

THE ECONOMICS OF NATURE

AND ITS IMPLICATIONS FOR THE AUSTRALIAN FEDERATION

AUSTRALIAN FEDERALISM: RESCUE AND REFORM
INSTITUTE OF PUBLIC ADMINISTRATION AUSTRALIA
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Australia's Federation was designed to manage the world of the 19th Century – to manage the upsides and downsides of the industrial revolution and secure the new nation in a world of political turmoil.

By any measure it has been an extraordinary story – we have become one of, if not the most, successful and stable democracies in human history¹.

But with the new century comes new challenges – challenges that our founding fathers could not have dreamed of when they built our Federation.

Our political systems were built to manage the industrial revolution where the great contest of the age was between capital and labour.

Our Westminster system reflects this contest – two major parties fighting for political ascendancy – one from the right defending capital – the other from the left fighting a social revolution.

Both won.

The industrial revolution was built on the harnessing of fossil fuels – the energy embedded in the vast oil, gas and coal reserves that were laid down millions of years ago, when the earth was a very different place.

It has given us health care, aged pensions, fast cars, shops full of food, schools, 4 weeks annual leave, sick leave, television, the internet, coffee shops, the list goes on and on.

We have become as a civilisation highly skilled in economic management, highly skilled in the social sciences – education, health, law and order. These were, and still are, the defining issues of our age.

And therein lies our problem.

The world laughed at the Club of Rome² when they warned that the industrial revolution would send many of our natural systems to the point of collapse and never in our wildest dreams did we imagine that the very machines that created all this wealth could change the world's climate system, within our own lifetimes.

We built our economic and political institutions at a time when the natural world seemed endless – where nature was there for the taking – where land clearing was part of a heroic vision to develop the nation – where fresh water flowing to the sea was thought to be wasted. Today that has all changed.

The great challenge of our age is not wealth creation – certainly not in the western economies – the great challenge of our age is climate change, global food security, the growing scarcity of fresh water resources, and the catastrophic loss of the world's biodiversity.

To quote Ross Garnaut: "On the balance of probabilities, the failure of our generation on climate change mitigation would lead to consequences that would haunt humanity until the end of time."³

These are the defining issues of our age which will increasingly challenge our notion of progress.

Our problem is that our political institutions are designed to manage economic growth and distribute wealth. They are simply not designed to manage the economics of nature.

The environmental challenges of the 21st century require a new set of skills and political institutions – skills and institutions built from an understanding not of the market economics and social sciences of the 19th and 20th centuries, but skills and institutions built from the natural sciences.

Future progress requires our political and economic institutions to be grounded in a new understanding of the natural processes that drive our planet – the water cycle, the carbon cycle, ecology and the role of ecosystem services.

We need to confront the 21st century challenge of managing our natural world with the same discipline we applied to managing the industrial revolution.

Let me take you back a step.

Our nation was born in the early stages of the industrial revolution, when machines changed the course of human history.

The industrial revolution also drove the green revolution, allowing us to produce and store vast quantities of food.

Our population exploded. In 1800 there were one billion people on this planet. By 1960 it had reached 3 billion.

Just 50 years later it doubled again to 6 billion and we expect it will grow to 9 billion within the lifetime of most people here today.

We are, without doubt, the wealthiest, healthiest and most educated generation. We have more choices and more opportunity than any generation in history: all because of the machines.

But this success has been at the cost of our natural world. We have already cleared half of the world's rainforests, we've degraded vast river basins, and we stand to lose half of all species on earth.

These great environmental challenges of our time cannot be resolved by short-term tweaking of the current economic system.

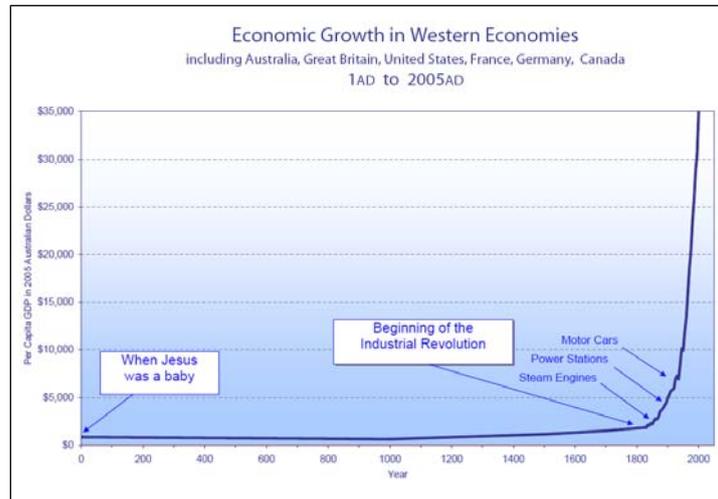
They require fundamental reform.

This graph shows the explosion of personal wealth in western economies since the invention of machines⁴.

It also provides the pathway for us to address our long-term environmental problems as well.

Let me explain - here is when Jesus was a baby.

And here, nearly 2,000 years later, is the beginning of the industrial revolution: steam engines, power stations, motor cars.



Just look at the explosion in our wealth since the invention of the machines.

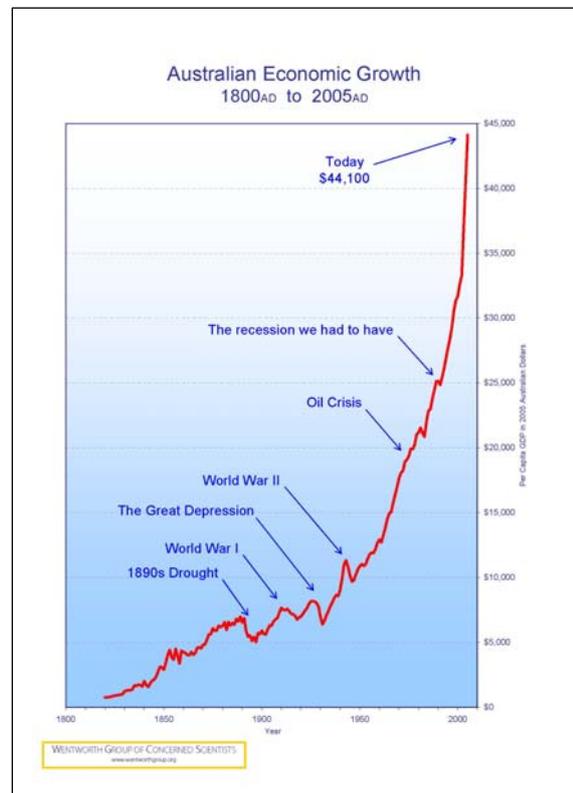
When Australia became a Nation in 1901, average annual incomes had grown to 6,000 dollars in today's money.

But even that was just the beginning.

Today, just 100 years later, it is now over 44,000 dollars for every man, woman and child.

The key to the revolution of the 21st century, a revolution that can change the course of history for all time, lies in our generation accepting the challenge of climate change.

The world's climate scientists tell us that we need to keep greenhouse gas concentrations in our atmosphere below 450ppm CO₂e if we are to have a 50% chance of keeping global warming below a critical threshold of 2 degrees above pre-industrial levels⁵.



The institutional and technological implications of achieving stabilisation at 450ppm are phenomenal. It requires a global reduction in existing greenhouse gas emissions in the order of 85 percent by 2050 (based on a 15% probability)^{6,7,8}. That's the global average for all nations, developed and developing.

This is no game.

To have any chance of achieving that target, highly industrialised economies such as Australia, on a per capita basis, will have to reduce our existing greenhouse gas emissions in the order of 97 percent by 2050⁹.

Indeed, all the world's industrial and industrialising economies will need to reduce their emissions by similar amounts: Europe and Japan by 93%, the United States by 97%¹⁰, China 79%.

The implications of global stabilisation target of 450ppm for Australia and the world is simple, but profound. No matter which phase in the industrial revolution countries are in, we are going to have to completely decarbonise the world's energy production systems and we are going to have to restore a positive carbon balance in the world's natural landscapes - our forests and our agricultural lands - and we have 40 years to do it.

Per capita greenhouse gas emission reductions required to achieve 450ppm by 2050
(in CO2 equivalent: includes CO2, CH4, N2O, PFCs, HFCs, SF6, land use change & int. bunkers)

Country	MtCO2	Rank	% World Total	Tons Per Person	World Rank	Per Capita Reductions (15% probability)
Malaysia	861	9	1.9	37.4	1	98
Australia	509	14	1.2	26.6	2	97
Canada	751	10	1.7	24.4	3	97
United States of America	6,611	1	14.9	23.4	4	97
Indonesia	3,068	4	6.9	14.9	5	95
Russian Federation	1,991	6	4.5	13.6	6	94
Brazil	2,333	5	5.3	13.4	7	94
South Korea	547	12	1.2	11.6	8	93
Japan	1,406	8	3.2	11.1	9	93
European Union (25)	4,982	2	11.2	11	10	93
Myanmar	521	13	1.2	10.9	11	93
South Africa	455	15	1.0	10.3	12	92
Dem. Republic of Congo	408	17	0.9	8.2	13	90
Mexico	682	11	1.5	7	14	89
Iran	435	16	1.0	6.8	15	88
China	4,850	3	10.9	3.8	16	79
India	1,574	7	3.6	1.5	17	47
World	44,347		100.0	7.3		

We need to reframe the industrial revolution – we need to build a 21st century economic system that is profoundly different to that of the 19th and 20th centuries.

Yet while the political and technical challenges are enormous, what we are coming to realise is just how economically feasible this is.

Let's just leave that aside for the moment that "the cost of action is less than the costs of inaction"¹¹, and simply look at the costs of action.

This graph highlights the implications of achieving a 450ppm CO₂e target on the Australian economy¹².

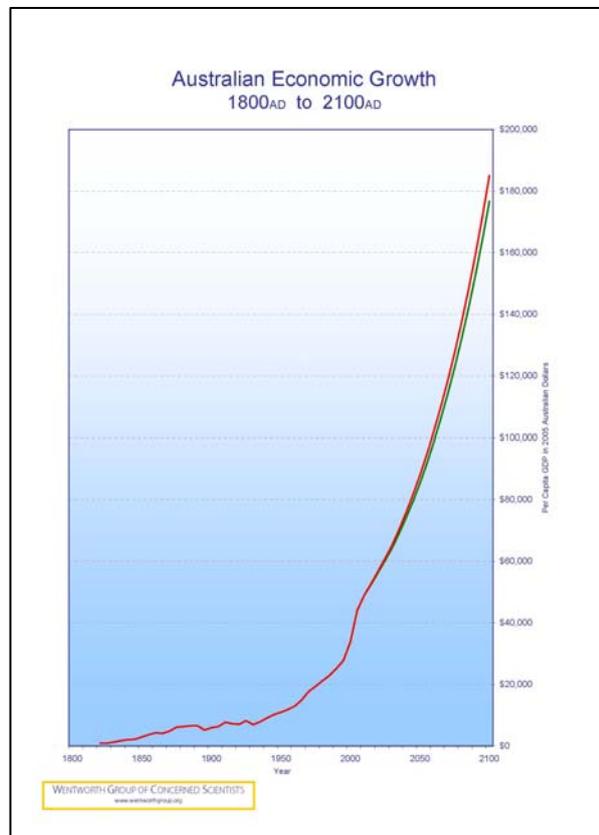
It is based on Australian Treasury projections of future economic growth in Australia.

The **red line** shows the explosion in wealth expected between now and the end of this century if GDP continues to grow in the order of 1.5 per cent per capita per annum.

The **green line** shows you what a reduction in GDP really means if we commit to stabilising greenhouse gas concentrations at 450 ppm CO₂e by 2050.

No sane human-being would risk runaway climate change on the basis of this information.

This graph should be on t-shirts because it is a most hopeful message.



It shows that we can stabilise the world's climate system without destroying the machines of the industrial revolution, provided we change the way we power them. A price on carbon will drive the next industrial revolution.

But as our world gets smaller and nature's resources get scarcer, the implications of this graph go well beyond climate change – it goes to the heart of what humanity is capable achieving in the 21st century – an opportunity to create an economic system that is profoundly different to that of the 19th and 20th centuries.

The solution to climate change has not one, but three components¹³:

1. Energy technology (to produce carbon pollution free energy) – this needs to provide 50% of the solution;
2. Energy efficiency (using less energy and in the process saving money) – that's 25% of the solution.
3. There is a third component to the solution – that is landscape management (we need to let nature help us, because trees and soils absorb carbon) – that's also 25% of the solution.

It is in this last component that lies at the heart of what I call the economics of nature in the 21st century.

Reducing the destruction of these stores of carbon, by reducing land clearing, and increasing carbon stocks through revegetation and improving soil carbon, makes landscape management a fundamental part of managing the CO₂ balance in the atmosphere.

Because landscapes absorb vast quantities of carbon, we can design the carbon economics so that for the first, and possibly the only time in human history, we can grow the world economy without destroying nature.

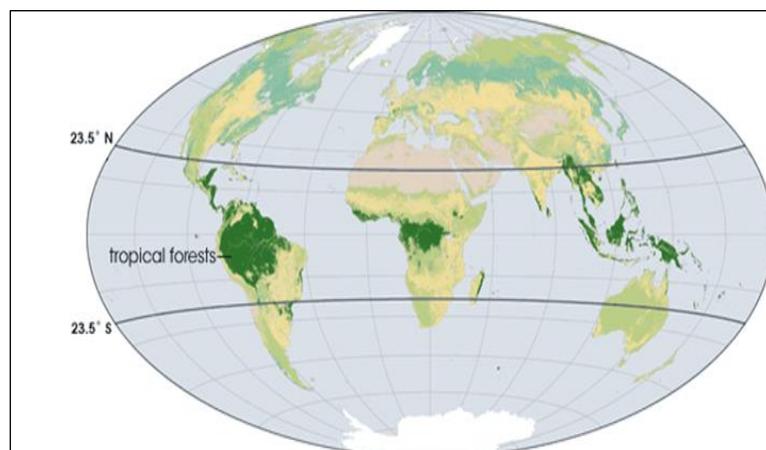
This is an unbelievably important concept.

Carbon economics of the 21st century presents our generation with the opportunity to not only stabilise the world's climate system but to also create an economic system that will conserve the world's biodiversity.

Because rainforests and restored river basins store vast quantities of carbon, healthy landscapes can become more valuable than cleared ones.

Tropical rainforests cover only seven percent of the world's land surface¹⁴, yet they contain almost half of the world's terrestrial biodiversity.

Over half of these forests have already been cleared, and current clearing rates are staggering - 13 million hectares is cleared every year.¹⁵



But tropical deforestation is not only destroying nature, it is also directly releasing a staggering 8 to 20% of all global carbon emissions.¹⁶

If the western industrial economies including the US, Europe, and Australia are prepared to invest, it will not only provide the world with up to 25 percent of the solution to climate change, it will, for effectively no additional cost, also finance the conservation of vast tracts of tropical landscapes¹⁷.

But the opportunities are not just in the tropics. For Australia, the story is similar: carbon pricing has the potential to fundamentally change the pricing signals in rural Australia and as a consequence how we manage the Australian landscape.

Properly designed, carbon pricing is capable of creating a self funding mechanism to repair degraded landscapes, such as in the Murray Darling Basin, at a scale that would have been unimaginable even a few years ago.

Investments for storing carbon in terrestrial landscapes can be targeted to produce multiple environmental and economic benefits:

- restoring native vegetation along the nation's rivers, wetlands and estuaries, which would improve water quality, and re-connect native vegetation across our vast, fragmented landscapes;
- expanding habitat to create viable populations of threatened species, which is a foundation stone for the long-term conservation of biodiversity; and
- improving soil carbon in agricultural landscapes, which improves productivity in soils, which have been in slow decline over the past two centuries.

There is a one other great economic and institutional reform that we must embrace, one that on face value seems a little mundane compared to the other two of decarbonising the world's energy production systems and putting an economic value on the services that nature provides us, but it is one that actually lies at the very heart of our current environmental problems.

We are now aware that our future prosperity is linked to effective stewardship of nature: our land and water, a stable climate, clean air, healthy coasts, and marine resources. We now know that without stable functioning natural systems, our economic prosperity is transient and intergenerational financial security is a mirage.

Australia needs to confront the challenge of managing our natural capital with the same discipline with which we manage our economy.

We are in the early stages of the 21st century yet our environmental accounting practices are in the dark ages. If you can't measure it, you can't manage it.

It is one of the great failures of public policy of our generation and is at the core of our environmental problems. It has resulted in policy and land use decisions that have caused significant and unnecessary damage to our natural environment, and it has resulted in the massive waste of billions of dollars of public funds aimed at repairing this damage.

Australia needs an environmental accounting system that will inform government, business and community decision-making.

There are parallels to this environmental dilemma with the rapid industrialisation of our economy in the early part of the 20th century¹⁸. It took nearly a century of the industrial revolution to pass before we recognised the value of a systematic collection and reporting of economic statistics and developed the capacity to do so. In doing so, they fundamentally changed the way we manage the economy.

The Wentworth Group have developed an institutional model for building the National Environmental Accounts of Australia.

This *Accounting for Nature*¹⁹ framework will change the way we manage Australia: the design of our cities, how and where we produce our food and fibre, and how we direct public and private investments as we strive to improve and maintain the health of our environmental assets.

Today, we wouldn't dream of managing the economy without rigorous accounting standards for our personal accounts, for business dealings and for managing the national economy. Environmental accounts are fundamental to successfully dealing with the 21st century challenges of stabilising the world's climate systems and managing nature.

With three great reforms – the decarbonising of the world's energy production systems; by putting an economic value on the services that nature provides us; and in building environmental accounts - our generation has the opportunity to transform the economics of the 21st century and in doing so transform the management of nature and with it, our place in history.

So what does this all mean for our Federation? Does it mean we need to rewrite the constitution, build a republic and abolish the states? Would we be better served with these changes to our Constitution? Probably, but that's my personal view.

Is it an essential precondition to driving these fundamental reforms? Certainly not.

Are these reforms fundamental to a prosperous 21st century? Absolutely.

I believe the Commonwealth has more than adequate constitutional powers to act in the national interest to protect the environment – through its external affairs powers and often today, through the corporations and trade and commerce powers.

When the Commonwealth used section 51(ii) of the Constitution to take over income taxation from the States in 1942, the Commonwealth also acquired the economic weaponry that it needs - should it choose to act.

If you look back at the changes to the environmental management in Australia over the past ¼ century there is no question there has been progress: the Commonwealth intervention in the Franklin Dam in 1983, funding the Australian Landcare movement 1990, the Natural Heritage Trust in 1997, the 1999 Environmental Protection and Biodiversity Conservation Act, the 2004 National Water Initiative.

With the election of the Rudd Labor government last year, we have seen a radical shift in Australia's response to the global climate change crisis, through the ratification of the Kyoto Protocol. There are also positive signals through the Prime Minister's Summit, that they will drive the building of the national environmental accounts²⁰.

Environmental policy reform is mirroring the economic reforms earlier in the last century – a substantial drift of powers – under the existing constitution – to the Commonwealth.

But the real question is whether this progress is keeping pace with the accelerating scale of the environmental challenges we will have to confront in this new century.

And the answer is absolutely and unambiguously, no.

In addition to the national environmental accounts, there are three other actions that are fundamental to creating healthy and productive landscapes in Australia:

- strengthening the regional delivery of natural resource management;
- radically changing the way we plan, build and manage our cities as population growth drives urban development up and down the Australian coast;

- and of course, we need to fundamentally change the way we manage Australia's increasingly scarce fresh water resources.

We do not need to throw out the foundations of our constitution to achieve many of these reforms. Our constitutional structure is underpinned by the principle of subsidiarity: that is, a central authority should only perform functions which cannot be performed at a more local level²¹, and this principle has served our democracy well.

The first two reforms can be achieved without sacrificing this important principle. In fact, they will be better served if that principle is maintained, with the Commonwealth driving reform largely through coercion, with the Commonwealth simply exercising its fiscal powers. The polite term for this is 'co-operative federalism'.

But history also suggests that fixing Australia's water resources will take much more if the States will not refer sufficient powers to the Commonwealth – it will almost certainly require Commonwealth exercising its constitutional powers to override the States.

I would love to discuss all three in detail here with you, because they are all fundamental to Australia's future prosperity, but in the short time available, let me concentrate on water reform.

The lack of progress on national water reform is today's great test of Federalism.

Whilst the constitution vests primary responsibility for land and water management with the States, Australia now expects our Prime Minister to fix Australia's water resources because we believe it is in our national interest for him to do so.

If the Prime Minister chooses not to take decisive action on water reform for fear of upsetting a State Premier, then the political price will be significant, because if the drought continues, as is likely, he will be blamed for this crisis: it is his job to fix this problem and he chose not to act for what will be seen as a minor dispute with one State government.

When it comes to water reform, however, the new language of "cooperative federalism" needs to be more than just good branding for the ALP: it requires decisive action and a Prime Minister who is prepared to stare down the States in the national interest, just as the Hawke government held firm on the Franklin River 25 years ago.

The only way we will repair the health of Australia's river systems is for the Federal government to ignore the impediments the States are still putting in place and go in and acquire water. The States will then challenge this in the High Court as they did in 1983.

And as in 1983, they will lose.

Because we think that taking water from people is bad, we have made the profound mistake of accepting incremental change when rapid, fundamental, large scale reform is required.

If we continue with this creeping incrementalism we will surely destroy Australia's greatest river system and we will destroy the well-being of the thousands of people who depend on a healthy river for their livelihoods.

Two weeks ago the Wentworth Group and others prepared a submission to the Senate Inquiry into the Coorong and Lower Lakes²². In preparing this submission we commissioned an analysis of the existing scientific literature and most recent modelling to establish just how much water is needed to repair the rivers in the Murray Darling Basin.

The magnitude of the structural adjustment required is beyond anything that has been contemplated before in the Australian community.

If we are to maintain healthy rivers and provide high quality water to produce food, our analysis suggests that consumptive use of water across the Murray Darling Basin is likely to be cut by between 42 and 53 percent.

This has profound implications for the future of water resource management and the towns and cities and rural communities that have relied on the rivers.

The great surprise though, is that the science says that if we spend the money that has already been appropriated by the Commonwealth parliament wisely and quickly, there is a high probability we will restore the rivers and floodplains to sustainable levels and in doing so it will also put us in a far better position to confront the new challenges, such as climate change, that are rapidly bearing down on us.

An extraordinary political legacy is possible.

We have an historic opportunity, brought to a head by the current drought, to break through on one of the most significant environmental policy reforms in the history of Federation – to do what everyone believes in their heart is impossible - and to do so in a way that provides a way out for communities in economic trouble.

Crisis defines political leadership. It always has. They are usually defined by economic crisis or war. We have seen such leadership over the past few days in response to the global credit crisis.

But unusually, our times are also marked by two environmental crises – climate change and water. This is the moment in history where decisive action is needed on both.

We are seeing such leadership on climate change. My great hope is that the Prime Minister will also recognise this opportunity of a generation to restore the health of the rivers on Australia's greatest river system.

It will be an extraordinary legacy if he does.

Acknowledgement

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