

Ecosystem services – an industry perspective

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An Otago Peninsula landscape today

View of early settlers in Otago

In 1844 the New Zealand Company's Principal Agent, Colonel William Wakefield, sent a despatch to the company's London court of directors describing what he had seen of Otago harbour and its potential for settlement. He described it as 'steep, with timber covered hillsides and undulating slopes, covered to the water's edge with beautiful timber and copse wood.' A less sanguine description by a later settler (no doubt pining for the managed woodlands of home) described it as covered in 'dark sombre forest, reeking with misty vapours, and hanging on the steep hillsides right down to the water's edge, while the dripping mist rested like a pall overhead, shutting out sun and landscape alike.'

Despite the early abundance of timber, rapid and at times indiscriminate clearance led within a remarkably few short years to a cleared and grassed landscape and to worrying shortages of timber for many settlers. Today Dunedin, and particularly the Otago Peninsula,

is surrounded by a relatively bare rural landscape. Predominantly grassed paddocks are classified as an 'Outstanding Landscape' and forestry is restricted because of its propensity to 'hide the underlying landform' (Dunedin City Council District Plan).

The limits of our world

The early 20th century Austrian philosopher Wittgenstein claimed that, 'The limits of my language mean the limits of my world.' His philosophy of language explored the way in which the human experience of reality is directly linked to the 'language-world' we inhabit. In more recent times we have seen this principle illustrated by a US election in which the important battle was to control the narrative rather than the truth. There should be no surprise then at voters' subsequent willingness to forgive some back-tracking on promises made in the excesses of the campaign, because they bought into the narrative rather than the detail.

So what does all this have to do with ecosystem services and whether they are important for a company like City Forests? It has become clear to me over many years now that plantation forestry in New Zealand does not control the rural narrative or, to use Wittgenstein's concept, it has little part in setting the limits of New Zealanders' language-worlds. As the image of what is regarded as an Outstanding Landscape on the Otago Peninsula above illustrates, the rural language-world in New Zealand has been long controlled by pastoral farming – this is the ruling paradigm. It often takes foresters like me by surprise just how deep seated this is when, for example, individuals can rail against the monoculture of a plantation forest. This is while failing to see the vastly more mono-cultural ecosystem of thousands of hectares of grass in the foreground, or to be shocked by the 'devastation' of a cutover site while not seeing the enormous disturbance of a ploughed paddock just over the fence.

While there is evidence that pastoral farming is beginning to lose its grip on the rural narrative, there seems little to suggest that plantation forestry is regarded as a natural successor, or that it is coming to be seen as the rural good guy amongst the wider public. Indeed we seem to either fly under the radar or to be regarded as a dangerous and dirty industry, destroying rural roads, delivering log-filled sediment washes down rivers and streams and exporting non-value added product to the Chinese. Kit Richards so ably made the point at the recent Forest Growers' Research Conference that 'their perception is your reality.'

Back in Dunedin then it is somewhat ironic to note that by the early 1900s it had begun investing in plantations of exotic species around the city in order to meet the demand for future timber and to mitigate for increasing problems with water quality and the spread of weeds. The result today, much grown and expanded, is the company I work for – City Forests – a fully commercial forestry enterprise which is wholly owned by the City of Dunedin.

Relevance of ecosystems services and related research

Nevertheless, ecosystem services still seems like a rather abstract subject for a forester actively engaged in the annual cycle of plantation forest management. So given that we don't control the rural narrative, should we not just keep our heads down and get on with our business? Are ecosystem services and related research really important at a practical level? My answer is emphatically yes.

Richard Yao and others have created a framework for understanding and analysing ecosystem services which helpfully divides them into three types: provisioning, regulating and cultural services. The framework is useful for understanding and analysis, but as a practitioner my day-to-day activities are overwhelmingly governed by a framework of just two: what I can get paid for, and what I can do (i.e. my licence to operate).

What I can get paid for – carbon

Other than timber, carbon sequestration has been the first, and realistically will probably be the only, ecosystem service we are ever likely to be directly paid for, at least to any financial significance. As an early and enthusiastic participant in the emissions trading scheme (ETS), City Forests has done well out of the carbon market and it has provided an important alternative revenue stream for the company during a period of poorer trading conditions.

For the forest industry, an ETS that is well supported by sympathetic regulation and by active participation has the potential to keep us in the competition for forestry-suitable rural land. This is important, as enduring ETS benefits to the industry are dependent to some extent on ongoing afforestation, as well as being the desirous outcome for New Zealand's current carbon commitments and a cornerstone of any low net-carbon future for the country. City Forests continues to benefit in practice, with ongoing new forest and land purchases underpinned at least in part by past and future projected earnings from carbon trading.

However, have we generated any additional licence to operate from our forests' ability to sequester and store vast amounts of atmospheric carbon? Probably not. While the Dunedin City Council, City Forests' shareholder, has been happy to claim the carbon offsetting capacity from our forests for other council controlled activities for many years, I am not aware of a single public acknowledgement of this from the local community. Furthermore, the nationalisation of the bulk of carbon from pre-1990 forests, protested almost solely by foresters, suggests that forest-stored carbon has long been regarded as simply a public property. Also, talk-back New Zealand has at times seethed with indignation at the profits accruing to foresters from trading their carbon credits.

For support for our licence to operate, we therefore have to look predominantly to other ecosystem services.

What I can do – clean water, avoided erosion, biodiversity and recreation

City Forests was an early adopter of Forest Stewardship Council (FSC) standards, first achieving certification in 2000. Environmental certification was initially motivated by potential market premiums, but has subsequently sparked a revolution in the way in which the company practices its craft and measures its performance. What began as a marketing imperative has filtered down to practically every corner of the business. Ownership by contractors and staff alike has moved beyond mere FSC box-ticking to a broad range of environmental outcomes being an important yardstick by which plans are developed and actions judged.

Along the way we have set aside over 11% of our estate in permanent ecological reserves, including high quality coastal bush remnants, a network of high

quality coastal lowland and elevated upland wetlands – long drained or otherwise degraded in the neighbouring landscape. We have commissioned detailed ecological surveys over much of this area and discovered rare flora, bird and fish species. We have discovered that our exotic forest areas are home to significant populations of threatened bird species now absent in much of the surrounding region. We have contributed to rare species enhancement projects both within and outside our estate.

We have monitored waterways for more than 10 years around our harvesting sites and discovered that with good practice we are able to maintain pristine water quality throughout the harvest and reestablishment cycle. We routinely monitor our site disturbance to ensure that it remains within acceptable levels. We are also voluntarily establishing setbacks from waterways.

We have worked with local organisations like Mountain Bike Otago to provide a very extensive network of cycle trails within our forests, even setting aside a potentially productive area for permanent trails. Cars rally on parts of our nearly 600 km of internal roads, motorcycles are in our forests every weekend, and we provide opportunities for walkers, hunters, fishermen, horse riders, LandSAR and NZ Army exercises. International movie-makers have used our forests. We pay archaeologists to study and help

us preserve important artefacts found by our staff and contractors who we have trained in accidental discovery protocols. We maintain a relationship with local Māori and invite their feedback and input into our forests and their management.

We do all of this, willingly, and yet we know we are not alone in this in the forestry sector. Nearly every significant forestry enterprise in New Zealand is providing a similar or even greater range of ecosystems services to their communities and environment, yet so much of this takes place beyond the view of the public and seldom attracts their attention or comment.

Why do it?

So why are these environmental services important, and why do we continue to invest significant amounts of time and resources in maintaining, enhancing and researching them? In my view there are four key reasons.

First, we do it because it is the right thing to do. Foresters are long-term thinkers – we have to be. At City Forests we plan in cycles of at least two rotations and principles of long-term sustainable yield are enshrined in our statement of corporate intent. We know that the benefit of some decisions we make today may not be seen until long after we have gone. So we understand that we are temporary guardians of the land and we



Tussock wetland reserves have flourished within Waipori Forest



Dunedin's mayor Dave Cull opening a mountain bike reserve

wish to pass it on in as good as, or perhaps an even better, condition than today.

Second, we are very substantial landowners in the regions in which we operate and we often operate in primary landscapes such as headwaters, some of which are fragile. We therefore attract the attention of regulators such as regional councils, many of whom are developing (or have developed) second generation plans. In Otago, the regional council has implemented a second generation water quality plan and other components have been signalled. There is little question that regional councils are raising the bar for environmental performance with their plans and enforcement of rural land use outcomes, and yet it is sometimes surprising to encounter the lack of understanding of the forestry cycle and its real environmental effects amongst regulators. Yet experience tells us that consistently skilful environmental performance, combined with knowledgeable dialogue with regulators, contributes to the development of good regulation and sympathetic monitoring of our activities.

Third, we are living in a world that has considerable environmental challenges ahead of it. Part of the answer to that challenge – sequestered carbon – is accumulating in our forests and has attracted a significant value that

we have been able to trade. This new income stream has improved our ability to compete for rural land. While it is unlikely that other ecosystem services will attract a direct value in the future, they are likely to become a more explicit part of future investment decision-making.

Last, we do so because plantation forestry in New Zealand has a great story to tell. Returning to Wittgenstein's language-worlds, I would argue that fundamentally we will do much greater service to our own businesses, to our industry, and for the common good of our communities and country when we speak our own language really well rather than getting frustrated when we are innocently or wilfully misunderstood.

I support the provision of ecosystem services and related research because together they are a key component of learning to speak our own language well. When we can skilfully practice our craft, and speak knowledgeably about the full benefits of what we do, we may ultimately begin to shift the paradigm and control the rural narrative.

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