



Case study: Mulloon Rehydration Initiative

Project location: Southern Tablelands, NSW
 On Country: Gundungurra, Ngunnawal, Yuin, Ngarigo
 Size: 23,000 hectares, 50 kms creek
 Participants: 23 landholders

This catchment-scale project that aims to rebuild the natural landscape function of the Mulloon catchment and boost its resilience to climatic extremes for more reliable stream flows, improved ecosystem functioning and enhanced agricultural productivity. Includes development and implementation of a comprehensive Integrated Monitoring Plan.

The Mulloon Rehydration Initiative is a model for landscape scale repair across Australia which has led to increased productivity, biodiversity and soil fertility and soil organic carbon, improved water quality and quantity and resilience to climatic extremes. The results of the project reflect healthier landscapes and the production of high quality, nutrient dense food.

Mulloon Rehydration Initiative
 – Stage 1

2020 Winners
 ‘Response to Climate Change’

Australian Sustainable
 Communities Award



Above – Mulloon Creek, 2015

Right – Mulloon Creek, 1977



Mulloon Institute
 For environment, farming and society.



Problem

At Mulloon Creek, widespread land degradation had been caused by nearly 200 years of European land use, including agriculture, forestry and mining. The deep and chronic erosion of creeks and gullies has lowered the water-table, dried up wetlands and dramatically reduced the water holding capacity of the soils. Just like pulling the plug out of a bathtub.

Solution

The Mulloon Institute is working in partnership with the Mulloon catchment community to reverse these threats, through catchment-scale rehydration of the waterway and recreation of habitat through

revegetating aquatic and terrestrial areas. This is building whole landscape resilience due to increased and prolonged water and moisture levels, preventing future environmental damage, improving biodiversity and restoring and protecting habitat. Improved ecosystem function also improves soil health, as well as ground and surface water quality and availability through the filtering of sediments and recycling of nutrients.

Increased soil moisture combined with managed grazing approaches can increase soil carbon levels. This combined with the reinstatement of wetlands – traditional carbon sinks – can assist in sequestering carbon from the atmosphere and so contribute to addressing the global challenge of climate change.

Bringing the community along

Catchment-scale projects are inherently social projects that begin with the education and capacity building of communities on the process of landscape rehydration and associated regenerative land management approaches. The Mulloon Rehydration Initiative has developed a 'bringing the community along' approach to ensure that all stakeholders, including landholders, regulators, researchers and the broader community, can engage with the project.



Baseline studies

The Mulloon Institute and its partners are undertaking a suite of biophysical, social and economic baseline studies within the catchment. The overarching integrated monitoring plan will enable the impacts of the restoration and rehabilitation work to be monitored in the long-term and demonstrate the crucial link between environmental, social and economic aspects of landscape repair. This valuable research will be shared publicly and this project will be used as a model of implementation in order to facilitate similar projects across Australia.

Threatened species

The Mulloon Rehydration Initiative demonstrates the benefits of landscape scale repair and restoration works that have resulted in the sustained baseflow of Mulloon Creek. The waterway now has increased water quality and restored spongy wet floodplains which are more productive and provide valuable habitat for threatened and vulnerable species, including the Scarlet Robin, Diamond Firetail, and Dusky Wood Swallow.



Future

The Mulloon Rehydration Initiative is a long-term, catchment-wide project. It is a key focus for the Mulloon Institute, which is coordinating activities for 23 landholders, ten government agencies, several local environmental groups and universities, as well as a wide community of interest spanning the country. This unique and collaborative community project is the only one of its kind in Australia and highlights the social nature of catchment scale projects, with a wide range of stakeholders involved.

Above – Duralla Farm, 2018

Below – Duralla Farm, 2021



Services provided



Design & approvals

Detailed designs of landscape rehydration measures including in stream bed control structures (leaky weirs), contours, revegetation, fencing and documentation for regulatory approvals.



On-ground works

Leaky weirs, tree planting, creek fencing for stock exclusion, contours, grazing management, erosion control measures, education and capacity building.



Monitoring

High tech monitoring equipment across the Mulloon catchment includes 31 soil moisture sensors, 75 piezometers installed in transects across the floodplain, automated stream gauges and two climate stations. Further baseline and monitoring surveys are being conducted including water quality monitoring, landscape function analysis, rapid appraisal of riparian condition and biodiversity surveys.



Palerang Farm, 2019



Palerang Farm, 2020

Below: Bringing the community along for a tour of the creek works.

Acknowledgements

The Mulloon Institute has been recognised by the **United Nations Sustainable Solutions Network** as being one of five projects globally, as a demonstrator of sustainable, profitable and productive farming.

The Mulloon Rehydration Initiative is jointly funded through the Mulloon Institute and the Australian Government's National Landcare Program.



Video link

<https://youtu.be/kbaSL94NBcw>

