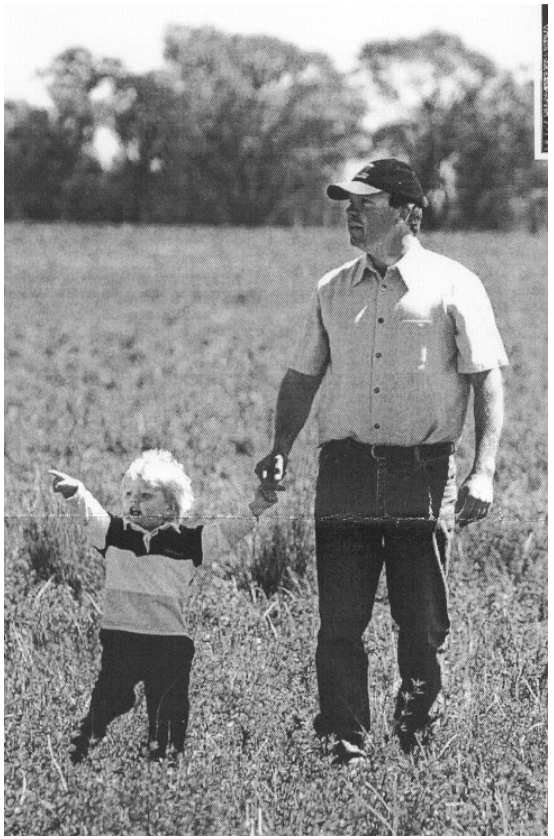
If you think…..

An internet seminar on constructive Agricultural

by Bruce Maynard

If you think….that there must be superior ways to produce food….

- Today's introduction is about thinking on Constructive Agricultural Methods-
  - On-farm practices at "Willydah" with Bruce Maynard
  - Layers in the landscape- a more complete picture
  - No Kill Cropping
  - Stress Free Stockmanship
  - Self Herding
  - Grassland Grain



"The agricultural industry swamps farmers with what to do rather than how to think."

Bruce Maynard and Willydah farm History

- Five generations on Willydah- near Narromine, NSW
- Traditional Crop/Wool/Cattle/Pig Producers
- Found ourselves working harder and harder to stay in the same spot.
- 7 year Rotation- 4 yrs Lucerne, 3 yrs Crop.
- Every year we were steadily consuming more, working more and enjoying it less.

What it used to be like……..

Direct drilling, Lucerne rotations and chemical sprays.

Thinking we could combine lots of methods…..

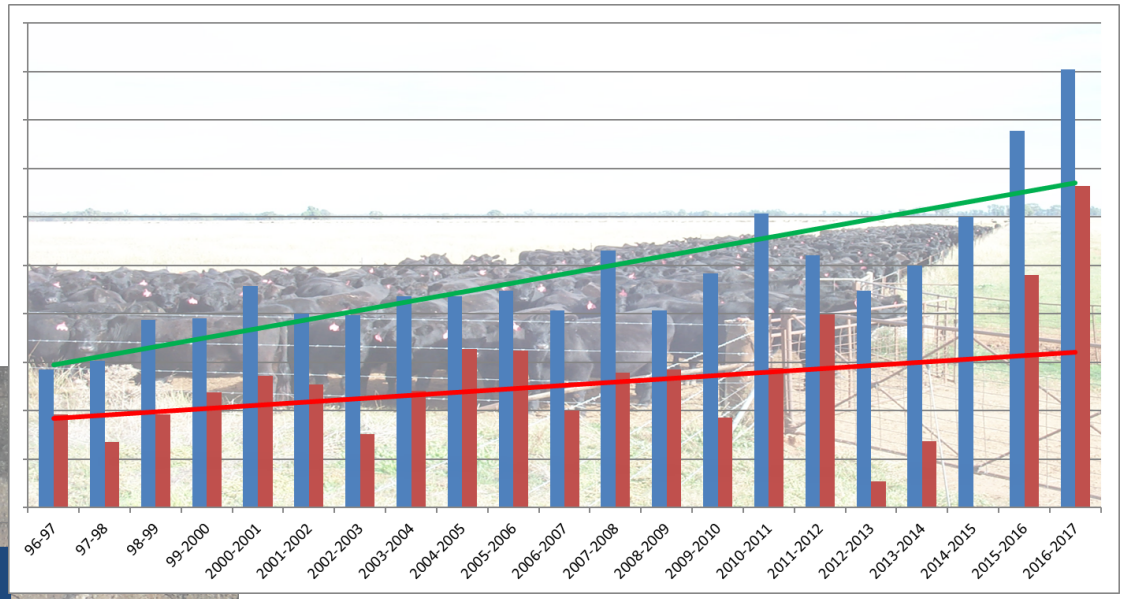
Saltbush Block Plantings 1990
Whole Farm Plan 1991
Time Control Grazing 1994
Access Laneways 1995
No Kill Cropping 1996
Holistic Resource Management 1997
Alley Farming 1998
Stress Free Stockmanship Methods 2000
Whybother Treeplanting Method 2001
Direct Tree Seeding 2001
Advance Tree Seeding 2002
Agroforestry Treeplantings 2002
Target Saltbush Plantings 2004
Spiral Saltbush Plantings 2005
Carbon Tree Plantings 2007
Multi species grazing 2008
Locally adapted livestock breeding 2009
Self Herding 2014
Medicinal Shrubs 2013
Grassland Grain 2016

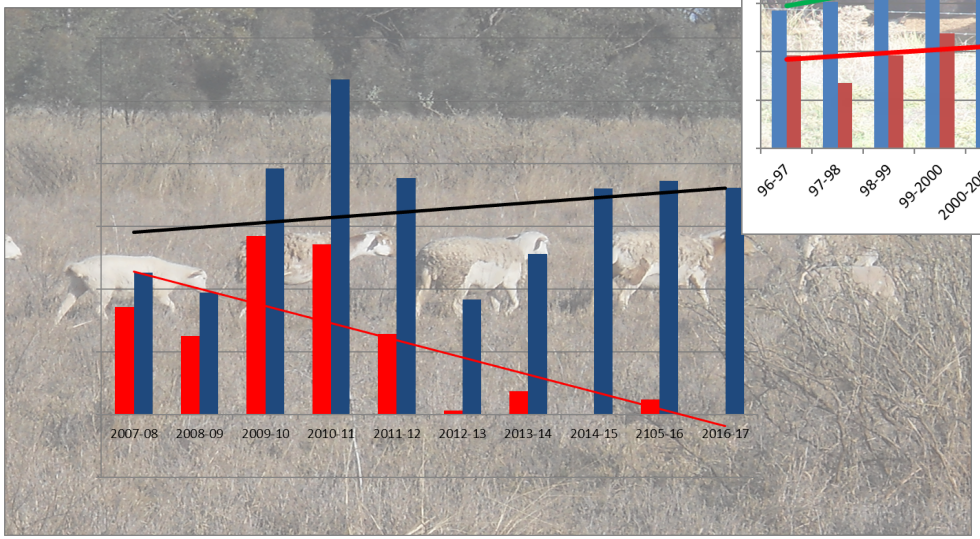
If you think you can reduce inputs and impacts and increase benefits- you can

Management	Then	Now
Pasture Fertiliser	Little added	None added
Cropping Fertiliser	Small amounts	None added
Fuel Use	Increasing	80% less
Chemical	$40,000 in 1996	$250
Animal Health	Dip,Drench,Needle	Destress only
Machinery Capital	Full plant list	Minimal equipment
Time required	3 full time	1/3 full time
Animal Production	3700 dse average	14,500 dse average
Crop Production	1200 tonnes- commodity grade	500 tonnes- niche market grade
Soil Carbon	Depleting	Increasing
Profit	Declining	Accelerating
Perennial Grasses	Few	Many
Shrubs	Few	Planted 320,000
Trees	Declining in number	Planted 110,000
Groundcover	Low-45-80%	High 75-100%
Property appearance	Slowly declining	Rapidly improving
Enterprise number	10 +	4
Disturbance	Very high	Very low
Fun	Declining	Increasing

Business indicators for a constructive farm

- Increasing margins along with increased carrying capacity and all with lower inputs.
- Agroecological thinking must be combined with business improvement.





The Soil has changed

Side by side comparison our soil on right.
Changes in the soil are evident to great depths.

Water cycles have improved

Thinking from the checkerboard to an artists palette

Past views on landscapes usually emphasise using distinct areas for distinct purposes.

It is possible to intermix all land uses and benefits at the same time.

Thinking of Layers In The Landscape

- Shrub and tree layers can be added without subtracting from the grass/forb productivity.

Adding without removing

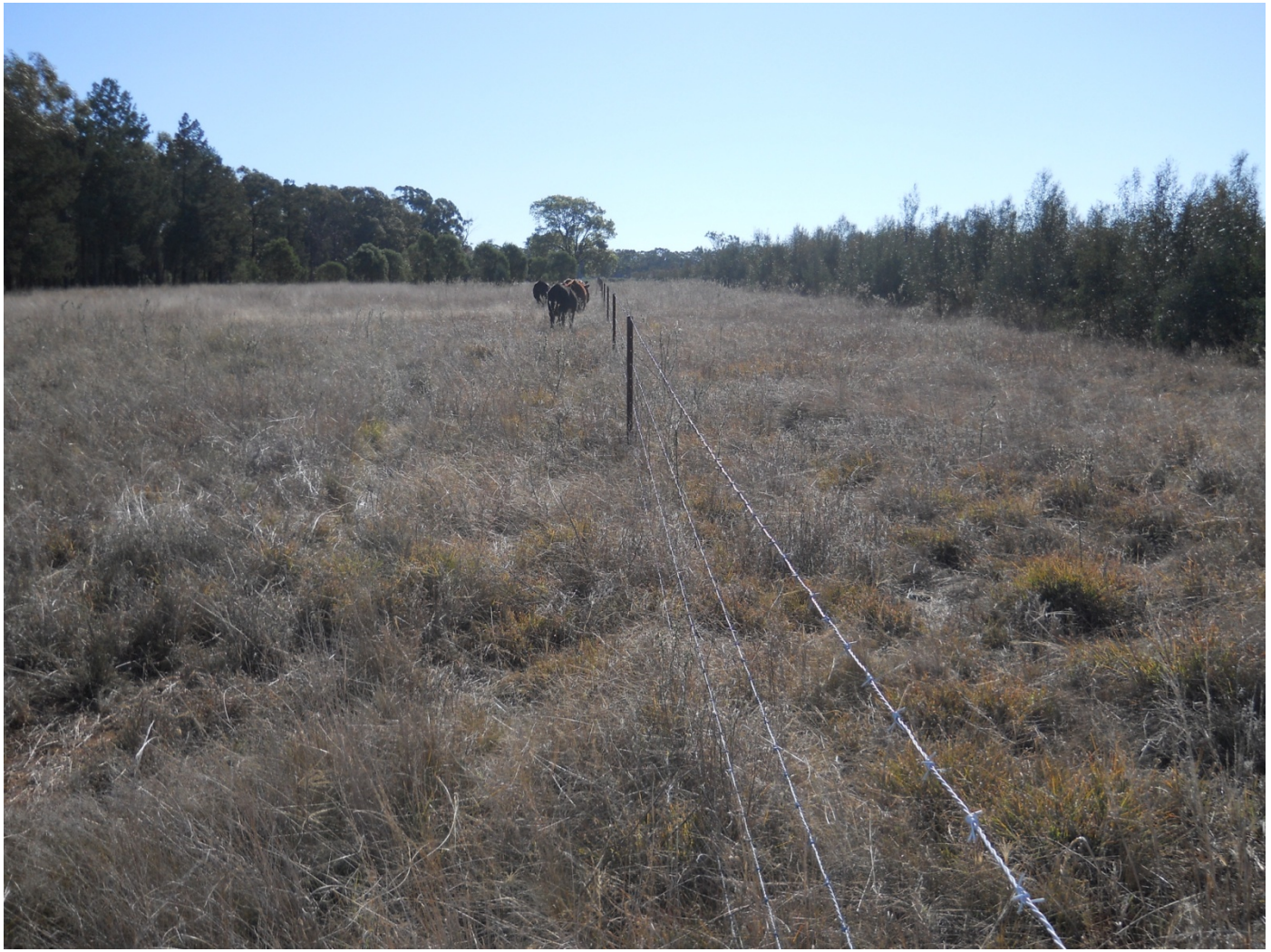
Alley Farming Layouts allow shrubs and trees to be added without sacrificing grassland production

Regeneration Areas

- 15% of the property is in “Core Conservation” areas.
- These are refuge areas for plants and animals that need little grazing disturbance.

Grazing and wildlife areas

Adding trees to enhance production and diversity at the same time.



Production and conservation together

Agroecology designs for diversity.

Future production landscapes can operate with the 4 layers of the landscape present.

This will provide the maximum natural function and optimum production capacity.

Curves add microhabitats and microclimates. Same investment as straight lines but much greater returns.

Increasing production with Trees

- 120,000 Trees planted for Carbon Credits, regeneration areas and production.
- The trees have more benefit than just the $ generated- deep shade, shelter and greater diversity.

Access laneways for impact control

- This is ‘controlled traffic’ for both livestock and the vehicles.

Livestock can increase diversity

Initiating learned behaviours to further increase diversity and utilisation.

Just moving them around is not sufficient.

Thinking for more diversity……

Higher level organisms tell us about the diverse food pyramid that supports them.

Thinking beyond our farm……

- Worldwide existing agricultural methods are showing:
  - reduced diversity, ⬇
  - contracting communities, ⬇
  - declining profitability ⬇
  - decreased nutrients ⬇
  - increased inputs ⬆

Thinking of solutions with large impacts

- Stress Free Stockmanship

- No Kill Cropping

No Kill Cropping

- Self Herding

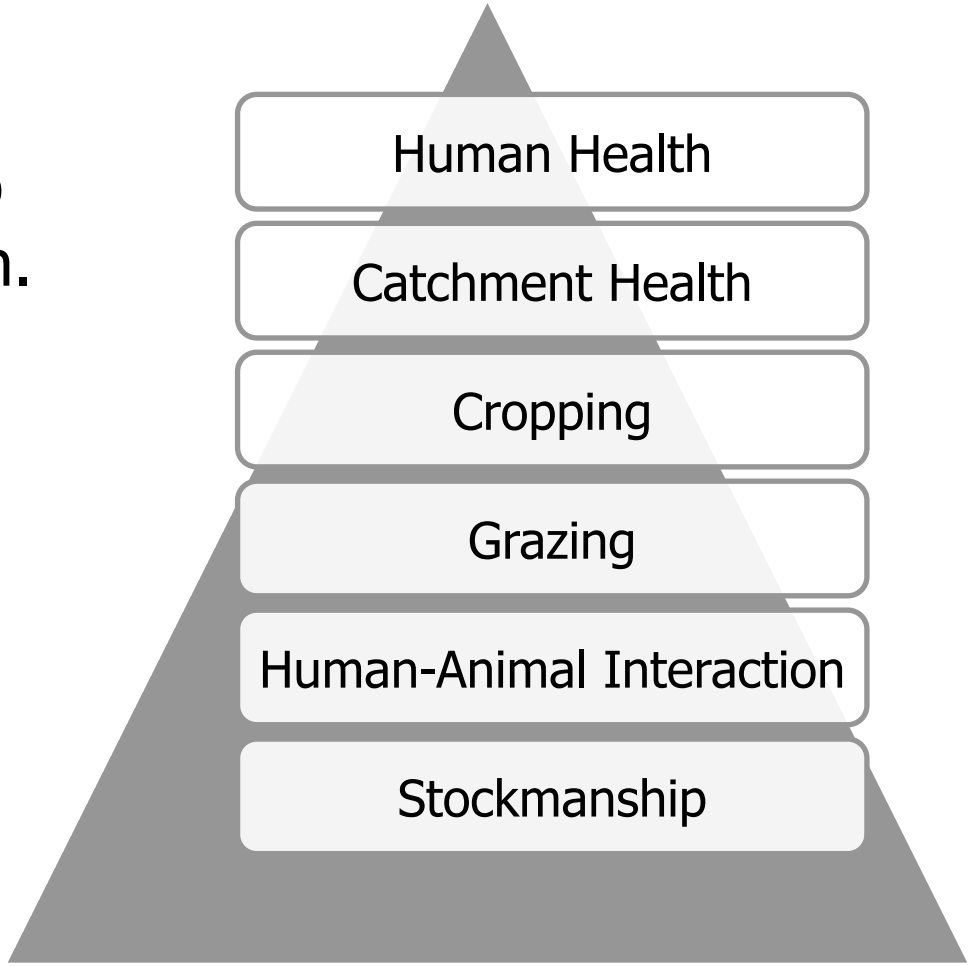
Bruce Maynard's and Dean Revell's
Self Herding

- Agroecology

Grassland Grain™
How it's produced makes all the difference.
Grassland Grain

Our actions determine our health.

- Our thinking and actions with animals across landscapes relink back to our own long term health.



Stockmanship is a foundation for grazing

- Animals that carry low levels of Stress will tend to avoid areas of:

  Novelty

  Difference

  Difficulty

The feed value of any plant in your grasslands depends upon…

Voluntary Feed Intake

and

Nutritive Value.

We can influence Voluntary Feed Intake by de -stressing our animals.

Thinking Stress Free Stockmanship

- Principles and practices that allow handlers to let animals exhibit their natural behaviours.
- It is not training or taming.
- Aimed at:
  - building resilience into animals for them to recover quickly from stressful events,
  - exhibit their full range of behaviours

The 4 Levels of Livestock Behavioural Management

- Raising the bar of livestock management.

Dean Revell, Bruce Maynard, Self Herding

Bruce Maynard Stress Free Stockmanship

Bud Williams Low Stress Stockhandling.

Temple Grandin, Yard Design

Sophisticated Ethology (including Stress Free Stockmanship and Self Herding can bring….

- Weed Eating behaviours in livestock.
- Performance increases up to 34%.
- Reduction in medications of 90%.
- Increases in reproduction of 12%

How can you get your animals to eat weeds?

- **Create the conditions for animals to express an expanded range of options.**

- Animal behaviour changes all the time- and in large ways.
- Every plant brings different nutrients in different amounts at different times to the surface.
- Behaviour changes consumption which changes physiology which affects the genome.

No Kill Cropping
What is it?

Cropping without killing.

Farming without harming.

- Sowing crops into grasslands and retaining all the functions and organisms.
- A cropping system apart from all others- it does not use simplification strategies.

No Kill Cropping
What is it?

No Kill uses companion plant theory – not competition plant theory.

NO FERTILISER

NO HERBICIDES

NO PESTICIDES

No Kill Cropping What Is It?

- No Kill provides the crop with the headstart over germinating weeds and that is sufficient to allow effective growth.

No Kill Cropping

- You can yield crops without simplifying the grasslands

No Kill Cropping

- Western Australia- reclaiming scalded areas- comparison.

No Kill Cropping

No Kill Cropping

No Kill Cropping

- Graze the crop when growing, at maturity or after harvesting.

No Kill Cropping for weed control

- Adding a high nutrient/low toxin plant.

No Kill Cropping

- From Vineyards to Tree Seeding to Free Range Chooks the uses of NK to magnify other techniques allows all sorts of improvement.

Self Herding

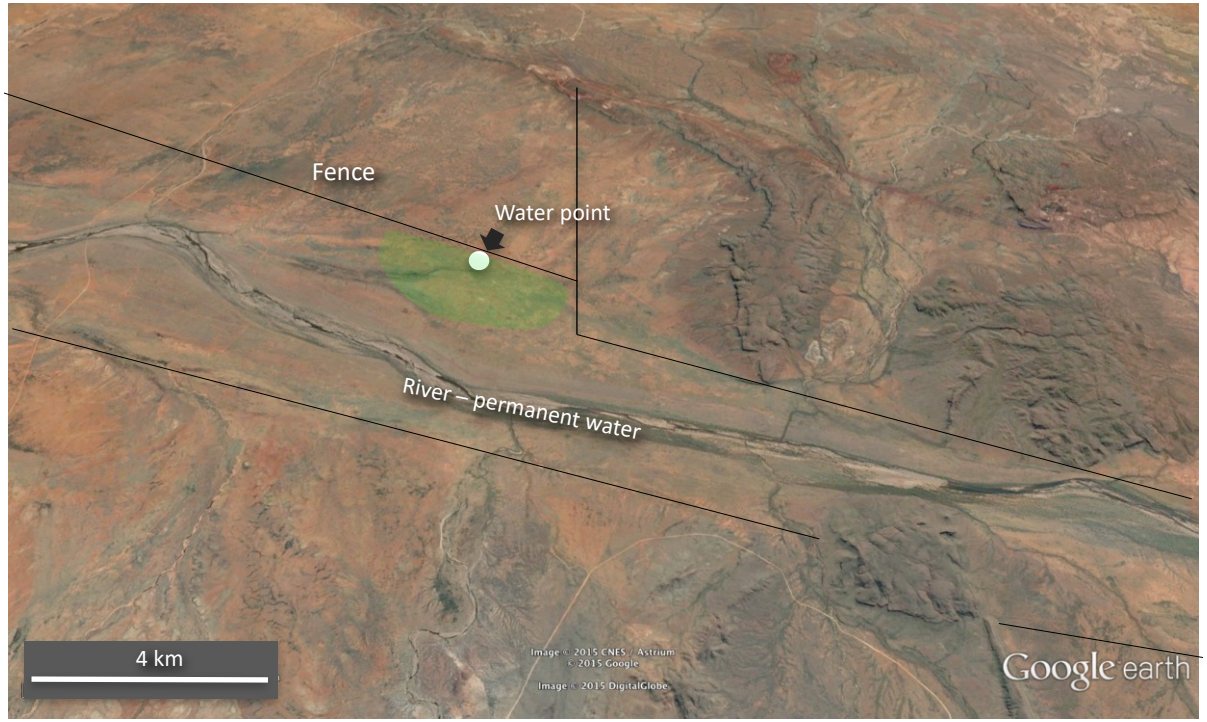
- Moving animals around the landscape without force.

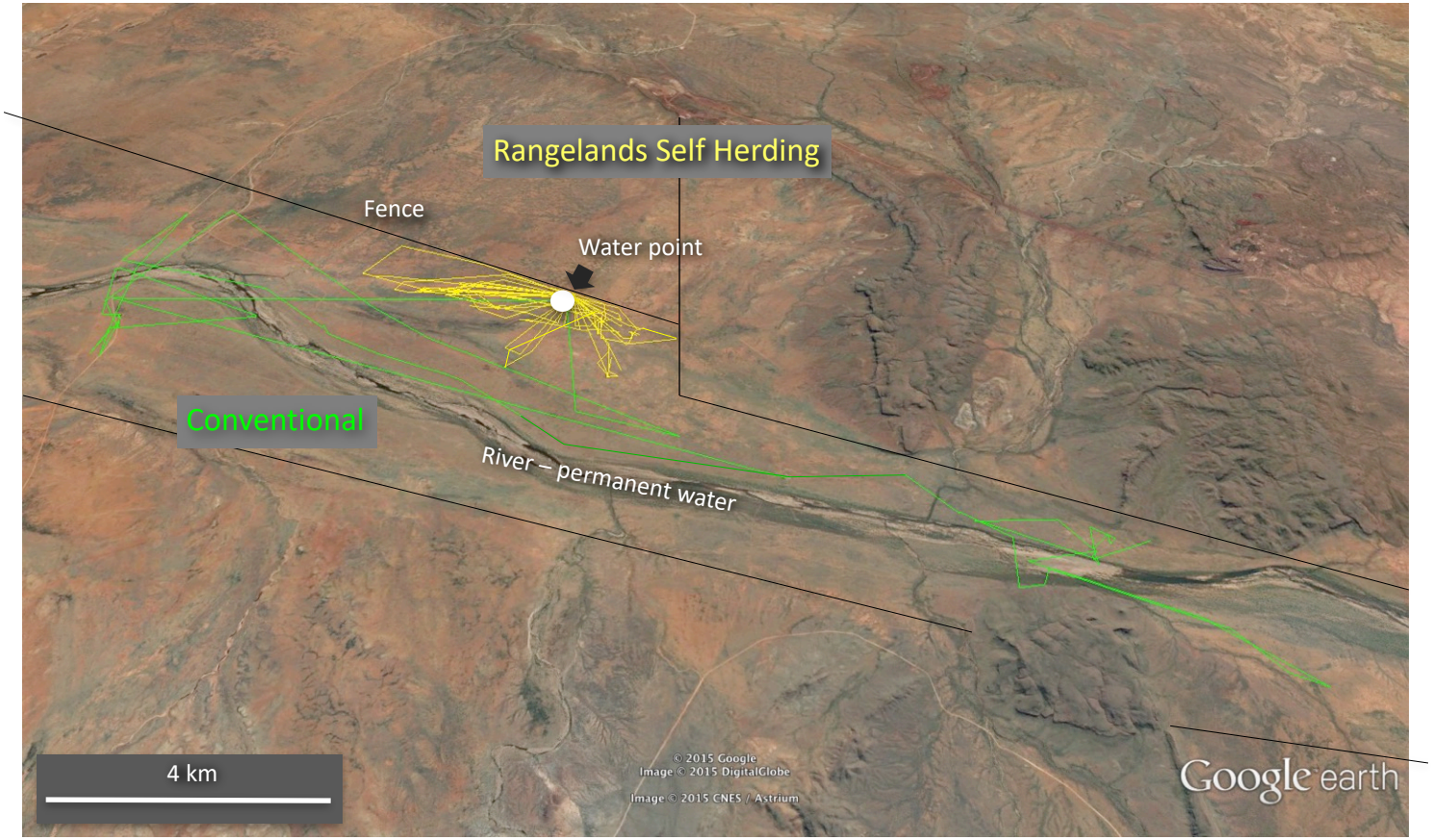
Maynard & Revell
Self Herding
& Self Shepherding

The bigger picture- toward a: Win-Win-Win

- Animal behaviours are the key link toward combined future results of increased production and increased landscape function.
- Livestock are the modern 'Megafauna" that link us back to the first Australians around 47,000 years ago.
- Animals are a tool that is spread across the landscape- we can choose to guide that or not.

Redistribution of grazing- Pilbara, WA




Rangelands Self Herding
Fence
Water point
Conventional
River – permanent water
4 km
© 2015 Google
Image © 2015 DigitalGlobe
Image © 2015 CNES / Astrium
Google earth

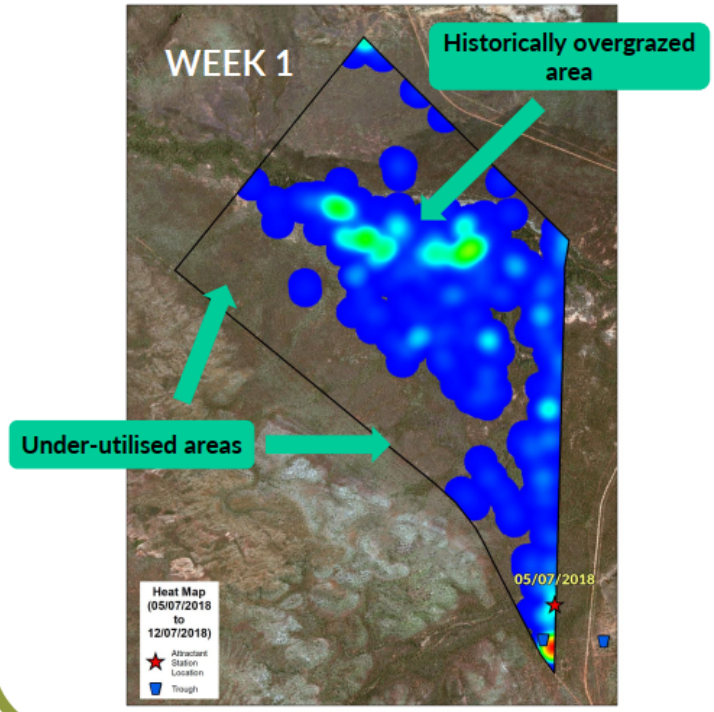
Self Herding- Herd Effect by choice – not force

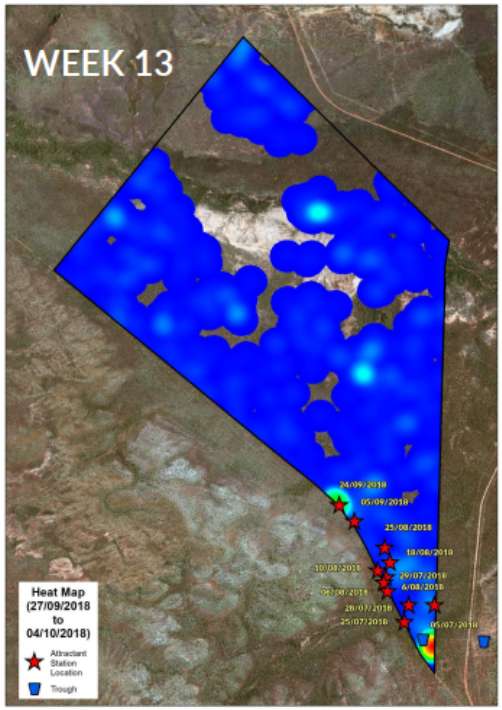
1 year later

Controlled impact + rest = new grasses adding diversity

Self Herding in NT- Kidman Springs Station

GPS “heat maps” show that Self Herding techniques have influenced grazing patterns





Self Herding at Kidman Springs, NT

- The animals are using areas not used before.

Not either/or **but** both……..

- By changing behaviours we can increase diversity and production simultaneously.

The Dining Boom

Grassland Grain™

How it's produced makes all the difference.

Grassland Grain

- An emerging and strengthening consumer trend- the desire for food produced differently and more satiating.

If you think you'd like to know more:

- Follow or get involved in the progress via these links and sites:

No Kill Cropping

The Constructive Farming Co-operative Ltd

Bruce Maynard's and Dean Revell's
Self Herding

Grassland Grain™
How it's produced makes all the difference.

Stress Free STOCKMANSHIP

compost buddy

Grassland Grain

Youtube: "Regenerative Farming" channel or email: brucemaynard@bigpond.com