

Implications for biodiversity markets of recent developments in carbon

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About a decade ago, Australian policy makers could lay claim to operating the world's best set of mechanisms for securing the abatement of domestic greenhouse gas emissions. That all came to an end when the Abbott Government repealed the emissions trading scheme (ETS).

The ETS had been identified by Canberra-based policy advisers in the late 1990s as the preferred mechanism for securing emissions abatement, though there were some who favoured a carbon tax. Common to both options was the straightforward notion that the economic costs of securing any level of emissions abatement for the nation would be minimised through an economy-wide price on carbon.

Since the repeal of the ETS, Australia has played around with what might best be described as a dog's breakfast approach to climate policy. At all times, those who were in government wanted to claim that they were adopting targeted approaches and were not doing anything that might impose a price on carbon.

You should conclude, therefore, that they were not interested in minimising the national cost of securing emissions reduction. Australia's entirely avoidable energy crisis provides ample illustration of that point. Yet these policy dilettantes were interested in doing something. And the 'something' that survives offers considerable potential, not only for efforts to reduce greenhouse gas emissions, but to secure a range of other environmental benefits, including in respect of biodiversity protection and enhancement.

There are big opportunities. But there are also big risks. It is those opportunities and risks that I want to talk about this morning.

The current framework

Australia's policy framework, such as it is, for achieving emissions abatement has three principal components: the Renewable Energy Target (RET), the Emissions Reduction Fund (ERF) and the associated Safeguard Mechanism. One would hope that, notwithstanding the political dysfunction that has undermined durable policy success in this area for a couple of decades now, Australia will

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² I would like to thank Adrian Ward (CEO, Accounting for Nature Ltd), Daniela Binder and colleagues at the Australian Climate and Biodiversity Foundation for reviewing an early draft of this address. Obviously, all errors are mine.

one day soon embark on another journey to an economy-wide price on greenhouse gases. But, for the moment, these three, partial, components provide the basic infrastructure of Australian climate policy.

The ERF finances auctions conducted by the Clean Energy Regulator (CER) to acquire Australian Carbon Credit Units (ACCUs) created under various methods approved by the minister. One ACCU represents one tonne of CO₂e abatement. Methods available to generate ACCUs have been approved for various agricultural practices, savanna fire management and a limited set of vegetation activities. But they cover only a tiny proportion of activities across the economy that could be used to abate carbon emissions.

Vegetation methods have proved especially controversial. The Human-induced Regeneration (HIR) method, which supports the generation of ACCUs from native forest regeneration due to changed land use practices, is responsible for more than half of the ACCUs purchased by the ERF. The integrity of application of the HIR method has been questioned by respectable analysts.³ Criticisms have also been made of the application of several other methods approved by the former Minister for Climate Change and Energy. These criticisms and related issues are currently being reviewed by a team led by former chief scientist, Professor Ian Chubb.

Why ACCU integrity matters

If a landholder engages in activity, pursuant to a method approved by the Minister, that generates, say, one tonne of CO₂e abatement, then the landholder is entitled to have one ACCU registered with the CER. In principle, these ACCUs are available for sale to third parties. To date, though, the principal purchaser of ACCUs has been the CER itself, under auctions funded from the ERF. Since the ERF has been established with taxpayer funds, in formal tax incidence terms, this auction system is the opposite of a carbon tax. Yet it imposes a price on carbon in an equivalent manner.

Under a carbon tax, the carbon emitter bears the formal incidence. The ability to reduce a tax liability provides an incentive to reduce emissions. Tax ‘avoidance’, secured by engaging in activities to reduce emissions, is how the carbon tax achieves its policy objective. But carbon tax ‘evasion’, obtained by fraud or deception, is another matter entirely. It undermines the policy objective.

Under the ERF, those covered by an ACCU method have an opportunity to reduce emissions in exchange for cash. If carbon emissions are not reduced, then a cash opportunity is forgone. Thus, the cash opportunity offered by the ERF represents the price of carbon that is emitted, when it could have been abated. As under a carbon tax, an offer to purchase a certain number of units of carbon emissions abatement provides an incentive to reduce emissions. But if payments are made and emissions are not actually reduced, then the ERF ends up paying for nothing. This is a compliance problem for government. For obvious reasons, taxpayers should have confidence that what they have contributed to general revenue to fund the establishment of the ERF is not being squandered through maladministration, fraud, or deception.

ACCUs as offsets

Let’s now introduce a third party. This party is a big carbon emitter but has few means of reducing emissions internally. For example, fossil fuels might be an indispensable input into production. Suppose that the Safeguard Mechanism is beginning to bite. This mechanism, which applies to facilities generating more than 100,000 tonnes of CO₂-e per annum, and covers about a half of Australia’s total emissions, operates just like a carbon tax with a zero-tax threshold prescribed in an emissions baseline. The implicit tax can be avoided either by investing in activities to reduce

³ Macintosh, A., Butler, D., Ansell, D. (2022) *Measurement Error in the Emissions Reduction Fund's Human-induced Regeneration (HIR) Method*. The Australian National University, Canberra.

emissions internally or by purchasing ACCUs externally; that is, from the CER, and directly or indirectly from other entities that have viable means of reducing emissions. Purchasing an ACCU provides an ‘offset’ to the safeguard mechanism obligation.

Demand for ACCUs as offsets to meet Safeguard Mechanism obligations is nascent. But it could grow quickly, depending upon the Government-determined gradient of the declining emissions baselines for major emitters.

On top of that, there is a further potential source of demand for ACCUs as offsets. This source is considerably larger than anything likely to emerge from the Safeguard Mechanism. It arises from the voluntary commitments of major Australian businesses, including all the BCA membership, to achieve net zero emissions by 2050. These voluntary commitments are a game changer.

So, what happens now?

Here’s a question that occurs to me. If Australian business is committed to achieving net zero by 2050, then why should the new Labor Government not re-legislate the world-leading emissions trading scheme that a dysfunctional parliament repealed almost a decade ago? Re-legislating the ETS would provide businesses with all the instruments they need to meet their commitments and would quickly generate a market-based forward price curve for carbon that would go a long way to repairing the damaging investor uncertainty that has helped drive Australian investment to recessionary lows. That forward price curve would also provide businesses right across the economy with a reliable basis upon which to reshape corporate strategies. And it would make more transparent the choices confronting leaders in all those fossil fuel dependent Australian communities in transition.

But I will assume this is not going to happen just yet. So, I have been wondering what might happen instead. And that is what the rest of this address is about.

I can’t recall many examples in Australia’s economic history of businesses having decided for themselves to pursue a goal that enjoys widespread public support but is patently profit-reducing. This is not how business is meant to behave in a capitalist system.

Some things are clear.

First, very few large Australian businesses will be able to settle on a trajectory to net zero emissions by 2050 without relying upon offsets purchased from others.

Second, unless there are supplementary elements of governance, there is a significant risk that many, perhaps even most, Australian businesses will simply buy the lowest cost offsets available, both locally and internationally. It is surely a matter for Australian governments to determine to what extent Australian businesses might be able to meet their net zero commitments by accessing offsets locally, and the characteristics of those locally generated offsets, beyond carbon.

There are three possible consequences of concern.

The first is that the offsets lack integrity and/or generate negative externalities for biodiversity or agriculture. It may be, for example, that the abatement claims being made are false. In respect of legislated carbon abatement schemes, this risk will be managed by publicly funded compliance activity, probably involving some form of international agreement, mutual recognition, and so on. But will we see the same sort of regulatory architecture develop if the claimed abatement is merely voluntary? It is of interest that, in announcing its 2022/23 enforcement priorities, the ACCC has signalled that it is taking a heightened interest in ‘greenwashing’; investigating environmental and sustainability claims that might be misleading. I wouldn’t want to venture an opinion on whether the ACCC has either the requisite legislative power or resourcing to deal effectively with the integrity issues that arise in respect of carbon offsets, especially those acquired from potentially millions of

foreign suppliers, but this is clearly a watch point. Moreover, while ever there are question marks over the integrity of current methods and credits, many Australian businesses will hold off buying ACCUs to meet offset requirements.

Managing the risk that heightened demand for carbon offsets will generate negative externalities for biodiversity or agricultural production is clearly a matter for government. The design of ACCU methods must have regard to these risks.

The second consequence of concern is that unless there is a very large increase in the supply of qualifying ACCUs, the demand for offsets from Australian business could drive the Australian carbon price to a level several multiples of recent voluntary trades; that is, unless offsets are accessed from offshore in substantial quantities. Put simply, there is a case for a significant increase in the coverage of government-approved methods for the generation of ACCUs. In principle, any domestic activity that is capable of securing carbon abatement, with assured additionality, should have a method according to which it can seek to create a qualifying ACCU. That's what it would mean to say that we are going to have an economy-wide, technology neutral, and therefore cost minimising, approach to carbon abatement.

The third consequence is of a rather different character. It is that we might miss an extraordinary, once in a generation, opportunity to achieve a 'double-dividend' for the nation.

In illustration of what I am getting at, consider this statement from a recent policy brief published by the Wentworth Group of Concerned Scientists, based on work by Bonnie Mappin and others, published in September last year: 'it is possible to restore 99.8% of Australia's degraded terrestrial ecosystems to 30% of the pre-European extent while maintaining food production, and with all the costs potentially covered by carbon farming revenue The restoration of these most degraded ecosystems will initiate their trajectory to recover critical ecological functions and provide habitat for threatened species assisting with Australia's Threatened Species Strategy.'⁴ The note goes on to say that 'The Wentworth Group has identified what to do and where, for (sic) how much it will cost, the benefits that will accrue, and how it can pay for itself.'

It is relevant, as the policy brief notes, that Australia, in June last year, joined an international coalition of more than 70 countries committed to halting the further loss of biodiversity through a global agreement to conserve 30 per cent of the world's land and sea. When native vegetation falls below 30 per cent coverage, ecosystem services and biodiversity decline sharply.⁵

The somewhat revolutionary point here is that right now, this generation of Australians has the means of ending a dreadful 230-year war on the continent's biodiversity, and of putting virtually all our most degraded ecosystems on a trajectory to recapture ecological function, rebuild habitat and create rewarding employment opportunities for land managers, including the indigenous custodians of traditional ecological knowledge. And we can achieve this remarkable thing because of the commitments made by Australian businesses to achieve net zero emissions by 2050.

Just think about that for a moment. Continental scale environmental restoration funded by Australian business; not reliant upon politicians of goodwill having to win election after election for a generation, battling well-resourced vested interest with an agenda of ecosystem plunder, always vulnerable to short-term fiscal shocks.

⁴ Bonnie Mappin et al, 'The costs and benefits of restoring a continent's terrestrial ecosystems', *Journal of Applied Ecology*, 2022; 59: 408-419.

⁵ The policy brief references Cristina Banks-Leite et al, 'Using Ecological Thresholds to Evaluate the Costs and Benefits of Set-Asides in a Biodiversity Hotspot', *Science*, 345.6200 (2014), 1041-45.

Imagine that. We, this generation of Australians, can do it.

Before going on to consider what we need to do now to make this happen, it is worth pausing to reflect on how we got to this point.

The political significance of voluntary action

In the 30-year period following negotiation of the United Nations Framework Convention on Climate Change, climate policies around the world have featured a combination of inducements, nudges, and penalties directed at emitters. For almost all those years policy people in Australia proceeded on the basis that it was for government to determine both the level of national ambition and the mechanisms to be used to reach the national target. Businesses were assumed to have no reason to commit to voluntary action. Policy advisers considered it probable that business would take every opportunity to undermine the development of good policy. Given Australia's increasing political dysfunction, businesses opposed to good policy have had ample opportunity, and Australia's recent political history provides numerous examples of such opportunities having been exploited.

Over the years I have heard many leaders in business explaining that it is not for them to pursue any outcome beyond profit. Some point out, correctly, that the capitalist system demands nothing more of them, even though it is they who decide what is produced, how it is produced, how it is made available for sale, who is employed and where. Students of the capitalist model are taught, as I was and as I went on to teach, that it is not the responsibility of business, but rather the responsibility of citizens to use their democratic freedom to elect politicians who will frame and enforce laws that ensure that the activities of profit maximising businesses improve the wellbeing of the nation.

According to the capitalist model, it is our task, as citizens in a democracy, to ensure that we, and those citizens who come after us, are the beneficiaries of an economic system in which business has no social responsibility beyond profit.

This is what I used to teach, and I still consider it to be true. But I also know that, as voters and politicians, we have not been up to the job. In too many vitally important areas, we have proved incapable of using our democratic system to deliver the policies needed to underpin national prosperity. Our democratic institutions are weak, at times dysfunctional.

Weakness in the nation's governance provides opportunity for those who know how to plunder. It turns out to be trivially easy to convince a dysfunctional nation that you are doing it a favour when you put your hand in its pocket.

But whilst the citizenry of Australia might have had difficulty in making the political system work for it, it also knows that things have not been working. It is demanding better outcomes.

No doubt encouraged by a succession of devastating droughts, storms, fires and floods, the demand for better outcomes is especially strong in respect of climate change action.

With Australia's government having walked off the job about a decade ago, pressure has mounted on business to accept this responsibility.

And business has done just that.

Today, through their constructive approach to climate action, and engagement on an increasing number of other challenging policy issues, many Australian businesses and business leaders could be starting to rebuild efficacy in our democratic institutions.

So, let's make this work.

The scope of opportunity

We first need to scope the dimensions of the opportunity. We have gone beyond carbon abatement, to identify an opportunity to enhance biodiversity. But there are equally exciting opportunities in sustainable agriculture, forest management and disaster resilience; all having a connection with carbon emissions reduction.

The *Australian National Outlook 2019*⁶, which I had the privilege of co-chairing with then CSIRO Chair David Thodey, paints a picture of future Australian landscapes sustainably and profitably generating a mosaic of food, fibre, carbon sequestration and biodiversity enhancement. It estimated that carbon plantings could offset as much as 700 MtCO_{2e} abatement by 2060 and contribute to reforestation and land remediation efforts that would restore ecosystem health and boost on farm productivity. It noted that the potential scale of activities incentivised by carbon revenue provides an opportunity to develop landscape solutions to multiple challenges, providing an immediate source of additional on-farm income, contributing directly to ecosystem restoration and a source of revenue to fund diverse plantings. Emphasising the critical interdependencies at issue, it observed that '(p)lanting the right species in the right river catchments and corridors is the most effective large-scale path to restoring the ecosystem health upon which Australia's agricultural productivity and biodiversity depend'. It noted that assisted reforestation in agricultural landscape can potentially increase both the total productive value of the land and its resilience for agricultural use.⁷ It also noted that planting shelterbelts, increasing woodland density on pastoral lands and various practices to increase soil carbon could support enhanced farm productivity and contribute to emissions abatement.

What, then, of our forests on the east coast of the continent, what remains of them? I should caution you that I grew up in these forests. My father, and his brothers, were timber workers on the mid-north coast of NSW. They were doing what they knew how to do; cutting railway sleepers by hand, finishing them off with squaring axes and, with their chainsaws, felling giant logs out of State forests to supply local sawmills. They worked at it for pretty much all the second half of the 20th century. But none of them, and no one they worked with, or for, considered that the native hardwood forest industry had a future. As far back as the 1960s, I remember my father complaining that nobody seemed to appreciate the importance of developing plantations to sustain an industry in hardwood timber. If he were still alive today, he would howl in rage at what has been going on, for some years now, in the remnant hardwood forests of NSW, where most of what is felled is turned into wood chips to satisfy export contracts, subsidised heavily by the taxpayer. And he would be dismayed by the increasing frequency and intensity of forest wildfires, and the knowledge that logging practices have been making these things much, much worse.⁸ Along with all other Australians he would have been shocked by the loss of as many as 3 billion native animals in the 2019-20 bushfires, and the loss of livelihood experienced by thousands of rural landholders.

I wish I had had the opportunity to ask my father what he would have thought of a career in forest protection and restoration, not chopping down ancient tallowwoods, blackbutts, turpentines and grandis, but managing hardwood forests to promote fire resilience, and for their carbon, biodiversity, and recreational values; underwritten by private sector money, not taxpayer subsidies. Of course, this vision was inconceivable last century. But today, it is well within reach.

⁶ CSIRO, *Australian National Outlook 2019*. Available at: https://www.csiro.au/-/media/Showcases/ANO/ANO2_MainReport_WEB_190614.pdf.

⁷ Ibid., p.65-66.

⁸ For example, Lindenmayer et al., 'Logging elevated the probability of high-severity fire in the 2019-20 Australian forest fires', *Nature Ecology & Evolution*, <https://doi.org/10.1038/s41559-022-01717-y>.

More than that, in signing up to last November's *Glasgow Leaders' Declaration on Forests and Land Use*, our political leaders committed to a set of outcomes that simply cannot be delivered unless this vision is realised. What was once inconceivable is now an imperative. Among other things, the Glasgow declaration commits signatories to 'halt and reverse forest loss and land degradation by 2030', 'conserve forests and other terrestrial ecosystems and accelerate their restoration' and 'facilitate the alignment of financial flows with international goals to reverse forest loss and degradation, while ensuring robust policies and systems are in place to accelerate the transition to an economy that is resilient and advances forest, sustainable land use, biodiversity and climate goals'.

Our political leaders have accepted what the scientists and economists have been saying for decades. We don't have a choice. We must restore our forests. We must transition rapidly to sustainable land use practices. We must restore biodiversity. And we must deliver on our climate goals. We must do it all.

How to make this work

Early experience with ACCUs emphasises one lesson above all others: when it comes to markets, data integrity really matters. This has been amply illustrated in transactions which, to date, have been limited to over the counter, bilateral trades, with a government agency usually sitting in the buyer's seat. Imagine how much more important the data integrity issues become with exchange trading.

Yet, as everybody in this room knows, the data integrity issues involved in carbon credits pale into insignificance against those embedded in biodiversity credits and offsets.

So, let me tell you a little about *Accounting for Nature*.

About 15 years ago, a small group of people in the Treasury, the Australian Bureau of Statistics and scientists associated with the Wentworth Group found themselves talking about the limits of GDP as a measure of progress. These limits had been understood well by those who contributed to the development of the system of national economic accounts in the post-World War 2 period, whose objective was merely to develop a set of macroeconomic measures that would operationalise Keynesian demand management. Over subsequent decades, and in the absence of alternative measures of equivalent rigour, GDP has become widely used for purposes for which it was never intended.

As far back as 2002, the ABS initiated a program of work designed to provide a broader set of data to inform an assessment of societal progress. And in the early years of this century, senior people in the Treasury, involved in the development of a wellbeing framework to guide policy advising work, were wondering about the possibility of modifying national accounts aggregates in some way, especially to capture the environmental impacts of commercial activity. But there was no integrated framework to answer even the most basic environmental question at a national scale; namely, is the state of the environment improving or deteriorating?

That was to change, with the ambitious project to provide, at five yearly intervals, a national state of the environment (SOE) report. In SOEs, assessments of environmental state and, where feasible, trend, are reported against a four-point rating scale, for numerous species and ecosystems. Assessments are made by people with considerable expertise. But they are handicapped in almost all cases by inadequate and inconsistent data.

At much the same time, the United Nations Statistical Commission was working on the development of a system of environmental economic accounting (SEEA). The SEEA central framework was endorsed by the Commission in 2012. It provides an intellectually robust framework to assist policy makers in thinking through the connections between economic flows and environmental stocks. But it doesn't prescribe what environmental data should be collected or how. It certainly doesn't pretend to

provide guidance to statistical agencies on how they might go about developing an alternative to GDP that captures changes in the state of the environment.

The group of people having these discussions in Australia many years ago were involved in all these strands of work: measures of Australia's progress; state of the environment reporting; and the UN SEEA. But they had bigger ambition than any of these projects. Their ambition was to produce a quantitative assessment of the condition of the environment at any scale of relevance to decision-makers, from a paddock to a continent, using robust, peer reviewed, methodologies that permitted replicable measurement; importantly, facilitating periodic state assessment to track change in environmental condition over time.

After more than a decade of work by the Wentworth Group of Concerned Scientists on the development of scientific methods that permit the quantitative assessment of environmental condition for numerous asset classes, and with encouragement from the Queensland Government's Land Restoration Fund, the not-for-profit entity *Accounting for Nature Limited* (AfN) was formed. AfN is chaired by Peter Cosier, inaugural Executive Director of the Wentworth Group. I am a non-executive director. So too is Peter Harper, former Deputy Australian Statistician, who led the development of the SEEA under the auspices of the United Nations Statistical Commission. You can read details of other directors, and our work to date, by going to our website: <https://www.accountingfornature.org>.

Now I want you to use your imagination. You are sitting at your computer, looking at a colour-coded map of Australia; perhaps via Google Maps. With the click of your mouse, you select a place of interest. It might be a river catchment. Your mouse click brings up an information table that records, on a scale of 0 to 100, an assessment of the environmental condition (both quality and extent) of the catchment's native vegetation, soil, native fauna, and freshwater. Had you selected a marine environment, the information table would have provided an assessment of its environmental condition, also on a scale of 0 to 100. All assessments are made relative to a reference condition which, in most cases, is an assessment of the state of the respective environmental asset in the year 1750. If the current state matches that reference condition, it scores 100. If it looks more like a basketball court, it gets a score of zero.

Click again. Instead of a river catchment, you are looking at a 1,000-hectare area of farmland, and a new data table providing all the same information. Click again. Now you have details for an area of 100 hectares. Click twice more and you have details for 1 hectare.

All the data you have been looking at have been assembled by AfN accredited assessors, using methods approved by AfN's Scientific Accreditation Committee, which is comprised of some of Australia's leading ecologists. The data come with quality labels addressing statistical confidence levels. Where the data have been used for commercial purposes, such as to generate a biodiversity co-benefit, they will, in most cases, have been externally audited.

And you won't just get current state assessment data, but also trend data where available.

Am I hallucinating?

Well, we have been at this for a few years now. And we have had a lot of engagement. So much so that we expect that by the end of this calendar year we will have mapped the environmental condition of about 10 million hectares of the Australian continent. The CSIRO Habitat Condition Assessment System (HCAS) has also made good progress in combining remote sensing, spatial ecological modelling, and low density on ground assessment data in a step toward national environmental

accounting.⁹ HCAS is a key input in one of Accounting for Nature's accredited methods for monitoring the condition of native vegetation. So no, it's not a pipe dream.

Landholders using AfN methods have a variety of motives. But most see a commercial benefit in being able to describe, with confidence, what is, or is not, happening to the environmental condition of their land and water. This includes for the purpose of making credible nature risk disclosures and other public claims, such as under the emerging Taskforce on Nature-related Financial Disclosures, representing investors with more than \$A20 trillion in assets under management.¹⁰

As the environmental coverage of carbon methods becomes more comprehensive, interest in the biodiversity impacts of carbon abatement activity will increase. Already, payments made under the Queensland Land Restoration Fund include an embedded carbon credit plus a significantly larger payment for what might be labelled a biodiversity co-benefit. Most of those biodiversity co-benefits have been based on AfN metrics.

Other jurisdictions have their own biodiversity credits and offsets of one form or another, as you know well. There is a possibility of AfN methods also being used to provide data integrity in those cases, though financial instruments might have to be developed to deal with a timing mismatch between effort and reward, since AfN-based assessments measure actual outcomes, not projected improvement.

While purchasers of biodiversity credits and offsets are today, for the most part, governments, that could change, and quickly. Suppose, for instance, that some of Australia's large businesses that have committed to net zero by 2050 were to declare that they will purchase as carbon offsets only those ACCUs that have a label attached that provides a high level of confidence that the carbon abatement activity is also generating biodiversity enhancement. These 'ACCU-plus' offsets will command a premium price, the margin to a 'plain vanilla' ACCU representing the value of the embedded biodiversity co-benefit. But then, couldn't a landholder create a biodiversity certificate from activity that involves significant ecosystem enhancement but no carbon abatement and make that available as a co-benefit to be 'stapled to' a plain vanilla ACCU?

And if that can happen, then we can have markets in carbon credits co-existing with, and closely related to, markets in biodiversity certificates. And once we have markets in biodiversity certificates, then regulators charged with enforcing biodiversity offsets have a whole new set of instruments available to them. Obviously, a lot of work remains to be done before we get to this point, but the prospects certainly are appealing.

And note that the possibilities include not only private landholders, but also State and local government landowners becoming active generators of ACCU-plus credits, reaping a financial benefit, for their communities, from the enhancement of carbon and biodiversity stocks on public land. Funded by business.

Concluding remarks

Australia's climate policy architecture is far from optimal. Yet, largely because of a striking change in attitude on the part of business, that rather primitive architecture could be used to leverage transformational enhancements in biodiversity, sustainable agriculture, forest management and disaster resilience.

⁹ <https://research.csiro.au/biodiversity-knowledge/projects/hcas/>.

¹⁰ <https://tnfd.global>.

Leveraging ACCUs into benefits beyond carbon, and even in carbon abatement, relies heavily upon the availability of methods based on good science and data integrity. Concepts of independence and transparency are critically important here. But so too is coverage. In the recent controversy over the integrity of ACCUs based on human induced regeneration, many have observed that markets would function much better if we had a map of the continent recording, at some fine level of granularity, its levels of carbon sequestration and sequestration potential. The same is true of biodiversity offsets and emerging markets in biodiversity certificates of various forms. We need high quality methods and credible data, publicly available, at some level of detail.

To date, the development of carbon methods has been politically managed. Methods for evaluating environmental condition, developed by Accounting for Nature, have high scientific credibility. But data gaps in both carbon and biodiversity are inhibiting the realisation of well-functioning markets.

So, I am going to close with an observation that should surprise nobody. The private sector can compensate for some of the failings of government, and it can make it easier for governments to develop good policy, but it is not an efficient provider of everything that governments should be doing. Right now, one thing government should be doing is developing comprehensive national data bases for both terrestrial carbon and environmental condition.

For a new government that understands the importance of developing a narrative of national progress based on broad notions of wellbeing, it should make a lot of sense to take the opportunity to invest in the development of comprehensive, high integrity national accounts in both carbon and environmental condition.