Strathalbyn consultant Rebecca Tonkin sharing soil health knowledge with local farmers at a field day, Willow Creek May 2017

Healthy farming for the Fleurieu

A passion for soil health has brought together farmers, advisors and industry to form a new farming systems group

The problem

The Fleurieu Peninsula is a region of diversity, hosting a range of commercial and small scale horticultural, cropping and livestock producers.

Geographic and weather conditions also vary, with annual rainfalls from 400 mm to 1000 mm, soil types including acidic sandy soils and ironstone glacial soils and a range of different biotic pressures. This creates unique challenges for producers to manage.

The region has had limited independent grazing research prior to the formation of the new group, which has resulted in a gap in locally specific scientific information for Fleurieu graziers.

The approach

In early 2016 the Parawa Agricultural Bureau, the Fleurieu Beef Group and local independent farmers, researchers and consultants collaborated to develop a project looking at soil fertility and health.

This was in conjunction with Natural Resources Adelaide and Mount Lofty Ranges.

The success and farmer interest in the project led to the decision in 2017 to form a farming systems group, initially named Fleurieu Forward Farming.

The group undertook a formal governance process, leading to the incorporation of the group 'Fleurieu Farming Systems Inc', managed by a board, with Climate and Agricultural Support's Melissa Rebbeck taking on the role of communication and project officer.

"The Fleurieu now has an independent source of locally specific trials and research to benefit our farmers," Melissa said.

"While we developed the model of Fleurieu Farming Systems based on what other regions have done, we have defined a structure that is unique to suit our issues and needs."

The group has held four field days to date, including a soil health field day attended by nearly 100 farmers in May 2018.

The projects

There were six components to the Fleurieu farming project; soils research review, a replicated soil health trial, soil health case studies, a biochar trial, installation of seven soil moisture probes and soil pH mapping.

The group commenced its investigation with a review of soil health studies in the region, going back almost 50 years, and performing an analysis to identify research gaps. This, along with input from farmers, provided a base from which the group developed a plan to improve soil health.

The first key on-farm project was a replicated trial site at Willow Creek studying treatments designed to build soil health, microbial activity and supply trace elements. Pasture quality and feed test measurements were taken along with soil tests measuring chemical and microbiological properties. The trial found that biologically treated plots showed improved mineral uptake, nitrogen use efficiency and soil health indicators, compared to a control.

The biochar trial studied the effect of broadcasting biochar and fertiliser below the soil surface in Phalaris and Lucerne at Willow Creek, finding that biochar had a positive effect on both plant biomass and soil mineral content.

Soil moisture probes have been installed at seven sites across the Fleurieu, with data publicly available on its website.

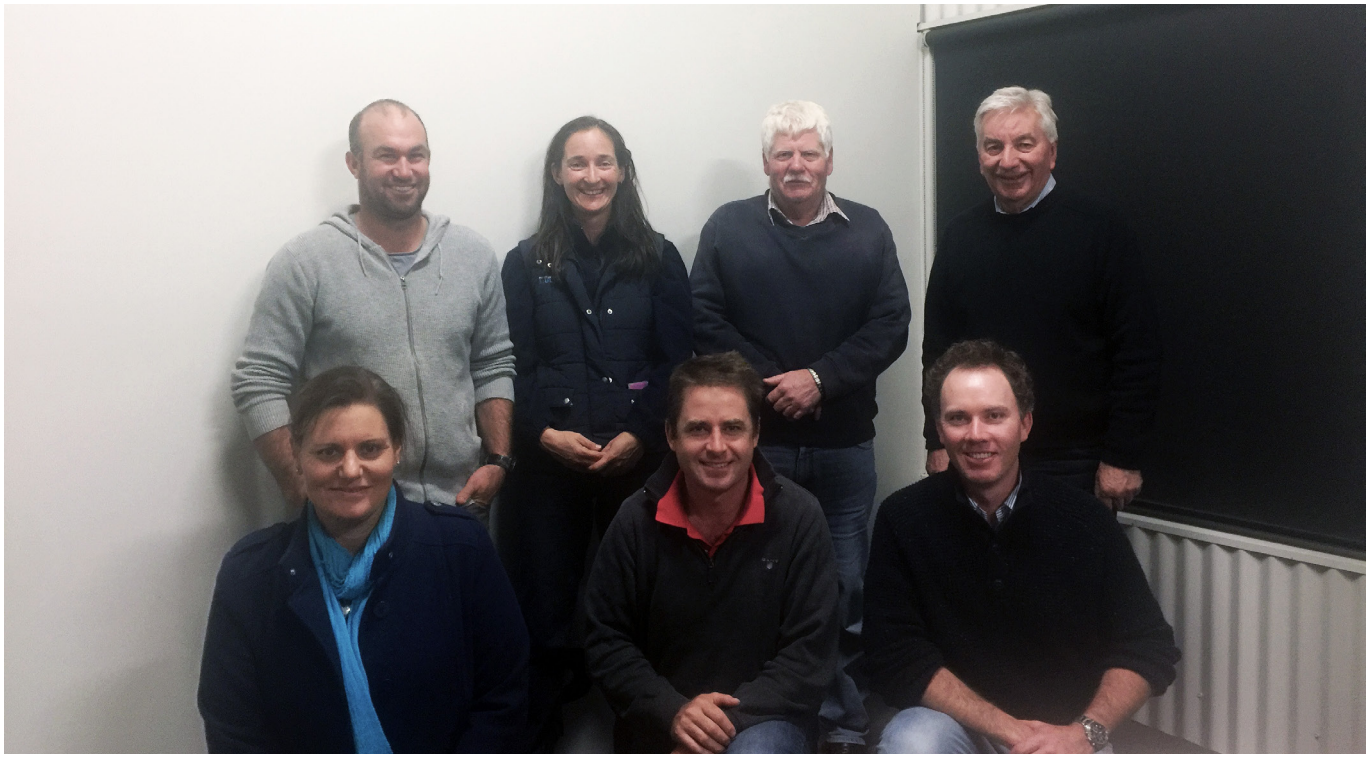
The Soils Research Review, covering almost 50 years of studies, can be downloaded from the group's website https://fleurieufarming.systems.

The website also provides information from seven soil moisture probes across the region and key findings from completed projects.

Each of these report soil moisture at five depths, plant available water, soil temperature and rainfall. Measuring soil moisture helps to indicate potential feed availability based on plant available water.

Five paired case study sites measured soil health comparing a soil health treatment with a control in an adjacent paddock. These case studies, in Delamere, Waitpinga, Inman Valley, Talamara and Parawa, demonstrated the importance of maintaining groundcover, grazing management, diversity in pasture species and biological fertilisers in supporting soil health.

In 2017, pH data and electrical conductivity were mapped, on 10 pasture paddocks in a range of locations and soil types using a Veris machine.



The Fleurieu Farming Systems inaugural board: (back) Alistair Carmichael, Alice Morley, Peter Filsell, Keith Parkes (front) Melissa Rebbeck, Alistair Just and Sandy Nott. Absent: Amy Williams and Wes Hurrell

Fleurieu Farming Systems Communication and Project Officer Melissa Rebbeck with Yundi farmer Geoff Bowles, May 2017

This demonstration tested the effectiveness of pH mapping in Fleurieu pasture paddocks. The report, available on the group's website, found that pH and conductivity mapping can be worthwhile if certain conditions are in place – for example ensuring there is adequate soil moisture.

The group has also received funding from others including Alexandrina Council, Farming Together, Natural Resources SA Murray Darling Basin, BioAg and LawrieCo, to support project work and governance, along with in-kind support from consultants such as Melissa and members of the steering committee.

The outcomes

Fleurieu Farming Systems has demonstrated a rigorous outcomes-driven approach to natural resource management research.

Driven by farmers and advisors, the group developed a strong foundation with the Soils Research Review.

After successfully collaborating on a project basis, they sought support to undertake the governance required to ensure sustainable success for the group. This will lead to improved natural resource management and productivity outcomes for Fleurieu farmers.

Where to from here

Now an incorporated association, Fleurieu Farming Systems is positioned to be a hub of locally specific trial information. The current projects will continue with results and field day events to be reported on the group's website. New projects will follow, driven by the group's board.

Sustainable industry support

This project is supported by the Adelaide and Mount Lofty Ranges Natural Resources Board's Sustainable Agriculture Industry Support scheme through funding from the Australian Government's National Landcare Progam and the NRM levy. Healthy natural ecosystems and sustainable primary production systems are fundamental to social, environmental and economic well-being.

With more than 50 per cent of the Adelaide and Mount Lofty Ranges region used for primary production, the NRM board will continue to partner with industry to increase sustainability in production systems.

Australian Government | National Landcare Program

For more information

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