LANDSCAPE SOUTH AUSTRALIA KANGAROO ISLAND



Case Study: Practical Innovation on the Coast

About the Farmer

Tim Chirgwin is a lifelong Kangaroo Island local with a strong reputation for hands-on innovation. A semi-retired fencing contractor, Tim lives in Cygnet River with his partner Zushka and has raised his family on the Island. His family property stretches from tidal saltmarsh to sandy rises, offering a unique mix of coastal farming challenges.

With a practical mindset and a self-taught engineering skillset, Tim is known for his DIY solutions—constructing everything from water catchments and compost brewers to biochar kilns and custom mineral licks.

“The good ground pays. The rest—use it for what it’s worth, or go do something else that pays better.”

Tim’s property is located at Grace James Corner, near Nepean Bay, Kangaroo Island, SA

- **Property Size**: 525 ha (270 ha arable, 255 ha saltmarsh/coastal)
- **Enterprise**: Sheep grazing and pasture improvement
- **Rainfall**: ~450 mm/year
- **Livestock**: Black-faced sheep (crossbreds and Suffolks), breeding rams
- **Pastures**: Mixed annuals, salt-tolerant perennials (trial), clover-based systems

Some of the challenges face by Tim include:

- **Soils**: Low fertility, high salinity, nutgrass invasion, low organic matter
- **Water**: Brackish groundwater, dryland limitations, high cost of mains
- **Grazing**: Balancing mob size, paddock pressure, seasonal variations

Generated from https://www.landscape.sa.gov.au/ki/land-and-farming/land-management-support/case-study-practical-innovation-on-the-coast on **11 November 2026**

- **Trace Elements**: Copper and cobalt deficiencies linked to swayback
- **Trees**: Keen to preserve scattered mallee for shade, shelter, and ecological function
- **Logistics**: Isolation impacts ram sales, freight, drought and extra cost for inputs
- **Pasture establishment** getting the perennials established and then grazing management right to keep them going.

Innovative Practices



Tim made the stand for a spray unit for the KILB that can be connected to a tow ball. This is used to spray out bio stimulants and biological treatments such as EM and compost and vermicaste extracts made on farm. If only there was a more efficient way to clean the car afterwards!

? Water Security: DIY Catchment Success

Generated from https://www.landscape.sa.gov.au/ki/land-and-farming/land-management-support/case-study-practical-innovation-on-the-coast on **11 November 2026**



The king tide is less than a few meters away from Tim’s fresh water plastic lined catchment.



Even small amounts of water are captured using the plastic.

? Salt-Tolerant Pasture Trials

Tim trialed a range of perennial species including:

- **Messina Neptune** (salt-tolerant, inoculated)
- **Tall Wheat Grass**
- **Puccinellia**
- **Prosper Tall Fescue**
- **Mate Phalaris**
- **Chicory** and **Plantain**

Despite a poor season that impacted establishment, some species—like Tall Wheat Grass—are persisting. Tim is confident that with improved grazing management, these species could thrive.

Generated from https://www.landscape.sa.gov.au/ki/land-and-farming/land-management-support/case-study-practical-innovation-on-the-coast on **11 November 2026**



Tall wheat grass will grow with the right grazing management.

Understanding soils at depth is key to establishing pasture. Pasture species selected for Tim’s property were based on their ability to improve water logged, heavy clay soils.

Tim hosted a forage shrub and salt bush workshop on his property with Jason Emm. The perennial mix was recommended to increase ground cover and increase fodder instead of forage shrubs such as salt bush that do not like their roots in waterlogged soils.

Generated from https://www.landscape.sa.gov.au/ki/land-and-farming/land-management-support/case-study-practical-innovation-on-the-coast on **11 November 2026**

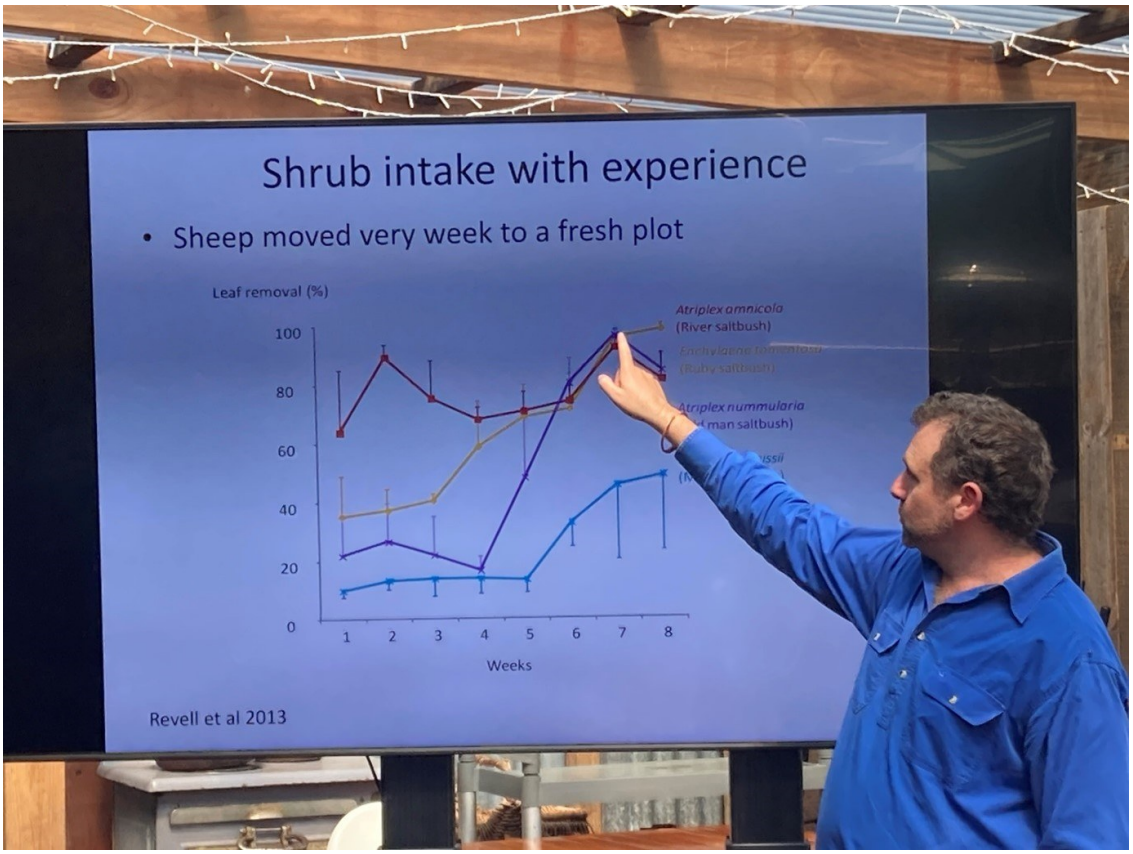


This photo shows the 3 metre hole that is left after the soil core was removed for analysis. Because the elevation of the property and its proximity to the ocean, the testing allowed us to look for sea water.



Tim hosted a Field Day on his property focussed on turning marginal land into productive fodder with saltbush and perennial grasses, hosted by Dr Jason Emms with support from the Kangaroo Island Landscape Board's Soil Extension Officer Cassandra Douglas-Hill in December 2023. The demonstrations at Tim's property was followed by a workshop at Emu Ridge Eucalyptus Distillery.

Generated from https://www.landscape.sa.gov.au/ki/land-and-farming/land-management-support/case-study-practical-innovation-on-the-coast on **11 November 2026**



Dr Jason Emms explaining the economics behind fodder shrubs at the at Emu Ridge Eucalyptus Distillery.

? Animal Nutrition and DIY Licks

Tim is experimenting with various mineral supplement and is currently using:

- DIY mineral mixes , Pat Coleby Lick Pack, ASP and Compass Feeds.
- He also adds molasses, charcoal, and trace minerals (Blue Cap) to grain as a feed supplement. Tim is always inventing ways to streamline jobs to make them more efficient such as coating the seed with mineral supplements and biochar.

“We need to understand the limiting factor—sometimes it's copper, sometimes just too many sheep.”

Generated from https://www.landscape.sa.gov.au/ki/land-and-farming/land-management-support/case-study-practical-innovation-on-the-coast on **11 November 2026**



Trace element deficiencies—especially copper—are a recurring challenge, and Tim continues to refine his approach to meet stock health needs affordably and effectively.

? Soil Biology and DIY Inputs

Tim is deeply engaged in biological farming.

Generated from https://www.landscape.sa.gov.au/ki/land-and-farming/land-management-support/case-study-practical-innovation-on-the-coast on **11 November 2026**



Tim is deeply engaged in biological farming. This photo shows Tim’s take on a Johnson sue composting system after getting sick of turning a thermodynamic pile.

Generated from https://www.landscape.sa.gov.au/ki/land-and-farming/land-management-support/case-study-practical-innovation-on-the-coast on **11 November 2026**



Producing small-batch biochar and mixing it with feed to enhance digestion and nutrient cycling

Generated from https://www.landscape.sa.gov.au/ki/land-and-farming/land-management-support/case-study-practical-innovation-on-the-coast on **11 November 2026**



Trialling biofertilisers, hydrolysate brews, and CropBioLife.

Generated from https://www.landscape.sa.gov.au/ki/land-and-farming/land-management-support/case-study-practical-innovation-on-the-coast on **11 November 2026**



Tim was also a great help at the biofertiliser workshop and made a hydrolozate from old poor quality wool molasses and EM. This photo show Tim other workshop participants learning how to make an airlock for anaerobic ferments. Tim made a better version a few days later.

Generated from https://www.landscape.sa.gov.au/ki/land-and-farming/land-management-support/case-study-practical-innovation-on-the-coast on **11 November 2026**



Tim made some LAB base culture for biofertilizers and hydrolysates, otherwise known as EM. This batch grew a yeast on top due to aerobic conditions.

? Tree Management

Tim is passionate about tree management on his property, particularly Narrow-Leaved Malles. Scattered mallee trees are intentionally retained across paddocks to provide windbreaks and vital shade for lambs. Tim sees them as a key part of his farm's resilience and function.

Generated from https://www.landscape.sa.gov.au/ki/land-and-farming/land-management-support/case-study-practical-innovation-on-the-coast on **11 November 2026**



This tree needs to be coppiced or pollarded or it will die.



This tree has been coppiced and the old branches used as a fence to keep off stock. This wouldn't work for cattle, just sheep.

Generated from https://www.landscape.sa.gov.au/ki/land-and-farming/land-management-support/case-study-practical-innovation-on-the-coast on **11 November 2026**



This tree was not coppiced or managed and subsequently died.

🌱What's worked



By minimal use of synthetic chemical fertislers, Tim has been able to maintain is macro and micro ecosystems. This photo shows worm castings thick on the ground. Worms are a good sign of healthy soil. Worms are the natural rotary hoe for the soil without the damage. Ten or more worms

in 1 square foot of soil can turn over 18 tonnes of soil per hectare per year.

Generated from https://www.landscape.sa.gov.au/ki/land-and-farming/land-management-support/case-study-practical-innovation-on-the-coast on **11 November 2026**