

ADDRESS BY

**MAJOR GENERAL THE HONOURABLE MICHAEL JEFFERY,
AC, AO(Mil), CVO, MC (Retd)**

AT THE TALKIN' SOIL HEALTH CONFERENCE

**DALWALLINU RECREATION CENTRE, MYERS STREET,
DALWALLINU**

"KEY LESSONS LEARNT"

TUESDAY, 13 MARCH 2018

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**KATANNING LEISURE AND FUNCTION CENTRE, PEMBLE STREET,
KATANNING**

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THURSDAY, 15 MARCH 2018

- Thank you for attending this session – I hope our story at Soils For Life can inspire you. I'm representing our Soils For Life Chief of Staff, Natalie Williams who is absent on family matters this week

SLIDE 1 – Aussie farmers taking action

- This is a story about the growing momentum in Australian agriculture towards regenerative agriculture
- Often, new regenerative practices have been adopted in the face of farmers reaching some crisis point in their lives; perhaps a failure of crops and pastures, increasing debt issues, or a realization that they can't continue using their current system of landscape management. We have tried, I think quite successfully to record those stories and the actions farmers took to improve their situations

SLIDE 2 – Soils For Life

- Thus it was that I founded Soils For Life as a non-profit organisation designed to encourage the wide adoption of regenerative landscape management practices, to restore landscape health and in the process produce quality and nutrient-dense food and fibre

SLIDE 3 - Solutions

- As mentioned this morning, whilst Australia has some land and water degradation problems we also have the solutions through innovative farmers backed by good science
- These solutions involve:
- regenerating degraded landscapes through all year round top cover (green for as long as possible), no till, pasture cropping, rotational cropping, controlled cell grazing, slowing down water, repairing riparian zones etc and by ensuring more resilience in the face of increasing climate variability to provide clean, green food and fibre on a sustainable basis
- In the process, we have seen increased 'natural capital' value of farming landscapes

SLIDE 4 – Our Strategies

- As mentioned this morning, this is what we do
- First, we define the global imperative – John Hartley
- I see a big global train smash, through soil, water and food insecurity
- Countries like India, China, sub-Saharan Africa and the Middle East are facing big problems, with the rapid reduction of water from finite aquifers, loss and degradation of arable land, and an overuse of chemicals, pesticides and inorganic fertilisers
- Then we demonstrate that whilst Australia has issues with agricultural land degradation, very importantly we've also got the answers
- These answers provide the second arm of our strategy where Soils For Life focuses on fixing the paddock. Our third priority is to fix the policy and I spoke this morning about the very positive developments on the policy front with the Report I have provided to the Prime Minister. (Explain his response)

SLIDE 5 – Case Studies tell the story

- Our Case Studies tell the best stories
- In 'fixing the paddock' we have established 21 Soils For Life case studies of leading agricultural best practice across a range of agricultural enterprises and established a proven farmer to farmer mentoring program.
- Soils For Life is now rolling out the next phase to 100 case studies over three years to embrace all agricultural types and geographic locations in Australia. (Explain process – EOI, narrative, base measurement, annual Open Days, mentoring, costs about \$110K per case study start up)
- Let's now have a look at three such case studies

SLIDE 6 – Three Rivers Station

- *Three Rivers Station* is located at the headwaters of the Gascoyne River in the rangelands in the mid-north

- These rangelands are vast areas of lands from the headwaters and catchments of major rivers including the Gascoyne and the Murchison
- As a result of decades of heavy grazing practice, the rangeland perennial grasses have steadily declined, causing surface damage, and the fragile topsoil was exposed and vulnerable to the variable climate and occasional, but quite extreme rain events
- (I'm sure this is familiar territory for many of you here)

SLIDE 7 – Three Rivers Station

- Dramatic action was triggered at the 2003 muster when the family observed that the cattle did not look as good as they thought they ought to, given the amount of feed that appeared to be on offer
- They made the decision to remove all the mustered cattle from *Three Rivers* and to de-stock the property
- To this day Graham Forsyth is convinced that if he had not done this, many of the cattle would have died the following summer, even if heavy weaning was carried out
- This courageous act was initially costly to the family both in direct costs and lost opportunity from the pastoral lease

SLIDE 8 – Three Rivers Station

- The Forsyth's priority for helping the soil recover its health is to slow down the flow of water on the landscape so that it soaks into the soil
- The reduction in grazing pressure to very light grazing has already resulted in vegetation re-establishing in some of the better areas, such as where healthier, protected soils hold seed banks of perennial grasses
- The Forsyths have also trialled and developed "water calming" interventions, starting at the erosion source areas and working downstream. The results are compelling...

SLIDES 9, 10, 11 – Three Rivers Station

- The combination of completely de-stocking, initially foregoing revenue, plus perennial pasture, water interventions, and rotational grazing has resulted in clean,

green and healthy livestock

- The pictures tell the story...

PAUSE

SLIDE 12 - Gunningrah

- On the other side of the country, the Maslin family has managed *Gunningrah* for 100 years
- At 4200 hectares, it's located at the southern end of the Monaro Tablelands of south-eastern New South Wales

SLIDE 13 - Gunningrah

- The Maslins identified an opportunity to make the most of the rainfall they received
- They found that the health of watercourses could be significantly restored by slowing the rate of water flow, especially after rain, by a series of physical interventions in the landscape – leaky weirs and contour banks

SLIDE 14 - Gunningrah

- The cell grazing method they chose to adopt involves dividing the land into an increased number of smaller paddocks which are intensively grazed for short periods, followed by sufficient recovery periods to allow pasture to regenerate

SLIDE 15 – Gunningrah

SLIDE 16 – Ground Cover Improvement

- As a result of the new practices, the ground cover improved from 70% to around 85% in the first five years
- In 2011 some areas had close to 100% ground cover
- Gunningrah's native pastures have increased substantially

SLIDE 17 – Soils For Life

- While our Soils For Life work is fundamentally about soil, water and plant regeneration, our program has now become a long term data, information and research base with a proven mentoring program
- This farmer to farmer mentoring means farmers have personal access to leading practices on soils, water and agriculture in general

SLIDE 18 – Soils For Life - Evaluation

- When we go onto the farms, we evaluate soil carbon and nitrogen levels, soil water retention, innovative techniques and equipment and the triple bottom line of social, economic and environmental performance, as part of a new, comprehensive natural capital assessment, now being actively supported by the NAB

SLIDE 19 – Soils For Life – Measuring Soil Carbon

- One of the most important requirements of our work is to find the means to measure soil carbon levels quickly, accurately and cheaply; as a key indicator of a healthy soil
- Soil carbon helps support a healthy balance of nutrients, minerals and soil microbial and fungal ecologies, and enhances the ability of the soil to hold water – 8 to 1 ratio
- Across the Australian dry land cropping and grazing sector, most actively farmed soils have a carbon content of 1.5% or less, yet to deliver its myriad of benefits, the soil carbon levels for quality agriculture should be around 3% to 5%
- We're very proud of the work we do, and we're steaming ahead...

SLIDE 20 – Brownlow Hill at Camden, NSW

- Our third example, where we are currently applying our performance measuring disciplines of social, economic and environmental performance is at *Brownlow Hill*, near Camden on the outskirts of Sydney

SLIDE 21 – Brownlow Hill

- It's one of Australia's most significant early agricultural and settlement sites for research and development for more than 200 years

- There were originally four dairies on the property and three continue to operate, one under lease to an organic milk producer
- This is a wonderful research project for us - monthly reports and rainfall measurements have been collected since May, 1882 and from the Bureau of Meteorology from its foundation in 1908
- Over the years, Brownlow Hill became a North American Holstein stud of high repute and high productivity

SLIDE 22 – compacted soil

- But in the mid-1980s, the Downes family had compacted soil and the more they cropped and the more milk they produced, the more nutrients were being taken away in the milk tanker or running into the river
- Their constant tillage was damaging the soil, and damaging the budget – fuel, fertiliser and spraying was becoming increasingly costly
- It was time for change...

SLIDE 23 – natural fertilisers

- From 1985, they started to use natural poultry and then horse manure instead of synthetic fertilisers and installed sub-surface drip irrigation
- The cropping intensity was reduced and more land was devoted to lucerne for the dairy herd and for sale as hay
- The turning point was the incorporation of infrastructure changes to the land to control the flow of water, resulting in better retention of water in the soil
- One of the most outstanding developments on Brownlow Hill was the introduction of BioBanking. Brownlow Hill became the pilot for this program initiated by the NSW Office of Environment and Heritage

SLIDE 24 – Painting of Brownlow Hill

- It meant that the rarity of remnant Cumberland Plain Woodland in this area very close to the Sydney urban sprawl has diversified and survived. The Downes family has been able to resist developers (and the State Government itself) and has

prevented the destruction of this threatened ecological community while at the same time, realising their least productive agricultural land has become their most valuable asset

SLIDE 25 – wetland at Brownlow Hill

- We're currently undertaking a comprehensive examination of major elements of Brownlow Hill's successes and will be publishing that case study soon
- It will make fascinating reading and I hope it will become a case study for the Australian Soil Network and/or the CRC on superior soils

SLIDE 26 – Soils For Life

- In summary, this has been a snapshot of three farming stories, from the big country here in western Australia, to the plains of the Monaro, and the outskirts of Sydney
- There are, of course, many more success stories on our website – www.soilsforlife.org.au - and more about to be told.
- Our aim is to have 100 case studies by the end of 2020, providing a long term research base which will prove that transitioning from conventional agriculture and understanding what your farm really needs, will yield results
- It's a lot of work and we have a wonderful team of people devoted to working with farmers to produce great results
- Have a look at our website and our Facebook page, get in touch, ask us questions
- We do have the answers!
- Let me quote from Franklin Roosevelt – “the nation that destroys its soil, destroys itself”
- And “To save the planet, save the soil”
- Thank you for listening