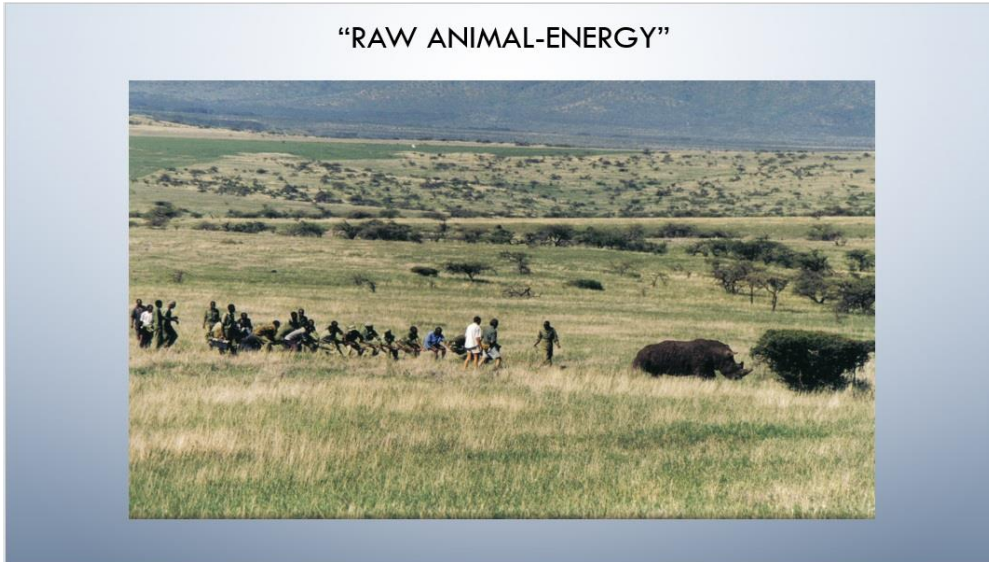


Without first WATER-SECURITY, there can be no BIOSECURITY!

Slides and commentary from a PPP prepared for the GROUNDED Conference in Tasmania.

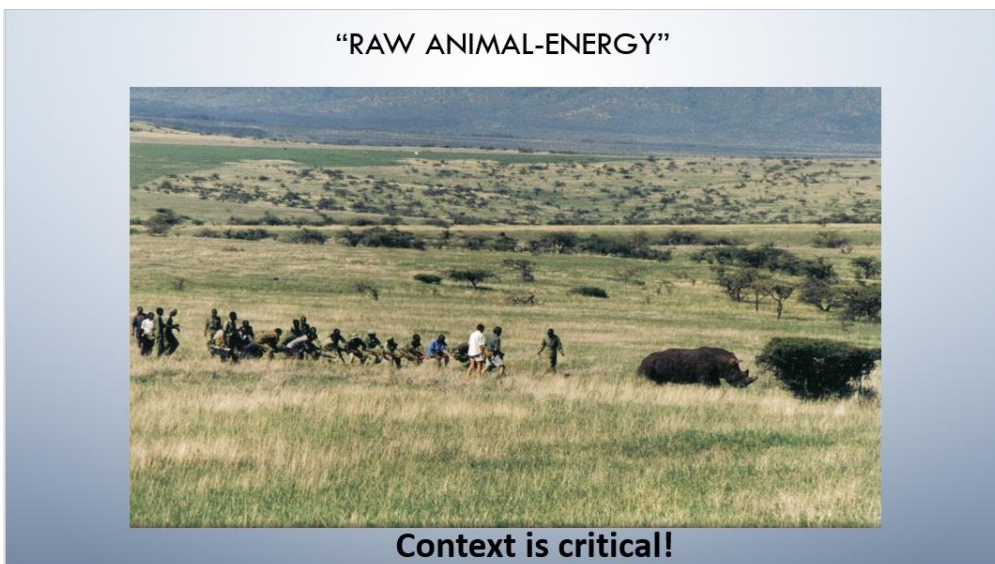
Chris Henggeler, Kachana, Kimberley, Australia, December 2024

1.



What advice do we give here?

2.

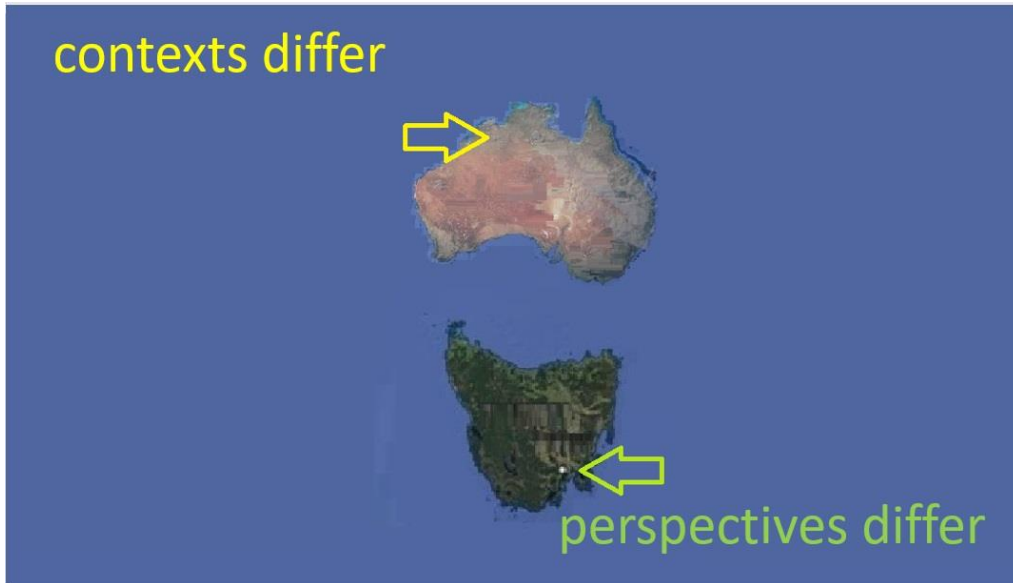


Context often allows us to step up to levels of conscious incompetence.

Curiosity (not certain knowledge) **needs to drive science.**

Allowing for context, we are able to ask better questions.

3.



I've always wanted to visit Tasmania.

I was waiting for a combination of drought and heatwave.

Then Matthew asked me if I was interested in sharing some of my observations

So here I am, and I thank you all for contributing to [a shared learning experience](#).

From a Tasmanian perspective, WATER-SECURITY might not seem such a big deal.

But what if that island to the north is actually a whole lot larger than we think it is?

And what if it were to further dehydrate?

Might that impact Tasmanian weather-patterns?

In this session I will present a Kachana perspective of things in Australia's backyard.

To get us all onto the same page I'd like to show a six-minute video-clip.

4.



➤ . [Six-minute introductory video: Talkin' Soil Health](#)

5.



What do we do when we have an ambition, but recognize that we are dealing with forces far greater than we can control, or perhaps even anticipate?

My experience has been that **fighting or attempting to subordinate nature can only ever be a short-term strategy.**

I have no idea to what extent city-based cousins can relate to what it really feels like, to be sandwiched in between modern civilization and an untamable geosystem.

Life is all about relationships.

When dealing with forces of nature, it is wise to first recognise how small and insignificant we really are. A whole wet season in a camp on Kachana can do that for you. – We've enjoyed over 30. With a sense of awe and humility we attempt to work with the nature of what confronts us.

As my sister did with elephants, we as regenerative managers of land attempt to work **with** what is out there.

6.



A whole industry is already positioned to act.
Sadly it has not been given the green light.

As custodians and land-managers we are confronted by an ongoing juggling act.

As pastoral innovators, who have been on the front line since 1992, we remain painfully aware how easy it is to mess up.

Those of us who have built deep connections to the land, juggle primarily on behalf of our great grandchildren.

What will be good for my great grandchildren, ought to benefit everybody's children and grandchildren.

Twenty years ago, the science began catching up.

Today it is safe to say that the science has caught up.

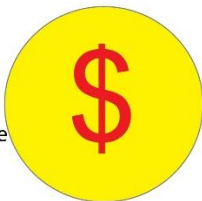
This does not mean the science is settled... the science is never settled... and **academia must never stop testing anything that is being challenged by new evidence.**

Science merely offers us a process to move forward more confidently whilst alerting us to where extra caution might be called for.

7.

Ball No. 3

justification of time
and capital
invested



As the saying goes: We cannot be green when we are in the red.

(Ball No. 3) - For me this means the justification of time and capital invested in Kachana since 1985

Opportunity-cost is by far our greatest expense.

Where there is a will, there is a way.

Off-farm income has largely payrolled my learning-curve.

Given Kachana's unique context, management will need to be holistic.

In this sense I am a Savory scholar.

However, I remain quite prepared to look at any decision-making process that is as good or better.

The direction that I am favouring, is Joel Salatin's "fiefdom-model".

To anybody planning succession, I highly recommend Joel Salatin's book: **Fields of Farmers**

8.

Ball No. 1

The good news:
Australia's New Megafauna

Can we get animals to behave in line with their original ecological function?

Will self-regulating dynamics come to our aid?



This one stirs my passion.

To explore the relevance of Australia's new megafauna and multi-species interactions

Can we together, old **and** new Australians, build a healthier continent ?

Can we get animals to behave in line with their original ecological function ?

Will self-regulating principles come to our aid ?

Should we use animals to re-build healthy landscapes ?

Herbivores, behaving as nature intended, make a huge difference.

Animal behaviour harnesses ANIMAL-ENERGY!

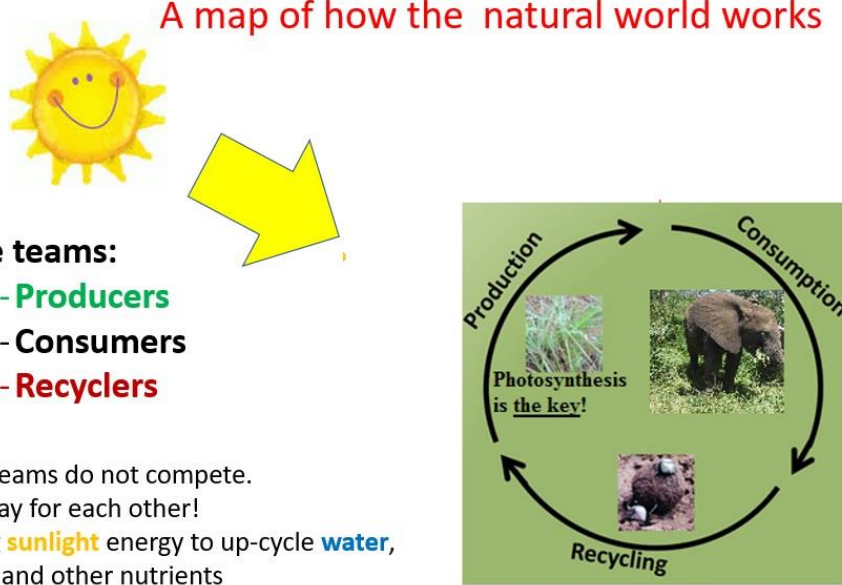
This is potentially a **solar-powered renewable energy source**.

- It is manageable
- It can work for us
- It can also work against us

The challenge is to manage or influence behaviour appropriately within given contexts.

9.

A map of how the natural world works



Three teams:

- **Producers**
- **Consumers**
- **Recyclers**

These teams do not compete.
They play for each other!
... using **sunlight** energy to up-cycle **water**, **carbon** and other nutrients

In functional savannah landscapes we find **three teams** at work

- Producers or sunlight-harvesters - Their net-role in life is production
- Consumers – whose net role is consumption
- Recyclers – their game is cleaning up and recycling

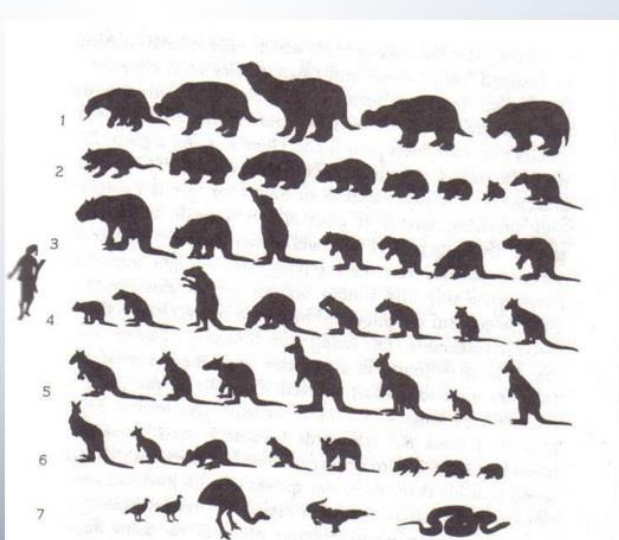
We humans are on the consumer team.

I've got the elephant in there because it is the largest land-based herbivore left on the planet. According to scientists nearly all of Australia's large herbivores disappeared soon after humans arrived on this continent.

10.

EVERY SPECIES HAS A ROLE TO ENHANCE ECOSYSTEM-FUNCTION

FOR THOUSANDS OF YEARS, HERE IN AUSTRALIA, WE HAVE HAD TO MAKE DO WITHOUT MUCH OF OUR **ORIGINAL MEGAFAUNA.**



The Future Eaters by Tim Flannery, Page 119

This is what some of them supposedly looked like.

11.

Biomass-burning short-circuits savannah economies

Production → Consumption → Recycling

Photosynthesis is the key

Is this good?
Is this bad?

It depends ...

Remember: The use of fire in the face of deteriorating soils is in fact burning up energy-reserves.

What are we attempting to achieve?

What is the context?

We zoom out ...

12.

we are here

we have choices

Where to from here?

Four broad options come to mind

1. Sustain a largely dysfunctional geosystem?
2. Give way to trends pushing towards further ecological decline?
3. Colonise other planets?
4. Why not first look at recolonising human-made deserts? Re-greening our own planet?

13.

So what would happen if we put some of Australia's introduced gardeners to work?



- Cattle
- Donkeys
- Camels
- Horses
- Goats
- Sheep

What if we were to put nature's gardeners to work?

Primarily those who have long track-records of collaborating with humans?

For those not already in it, I invite you to **watch this space!**

14.

Ball No. 2

WATER-SECURITY?



Ball No. 2 – As mentioned earlier, I do not know how relevant this ball is to Tasmania at this point in time. Where I come from it is highly relevant.

15.

Ball No. 2 WATER-SECURITY?



Do we have a social obligation to report an accident?

When I grew up, the answer was “YES”.
So, on Kachana we began looking closer and reporting in 1992

16.



This is Kununurra February 2014

This is not an accident.

The road did not get fully severed and after a day or two, traffic was able to resume.

We could call it a near miss.

And anyway, there were plenty of witnesses to report.

17.



On the same day, just a few km to the NNE (Ord Irrigation Area, Kununurra - February 2014)
This too got reported...

Was this an accident or a near miss?

We can be sure that insurance companies would have considered this question.

18.

A screenshot of a Quartz Africa article. The article title is "February 2018: Theewaterskloof dam supplies most of Cape-Town's potable water Cape Town delayed Day Zero but South Africa's water woes aren't over". The author is Brian Browdie. The article includes a photograph of the Theewaterskloof Dam, which is a large reservoir with a winding river flowing through it. The surrounding landscape is arid and hilly. The article is dated January 16, 2019, and is from Durban, South Africa. The Quartz Africa logo is visible at the top of the page.

Article: Brian Browdie /
QUARTZ AFRICA

Image: Mike Hutchings /
Reuters

This was a close shave for Cape-Town in 2018!

We are talking about 4.6mio people here; a population only slightly smaller than that of Sydney...

My take is, that a major accident was narrowly avoided.

19.



Here another close shave...
... but a **death-sentence** none the less.

20.



Many people would call this natural.
Technically speaking, they may be correct.
This is how nature responds to humans lighting matches, once everything has dried off.

21.



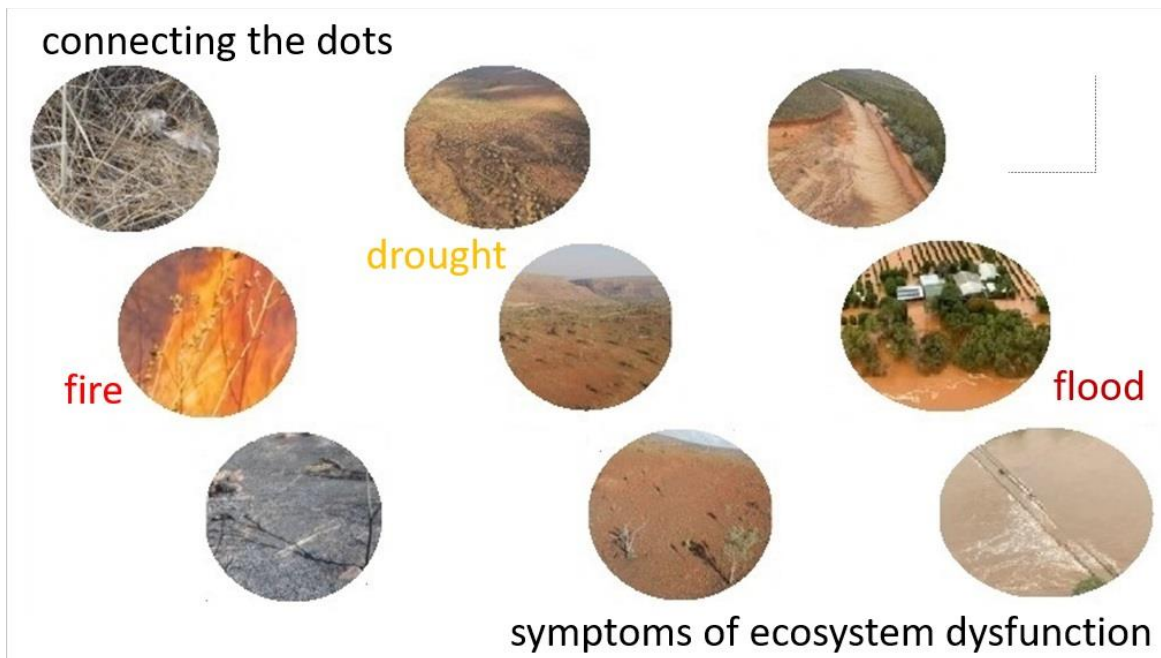
We end up with more and more country looking like this...

Is this “natural”?

Yes, but as Ray Archuletta might say:

The country is “naked, thirsty, hungry and running a fever”

22.



Fire, drought and flood, are siblings!

All three are symptoms of ecosystem dysfunction.

They are mostly spawned by unhealthy vegetation and dying soils.

This is not new knowledge.

It simply does not suit much of today's compartmentalised thinking.

Therefore, now we have independent bureaucracies at work instructing us on how to fight individual symptoms. That is at least the case where I come from, it might be different here?

Let us connect some dots

1. Bones of dead herbivores lying in unhealthy senescent grass
2. Fire
3. – 5. Bare, dehydrating ground that is subjected to weeks or months of radiation
6. Wind-erosion and compaction seal the surface
7. Raindrops become bomb-shells and rivers flow red as we lose soil
8. instead of quenching a thirsty landscape, Water further seals it and runs off
9. Erosion accelerates at an exponential rate ($\text{Energy} = \text{Mass}/2 * \text{Velocity}^2$) and “accidents” happen!

Downstream reporting also uses words like: “acts of God”, “natural disasters”, “climate-change”.

At political, departmental and community levels, there appears to be a strange lack of interest in the compounding effects of changing micro-climate upstream.

23.



A 200 million-dollar “repair” bill for the township of Warmun (2011)
This could be called the result of an accident.
As it happened, that accident had been **waiting to happen** for some time.
Reporting only took place after the event.

24



Here is "Starvation Billabong", just over the range from us.
Another accident waiting to happen.
We had been reporting for years but nobody of any “importance” listened.
(The photo was taken a few months earlier. - November 2010)

25.



(Starvation Billabong, Chamberlain River 2011)

Then in March 2011 the accident did happen.

This was no near miss. - Those trees were alive and growing until floodwaters arrived. Potential livelihoods got wiped out; we tried to report the accident; nobody investigated.

26.



ONE for the price of THREE!

(Fitzroy River, January 2023)

A bridge, "six times stronger" than the one that just got washed away.

What a deal for the engineers and construction workers.

Tax-payers alone were saddled with unexpected costs amounting to over of half a billion dollars.

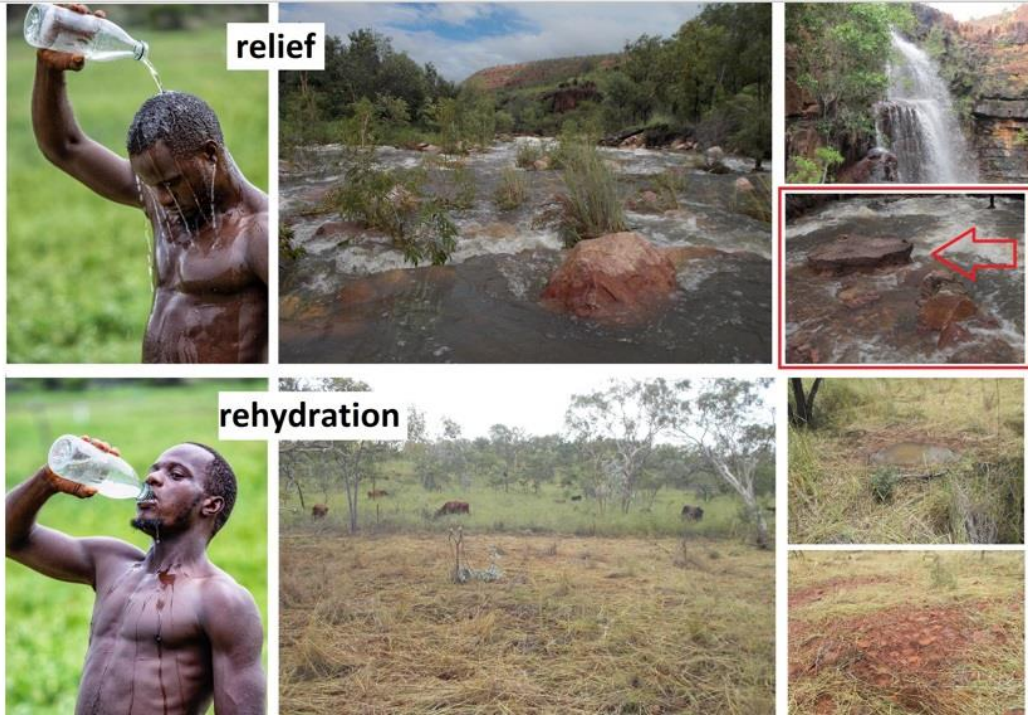
Private and corporate players continue to lick their wounds as investor confidence for the region is being put to the test.

Cost to private operators, local residents and insurance companies are masked by rising GDP and inflation.

Predictable events can of course be labelled "**accidents**" or "**natural disasters**".

If calling them that, means that we keep accepting more and more of them, perhaps we'd be wiser to begin using other terminology?

27.



How we prepare, for what drops out of the sky, will impact WATER-SECURITY!

'Soils for Life' describes the "story of 100 raindrops" typically falling onto Australia's land mass: 50 of them evaporate. (See picture at bottom of page.)

Gravity and evaporation tend to be by far the greatest **thieves of water**.

With good surface-management, we can prepare for, and begin to minimise both.

In order to rehydrate, water needs to percolate through the body or the soil.

28.

Ball No. 2

WATER-SECURITY



No water, no life !

The lesson that nature teaches us is quite simple: **No WATER: No LIFE!**

WATER-SECURITY implies reliable reserves and appropriate hydration throughout the year.

Building water security is a process that must be driven from the bottom-up. It cannot be legislated from the top-down.

For the individual citizen or property, **WATER-SECURITY** remains "circle of concern" stuff.

At a community level, **WATER-SECURITY** lies within the "circle of influence".

This is why the definition as well as the provision of **WATER-SECURITY** requires **active community support**.

Even better, would be the collaboration of top-down regulators, who encourage innovation and empower custodians to manage bottom-up processes!

29.

Without 'Water-Security' there is no 'Biosecurity'!
 (Nor can there be any other form of security, without 'water-security'!)

Once we are able to connect the dots, there are many good reasons to want to change raindrops from bomb-shells into mist-irrigators.

- Stockmanship
- Grassfarming
- Soilbuilding
- Rainfallmanagement
- Resilient micro-climate

02 March 2023, Cleanskin Creek releasing filtered water into the Chamberlain River

Cockatoo Creek, 09.09.2023

one day later

Managing Australia's "New Megafauna" is key ...

This is an attempt to put the message onto a single page.

In our Kachana News for early 2023 we go into all this in detail: [January](#), [February](#), [March](#)

30.

juggling act with three balls

1 biodiversity ("engine" of ecology)

2 WATER-SECURITY

3 true wealth (sustained financial justification)

Regenerative pastoralism has the capacity to begin addressing Australia's **WATER-SECURITY** with immediate effect. - "Biosecurity" then becomes a function of health!

Without first WATER-SECURITY, a quest for sustained "biosecurity" will be yet another "for-ever war". A war against nature... a fight against dynamic processes at play in an attempt or suppress symptoms. An unwinnable war against the far more intelligent design of natural systems.

The good news is that we already have an industry in place that has the people, knowledge, skill-sets and tools to radically improve WATER-SECURITY on mainland Australia and beyond.

As we begin to work with nature to re-create abundance, the "need" to do battle with her evaporates.

31.

Pastoralism holds the key
to Australia's **Prosperity**

Production → Consumption → Recycling

Photosynthesis is the key

We have the tools to
rebuild the foundations
of a sound economy:
Australia's new mega-fauna

As pastoralists we can offer solutions that are in line with how nature works:

Solutions that are: **Family friendly,** **Community friendly,** **Low tech / High skill**

Such solutions promise: **New knowledge,** **New skills,** **New jobs,** **New industries,** **New wealth**

All we require is a **green light** for regenerative pastoralism, and **real** incentives.

Such partnership-possibilities with nature, give me hope, for us, our children, our grandchildren and their children in this part of the world.

32.



Thank you for your attention!

33.



healing land naturally

Chris Henggeler

Kachana Pastoral Company

Environmental Consulting: kachana@bigpond.com



34. One more slide before we get to the questions.

Tim Flannery: The Future Eaters (P. 119)

Row 1: Tree feller, marsupial rhino, diprotodons both large and small species, Euwenia

Row 2: Marsupial lion, five species of extinct wombats, giant rat-kangaroo

Row 3: Seven species of giant short-faced kangaroos

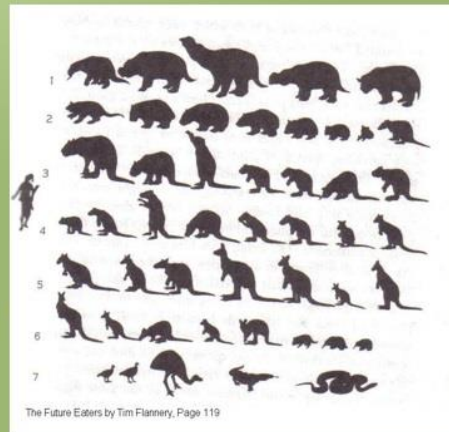
Row 4: Eight species of extinct kangaroos

Row 5: Seven species of extinct or dwarfed kangaroos

Row 6: Extinct or dwarfed marsupials and monotremes

Row 7: extinct birds and reptiles

Apparently many thousand years ago (shortly after humans arrived on the scene) Australia lost 95% or more of large animal species – most of them were plant-eaters



48 species shown, the human hunter to the left gives some idea of their size.

Given the **giant ecological hole** left by the loss of Australia's original megafauna, **How do we reference regeneration?**

- Against how our landscapes supposedly functioned 300 years ago?

- Against the natural wealth and the level of landscape function that might have existed before the first humans arrived in this part of the world?

35.

production driven **consumption led**

Carbon Cycle
Also known as the **Cycle of Life**

Reproduction Death
Growth Decay
Birth

We are all a part of it:
from micro-organisms to large animals,
from individuals to communities,
even civilisations...

Change isn't the exception to the rule, it's the only rule.
Fred Provenza

we have choices

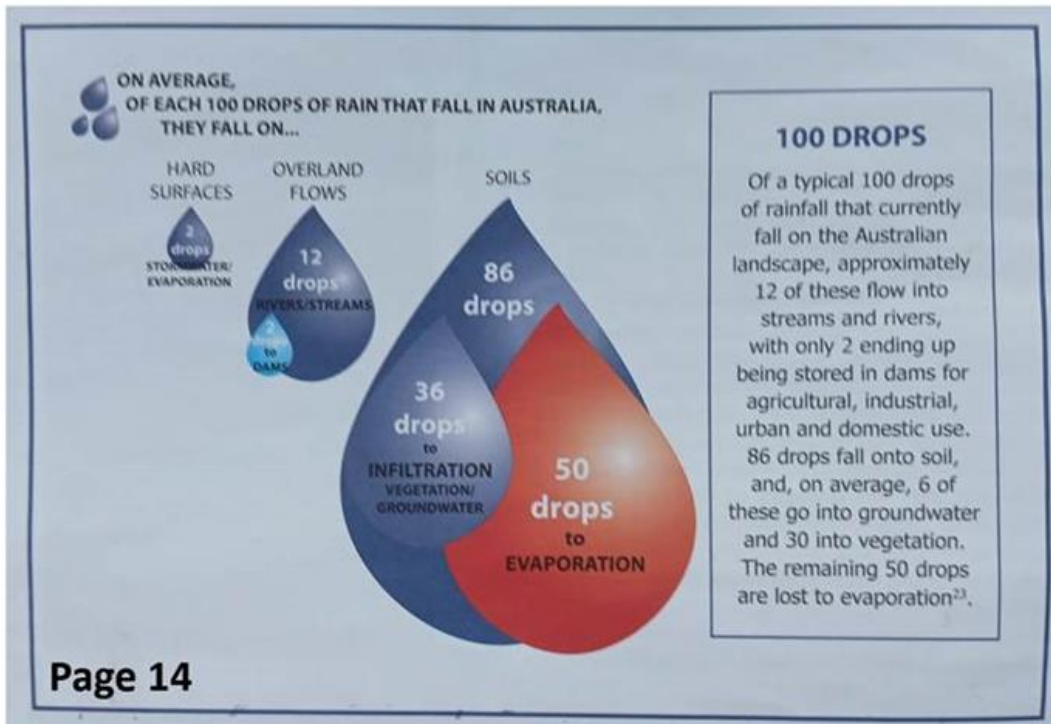
WATER-SECURITY is still one of them

Question time.

[GROUNDED Australia - Farming Better](#) plans to upload videos of filmed presentations.

GROUNDED Conference – Chris Henggeler: [LAND-DOCTORING neglected landscapes in Northern Australia](#)

The “story of 100 raindrops” typically falling onto Australia’s land mass: 50 of them evaporate. (See slide 27.)



SoilsForLife

INNOVATIONS FOR REGENERATIVE LANDSCAPE MANAGEMENT

Case studies of regenerative land management in practice

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