COMMUNIQUE FOUR
Project Update May 2020

# The Innovative Gully Remediation Project

Greening Australia

Queensland Government

Photo credit: Fruition Environmental Pty Ltd 2020

## Project update

The Innovative Gully Remediation Project has kicked more goals in the past year:

- The Strathalbyn Northern Gully remediation area now covers 44 hectares with 17.4 hectares of direct gully remediation works.
- The project represents the largest gully remediation project within the Great Barrier Reef catchments undertaken to date.
- Water quality monitoring has continued throughout the 2019-2020 wet season. In total, 10 rainfall events have been sampled between November 2018 and May 2020, with 165 samples collected across all treatment sites.
- Based on terrain analysis and water quality results, the treatments have shown to be highly effective, achieving in excess of 98% reductions in sediment export.
- It is estimated that the project has resulted in a reduction of more than 4,900 tonnes per year of very fine sediment (i.e. sediment smaller than 20 micrometres) to the Great Barrier Reef lagoon.

Photo credit: Fruition Environmental Pty Ltd 2020

## About the project

The Innovative Gully Remediation Project is a collaborative project supported by the Queensland Government's Reef Water Quality Program and Greening Australia's Reef Aid™ Program.

This project's purpose is to identify more innovative and cost-effective gully remediation techniques applicable to the Great Barrier Reef catchments and communicate the outcomes of the trials to ensure broad uptake of best practice gully remediation techniques.

The remediation trials under the project have been undertaken in collaboration with the Hughes family on Strathalbyn Station, part of the East Burdekin priority sediment reduction catchment.

Greening Australia CEO Brendan Foran and landholder Bristow Hughes. Photo credit: Annette Ruzicka

Photo credit: Fruition Environmental Pty Ltd 2020

## Pre-works baseline data collection

The Innovative Gully Remediation Project has now completed all of the on-ground works and trials planned under the program. The 2019 works included:

- remediating the last gully targeted for remediation under the program, adding an additional 4.2 hectares to the project total
- installing 380 metres of diversion bund, directing catchment run-off safely down a constructed rock chute at the top of the newly remediated gully
- trialling lower cost surface treatments by experimenting with stabilising batters without imported or re-purposed capping materials, instead focusing on mulch bunds and blanket applications of composted organics
- utilising various flow dissipation strategies, including diversion bunds, rock chutes, batter chutes, porous check dams, and contour mulching.

**Key learnings from the gully remediation trials will be the focus of the next project update, Communique 5.**

## Interested in more detail?

- Get an aerial view of the remediation sites on Queensland Globe (use search function and enter Latitude -20.188, Longitude 147.327): https://qldglobe.information.qld.gov.au/
- Read the project's Monitoring and Evaluation Plan online: https://www.greeningaustralia.org.au/wp-content/uploads/2019/09/IGRP_ME_Plan_Report_20181126.pdf
- Review which treatments were done where and how they've fared to date in the Strathalbyn Station Gully Remediation Works Update (July 2019): https://www.greeningaustralia.org.au/wp-content/uploads/2020/02/FRUITION-Strathalbyn_IGRP_WorksUpdate_July2019_WEB.pdf

# Post-works maintenance

Maintenance and minor repair of completed remedial works were required in a number of the treatment gullies. The maintenance works were predominantly focused on addressing areas of flow concentration that became particularly obvious after the 2019 monsoon rain event.

Repair works were relatively minor with approximately $20,000 spent on small-scale modifications to the works completed in 2017 and 2018.

The strategies used to combat flow concentration included minor diversion bunds, improved road drainage, porous checks structures, batter chutes, additional hay/bagasse placed on long slopes, and supplementary seeding to improve vegetation cover.

Future works and designs will consider how to avoid minor drainage depressions adjacent to batters, as generally capping materials are not sufficient to prevent rilling until ground cover and other vegetation is established.

Batter repair using diversion bunds and a batter chute (left image 2019, right image 2020). Photo credits: Fruition Environmental Pty Ltd 2020

# Evaluating treatment effectiveness

Evaluating the effectiveness of each overall treatment and the different remediation techniques utilised is an important objective of this project.

To assist evaluation, post-remediation monitoring has been occurring at regular intervals including:

- wet-season rainfall event monitoring, focusing on fine sediment and nutrient export from both treated and untreated gullies
- utilising post-construction and end-of-wet high-resolution LiDAR to estimate erosion rates through comparison of Digital Elevation Models between capture periods (targeting both treatment and control sites)
- end-of-wet and end-of-dry vegetation survey and land condition assessments.


Cost-effectiveness is another important attribute to be evaluated under the project. With the completion of on-ground works this assessment is now underway. The outcomes of the economic evaluation of the project will be the subject of a future Communique later in 2020.

## Project recognition

In November 2019, the Innovative Gully Remediation Project was recognised in the Queensland Government's Premier's Awards for Excellence.

The project won two categories of the awards, including the Premier's Award for Excellence and the Protecting the Great Barrier Reef Award, and was highly commended in the Creating Jobs in a Strong Economy award.


*The Innovative Gully Remediation Project team at the Queensland Government's Premier's Awards for Excellence.*

**PROJECT FUNDER**

Queensland Government

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