

# How our farm in Lima East is adapting to Climate Change



## KEY FACTS

**Property size:** leasing 145 hectares

**Location:** Lima East, VIC

**Enterprise:** backgrounding steers

**Average Annual Rainfall:**

**Soils:** granitic sandy soils, running to fertile creek flats

## TECHNOLOGY AND BIOLOGY

Damien Gerrans is concentrating on growing high quality steers focusing energy into the soil and pasture that will produce them. Damien, together with his wife and kids lease their 145 ha from his wife's family. The farm is a mix of granitic sandy hills and rich creek flats. The sandy soils are a challenge; they are spewy when wet and set hard in summer.

Damien is concerned about the resilience of the area for farming into the future. He understands that climate change will have an impact on his production potential and is working to prepare the land he manages for more variable seasons. His three areas of focus have been water, soil and trees.

Damien's background in environmental engineering has him investigating and trialling technological and biological approaches to increasing the resilience of his pastures by improving soil structure and soil organic carbon to increase soil moisture.

Through supporting demonstrations with the Gecko CLaN Landcare Network, Damien is trialling technology such as soil moisture probe and weather station, tillage radish, diverse annual seed mixes and keyline ploughing.

## MOTIVATION FOR CHANGE

- To improve productivity of hillside paddocks and manage difficult soils.
- To overcome subsoil constraints.
- To increase plant rooting depth and soil carbon levels.
- To grow productive pastures capable of turning off quality steers.
- To improve the soil, biodiversity and productivity for the next generation.

## PRACTICES & INNOVATIONS

- Diversifying water supply - fencing off the creek, dams for off-stream water, header tank for reticulating to paddocks
- Revegetating along the creek
- Testing use of soil moisture probe and weather station to assist with decision-making
- Plant-based approaches to repairing and improving soil structure, such as tillage radish, oats and annual pasture mixes
- P.A. Yeomans keyline ripping
- Planting shelterbelts
- Fencing off dams
- Remote tank and trough meters

**Water management is critical.** Tank and trough monitors have been added to the weather station so Damien gets an alarm if there's an issue, and a dam surface level monitor measures evaporation and inflows. He has also diversified his water supply. Historical stories indicate the creek dried up once in the last 80 years. In Damien's five years at the farm, the creek has dried up every summer. Damien's first project was to secure water. Goulburn Broken Catchment Management Authority provided incentives to fence off the creek, plant it out and create a dam. He now pumps water from the dam to a header tank at the top of the property to troughs which service the water needs of his stock and continues to plant along the creek increasing the biodiversity of the area.

Damien uses the soil probe moisture and temperature data for sowing decisions. He is trialling diverse annual seed mixes to improve pasture diversity and soil structure. Following Gabe Brown's book he is trying autumn and spring sowing for the annuals, with a perennial the following year. In drier autumns, or years with frequent frosts, the soil data is very useful.



*"I have planted the creek with vegetation to reduce evaporation from the creek, improve the water quality by increasing the filtration of the plants along the creek and provide a shelter for stock".*

Damien's third focus is trees. He's working on increasing shelterbelts and plant cover for better stock shelter. The farm used to have really good paddock trees, Long leaf box and Stringybark. But these have not replaced themselves due to grazing pressure so each year the family plant more trees. They are integrating dams into these shelterbelts. The dams are fenced from stock so they are a good place to plant out, avoiding the bank and inflow areas, and link up with the broader farm revegetation plan.

### WORKING WITH OTHERS

Much of the work Damien is trialling and testing is supported by his local Landcare Network, the Gecko CLaN. It's a great match. Damien's interest in water management and increasing the resilience of his pastures lined up beautifully with Gecko's "Soils, Moisture, Plants and Technology Project." Together with Damien's insight into technology for the environment and his love of sharing his insights and experience with others it has made for a very successful project (you can find out more about it at [www.geckoclan.com.au](http://www.geckoclan.com.au)). Gecko's project objectives were to compare technological and biological ways to improve soil structure, increase soil moisture, up the soil organic carbon and better monitor water usage.