvements to protect and conserve the Great Barrier Reef.
- **Safeguard Australia's natural assets** – the iconic Great Barrier Reef, recognised in Australia and internationally for its scale, beauty and biodiversity.

Want to participate in Reef Credits?

To understand what's involved in a Reef Credit Project and if it's right for you, consider the following points:

1. **Talk to an environmental project developer**
   Get in touch with an environmental project developer about the potential for a project on your site. Understand if you meet the eligibility criteria and what's involved in a project. A list of environmental project developers is available on the Eco-Markets Australia website.

2. **Seek expert advice**
   Speak with your local NRM, industry group and business advisors (accountant, solicitor, financial advisor, agronomist, etc) to gain an understanding of your specific situation.

3. **Evaluate risks and benefits**
   Assess the risk-to-reward ratio associated with participating in a Reef Credit Project. Reef Credits offer a financial return linked to a verified environmental outcome. Evaluate the short, medium, and long term financial implications of undertaking a project.

4. **Understand the project**
   Understand what you will be expected to do, including timeframes, reporting and monitoring.

Resources

For easy access to Eco-Market Australia's online resources, please click on the **links** or scan the QR codes.

Reef Credit Standard - rules & requirements:
eco-markets.org.au/rules-and-requirements

Reef Credit Wastewater Methodology:
eco-markets.org.au/methodologies

More information

If you have any questions or would like more information about Reef Credits, please contact Eco-Markets Australia:

T: 0437 264 608
E: **info@eco-markets.org.au**
W: **eco-markets.org.au**

Level 1, 261 Queen Street, Brisbane, QLD 4000

0437 264 608

info@eco-markets.org.au

@eco-markets-australia

@ecomarketsaustralia

eco-markets.org.au