

Managing Cattle, Sheep and Giant Gippsland Earthworms – Moyarra Pastoral Company Case Study

Who: Burke Brandon (Moyarra Pastoral Company)
Where: Moyarra, South Gippsland
Property Enterprise: Sheep and Beef - 80 breeding ewes, cows and calves
Property size: 200 acres (80 ha)
Bioregion: Strzelecki Ranges
Ecological vegetation classes (EVC): Damp Forest (EVC 29) and Riparian Forest (EVC 18)
Soil Types: Derasol - Clay Loam
Number of GGE colonies on farm: 4 confirmed colonies



Background

Burke Brandon from Moyarra Pastoral Company runs a 200-acre farm in Moyarra, in the Foster Creek catchment of South Gippsland. The property was purchased in 2011 and Prom Country Cheese was born, with the cheesery opening in 2014. The sheep and beef property is certified organic and is run under a regenerative agriculture management philosophy. Historically, the property was run as a much more intensive farming operation as Prom Country Cheese.

The property also supports colonies of the threatened Giant Gippsland Earthworm (GGE), meaning land management decisions have important implications not only for farm productivity but for the protection of a nationally significant species.

Burke used to milk up to 200 ewes a day, running over 400 sheep at times, along with

15 cows and calves which were run mainly in the steeper hill country and then on the flats during summer.

In 2022 the Prom Country Cheese part of the business was sold and the farming operation commenced downsizing. Today, operating as Moyarra Pastoral Company, Burke runs 80 breeding ewes and 25 cows and calves.

The property is grazed regeneratively with the ewes grazed on the flats only and excluded from revegetated areas of the farm, including the Foster Creek corridor. This is preserving biodiversity and minimising erosion in steep country. Burke has also recently introduced Wiltipoll rams to the same ewes, to produce heavier muscled prime lambs that can be turned off at a younger age.

Since purchasing the property Burke has planted approximately 6,000 tubestock, complementing the estimated 20,000 planted by the previous owner. Over 10km of fencing has been constructed to protect these

valuable revegetation areas which included the Foster Creek corridor. 18.6 hectares have been removed from production which equates to approximately 23% of the total property area. This could be increased to 28% with large scale steep escarpment plantings.

Regenerative Agriculture at Moyarra Pastoral Company

Since purchasing the property in 2011, Burke is continually learning and applying regenerative methods in line with regenerative agriculture philosophies. Specifically, this includes becoming certified organic in 2022. The certification process included a 13-month transition period, originally for organic milk supply for cheesemaking. 'We always wanted to farm organically, but the main driver was enabling a fully certified supply chain for the cheesery', says Burke.



Moyarra Pastoral Company - looking down onto the flats from the steep hills

Over the years, cheeses produced on site from the farm's sheep milk became popular all over Australia, receiving numerous national awards. Burke worked with authorities to develop a process for producing raw milk cheese, becoming Victoria's only raw milk cheese producer, and to this day specialises in this and blue cheeses. Produced from a regenerative farm that supports biodiversity, Burke's milk enabled cheese to be made that retained the life of the ecosystem, and broad,

lingering flavours in the matured cheeses that were unique to time (seasons) and place.

Certified Organic Status

As a requirement of the certified organic status, no chemicals are to be used on the property. Whilst there are many property, animal health and human health benefits to this, it does present numerous challenges and creates extra work.

'Not using chemicals has the human effect of more pleasant farm work, and less paperwork. The real benefit is to the biology in the soil, including the GGE on the farm, which can thrive naturally with less compaction from equipment and chemical infiltration into their habitat areas.

'The challenges are parasite control, animal health and control of invasive weeds such as Californian thistle and blackberry. It is difficult with sheep parasites, but regenerative grazing showed us a pathway where we only needed to make some small changes to become certified', says Burke. Minimal chemical use will protect water quality, minimise damage to soil biology, protect and enhance natural ecosystems, and reduce carbon footprints.

Minimum or no tillage

Burke also operates with a philosophy of minimum or no tillage. Avoiding the mechanical agitation of soil is important on the farm, particularly in colony areas for the GGE. Aggressive deep tillage can destroy GGE habitat and soil compaction from machinery can also compromise the health of a colony. GGE, earthworms and fungi in particular, are negatively impacted by tillage. 'No-till is standard practice on the property. In a perennial grazing model, tillage has all downsides, causing loss of soil carbon and destruction of soil structure. This leads to habitat destruction for soil biota, erosion, compaction and oxidation', says Burke.

Regenerative grazing, pasture management and longer rotations

Throughout most of the year the sheep are mob-grazed in high density cells, moved every day or a maximum of every 3 days. Burke's goal is to operate under a 120–180 day rotation. This is often less in the autumn and winter seasons, depending on pasture growth. Differences between years also dictates the frequency of grazing rotations with no year being the same as the next. For this reason, the sheep are grazed mainly on the flat country where Burke has better control of the grazing.

Cattle are grazed predominantly in the hill country, to minimise soil pugging in the wetter months. They are rotationally grazed, staying in the same paddock for no more than 5 days, depending on paddock size. Sites containing GGE colonies are removed from the grazing rotation during the wetter months, where moderate to severe pugging is likely to occur. In the drier months the sites containing GGE colonies are grazed only lightly for short durations. This ensures no lasting damage is done to the GGE colony sites as a result of grazing.



Cattle grazing GGE habitat in the steep country

Heavy cattle on wet and soft soils often cause pugging and destruction of soil structure. In GGE habitat, this can become problematic due to the changes in water flow and hydrology, as well as the interruption of the breakdown of vegetative matter into humus at the soil surface. Managed stocking promotes strong

root masses from regeneratively grazed perennial plants, providing better nutrition and more humus.

Burke has a policy of not cutting hay or silage. It is not an economical practice for the farm. The paddocks most suited to cutting hay and silage are usually too wet and are prone to heavy equipment compaction which disturbs the soil profile and reduces fodder quality. Cutting hay and silage also removes significant reserves of organic matter from the soil, feed quality is maintained throughout summer with high density grazing followed by flail mulching, which achieves good regrowth while there is soil moisture. A mulch blanket or standing hay provides soil armour to keep the soil cool through summer, preserve root mass, and reduce erosion from summer storms.

Transitioning to regenerative grazing required more control with low-cost fencing and water amendments, plus reduction of the flock size to achieve longer rotation periods. The benefits have been multi-faceted - a lower reliance on supplementary grain, healthier sheep digestion and therefore livestock health, condition scores, fertility and productivity, with heavier lambs turned off earlier, and more resilient pastures that remain in the growth phase for most of the year.

Some other welcome benefits of Burke's policy of no-till, no silage production and no synthetic fertilisers, have been much less time in the tractor, and low requirement for inputs such as diesel and herbicides. This frees up more time for moving livestock, a much more enjoyable farming activity which permits connection with the land and animals, and the opportunity to observe the health and productivity of the ecosystem. The focus then shifts to embracing multispecies perennial pastures - including the vertical-salad Dock, root mass, carbon sequestration and landscape hydrology.



Discovering Giant Gippsland Earthworms on the farm

Whilst previous owners of the property may have been aware of Giant Gippsland Earthworm colonies on the property, Burke only noticed them in 2013. This was an extremely wet year and combined with a 3.3 magnitude earthquake event, there was a series of large-scale landslips throughout South Gippsland. One landslip occurred on Burke's farm, exposing numerous GGE. After further investigation and research Burke realised he had numerous colonies on his farm. Burke's observations were confirmed by Dr Beverley Van Praagh who has been studying the GGE for over 30 years.

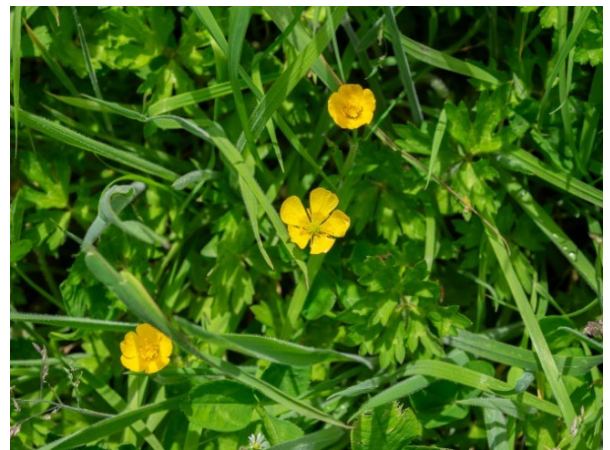
'We had heard the rumours about the GGE on the property but after the earthquake and landslip I actually saw one that had been washed up on one of the farm tracks. Unfortunately, it didn't survive the landslip event but it gave us confirmation that we had something special on the farm', says Burke. 'It's a curious thing about GGE that we seem to have this passion for something that we never actually see, they are a lot more prevalent than I originally thought. When I actually started going and listening for them, I found that they were in lots of places around the farm, not the entire farm, but in little discrete pockets around the farm.'



A known GGE colony on the farm above a creek line, notice the terraces which often indicate GGE habitat

Where are they found on the farm?

Throughout its range, the GGE prefers moist, well drained soils, predominantly south-facing slopes, natural seeps, springs and gullies and creek banks above the floodplain. On Burke's farm they are found in numerous locations, at the bottom of the steep part of the hillsides and also toward the creek flats above the floodplain. Burke says 'You won't find them on the floodplain due to waterlogging. They are also found higher up in the hill country, not on the tops of the hills, but close to the tops if the soil and hydrology is right', says Burke. GGE colonies are often also associated with yabby chimneys and Creeping Buttercup (*Ranunculus repens*) but not always.



*Creeping Buttercup (*Ranunculus repens*), a good indicator for GGE habitat*

Burke's recommendations to other farmers with GGE colonies on their farms?

Successfully managing GGE colonies on the farm hasn't been too difficult for Burke. Some colonies have been easily excluded from stock and incorporated into remnant protection areas, revegetation areas and protected waterway areas.

For those colonies that are in productive pasture areas Burke has managed to ensure these colonies remain healthy and viable by implementing the following practices:

- No excavation or soil disturbance of areas containing GGE colony sites (e.g. no ploughing, scalping or deep ripping)
- Minimise any pesticide and herbicide use in GGE colony sites, use non-chemical methods if practicable
- Remove any GGE colony sites from grazing rotations during wet periods to reduce soil disturbance and excessive pugging with the use of temporary electric fencing



Sheep are grazed mainly on the flat country where Burke has better control of the grazing

All farmers with GGE colonies on their farms can easily implement these management practices. Advice on GGE management is easy to find, either contact your local Landcare network or visit

<https://www.giantearthworm.org.au/gge-habitat-landform.htm>

Always seek advice when considering any extra works that may change the hydrology of a GGE colony site (e.g. drainage works and dam building).

Conclusion

For Burke, the presence of threatened GGE on his farm is a special privilege.

'I have a special responsibility to manage my productive farm and protect a threatened species at the same time. Protecting these colonies on my farm and remaining productive can co-exist', says Burke, as demonstrated by the regenerative agriculture management practices being used at Moyarra Pastoral.

'Maintaining ground cover and soil integrity is as important for perennial pasture production as it is for the protection of the GGE colonies on my farm' says Burke.

The additional benefits of rotational grazing with long rest periods include improved moisture retention, healthier root zones and mycorrhizal fungi, maximum pasture growth and healthy GGE colonies.

For Burke, it's a winning formula that other farmers with GGE colonies on their farms can readily replicate.



GGE Habitat and pasture can co-exist with a sensitive regenerative grazing management system in operation

The threat mitigation and soil hydrology for the Giant Gippsland Earthworm project received grant funding from the Australian Government Saving Native Species Program.