

What price nature conservation in a rapidly changing world?

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My perspectives

- Farming background Cavendish (SW Vic)
- Forestry (Creswick & Melbourne)
- Extension officer, DCFL
- Manager, Potter Farmland Plan
- National Landcare Facilitator
- Post-grad studies, Holland & France
- Senior Executive, Australian Government
- 7 years as CEO of Land & Water Australia
- Triple Helix Consulting
- Director, CRC Future Farm Industries



Take home messages

- We are living through a period of unprecedented environmental change, that is likely to intensify – **this is not a blip**
- Business as usual is not a viable trajectory, but we have choices...
- Increasing pressures on rural landscapes will squeeze nature
- Landscape restoration and reconnection can be funded, and co-exist with other goals, but only if planning, regulation and commitment at all levels improve, and fast
- Some entrenched blockages need to be overcome
- We need a new agenda and a new story for rural landscapes
 - and that story must engage people
- The need to learn to live like an Australian has never been more urgent



Backdrop

- Steep & rapid climate change (chaos)
- Food systems struggling, with demands increasing
- A rural sector under pressure
- An environment sector increasingly frustrated
- A recalibration of the respective roles of governments and markets, and a rediscovery of the need for a moral compass to guide them
- A recognition of the need to invest in skills, innovation and infrastructure



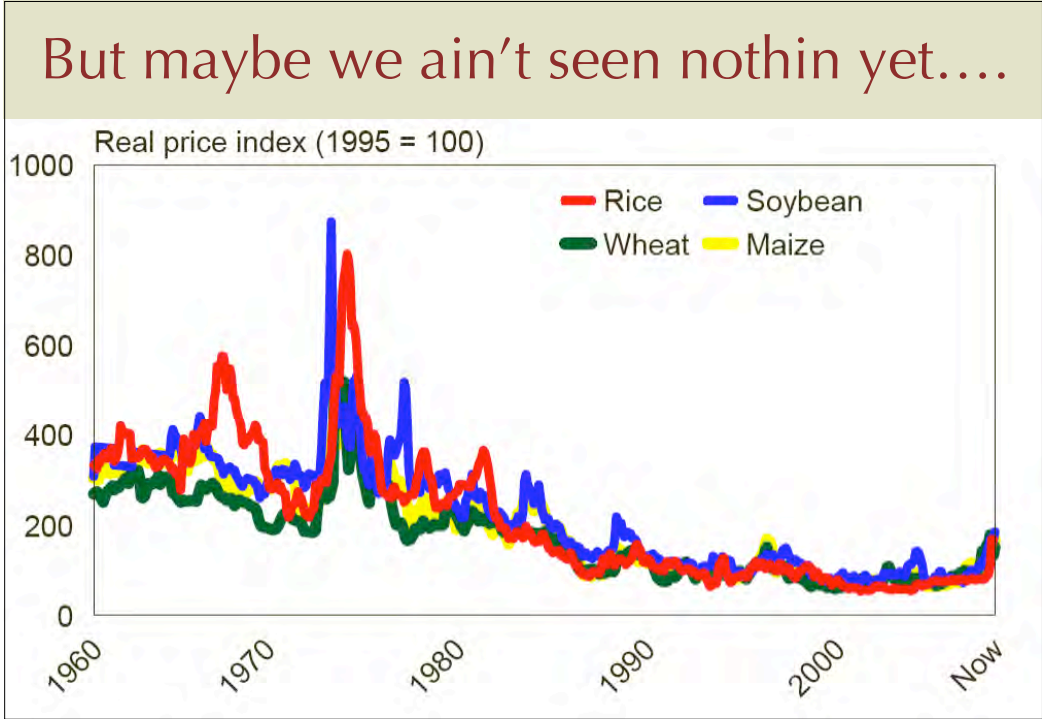
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Feeding the world

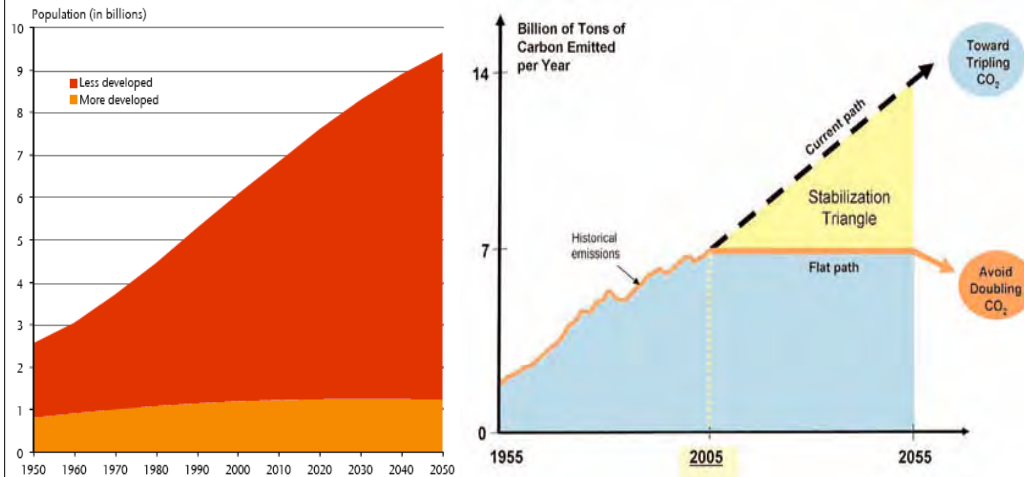
- In essence, the world needs to double food production by about 2050, & improve distribution
- We have done this in the past, mainly through clearing, cultivating and irrigating more land
 - and to a lesser extent better varieties, more fertiliser etc
- Climate change is narrowing those options, with limits to:
 - water
 - land
 - energy
 - nutrients



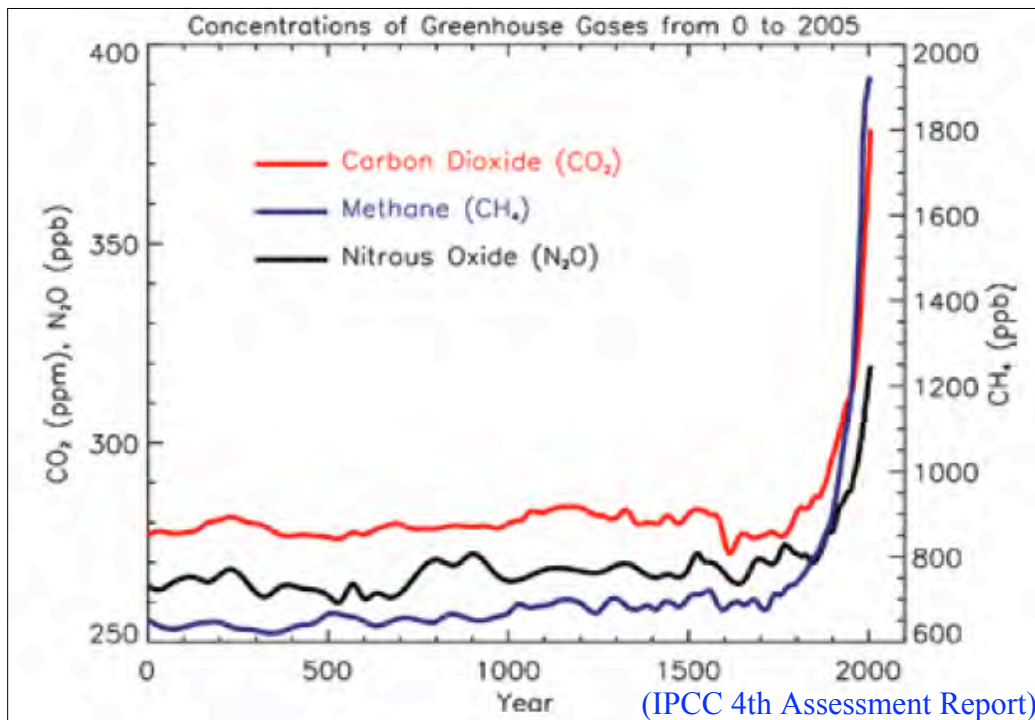
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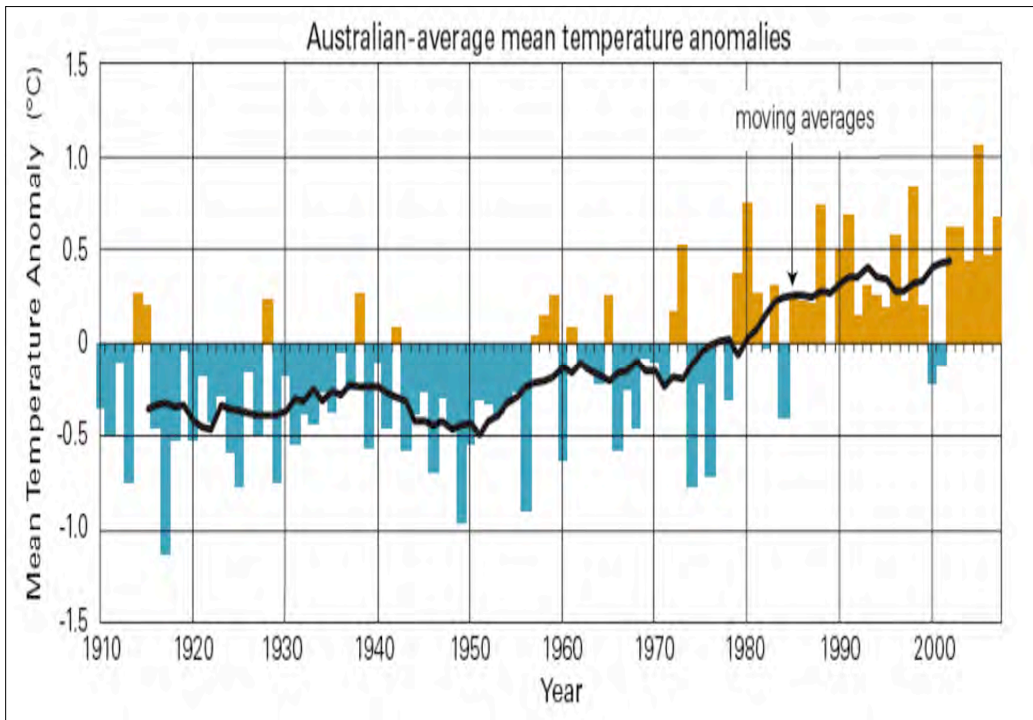


Population & carbon emissions



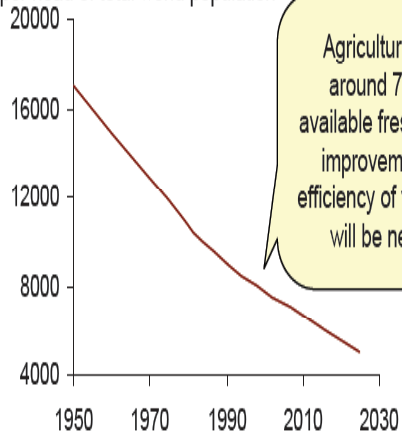
Source: WBCSD & IUCN 2008; Harvard Medical School 2008





Water

Actual and projected freshwater availability, cubic metres per head of total world population¹



Agriculture uses around 70% of available freshwater – improvements in efficiency of water use will be needed

- Each calorie takes one litre of water to produce, on average
- Like the Murray Darling Basin, all the world's major food producing basins are effectively 'closed' or already over-allocated

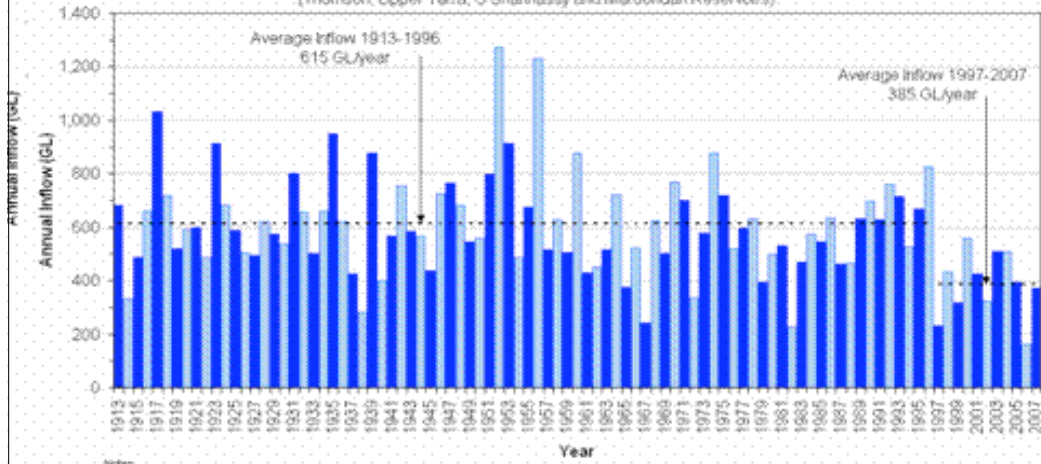


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Melbourne's Annual Storage Inflow GL (1913-2007)

Total annual water flowing into Melbourne's main water supply storage reservoirs

Total annual water flowing into Melbourne's main water supply storage reservoirs
(Thomson, Upper Yarra, O'Shannassy and Maroondah Reservoirs)



In Victoria, last 7 years the driest 7 years since records have been kept. Inflows to Melbourne storages since 1997 35% lower than prior to 1997.



Energy & nutrients

- The era of abundant, cheap fossil fuels is over
- Rising energy costs = rising fertiliser costs



Potential shocks & discontinuities

- The Greenland Ice Sheet is melting much faster than the IPCC worst case scenario. Sea levels could rise metres this century, not just 20cm.
- The Himalayan glaciers feed rivers that water India, Pakistan & Bangladesh (among others). They are disappearing much faster than worst case scenarios. Huge potential for conflict and massive refugee flows, war or not.
- The gulf stream 'conveyor belt' that warms western Europe could flip, tipping it into a mini Ice Age.
- The disappearance of the Arctic Sea Ice in summer (for the first time in at least 14 million years) will lead to a rapid acceleration in warming through the albedo effect, potentially accelerating tipping points.
- Trade barriers & farm subsidies go up. Countries hoard oil.
- There will be wars over land and water.

A seismic shift

Kevin Rudd, Westminster Abbey, 31 March 2009:
suggesting that the free market needs a moral compass:

*“To these values of security, liberty and prosperity
must also be grafted the values of
equity, of sustainability and community.”*

- Equity, Sustainability, Community...
- Sounds like Landcare values to me



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The imperative

- Rapid, often surprising, on-going environmental change will challenge governments and industries, and stress communities
- Many responses (proactive and reactive) will need to be designed and/or interpreted at regional and local levels. Tough decisions will be needed. Successful implementation depends on community support.
- We need an environmentally literate and capable delivery framework at a regional scale, with strong community support, involving community leaders and engaging grassroots volunteers
- Policy convergence in climate, energy, water and food systems will require an integrated planning & delivery framework
- Evidence-based policy depends on a good evidence base, trusted by stakeholders. We need frameworks that build on local knowledge and that can report at a fine-grained level across the whole country.

The opportunity

- Re-engage the community sector
- Build an environmentally literate (and equitable) regional framework
 - For regional planning
 - For guiding (not always implementing) public & private investment
 - As a bridge between government & community
- Honour the path pioneered by Hawke, Kerin, Cook, Farley, Toyne, Joan Kirner, Heather Mitchell and tens of thousands of volunteers
- Repairs & Maintenance and renovation of crucial social and environmental infrastructure in rural Australia
- Give tangible effect to the PM's values of equity, community and sustainability
- Finally get our act together on knowledge and innovation, moving beyond policy amnesia, adhocery and myopia

A 7 point plan for renovating NRM

1. Rejuvenate Landcare and Re-engage the Community
2. Reinforce the Regional Model
3. Rewire Environmental Information Systems
4. Revolutionise Agricultural Research, Extension and Education
5. Reform Drought Policy & Rural & Regional Services
6. Re-unite the Carbon, Water, Energy, Food, Farming and Fire agendas
7. Redesign the Institutional Architecture



Underpinning principles

- Building Resilience
- Balancing centralism and subsidiarity
- Re-engaging stakeholders and devolving responsibility
- Taking the time necessary to sort through complex, contested, connected issues
- Building, sustaining and using a comprehensive evidence base
- Investing in skills, knowledge, innovation and leadership
- Budgeting for longer term stability



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We need a third agricultural revolution — what might it look like?

- Closed loop farming systems (that don't leak)
- Smart metering, sensing, telemetry, robotics, guidance
- Cross-fertilisation between low input systems and high-input, high-output systems
- Better understanding & use of soil microbial activity
- Urban food production, recycling waste streams, water and nutrients
- Detailed product specification (e.g. Tesco)
 - more returns to farmers?
- 'Carbon plus' offsets and incentives
- Landscape reconfiguration to deliver resilience, water, bioenergy, biodiversity, beauty, heritage



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Land Use Planning & Design

- Victoria is “post-agricultural” in several regions (Neil Barr)
- We have some elements of a new paradigm
 - Ecoservices etc
 - Carbon offsets market (Greenfleet et al)
 - New corporate players — e.g. VicSuper, MIS schemes, energy companies
- And we know areas that need to expand
 - Water conservation
 - Habitat restoration and reconnection
 - Residential (600,000 new homes)
 - Renewable energy (wind, solar, biomass, biogas)



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Putting landscapes back together

- How can this all ‘fit’ at a landscape and regional scale?
- The landscape needs to be re-plumbed, re-wired and re-clothed
- We need new regional planning approaches that:
 - are robust under a range of climate change & demographic scenarios
 - build in resilience thinking (e.g. improve habitat connectivity & buffering, protect refugia)
 - accommodate carbon pollution mitigation options (energy, transport, food)
 - safeguard productive soil
 - facilitate recycling of water, nutrients and energy
- Integrating and/or replacing regional catchment strategies and local government planning, zoning, rating and development approval processes



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Some ecological principles

- Develop long-term shared visions and from these, quantifiable objectives and constraints
- Manage the whole mosaic – not just pieces
- Patches can only be assessed and managed within the context of the whole landscape
- Manage in an experimental framework
- Don't do the same thing everywhere
- Single species/ecosystem management are complementary

Adoptability reality check



On-farm Adoptability Issues

- On-farm change is more likely where innovations:
 - Offer relative advantage over existing systems/approaches
 - Are not too complex
 - Can be trialled, tested and evaluated
 - “Fit” with the farmer’s outlook, capacity and farming system
 - Offer good returns within a reasonable timeframe
- Broadscale revegetation (including agroforestry) options are rarely easily adoptable for most farmers
- This has significant implications for landscape-scale change

Juicier Carrots & Smarter Sticks

- It’s clear that landscape scale revegetation and habitat restoration are mainly for eccentric enthusiasts in the current context
- **So what would make it happen faster, and who should pay?**
- There is enough money around, in total, to make a good start:
 - Carbon funds
 - Corporates & super funds
 - Public NRM programs
 - Local residents and ratepayers
 - The Australian Taxpayer
 - Consumers
- The trick is in putting an investment portfolio together, and making it work at landscape scale
- This needs good planning, and committed people

The human dimension

- Managing whole landscapes
 - landscapes: “where nature meets culture” (Simon Schama)
 - landscapes are socially constructed
 - beyond ‘ecological apartheid’
 - sustainability means people management
 - engage values, perceptions, aspirations, behaviour
 - build knowledge grounded in a sense of place

Entrenched blockages (mainly between our ears)

- “*De Nile ain’t just a river in Egypt*” (Mark Twain)
 - words like ‘drought’ speak of a denial of the nature of Australia
- The sanctity of private property rights & the market
 - less emphasis on responsibilities (mutual obligation?) that go with these
- Timidity around planning and regulatory instruments
 - Our legislation is often pretty good, but compliance effort minimal
 - An aversion to drawing lines on maps
- Reluctance to confront the real costs of our food and fibre
 - or to try to ensure that a fair proportion of the price gets back to producers in return for re-investment in natural capital
- Amnesia hard-wired into the system
 - Inadequate monitoring, knowledge systems, evaluation

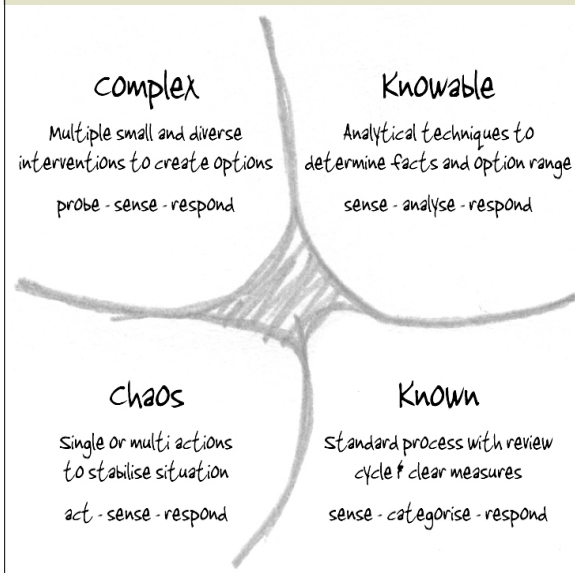




Knowledge, Research and Innovation

- The VEIL project (Larsen et al 2008) has comprehensively mapped knowledge gaps and innovation opportunities
- The evidence base needs work, especially along the value chain – more LCAs an urgent priority
- New research alliances are needed across and along the food value chain, from farming to health
- Work is needed in all four quadrants
 - Modify and adapt
 - Innovate and create
- Much of this research needs to be participative, action-oriented, systems-focused (e.g. EverGraze)
- Underpinned by serious investment in leadership & training

Implications for knowledge needs [through the Cynefin lens - Dave Snowden]



- Climate change spans all of these domains
- If temp increase > 2°C, then disorder & chaos will reign
- The challenge is to handle the necessary range of simultaneous responses
 - to work in all of these domains at once
 - to develop a system-wide perspective
 - & the knowledge systems and learning strategies to underpin that perspective
- and to bring people along

Building ecological literacy

- We need to re-engage in a community debate about what we want rural landscapes and rural communities to look and feel like
- We need ecological literacy across the whole community
- Not just about biodiversity but water, energy, carbon, waste & food
- We need to redefine what it is to **be** Australian, to **live** like an Australian and to **farm** like an Australian
- Landcare and the various watch programs remain very relevant
- We need to re-engage schools, and the education system proper
- Nature conservation needs to work more closely with other sectors like renewable energy — cross the divide into the built environment!



Alliances and Leadership

- The 'biodiversity sector' is a cottage industry
 - disparate, fragmented, lots of small players, under-resourced
- There are other kindred interests
 - E.g. renewable energy, sustainable foods, green building
- Look to build broad alliances across sectors
 - Scope out mutual interests, share resources & intelligence
 - Identify sympathetic cells within government & industry
 - Forensically search for and foster young emerging talent
- Invest in leadership
 - Work with e.g. Williamson, Fairfax, Australian Rural Leadership Program
 - Use leadership training to build networks
 - Strategic course composition



Our future is in our hands

“The future is not some place we are going to, but one we are creating. The paths to it are made, not found.”

— Phillip Adams

- We are in a mental dance between fate and desire
- We know that ‘what’s coming at us’ is big, ugly and scary
- We know that much of it we can’t influence
- But we do have choices, and some influence

“To decide not to succeed, is to decide to fail”



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- We need a new agenda and a new story for rural landscapes
- Grounded in ecological literacy
- **and driven by leadership at all levels**



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including background papers,
presentations and images

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