



INNOVATIONS FOR REGENERATIVE LANDSCAPE MANAGEMENT

Case Studies of Regenerative Landscape Management in Practice





CARING
FOR
OUR
COUNTRY



Innovations for Regenerative Landscape Management

Case studies of regenerative land management in practice

A Soils for Life Report

© Outcomes Australia, Soils for Life Program 2012

ISBN 978-0-9871050-0-4

This work is copyright. Apart from any use permitted under the *Copyright Act 1968*, no part may be reproduced by any process without prior written permission from Outcomes Australia. Enquiries should be directed to:

Outcomes Australia
Unit 6, 24 Richmond Avenue
Fairbairn ACT 2609

This report is also available at: www.soilsforlife.org.au

Photographic Credits

The photographs in this report are sourced from *Soils for Life* files, compiled as part of case study research and site visits, as well as from images provided by our case study participants.



Foreword

It is clear to me that the challenges we face in dealing with land degradation, a changing climate, food and water security, energy demands and the needs of increasing populations are unprecedented. With a diminishing global natural resource base, including some estimates of only about 50 years of top soils remaining and with severe aquifer depletion in China, India, Africa and the Middle East, it seems obvious that we can't continue to mismanage the landscape as we have done.

It is well documented that the environment in Australia is also under increasing stress from human activity and will suffer further from the effects of climate change. Agriculture, which relies on nature for managed output is also under stress. Despite good practices of many of our land managers and farmers linked to some good science, the realities of an increasingly arid and degraded landscape with severe salinity and erosion, diminishing river flows, high evaporation rates, decreasing availability of groundwater, declining soil health and rising input costs for fuel and non organic fertilisers, will impact significantly not only on the productivity and viability of agricultural enterprises, but also on the health of our environment and the well being of every Australian.

Change is required now.

The good news is that solutions do exist in Australia. In my travels I have seen wonderful examples of individuals regenerating the landscape through various 'innovative' practices. Through good soil and water management, they shine like beacons as stunning examples of what can be, and to my mind, must be done to meet the challenges of the future. But, for all sorts of reasons, their work in successfully managing the paddock is not being widely adopted nor quickly enough.

The *Soils for Life* Program intends to give these leaders a strong, persistent voice, to show us all the compelling advantages of adopting proven high performance in landscape management. This document is the beginning of our work to encourage change in how the Australian landscape can be regenerated and enhanced to realise sustainable productivity, with consequent social, environmental and global benefits.

Our initial set of case studies cover a range of regions and land use types across Australia, developed as independent and objective evaluations. They are written to tell a story in sufficient detail of how our landscape management leaders have made the change to sustainable, triple bottom line practices. Whilst common themes are recognisable throughout their stories, each of them is different and provides a range of ideas that the next generation of early adopters can embrace.

This is a first but critically important step.

At the strategic level, we must support the example of land management leaders, with sound national policy, incentives and research, to ensure that Australia can play a leading role in providing these solutions both regionally and globally. A national, integrated mechanism appropriately supported and managed at the highest political level, must be established to facilitate the required cooperation between national, state and regional authorities.

To save the planet we must save the soils and there is not much time to do it.

Michael Jeffery AC AO(Mil) CVO MC
Major General (Retd)
Chairman, Soils for Life
September 2012





Contents

Foreword	3
ACKNOWLEDGEMENTS	6
ABOUT SOILS FOR LIFE	7
1. LANDSCAPE REGENERATION FOR OUR FUTURE	9
THE NEED FOR CHANGE	9
KEY PROCESS DRIVERS FOR LANDSCAPE REGENERATION	12
LEADING CHANGE	17
2. LANDSCAPE REGENERATION IN ACTION	19
SOIL	20
WATER	25
SUPPORTING BIODIVERSITY	34
WEED REDUCTION	34
REDUCED INPUTS	35
PRODUCTION AND ECONOMICS	36
MAKING THE CHANGE TO REGENERATIVE LANDSCAPE MANAGEMENT PRACTICES	39
COORDINATED SUPPORT	40
PRINCIPLES FOR REGENERATIVE LANDSCAPE MANAGEMENT	41
RECOMMENDATIONS	43
3. CASE STUDIES OF LANDSCAPE REGENERATION IN PRACTICE	45
1. <i>Dukes Plain, QLD</i> - Delivering continuous improvement of the farming resource	48
2. <i>Bokhara Plains, NSW</i> - Reaching the real potential of the NSW rangelands	60
3. <i>Shannon Vale Station, NSW</i> - Weed control without herbicide is not a load of bull	68
4. <i>Beetaloo Station, NT</i> - First add water	76
5. <i>Three Rivers Station, WA</i> - Restoring the Gascoyne rangeland – commitment, cooperation and hard work	84
6. <i>Clover Estate, SA</i> - Turning sand into fertile soil with applied soil science	96
7. <i>Jillamatong, NSW</i> - Don't measure success by the size of your herd	102
8. <i>Gunningrah, NSW</i> - Shifting mindset from animals to the land	112
9. <i>Lana, NSW</i> - Partnering farm animals to regenerate the land	120
10. <i>Tallawang, NSW</i> - Productive greener pastures through restoring landscape hydrology	128
11. <i>Talaheni, NSW</i> - Reducing dryland salinity and achieving resilience by design	136
12. <i>Winona, NSW</i> - Pasture cropping the way to health	144
13. <i>Milgadara, NSW</i> - Putting life back into the soil - humus compost	152
14. <i>Inveraray Downs, NSW</i> - Higher quality food through regenerated soils and reduced inputs	160
15. <i>Briandra, VIC</i> - Using raised beds and beneficial fungi to restore soil health	166
16. <i>Prospect Pastoral Company, WA</i> - Against all odds: turning sand into profit	172
17. <i>Pine Lodge, VIC</i> - The influence of effluent - the power to do good	180
18. <i>North East CMA, VIC</i> - Empowering farmers to meet the soil carbon challenge	188
19. <i>NRM South, TAS</i> - Working with the willing	198
Endnotes	208
Glossary and Acronyms	210



ACKNOWLEDGEMENTS

This report is based on the differing and varied experiences of the Soils for Life Phase 1 case study participants in their individual approaches to high performance regenerative landscape management. The narrative presented in the report is a tribute to the work of the Soils for Life research and interview team in researching and telling the inspiring stories of these capable and committed people.

The Soils for Life team is extremely grateful for the openness and hospitality shown by each of the case study participants visited and their generosity in providing photographs and data included in this report.

The Soils for Life Program, Phase 1, has been supported by funding provided by the Commonwealth Department of Agriculture, Forestry and Fisheries (DAFF), *Caring for Our Country* initiative, and by the hard work and dedication of our many friends and supporters.

We acknowledge and thank the:

- ◆ Soils for Life Board
- ◆ Kioloa Conference of 2009
- ◆ Case Study Selection Panel
- ◆ Case Study Participants
- ◆ DAFF *Caring for Our Country* staff
- ◆ Soils for Life Program Office Staff
- ◆ Quality Assurance Auditor, D. Hilley, Price Waterhouse Coopers
- ◆ Soils for Life web site team
- ◆ many friends and volunteers of Soils for Life

And in particular, the:

Soils for Life Technical Support Network, comprising:

- ◆ B.F. Davidson, BSc (REM)
- ◆ Em. Prof. I. R. Falconer, AO, PhD, DSc, FRS Chem
- ◆ W. Jehne, BSc (Hons), MSc
- ◆ N.E. Marcar, BScAgr, MAgSc, PhD
- ◆ J.J. Walcott, BScAgr, PhD, FAIAST

Case Study Researchers and Interviewers, including:

- ◆ E. Gorny
- ◆ S.C. Gould, BSc, MA
- ◆ J.A. Leggett, BA (SocSc), MPA, AdvDipPM
- ◆ J.R. Letts
- ◆ D. McDonough
- ◆ S. Ogilvy, BSc, MBA
- ◆ M. Parsons, DipFor, BForSci, MAppSc
- ◆ Adj. Assoc. Prof R. Thackway, BSc, MSc

ABOUT SOILS FOR LIFE

Purpose

Outcomes Australia's Soils for Life Program is an environmental organisation with the principal purpose of *enhancing the natural environment through the provision of information and education on innovative leading performance in managing Australia's natural environment, with a particular focus on the Australian rural landscape.*

Objective

To facilitate positive and sustained change in how the Australian landscape is managed to ensure a thriving natural environment for the benefit of all Australians.

This objective will be achieved through three phases.

- ◆ **Phase 1:** Identify leading practice in landscape management through documenting, demonstrating and promoting those practices.
- ◆ **Phase 2:** Address the impediments to the wider adoption of these leading practices.
- ◆ **Phase 3:** Encourage the adoption of these leading practices as the norm across the agricultural landscape in Australia, setting a positive example for others.

The Program is expected to take up to 15 years to complete. This document contributes to the achievement of Phase 1.



