New Zealand

Tree Grower

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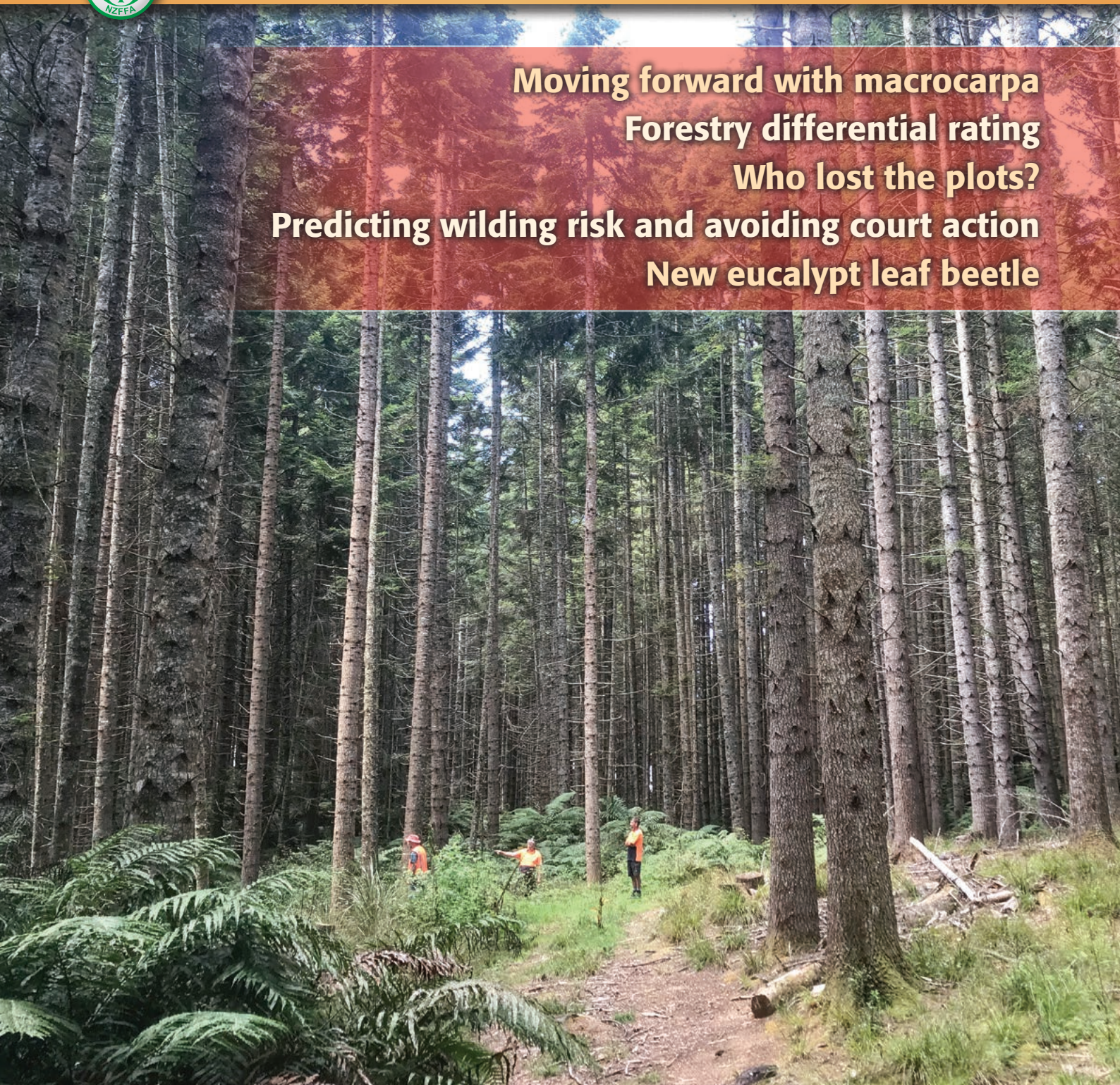
New Zealand Farm Forestry Association | Oranga Rākau Aotearoa February 2025

Moving forward with macrocarpa
Forestry differential rating
Who lost the plots?
Predicting wilding risk and avoiding court action
New eucalypt leaf beetle



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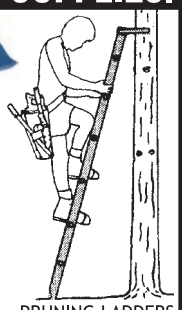
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From the President

Neil Cullen

Uncertainty seems to be the key word in any market reports I have read recently. Although supply and demand appear reasonably balanced in our vital China log market, there are many potential issues which could affect this situation in the near future. Number one of these is the United States threat of tariffs and what that would mean for processors and manufacturers who produce furniture and housing components from logs for export. The Ministry for Primary Industries in their annual *Situation and Outlook for Primary Industries* report have given the expectation that forest exports will rebound to $6 billion in the June 2025 year, but neither growers nor processors are exuding much optimism.

The government have followed up on their pre-election promise to restrict new planting on higher class soils by limiting admission to the Emissions Trading Scheme of class six land to 15,000 hectares per year and halting registration of newly forested land of class one to five. Farmers retain considerable flexibility, being able to plant up to 25 per cent of their class six land in forestry for the Emissions Trading Scheme. More details on how these restrictions will be implemented are yet to be released, but many farmers will be taking more interest in where the Land Use Class boundaries are on their properties.

Land owners will be able to have their categorisation reassessed at property level. It is too early to predict with certainty what the effect of these regulations will have on afforestation. There may be more interest in joint ventures between farmers and corporate foresters. There may well be a drop in land prices for hill country with less forestry interest in the market. What will remain certain is that forestry is a desirable option for the poorer parts of many of our hill country farms.

The promotions committee of the Forest Growers Levy Trust have decided they have more pressing needs for the funds they had invested in National Fieldays so will not be supporting a forestry hub this year. The NZFFA have yet to decide what presence they will have. We will, however, definitely be at Central Districts Field Days in mid-March at Feilding and South Island Agriculture Field Days at Kirwee between 26 and 28 March. At both venues we will be giving away tree seedlings to young people to encourage interest in tree growing, promoting our organisation and signing up new members.

Our thanks go to Dave Forsythe for co-ordinating our appearance at these events. The week after Kirwee is our annual conference in Christchurch organised by the North Canterbury branch. I encourage members to enrol early to give certainty to organisers. Councillors at their meeting will be asked to provide branch feedback on how they want future conferences to be structured. If, as seems likely, there is a desire to continue with a focus on field visits, an option for a second day at the November Council meeting for more technical information presentations and forums will be considered.

The NZFFA is currently negotiating with the Ministry for Primary Industries for a new partnership involving funding for an upgrade for our website and in return, working with Te Uru Rakau/New Zealand Forest Service to run field days and using NZFFA communication channels to help them get their message across to land owners. Thanks largely to the voluntary work over many years by Dean Satchell, our website is the most extensive and most visited of New Zealand's forestry websites. An upgrade to its look and feel will give it a modern appearance and make its vast stores of forestry information more easily accessible.

NZFFA conference 2025 North Canterbury

1 to 4 April

Grant Hunter

This year for the first time the conference registration is online only – there is no option to fill out a paper based form. It is a challenge for conference organisers but hopefully not too unsettling for those used to the old system. By now, all of you should have received an email explaining how to register. If you have not, please contact Raewyn on 04 4720432.

To recap the vital statistics. The conference runs from 1 to 4 April and is based at the Commodore Hotel, Christchurch. Tuesday 1 April in the afternoon and all day on Wednesday are based at the Commodore Hotel and involve the action groups, the Executive meeting, Councillor's meeting, the Annual General Meeting, the keynote speaker, technical sessions and the awards dinner.

Thursday and Friday are half-day and full-day field visits to farm forests with Friday being the end of the formal conference. For those wishing to stay on, there are optional field visits on Saturday 5 April subject to numbers registering.

Conference highlights

As a host at Mt Grey, Gary Fleming is the closest the writer has met to a walking Wikipedia on trees of the world, the environmental and management factors which govern their suitability for growing and their performance, especially in dry regions. Gary's knowledge is very practical and underpins his diverse trials and production stands.

At Alistair Malcolm's Selkirk, you will discover how the finesse of a career orchardist has translated into the performance of trees. Alistair stresses the importance of getting on top of weed competition on ground which gets very little rain. You will notice the results of his methods as you walk up the driveway to his house. The rewards are obvious in the overall tree performance.

Also at Alistair's place, forest ecologist Nick Ledgard will explain his mounting evidence on the beneficial changes in bird presence when open fields are transformed to forest, be it exotic or native. Over many years Nick has observed changes across a range of lowland and high country farms. Come and listen, so you can play a part.

Melrose and Double Tops will help you experience a much larger hill and high country farm with Dugald Rutherford and family. Dugald has been planting since his school days so harvesting is now a significant contributor to annual income. Along with planting the right species on the right site, locating plantations adjacent to future logging roads is essential for a profitable harvest. All woodlots planted on Melrose are set for harvesting at some point.

The Rutherfords have long recognised that relying on growing grass in this environment is a risky business, because for a good part of most years it is either too dry or too cold. On the other hand, once established, trees can access a deep and rich subsoil which gives reliable annual growth whatever the season.

There will be a presentation from Landcare Research on their research project Trees in Landscapes. The project looks at above-ground and below-ground carbon on transects from within a woodlot out into pasture, part of

Wildings in the Mackenzie basin – post conference field day

a nationwide set of plots covering various tree species and soil types. With the Rutherfords, they have traversed block of *Eucalyptus nitens* into pasture. The interaction between the trees and pasture results in an enhanced amount of carbon, so that a farm with many small wooded areas could have a significant increase in carbon.

Beyond the conference

Field trips on the Saturday after the conference extend the opportunities for visitors to the region beyond the formal conference programme. The first option is a three-stop loop covering Gary Fleming on dryland trials, John Fairweather at Specialty Timber Solutions and Proseed Ltd.

John Fairweather left a career at Lincoln University over a decade ago to develop technology for processing logs into high value products. His business near Sefton takes locally-sourced hardwoods, especially eucalypts, mills the logs, air dries the filleted pallets, kiln dries the timber using a solar kiln and two vacuum kilns, then machines the wood to various profiles.

Proseed Ltd is the largest supplier of tree seeds in Australasia. Its roots go back to the Forest Service tree seed orchard formed in 1966 which was purchased by Ngai Tahu in 2001. Proseed is a major supplier of radiata pine, cypress and eucalypt seeds and is an active research partner in many programmes. It is involved with hybrid breeding programmes established by Scion and Proseed in the late 1990s and is looking ahead to deploying genomics in its work.

Natural hazards – wildfire asserts its presence

Option two for Saturday is a tried and true high country circuit, this one focussing on invasive conifers. The Waimakariri basin venue has recently been rocked by adversity. Canterbury's specialty hazard has always been crippling drought and destructive winds. In the last five years we have been entering a much more extreme manifestation of the two – wildfire.

High country field day leader Nick Ledgard has an intimate knowledge of this precise area, from his early research days in the 1970s right through to involvement in the current wilding control programme co-ordinated for decades at the community level by the Waimakariri Ecological and Landscape Restoration Alliance, which now operates within the Ministry for Primary Industries Wilding Conifer Control Programme. No-one understands the overall picture better than Nick. The recent fire will add fuel to the discussions on our high country day.

Invited speakers

We hope to have Keith Woodford as opening speaker at the awards dinner. He was, for a long time, Professor of Farm Management and Agribusiness at Lincoln University and currently is Honorary Professor of Agrifood Systems. Keith is arguably the most lucid commentator on primary production systems involving carbon sequestration and the Emissions Trading Scheme.

Miles Giller, recently retired as the QE II Trust representative for North Canterbury, a role he had for 23 years. He will reflect on relationships within the diverse geology and indigenous biodiversity he has encountered in North Canterbury.

Simeon Smaill is a microbial ecologist specialising in plant soil microbe interactions in forest systems. His expertise covers the activity of growth promoting microbes, nutrient modelling, improving the efficiency of plant production, and the effects of climate change. Simeon has gift for presenting the latest research in an interesting and understandable way.

Nick van Haandel is Regional Manager for New Zealand Forest Service/Te Uru Rakau. We expect Nick will present a topical talk featuring dryland forestry and climate change effects on forestry.

Predicting wilding risk and avoiding court action

Nick Ledgard

The risk of wilding spread is predictable and calculable. We know the age when different species first produce cones and where the seed will go because it is only dispersed by wind. Most germinate within a few years – they produce a short-lived seed bank in the soil, and we know what controls seedling establishment which is mainly browsing and vegetation competition.

The fact that wilding risk is so predictable also makes it eminently manageable. This is why the government has been prepared to support control of wilding conifers to the tune of over $100 million. We quantified the level of damage caused and proved to them that a stitch in time will save nine.

Along with a few others, I used this knowledge to help develop a simple wilding risk calculator back in the early 1990s. Since then, I have visited the majority of sites where wildings exist, and often undertake desk-top calculations of the risk of spread. The risk calculator is currently being reviewed and could be improved, but the fact that it is still officially recommended 30 years later is testament to its usefulness. It is very user-friendly and can be quickly completed.

If a user knows the site to be planted and surrounding land and fills in the risk calculator accurately an estimate of wilding spread risk can be obtained within minutes. Consequently, many aspiring tree growers have made planting decisions without needing to consult an expert.

Douglas-fir is a very spread-prone species. Sales of its seeds have plummeted since 2017 to the extent that the main seed orchards no longer exist. It is more than likely that this is because potential Douglas-fir growers have calculated the risk of wilding spread and then decided not to proceed further, contributing to the decline in sales.

The current calculator is being reviewed, so hopefully any new version will be more accurate and just as easy to use. Watch this space.

Avoiding court action

At the last Wilding Pine Network conference in Taupo last year, one of the contributions I recall best was by Simon Hodgson. Simon runs a weed control business, Aoraki Tree and Scrub, but before that he was a lawyer in London.

At Taupo he addressed the question 'Can you sue a neighbour who is causing wilding conifers to invade your property?' The simple answer is yes. Any claimant would use one of two law options. The most applicable or suitable is the law of nuisance and the other which may be argued in tandem, is negligence. Nuisance is the more applicable because it is land based, and the spread of wilding pines fits neatly and precisely into its domain. As Simon said, as far as he is concerned and that the law is settled, that the spreading of wilding pines by wind borne seed will constitute a nuisance.

The law of nuisance, as applicable to wilding conifers, is further explained on the Wilding Pine Network website wildingpinenetwork.org.nz. Any claimant will need to prove that the spread more likely than not originated from the defendant's property, and to bring evidence to establish the amount of loss or harm suffered. We all know what the latter is and includes loss of grazed farmland, changes to water yield and iconic visual landscapes, or increased wildfire intensity.

Relative to the former, the source of seed, this is where the calculator can play its part. Remember that under civil law, the claimant only needs to prove that the spread came from the defendant's property on the balance of probabilities, which is 51 per cent or more.

Simon thinks that while we have yet to see court action for damages caused by wilding spread in New Zealand, the chances are that we will in the near future. Hopefully the knowledge of the potential liability and likelihood of legal action may encourage owners of seed sources to act pre-emptively and remove the sources in order to reduce their potential exposure to litigation. Already the use of the wilding risk calculator has encouraged potential planters of spread-prone species not to plant problematic trees in the first place. The more we spread the word, the more effective this might be to help us bring non-cooperative land owners on board relative to wilding control.

Nick Ledgard has legendary knowledge of wildings.

Moving forward with elite selections of macrocarpa

Vaughan Kearns

In the *Tree Grower* November 2024 I outlined the progress which has been made with superior selections of macrocarpa on Rangitoto Farm over two generations. The best available selections were included in the first woodlot established there, and then seeds from the best of those were used to establish the second rotation. Before the harvest of the second rotation of trees, a thorough assessment was made to establish the best trees among the stands growing there – the term elite being used to describe them.

Denis Hocking beside one of the superior macrocarpa trees

Selection process

The first aim was to ensure that the selections already made had a low or no incidence of cypress canker. This was made easy because this particular trait had already formed the main criteria for the first two rotations. We know that there is canker on the site because the research trial plantings established in 1996 and 1997 had some seed lines that were riddled with it. Almost all of these had been removed during previous thinning and those that were left were standing dead.

This is important to note because cypress are prodigious at producing pollen, and the last thing you want is to have canker susceptible trees pollinating with the elite selections. Wind-blown pollen can travel large distances and there are still many susceptible hedgerows on adjacent farms, but the siting of the block where the selections were made would have precluded this.

The next of the criteria which applies to all forest species is growth and form. These descriptive words are well known to foresters and are used by radiata pine growers in a number system to make the improvements from the earliest imported seeds. The GF Plus recording system is a patent owned by the Radiata Pine Breeding Company Ltd and is well worth a read on their website.

The form of the trees

Volume growth is essential, but for production of appearance-grade timber, which is an important facet of macrocarpa, the form of the tree is equally important. When selecting on form these are the traits we are looking for.


The collection team reflect on the progress and plan for another day

Good horizontal branch habit and size

Branches that grow at right angles to the stem are important, as is the size and frequency. Small horizontal branches are easier to prune than upward facing, large diameter branches. In addition, horizontal branches are better at withstanding the weight of a heavy snowfall. This is becoming more important each year as high altitude and high latitude areas are being planted. Considering that macrocarpa comes from coastal California, it is surprising how well they perform in Southland and the Canterbury high country.

Branch size is also affected by soil fertility and tree stocking rates, so we have had to take this into consideration as well. Small branching is no good if they are too small for helping tree growth, so in some instances we have had to be pragmatic.

Single leader dominance is another aspect of form selection. Multi-leader trees are eliminated at the beginning, but this has rarely been necessary due to previous good selection as well as adequate tree spacing to keep the trees reaching for the light above.

Butt fluting

Fluting in the butt end of the pruned sawlog can be problematic. This tends to develop with tree age and exposure to wind as well as genetic predisposition. Fluting causes bark folds to grow well into the heart of the tree around the base and can result in downgrading the value of the timber. Sometimes this is overstated, and in the case of trees at a harvest age of 30 to 45 years, it is not normally a problem.

Stem straightness is a given when producing sawlogs. Sawn timber is most efficiently produced from straight stems. There is a great deal of wastage when cutting bent logs, so it is important not to select these.

Volume growth

Volume growth is what everyone is after, but there is room for caution. Young cypress are quick out of the blocks when first established on good sites, but some have the propensity to topple while young. If their root growth does not keep pace with the foliage they lose the ability to stand up straight in strong winds. This is the biggest problem to solve with cypress, but not something we could look at with this site because it was so sheltered.

Height growth tends to follow diameter growth, but because cypress requires 10 to 20 years longer than radiata pine for a rotation, we selected the taller trees that gave the opportunity for an extra head log from the felled trees. Head logs – logs cut from the topmost part of the tree – produce an excellent appearance grade timber with small, tight knots ideal for furniture or interior panelling.

Heartwood content and colour

Growing trees which produce timber for exterior uses requires the wood to be 100 per cent heartwood, because that is the part which can withstand decades of exposure in exterior building applications such as weatherboards, decking and window joinery. We know that this trait is influenced by soil fertility and tree age as well as genetics. Heartwood percentages can also be


The heartwood content was recorded for each of the selected trees


The collected cones being put into a wool fadge

improved by careful silviculture. The opportunity was taken to remove a couple of trees that displayed large sapwood bands on this site.

Many people are impressed with the rich tones that can be found in macrocarpa timber. On this site the variation was minimal, so did not form a part of the selection criteria. It seems probable that the trees producing the vivid red colour which so many people like tends to be in trees much older than those that were available here. However, the timber sawn so far has provided a texture which is very pleasing to the eye.

Selecting trees and collecting the seeds

Once the selection of the elite trees in the stand had been made, there was a peer review which included the grower Denis Hocking. The selected trees were carefully felled by chainsaw and another assessment was made by inspecting the upper crown at close quarters as well as another perspective of butt fluting and heartwood content.

The seed collection was the fun part. To maximise the opportunity in the short window of time that was available before the harvest crew came in to get the balance of the stand, a team was assembled.

Thanks and praise must go to Cypress Development Group members Angus Gordon, Denis Hocking, George Shallcrass, Dougal Morrison, Ben Shallcrass and Scrubby Campbell.

Although some time was wasted as they tried to reassess the assessments already made, we managed to make itemised collections of the 15 trees in the stand which made the cut.

After three days of cone collecting we had managed to fill sacks with over a tonne of seed-containing cones. This collection is probably the largest ever made of such high quality genetic material from macrocarpa in New Zealand.

Seedlings for planting in 2025

The Cypress Development Group now have the opportunity to provide the very best macrocarpa seedlings available for the foreseeable future. The stock is predominantly made up from the second generation selections from Rangitoto Farm, but it also includes seeds from superior trees that were in the 1996-97 trial. These included trees supplied by NZFFA families including the Faulkners from Tai Rawhiti, the Rose brothers from Tai Tokerau and Shem Kerr also of Tai Tokerau.

What adds more kudos to this selection is that Denis Hocking's favourite cypress tree, Rangitoto 3 which we now supply as a clone, was part of the stand and would have added its genetics to the mix via the pollen it produces. This tree has been left standing on its own after the harvest and we will continue to take cuttings from it as well as a final seed collection. Any further seed collections from this one could be problematic because the seeds will mainly be self-pollinated from now on. This means the seeds will be pollinated only by itself, which is not ideal. I told Denis to instruct the harvesting crew to leave the adjacent, majestic looking lusitanica to see if we could get some nice hybrid seeds, but nobody listens to me.

Vaughan Kearns is chair of the Cypress Development Group.

Poisoning native trees for forest management

Paul Quinlan

John Wardle, a living legend in New Zealand's world of sustainable indigenous forestry, is poisoning the natives regenerating within his pine forest. Why? Because they are invading his forest, and in contrast to the pines the law makes the native trees worthless to him in this situation.

This is particularly sad because he would prefer to be managing a mixed-species, mixed-aged forest in that area and he is sure that it could be done. Ironically, at the same time, elsewhere, farmers and foresters are being encouraged to plant or allow more natives to regenerate on their farms and within their pine forests.

What is behind this odd situation? In short, it is a perverse outcome of well-intended but inadequate legislation. In this case, primarily the Forests Act and its lack of provision for the productive management of naturally regenerating native trees outside pure native forests. This oversight discourages the integration of regenerating native species within some production forests and farms. This article highlights the need to legitimise the harvest and use of native trees in non-native forest situations.

Continuous cover forestry with pines

John and Rosalie Wardle are well-known names in sustainable forest management. On their property, Woodside, near Oxford, they manage 70 hectares of black beech forest according to a Sustainable Forest Management Plan, as provided for under Part 3A of the Forests Act. However, they also apply unique management to 27 hectares of pine forest, which John calls target diameter harvesting. This is a form of continuous cover forestry which reflects their preference to avoid clear-fell plantation forestry on this site.

In theory, this type of close-to-nature forestry should suit the development of a mixed-species, uneven-aged forest. In practice, that is exactly what John has observed – 10 to 15 per cent of the radiata pine has really good beech regeneration underneath it. John believes that

John Wardle's continuous cover radiata pine forest

on the better soils and shadier gullies, target diameter harvest management would see the native regeneration eventually replace the pines. A mosaic-like pattern of mixed native and exotic species would naturally develop.

Originally, John was happy to allow the native trees to come in. He is confident that black beech tree regenerating in this situation can be pruned and managed to produce harvestable trunks of 45 cm diameter at breast height in about 45 years. He has such trees in the forest. However, if they sustain any bark damage while selectively harvesting the pines, they will be ruined by rot. It would make sense to be able to harvest them then as well.

Clearly, this could be an excellent example of mixed species, close to nature forestry, starting with radiata pine. However, frustratingly, this is precluded by a regulatory Catch-22 because Part 3A of the Forests Act applies – but it cannot be practically applied.

Northland totara naturally regenerate in paddocks

The problem with the Forests Act

There are two main provisions in Part 3A of the Forests Act which enable the legal [harvest and] milling of native timber on private land. These are known as Sustainable Forest Management Permits and Plans. They attempt to limit harvest yields to a sustainable rate and require management to ensure maintenance of the forest's natural values in perpetuity and to protect the forest from fire and other threats. The Sustainable Forest Management Permits and Plans have proved to be applicable to many remnant native forest areas, but difficulties are experienced when trying to apply them to native trees and forest in other forms. Examples of these include immature regenerating forests, highly modified forests and naturally regenerating trees within exotic vegetation such as plantation forests and pasture. Unless the areas can be defined as indigenous forest and discreetly mapped as such, the provisions cannot be applied.

The Act defines indigenous forest as 'land wholly or predominantly under the cover of indigenous [native] flora'. This means a Sustainable Forest Management Permit and Plan can be applied to John Wardle's 70 hectares of black beech forest to legally allow sustainable harvesting from it, but not to the same species regenerating within their commercial continuous cover pine forest. This disincentivises allowing black beech or other native trees to establish within that forest area and from being sustainably managed.

Totara in Northland

There is a similar situation with naturally regenerating totara in Northland where totara are also colonising pine forests and pasture areas. Yet these are not legitimate 'indigenous forest areas' for Sustainable Forest Management Permit and Plan provisions of the Forests Act. This reinforces the perception that regenerating natives are unproductive elements within any primary production system. In addition, fear that such native regeneration may be mapped as a Significant Natural Area in district plans, encourages land owners to clear or destroy it to protect their future land use options. This is a rational action, but a perverse result similar to John spraying out his native regeneration.

Paradoxically, if those same naturally regenerating natives were planted, then they could be certified as Planted Indigenous Forest and exempt from the sustainable management requirements of the Act. Milling

statements could also be issued allowing the timber to be legally milled and sold. In some situations, differentiating between planted and naturally regenerated natives becomes absurd. Similarly, if the pine forest had been planted after 1989, and entered into the permanent forest category of the Emissions Trading Scheme, then harvesting and milling the naturally regenerated black beech could be legally possible. Nature just does not seem to understand the rules.

Weaving native forest into our working lands

Land owners and managers are increasingly being encouraged to integrate more native plants into their local landscapes. The reasons include the multiple potential benefits and associated values such as indigenous biodiversity enhancement, soil and water conservation, carbon sequestration, cultural landscape values, environmental resilience, as well as timber and non-timber products. However, the 'weaving in' of natives will need to be at a large scale to have significant effect.

Fortunately, there is scope to integrate native species across the landscape in various roles and forms beyond conservation forests and existing stands of regenerating native forest. The indigenous biodiversity islands of existing native forests could be complemented by increasing the indigenous component of commercial exotic forests, particularly carbon-forests, and continuous cover forestry, but also out into non-forest situations such as small woodlots, buffers, shelterbelts and even trees on pasture.

However, a key point to make here is that while planting natives will have an important role to play, planting is very costly. In contrast, natural regeneration is cheap. Encouraging natural regeneration will be the critical complement needed for large-scale establishment and maintenance of native vegetation.

Encouraging natives within messy landscapes

Regenerating native trees and forests already exist in a diverse range. They include hybrid exotic and native ecosystems, as well as novel constellations within production systems – such as the beech colonising John Wardle's commercial exotic forest. This will increasingly be true of the future. There is a need to accept this reality and recognise the value of integrating native species across this range to support indigenous biodiversity conservation, which at present, the Forests Act does not. As we enter what some people are calling the Anthropocene, legitimising the productive use of naturally regenerating natives within these 'messy' and evolving landscapes will become more important.


Native black beech invading radiata pine forest

This article has highlighted a perverse outcome resulting from a lack of legal provision to accommodate the use of native species within a mixed exotic and native forest. In this case, the Wardle's still have a wonderful example of transitioning a radiata pine plantation to a continuous cover forestry regime using target diameter harvesting. However, if it were not for the law, it could have also been even more – the forest could include native species in the mix.

This story has only raised one of many legal issues disincentivising indigenous forestry. Further articles will outline others. Collectively, they will build the case for a comprehensive review of the regulations in relation to the harvesting of indigenous trees and forests.

Paul Quinlan is part of the Northland Totara Working Group.

Who lost the plots?

Jennie Marks and Vaughan Kearns

Over the last few decades strategically planted permanent sample plots have been neglected. This is despite the fact that they contain key information which could help us prepare for future adaptation for forestry development. How can we work together to safeguard these sample plots of alternative forestry species which would help us to improve resilience?

Across New Zealand you can find patches of forestry plots mainly of 50 to 80-year-old trees which are neither natives nor radiata pine. These plots were established deliberately and systematically to help the forestry sector understand the potential and specifications of various tree species which can be grown here.

As radiata pine emerged as a lead species to be backed, forestry land changed ownership, with the result that many of these sample plots have been forgotten. However, they can provide valuable information as well as a seed source to improve diversification and adaptation. Not all plots can be saved from felling and although a lot have already been lost, many still remain. Agreement for seed collection and access to land for new trial stands might be achieved if we can work with willing corporate foresters.

Systematic and planned

A deliberate process to grow plantation forestry got us to where we are today. New Zealand took a systematic and planned approach to developing its forestry industry and this was led and coordinated by the government's New Zealand Forest Service.

While the industry settled on the investment in radiata pine as its main crop, the risks of relying on this single species were understood. Initially, this risk was managed by ensuring that at least 20 per cent of the publicly owned forestry assets were planted in alternative species, and work continued to keep researching and improving alternative species.

The management also included the establishment of forestry species trial plots across the country to monitor species and timber performance in different

Discontinued eucalypt trial from 1998


Redwoods after re-measurement in 2022


Permanent sample plot of 51-year-old macrocarpa

micro-climates, soil types and research into genetic improvement. The majority of these 'other' species plots were established from the 1950s to the 1990s and include redwood, Japanese cedar, Tasmanian blackwood, Lawson's cypress, western red cedar along with many eucalypt species. A lot of these have since been harvested and replanted in radiata pine.

With government and sector reform over the last 80 years, the oversight and general stewardship of the programme information about many of the sites has been lost. There is now a myriad of land owners ranging from small to very large companies, domestic and international as well as some owned by agencies such as the Department of Conservation and Land Information New Zealand.

As the forest industry was privatised many of the trial sites and planting changed ownership and have been felled. Some were covered by covenants following the end of the Forest Service, but not all retained real protection or management.

Scion undertook some work in the year 2000 to identify remaining sites and current owners, but did not make much progress around the legal protection in the effort to safeguard the sites and plots for future research. Currently there appears to be little or no funding to provide stewardship and undertake research and protection for these sites. As a result, many permanent sample plots have been lost or the individual tree identification has become unreliable.

In North American timber building circles, wood supplied for the building industry is not sold by species, but in groups of species which have similar performances. For example, the letters SPF on a packet of timber could contain, white spruce, black spruce, jack pine, lodgepole pine, balsam fir, Englemann spruce, red spruce or others. None of these species has yet had meaningful investigation here, although some are in the old Forest Service trial sites, so it is important to preserve those that remain.

Examples of permanent species trial plots

The NZFFA and other organisations interested in the sustainability and resilience of the forestry industry are concerned about the loss of long-standing species trial sites for alternative forest species. A serious attempt was made during 2022 and 2023 to locate and positively identify each tree in permanent sample plots – most of which had not been measured for about 10 years. Initially this was focussed on redwoods but later it included all species. The first table below shows the number of plots re-measured and newly established.

Permanent sample plots measured and newly established

	Measurement	Establishment	Total plots	Species
Cypress	32	40	72	10
Eucalypt	83	8	91	6
Poplar	25	4	29	3
Redwood	26	34	60	1
Acacia	3	1	4	1
Sugi		2	2	1
Western red cedar		1	1	1
Kauri	2		2	1
Totara		1	1	1
Total	**171**	**91**	**262**	**25**

The 25 different species found and measured are shown in the table on the right.

It is likely that this measurement programme was the most comprehensive alternative species work since the disestablishment of the Forest Service in 1987. However, a significant number of trial sites and permanent sample plots are still unmeasured or are not recorded as having been lost. In addition, the remaining plots are not secured with binding agreements for their protection.

Grand fir and others

One potential forestry species of interest that was missed in the recent measurement programme was *Abies grandis* or grand fir. This is originally from the west coast of North America and is regarded as a serious contender as a contingency species for radiata pine. It has similar growth rates and timber properties to radiata pine but next to no genetic selections have been made to improve its productivity. There is already a growing interest in this species from large scale foresters in New Zealand. One substantial benefit is that, in existing trial sites, a range of provenances are growing which cover a large geographical range from their original overseas territory. What this means is that seed selection can be made which can match growing conditions found across various latitudes here.

Preliminary research work to determine that grand fir grown here is as good as that found in its home range has been completed. Work remains underway to increase the speed of nursery growth and overcome health problems in the nursery where seedlings are being produced for forestry clients.

Value greater than the sum of its parts

With increasing concerns about a social licence to operate, increasing biosecurity concerns and fire risk to an industry dominated by radiata pine, the need to find out more about the value of alternative species is increasing. Individual sample plot sites might not be of immediate value to the current owner, but it is a situation where the whole is worth much more than the sum of its parts.

The value of these sample plot sites is hard to quantify. However, there are important aspects which are just as relevant now as they were when they were planted. The sites –

- Combined provide a living record of the performance of a suitable suite of forestry species across climatic and soil conditions
- Can be used to continue to measure timber specifications, growth volume, disease resistance, and rate of carbon sequestration

Species measured during 2022 and 2023

Species list	
Acacia melanoxylon	*Eucalyptus bosistoana*
Agathis australis	*Eucalyptus fastigata*
Chamaecyparis lawsoniana	*Eucalyptus globoidea*
Cupressus ferndown	*Eucalyptus macrorhyncha*
Cupressus gigantea	*Eucalyptus quadrangulata*
Cupressus lusitanica	*Eucalyptus youmanii*
Cupressus macrocarpa	*Podocarpus totara*
Cupressus ovensii	Poplar androscoggin
Cupressus satchelli	Poplar kawa
Cupressus superl	Poplar veronese
Cupressus torrelosa	*Sequoia sempervirens*
Cryptomeria japonica	*Thuja plicata*

- Are the remaining resource for seed collection should any of these species be considered for large-scale afforestation or other commercial species.

Commercial radiata pine forestry is facing a loss of social licence to operate and is challenged by some of its environmental effects. The risks of a single-species industry in terms of exposure to market fluctuations, disease and fire are on the minds of many operating in forestry. Studies into the growth and carbon sequestration rates necessary to calibrate the settings of the Emissions Trading Scheme require access to permanent sample plots of various species. Recent funding to undertake these studies illustrates the current value of these sites.

Working together

The identification and protection of old permanent sample plots is a critical step to provide for the potential of research to gain further insights into the performance and suitability of alternative forest species. It is an important urgent first step that we look for a formal stewardship system to safeguard and enhance the value of forestry sample plots across New Zealand.

Any initial plan could include setting up an initiative which enables systematic, oversight and identification of trees on all sites. This should be based on the previously accepted system of annual survey of sites of less than 11 years old, bi-annual survey of sites of 11 to 16 years old and surveying every three years sites older than 16 years. This measurement schedule would guarantee that the identity of the trees and the plot are secure for future research and measurement.


Grand fir trial site

In addition, we need to develop a consistent method of protection and measurement programme with site owners and managers which provides for access to undertake research and seed collection. Finally we need to organise a coordinated research plan which can be carried out with representatives within regions.

The NZFFA is interested in developing a project in partnership with other agencies to identify and protect the remaining permanent sample plots. This will require working with owners to identify an acceptable way to help safeguard these strategic assets.

Vaughan Kearns is a mainstay of the Cypress Development Group.
Jennie Marks is a consultant with expertise in strategic policy with a focus on natural resource management including forestry.

A register of recommended forest harvest and marketing managers

Hamish Levack

There were several objections to the August 2024 *Tree Grower* article 'Suspicious about your harvest manager.' Some were valid, some might be valid and others were invalid. The criticisms, comments and rebuttals are outlined below. Later in this article is a resolution that I have discussed with the NZFFA Executive and for which I would like further comment from you.

The opening paragraph of the August article said that 'Usually the contract [between a small-scale forest owner and a harvest and marketing manager] refers to the manager maximising the profit for the forest owner, but because the aim of all New Zealand forest management companies is really to maximise profit for themselves, this seldom happens.' This touched a nerve.

Dishonouring contractors

One correspondent was adamant that my statement dishonoured most harvest and marketing managers. He demanded facts to back up the assertion, and pointed out that sometimes harvest mangers have even exceeded the forecasts that they gave their clients.

He said that occasionally he paid a lump sum for a cutting right, or offered a fixed price on a pay-as-cut basis. However, most forest owners did not like the risk built into these methods and opted for an open book in the hopes that the market would improve over the harvest period. Often, of course, the reverse takes place, which leads to some grumpy clients. For example, export log prices have been low for nearly a year now.

Pre-harvest inventory

The correspondent argued that he offered a pre-harvest inventory which is an important component of an accurate revenue forecast to all his clients, but was surprised how many, particularly small woodlot owners, declined to pay for one. He asserted that he always provided his clients with nett income forecasts which included costs for logging, roading estimates, loading and transport, local council notification and environmental planning.

However, he also admitted that a few harvesting managers probably did take advantage of their clients. He also agreed that with my claim that most small-scale forest owners are too naïve to ask for estimates before signing a contract. As a suggestion, he felt that the NZFFA could provide its members with more education about the questions they should ask before signing a contract. Fair enough.

Finally, he admitted that a register of forest harvesting and marketing companies was not a bad idea. But he worried about the difficulties of administering it.

Indignation

A criticism from the NZ Institute of Forestry via its president, James Treadwell, was more strident. He expressed indignation over the article saying that it 'failed to highlight, or indeed even mention, the NZIF Registration Board, whose role is to ensure registered forestry professionals remain fully informed of the latest industry standards and provide a complaints system and a mandatory code of ethics….which places a responsibility on harvesting companies to register their employees and ensure they adhere to the code.'

Being a registered forestry professional myself for many years I am aware of the Board and its role. I am sure it does good work, but if harvesting companies really felt deeply constrained by it, we would not have a problem.

A few rebuttals

While it is unfair to suggest that most harvest managers take advantage of small-scale forest owners, which is a claim I never made, of course they all aim to be profitable. In order to stay in business over the long term, they also need a good reputation. This is a balance for harvest managers, as it is for any serious business.

When they know the risk is high, companies will favour client relations. When the risk is low, they will favour the money. Here unfortunately bad behaviour is seldom exposed, and without information, the Institute of Forestry registration board cannot act. Profits and reputations are safe.

Many of us will know forest owners who have successfully won compensation through the courts after their complaints against harvesting and marketing companies were upheld, but in all cases they had to sign non-disclosure agreements. An arrogant harvesting and marketing company might take advantage of several small-scale forest owners before one stood up to challenge it. Naturally a challenge takes time and money, which tends to favour the company. Usually, at the end of a drawn-out arbitration process, an aggrieved grower is exhausted and gagged in return for accepting an offer of compensation.

Registration system

The Institute of Forestry's registration system, which includes a procedure for addressing complaints against registered members, has merit. But it does not give small-scale forest owners adequate protection. There are several reasons for this.

First, only individuals are registered, not the employers. Second, several individuals including Institute of Forestry members, currently operate successfully as forest harvesting and marketing managers outside the registration system. They are not formally recognised as being registered professionals.

Third, not every region is well served. Many small-scale forest owners are unable to secure a registered operator to harvest their woodlots and have to contract an unregistered operator. Another area that is problematic is assessing the safety record of the forestry management companies and the contractors they employ. The Forestry Industry Safety Council currently operates the Safetree certification system for assessing the safety of contractors and employees in high risk forestry roles. Unfortunately, small-scale forest owners are often unable to secure a Safetree certified contractor to harvest their woodlots, so they are forced to use uncertified operators for the work. This was the experience of Don Wallace, the small-scale forest owner representative on the Forestry Industry Safety Council. The latter is currently working on a scheme to safety certify forest managers which may help small-scale forest owners to ensure the safety of their harvest.

Finally, unlike the short-lived Forests (Regulation of Log Traders and Forestry Advisers) Amendment Act, which was supposed to ensure the certification of log traders and ban them if a complaint was upheld, the Institute of Forestry registration scheme is largely toothless. Even a member is de-registered, they can still continue to operate legally.

What is more, if a harvesting and marketing company employs registered staff who become complicit in taking advantage of clients, those staff are unlikely to blow the whistle. It would be a career limiting move. If they just keep their heads down they are unlikely to be exposed because any hardnosed client who tries to get satisfaction will probably end up signing a non-disclosure agreement.

An intermediate solution

Rather than penalising wrong doers, what I propose is the opposite. I suggest that the NZFFA hosts a feedback form on its website which allows members to identify the best operators by publishing good reviews of their experience. The point is to share best practice, not blacklist anyone.

Recommended harvesting and marketing companies			
NZFFA branch	**Harvesting and marketing company**	**Recommended by and contact details**	**Abbreviated details of the work when the work was carried out**
Northland	Smith & Co Ltd Phone Email	Name Phone Email	10 hectares harvested during 2023 at.....
Northland	Bloggs Ltd Phone Email	Name Phone Email	105 hectares harvested during 2024 and 2025 at....
Northland	Smith & Co Ltd Phone Email	Name Phone Email	15 hectares harvested during 2024 at.....
Lower North	Chopchop Ltd Phone Email	Name Phone Email	31 hectares harvested during 2022 at.....
Waikato			

The table above outlines the sort of information that could be gathered. I acknowledge that some small-scale forest owners will not really know if they have been well treated by their harvest and marketing manager, but the NZFFA could keep a register of recommendations which members send in and get more details in the case of any doubtful ones.

The idea needs some polishing, but for example if a company did a commendable job for more than one member, that company would appear more than once in the table. In the draft the mythical company Smith & Co Ltd has been recommended twice. The more times a company appeared, the more confident I would be that if I used them, I would have a good harvesting experience. In this system, approvals would tend to strengthen a company's reputation and lead to more work. It would be free advertising based on word of mouth.

The next steps

The solution described above should help reputable harvesting and marketing companies get a bigger share of the work available, and improve their profitability from economies of scale. Forest owners, rating harvesting and marketing managers need to take into consideration the risks that the managers are also obliged to run.

For example, it may turn out that the sawmill manager who is selling the forest owner's logs may fail to pay. To protect from this, the manager has to take on insurance costs. When log prices are high, plenty of forest owners will want their trees harvested, but the manager may be unable to secure a logging crew. To keep in business the manager might feel obliged to borrow funds for the necessary logging machinery to form his own logging crew. This may later turn out to be a disaster if log prices drop to levels where forest owners choose not to have their wood harvested.

Meanwhile I think we should look for funds to educate small-scale forest owners about –

- What they should know before engaging a harvesting and marketing company
- What their risk and reward profile is for their various sales options
- How to decide whether the company has carried out a good job, allowing for external factors like log prices affecting their expected returns.

I would give a harvesting and marketing company extra points for them agreeing to be paid as a percentage of nett income. Usually, they request payment as a percentage of gross income, which allows them to spend more than necessary on transport, roading and harvesting.

Your feedback and any recommendations about harvesting and marketing managers that you have employed are welcome. Please email hlevack@xtra.co.nz.

Hamish Levack is an active forest owner and past president of the NZFFA.

An agro-forest of opportunity Insights from the Netherlands

Jorie Knook

On a recent visit to the Netherlands, I looked at agroforestry landscapes which seemed to tell a story of resilience, diversity and a thoughtful balance between nature and economy. The Dutch approach to agroforestry emphasises a rich variety of tree species.

I could not help but wonder what could we in New Zealand learn from the Dutch example. This article focuses on two Dutch agroforestry examples and provides some interesting insights.

What is agroforestry?

Agroforestry, the integration of trees into agricultural landscapes, is a land use where woody perennials such as trees, shrubs or bamboos are combined with crops or livestock in various arrangements. In temperate climates such as New Zealand and much of Europe, including the Netherlands, this practice is referred to as temperate agroforestry. The design of agroforestry systems can vary significantly, with endless possibilities for tree combinations, planting densities and intended purposes, such as fruit or nut production, timber, shade or shelter.

In New Zealand, silvopastoral systems are common, featuring pasture interspersed with spaced plantings of trees such as poplars or native species such as manuka or kanuka. Denser systems also exist, such as grazing under young radiata pine trees between the ages of three and 12 years. These systems are often driven by the need to reduce erosion or make productive use of less fertile land.

In contrast, the Netherlands has less land available and minimal risk of hill erosion due to its flat terrain. Agroforestry systems there are shaped by high land prices, cultural history and policies that incentivise biodiversity and other ecological benefits. Although the approaches differ, New Zealand can draw valuable lessons from Dutch systems, which are tailored to optimise multifunctionality in compact landscapes.

The Netherlands – a bit of context

The Netherlands is a small country in Western Europe, bordering the North Sea to the north and west, Germany to the east and Belgium to the south. It spans a land area of 33,500 square kilometres and is home to over 18 million people. For comparison, Canterbury covers 44,503 square kilometres and has just over 666,000 residents.

Despite its size, agriculture plays a vital role in the Dutch economy and culture, with an average farm size of 33 hectares and over 50,000 registered agricultural enterprises. Dutch livestock includes dairy, pig, poultry and sheep farms, many of which keep livestock indoors for significant portions of the year with limited grazing time. Alongside livestock farming, cropping farms are also widespread, including one owned by my family, cultivating potatoes, wheat, sugar beet, strawberries, asparagus and grapes.

Farming in the Netherlands is deeply rooted in tradition, yet farmers are increasingly adapting to environmental challenges. Rising temperatures and prolonged droughts have pushed cropping farms to look for innovative solutions such as planting trees to reduce evaporation losses. While shade and shelter are less urgent for livestock farms – thanks to infrastructure enabling indoor housing during hot days – there is growing interest in diversifying livestock diets. This has led to experiments with fodder hedges, which combine ecological and nutritional benefits, reflecting the evolving priorities of Dutch agriculture.

Silvo-arable agroforestry in Lelystad

The first agroforestry farm I visited in the Netherlands was an agroforestry site in Lelystad, initiated by Wageningen University & Research in 2021. Spanning 15 hectares of a working farm, the facility studies the integration of trees with arable crops, aiming to assess the potential of mixed cultivation for Dutch agriculture. This experimental site combines rows of diverse trees, such as black poplar, alder and hazelnut, with annually rotated crops such as potatoes, grains and cabbages. The design follows the principles of alley cropping, a system in which trees are planted in rows and agricultural crops are produced between those rows.

This site is not the first research site in a temperate

climate in Europe. Extensive research has been conducted into alley cropping. The trees can influence the agro-ecosystem and the arable crop, as well as be a source of income for the arable farmer. Research in the south of France has shown that these systems can be very effective to increase crop yield in areas that face prolonged areas of drought. However, most research on alley cropping in temperate climates has focused on short distances between the tree alleys, just a few metres.

The short distance makes it challenging for large scale equipment, such as harvesters, to efficiently pass through the alleys. To allow testing large-scale systems where machinery can pass through easily, the site in Lelystad has created alley distances of 54 and 108 metres. One half of the site has alleys on 54 metres distance from each other, while the other half of the site has alleys on 108 metres from each other.

Wind protection

Wind erosion is a significant challenge in parts of the Netherlands due to the persistent wind. Studies on alley cropping systems have revealed that while crop growth near tree rows is negatively affected within a zone of up to 1.6 times the height of the trees, there is a net positive effect on crop yield further away, between 1.6 and 9.5 times the tree height. Although this positive effect might not be immediately noticeable due to reduced growth near the trees, the overall result is an average yield increase of seven per cent.

This improvement is partly attributed to the reduction in wind speed which, depending on hedge design and tree species, can extend 10 to 20 times the height of the trees. The aim for the project in Lelystad is to have the trees grow up to six metres, therefore the 54 metre and 108 metre experimental design. As many of you will know, a reduced wind speed decreases evaporation, helping to retain soil moisture and create more favourable conditions for crops. While additional research is needed, such as current studies in Wageningen, to determine whether this yield increase is consistent across various tree species and wind conditions, these findings offer promising potential for integrating trees into arable farming systems.

Alley cropping

A key focus on Dutch farms is the inclusion of nut or fruit crops in hedges, to enhance the economic viability of the design. Therefore, a key aspect of the alley cropping design in Lelystad is the inclusion of hazelnut trees. To account for the wind sensitivity of hazels, they have been planted alongside fast-growing tree species, such as black poplar and alder, which establish relatively quickly to form protective hedges. These hedges provide shelter for the young hazels during their early development, helping them to establish and thrive. Once the hazelnut plants are mature, the neighbouring hedge plants will be phased out, leaving rows of productive nut trees and increasing the area of land for cultivation.

This method allows researchers to study how biodiversity, microclimates and crop yields are affected by the transition from a biodiverse hedge to a more focused nut production system. Hazelnut trees are also being evaluated for their potential to provide an additional income source for farmers, which includes the study and development of markets for hazelnuts. Lessons to learn here are that an economic nut crop can be used in an alley cropping system, but establishment requires support from fast growing species.

Fodder hedges in dairy farming

Hedges are widely used throughout New Zealand. They often provide shade and shelter for livestock, which is why they are called shelterbelts. In addition to providing shade and shelter, they also enhance biodiversity, reduce wind erosion and contribute to carbon sequestration. Hedges in New Zealand are often characterised by a single species, although there might be potential for multi-species hedges to enhance foraging.

Fodder hedges are hedgerows planted with a mix of trees and shrubs that provide supplemental feed for livestock while producing ecological benefits. In the Netherlands these hedges usually include species such as willow, hazel, elderberry, mulberry and black walnut. The leaves from these trees are rich in nutrients, proteins and minerals which can be directly browsed by animals or harvested manually. Willows, for example, are particularly rich in selenium and zinc, and their leaves provide valuable forage for livestock.

Valuable land

The multifunctional component of fodder hedges is quite important in the Netherlands as land is scarse. The land of the farm visited and shown in the photographs was worth €100,000 a hectare, equal to about $180,000 in New Zealand. In the photographs you see the hedges placed in alleys at a farm in the centre of the Netherlands, following a design similar to the alley cropping systems. For establishment the trees were initially fenced off, and once sufficiently established after five years or so depending on the growth rate, livestock can freely browse them.

Specific lessons owners mentioned included seeing fodder hedges not as a replacement for pasture, but as a supplement. As a result nutrients in willow, such as proteins, zinc and selenium can improve immune function and hazel can improve auto-inflammatory problems.

Current research in this space is focusing on when animals are browsing which tree. For example, to identify the difference in nutrient need in the morning versus the evening, or during calving compared with other times in the year. Lessons for New Zealand include the increased understanding into browsable trees and how the nutrients provided by those trees can improve livestock health.

Transformative potential

In conclusion, the integration of agroforestry in both Dutch and New Zealand farming systems demonstrates the transformative potential of combining trees with agriculture to address environmental, economic and animal health challenges. Dutch systems, such as the silvoarable site in Lelystad, emphasise the strategic use of tree species to mitigate wind erosion, improve crop yields and enhance biodiversity in compact, intensively managed landscapes. Similarly, multi-species fodder hedges in the Netherlands offer additional benefits as a nutritional supplement for livestock, contributing to animal health while reducing nutrient run-off and supporting carbon sequestration.

For New Zealand, adopting lessons from these multifunctional systems presents opportunities to expand the role of hedges beyond traditional shade and shelter. By incorporating diverse tree species, New Zealand farmers could improve livestock diets, enhance farm resilience to environmental stresses, and optimise land use sustainably. Both systems highlight the importance of tailoring agroforestry designs to specific environmental and agricultural contexts, demonstrating how biodiversity, animal health and productivity can go hand in hand in modern farming practices.

Jorie Knook is Senior Lecturer in the Department of Land Management and Systems at Lincoln University.

The log market is a moving target

Kelly Coghlan

In my last market report in the November *Tree Grower* improved prices in the fourth quarter of 2024 were welcomed. However, as suggested, it remains difficult to predict any longevity as we started to experience some price weakening at the end of the quarter. It is becoming more difficult to prepare any market report which provides anything with confidence beyond four weeks.

With Chinese New Year in late January, many customers were expected stock to build over the period with New Zealand customers adopting a cautious strategy. They needed to consider –

- No change in the Chinese property market
- Disquiet around possible tariffs from the United States
- New Zealand as the main softwood supplier to China
- The current Chinese market is subdued, and a slower start-up is expected in 2025
- Not taking a risk but buy what they need at price they can afford.

The market in Korea remains steady and stable in price and volume and will remain so into the future. With slower Chinese demand, many have flocked to India. However, in December there were over 60,000 cubic metres of unsold logs with ships on 14 days wait to discharge at Kandla. This will have a major effect on forward pricing. The Indian market is not big enough and there are too many competing countries with better supply chain advantages.

For example, large volumes of softwood from South America and Uruguay at rates lower than radiata pine add a large downward price pressure. This is not expected to clear until April.

The table below is based on average log prices, accounting for various lengths of time at the port or mill. It is expected that early 2025 export log prices will remain stable at current levels. This is not ideal for those owners who are some distance form a port or mill, especially if they have high first rotation infrastructure costs to deal with. Be ready for a log price reduction from May to August which will depend on a variety of global factors.

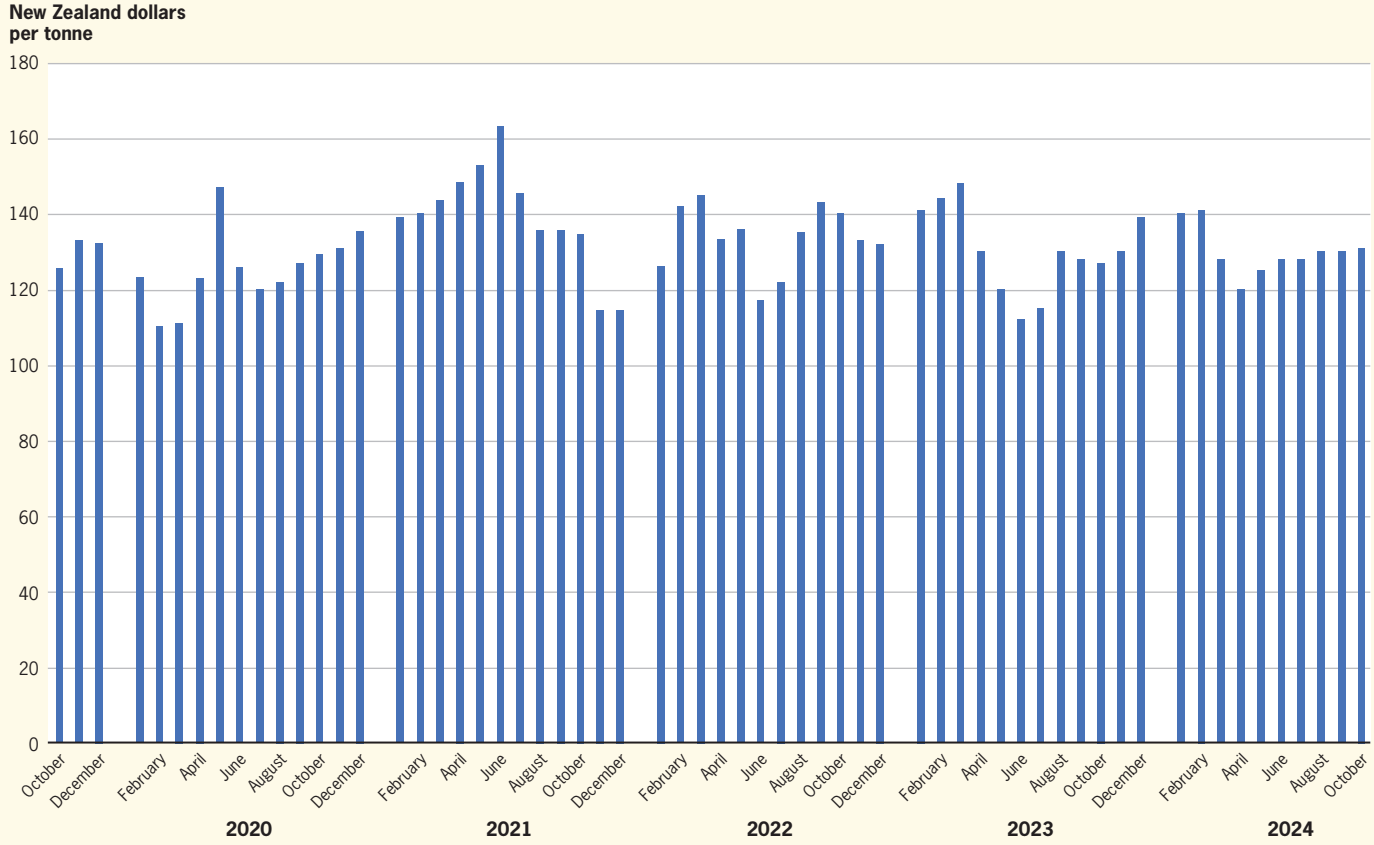
Uncertain future

As mentioned above it is extremely difficult to comment on the market. It is a moving target and will remain so in 2025. It is equally difficult to get any comment from associates and colleagues who have been in the export log trade for over 20 years. There was a time when there was confidence to forecast log price trends up to three

Log price averages

Grade	Five year average	Three year average	One year average	Current
A grade	$123	$121	$120	$122
K grade	$115	$112	$111	$110
KI grade	$105	$102	$99	$100
KIS	$96	$93	$90	$90
Domestic	$119	$121	$123	$120
Domestic pruned	$186	$190	$190	$190
Export pruned	$175	$177	$178	$183
Composite	**$132**	**$131**	**$130**	**$131**

Five year composite export and domestic log prices



months ahead. Unfortunately, those days have now gone as the market operates vessel by vessel and month by month.

When considering the market trend of the last two years, many small-scale growers are unsure and uncertain of how to manage future investment. The initial forestry investment was one aimed at generational success but the fear of many now is potential liability. The industry is developing trends of boom and bust which is producing negative effects throughout the forest growth cycle. As always forward planning and programming remain critical for the best results, and private growers need to invest in sound commercial independent management plans.

Kelly Coghlan is Director of Taml forestry in Taranaki.

NZFFA Conference North Canterbury

Tuesday 1 April to Friday 4 April 2025

Put these dates in your diary. The field visits will be hosted by past winners of the South Island Farm Forester of the Year, including the full day visit to the high country on the optional Saturday.

The conference will be based at the Commodore Hotel which is close to Christchurch airport. Full details are now on the website.

Hope or headwinds for the forestry sector in 2025

Ollie Batelier-Belton and Sinead McAllery

New Zealand's forestry industry is reaching a turning point as we enter 2025. Last year saw the introduction of significant policy changes and opportunities, but questions remain about the clarity and long-term effects these reforms will have. Has the groundwork been laid for a thriving forestry sector, or does it create further hurdles for planting trees?

Farm to forestry conversions

One of the announcements with the biggest effect was the government's land restrictions which were confirmed in December 2024. Some in the farming sector welcomed the news, but others are wary of restrictions which may see farmland values fall and stop tree planting where it is the best land use. The policy intends to curb whole farm conversions to carbon forestry. However, the government still needs trees to meet their climate targets and many farms need more trees for other environmental reasons including erosion control.

An important feature of the reforms involves the 25 per cent restriction for Land Use Capability 1 to 6 areas. This move has been seen as a win for farmers, because it opens doors for innovative partnerships and allows greater control over land use. This promise to reassess land use classifications at a more detailed level has also been well received as it offers greater clarity to land owners.

Forest owners registered in the Emissions Trading Scheme stand to gain significantly as the value of forests already registered may increase. Farm foresters are well positioned to capitalise on these changes because native forestry and existing forests appear exempt from the new restrictions. Land owners who had afforestation plans already under way last year are also exempted from the new rules.

Specific exclusions for Maori land from afforestation restrictions mark a significant policy change. Iwi has long advocated for the right to use marginal land for pine planting to generate carbon income, and this acknowledgement aligns with their aspirations for economic improvement using forestry.

The government has capped further afforestation of Land Use Classification 6 land at 15,000 hectares a year. How this permit to afforest will be allocated is another detail to be announced. The reduced number of forests entering the Emissions Trading Scheme could lead to fewer forestry carbon units being available to emitters and therefore the carbon price could increase in the longer term.

Forestry partnerships on crown land

The government's continued emphasis on reducing nett emissions rather than gross emissions underscores the critical role afforestation will play over the next 25 years. To bridge the gap between current emissions and removals, significant tree planting is required. In support of this the government has announced partnerships with private entities to plant trees on Crown-owned land. These partnerships could provide new opportunities for foresters, including ventures outside the Emissions Trading Scheme.

Annual fees

Another big change was the government's decision to reduce the proposed annual fee on land registered in the Emissions Trading Scheme from $30.25 to $14.90 a hectare. This reduction signals the intent to restore confidence in the forestry sector.

The reduction addresses past inefficiencies and provides some relief to over 4,300 participants but some concerns remain. Critics argue that the fee, though halved, still risks deterring potential participants, particularly owners of small forests. A more equitable model might exempt indigenous forests or tie the fee to trading in New Zealand Units, ensuring participants only pay when they actually get an income. Such adjustments could attract more participants and sustain long-term engagement.

As 2025 begins, the forestry sector must work through a landscape of opportunity and challenge. Policy changes signal progress but the devil is in the details. People will be watching closely for clarity on transitional measures and the future direction of the Emissions Trading Scheme. The question remains. Will 2025 mark a turning point for New Zealand's forestry sector, or will unresolved uncertainties hinder its potential? One thing is clear, those prepared to adapt will be best positioned to thrive in this evolving environment.

Ollie Batelier-Belton is the Managing Director of Carbon Forest Services **and** ***Sinead McAllery is a Senior Emissions Trading Scheme consultant at Carbon Forest Services.***

Forestry differential rating Danger lurks where you least expect it

Eric Cairns

Let me declare, right at the start, that I think forest owners should pay their fair share of roading costs. How to make that an equitable share is the big question. Councils are supposed to take the costs and benefits to the ratepayers into account when setting differential rates, but the benefits of forestry such as ecosystem services and particularly avoided erosion, are not generally recognised by the community.

I live in Upper Hutt, a medium sized dormitory city for Wellington. Although our city has had a rich timber industry history, local sawmills have closed down. However, the rumble of logging trucks down State Highway 2 to the port, as well as log trains from Wairarapa every night, is a reminder that the industry of growing trees and harvesting logs still takes place at our back door.

Greater Wellington Regional Council

In the bureaucratic silo alongside, our local district council which is Greater Wellington Regional Council, has been wrestling to give effect to the National Policy Statement on Freshwater Management, and wishes to override the National Environmental Standards – Commercial Forestry in order to improve sediment levels. A lack of information as to sources and quantity of sediment in Wellington and Porirua Whaitua did not stop the Greater Wellington Chief Executive Officer from expecting that all land-based activities play an equitable part in reducing sediment.

However, it is forestry, not pastoral farming which was seen as the main villain, because only forestry activities over the whole lifecycle are planned to become controlled activities. Greater Wellington also plan to retire 10 per cent of the steepest forestry land from harvesting, even though there is no red zoned land in our catchments.

While many of us were focused on the Natural Resource Plan, Plan Change 1, we almost missed notification of the Upper Hutt City Council long term plan, proposing a 500 per cent differential rating on commercial forestry under the premise of risk to infrastructure. By the time the plan was notified, the council had already voted to impose a forestry differential rating that would exceed 100 per cent, and we were not aware that anyone in the forestry world had been notified or consulted. Several requests for information were lodged under the official request system, but no justifications for differential rating were provided.

Punishing forestry

Before all this there were multiple events in northern Wairarapa, Hawke's Bay and Gisborne, such as flooding, woody debris and forestry companies being fined for breaches of consent or breaches of the Resource Management Act. We note in passing that a lot of the road damage after cyclone Gabrielle was caused by slumping and washouts, not by trucks, and that in most of the affected areas, wood attributed to forestry harvest waste was only between two and eight per cent of the total woody debris.

Upper Hutt City Council seems to be joining the collective rush among territorial authorities to punish forestry following severe weather, but the story goes back at least 10 years. In response to earlier attempts to impose differential rating, in September 2003, the New Zealand Forest Owners Association commissioned the Frame Group Ltd Report which was a review of issues relating to the use of district roads for the transportation of forest harvest. The relative amount of heavy commercial vehicles traffic generated by different rural industries was calculated, but most authorities have ignored this report in favour of a report from Opus International which showed that damage and heavy commercial vehicles movements from forestry harvest far outweigh that caused by dairy and other farming activities depending on the area.

Justification

When I say punish, there is usually some justification offered by councils based on perceived damage to roads caused by logging trucks but information in our case was not forthcoming, and nearly all forestry operations in the Upper Hutt area are within 20 kilometres of State Highway 2. Most of the leased Greater Wellington forests, which have cutting rights owned by China Forestry Group, have direct or almost direct access to state highways. While potholes on local roads are not uncommon, there are also plenty of other heavy vehicles using the same roads. One could argue that secondary roads are not built to a standard required for frequent heavy vehicle use, that forest owners pay rates for many years before trucks are needed, so why had councils not anticipated the need for upgraded roads.

The risk to Upper Hutt infrastructure from harvest slash as opposed to woody debris is minimal. We have argued that plantation forestry is just as good as native bush in holding hillsides together and reducing peak flood levels.

Wairoa District Council and Stratford District Council commissioned detailed reports on their local road networks and have estimated the annual maintenance costs attributed to forestry harvesting. It appears that both councils have used a method based on, or very similar, to that published by Road Controlling Authorities Forum (NZ) 'Guidelines for equitable funding of pavement maintenance for low volume roads, Special Interest Group on Low Volume Roads, 2017'.

Ecosystem value

The guidelines make interesting reading. They point out that territorial authorities can apply targeted rates as general or specific funds and that rates could be based on capital values, land value or land area. The Stratford report considered distance of the forest to the nearest State Highway where road maintenance is entirely funded New Zealand Transport Authority via road user charges.

The guidelines determine likely road damage based on the number of passes of equivalent standard axles and suggests ways of calculating this per hectare of production of each commodity and relating this to distance travelled. The result is that councils should calculate total maintenance cost split out by industry.

Councils can consider nett benefits of the industry to the community including locally retained benefits. To cut a long story short, benefits to the community will include whether local contractors or local processing are involved but tend to ignore ecosystem costs and benefits

Comparison of differential rates charged by territorial authorities						
Territorial Authority	**Commercial forestry scope**	**Targeted roading or general**	**Actual differential and formula**	**Comparable rate to other heavy commercial vehicle users**	**Were any perceived benefits of forestry to the district used to discount differential rates**	**Exemptions**
Gisborne District Council 2024 to 2027 plan	Properties with planted exotic forestry, includes pastoral blocks with 20 or more ha exotic forestry	Targeted local roading	13.75 fold weighting based on capital value. By proportion of land area 0.00437 capital value plus a flood damage and emergency rate	Pastural and horticulture land is 1.5 fold weighting	No, but pastural is expected to pay a 30 per cent share of woody debris clean-up	None
Kaipara District Council	All properties used for growing exotic trees	Forestry Roading Targeted rate	0.0081135 capital value	No other similar targeted rates		Unknown
Rangatieki District Council		Targeted roading	0.003933 capital value	0.00148 cv on all other rating units except defence land		Unknown
Ruapehu District Council	Quotable Value Property Use Code of FE	Targeted Land Transport	0.00279 capital value	General targeted rate is 0.000698, no other heavy vehicle units rated		
Southland District Council		Targeted Roading	0.00655 capital value plus a standard charge of $92	Dairy is 0.00102, other farming is 0.000628	No	
Stratford District Council	All properties with exotic forestry code allocated by Quotable Value	Targeted roading	Targeted rate is 0.00870 capital value Plus a uniform general rate	All other properties pay a targeted road rate at 0.00103	No	For mixed use properties, under 10 hectares of forestry are exempt
Upper Hutt City Council proposed	Not yet specified	General, similar to a business rate	290 per cent based on capital value 0.00493 capital value	N/A	No	Proportion of land area in forestry
Wairoa District Council	Property Category code FE exotic forest in their database	General	Four-fold based on capital value	Rural is 0.7, residential either 1.0 or 0.7, commercial 1.6	No	Landowners with less than 100 hectares of forest may be exempt
Waitomo District Council	Quotable Value property use code	Targeted district roading rate	General rate 0.238, plus 0.396 for forestry rate per $100 of capital value	All other rateable units pay targeted roading rate 0.132 per $100 of capital value		For mixed use under 20 hectares forestry exempt, otherwise applies to portion of land used

For most cases in the table above, information is extracted from district council websites from relevant rating resolutions plans for the year 2024 to 2025. The list of councils charging differential rates for forestry may be incomplete, and the author apologies if information is incorrect or incomplete.

such as greenhouse gas emissions, carbon sequestration, biodiversity and water quality. Some of these benefits are at a national interest level because local rating authorities have not yet accounted for climate change or carbon emissions.

One of the big items that forestry groups should push for is recognition of the benefits of avoided erosion. If councils value the benefits of the dairy industry, for example, but ignore the ecosystem services provided by plantation forestry, then the forestry land owners will pay an even higher proportion of the nett total road maintenance.

For all territorial authorities that I am aware of, permanent carbon forests are treated the same as other exotic forestry, even though most of them are not intended for harvest or to use log trucks. Most treat forestry as if the same level of heavy transport was being used all year, every year. For growers of smaller forests, or those growing alternative species, there is a 25 to 60-year delay before trucks are required, yet forest owners are expected to pay from year one. It is quite scary how costs can accumulate if amortised at real interest rates, and it is unfair to charge forest owners for many years for a service they may or may not eventually use for a short period.

Obscure costs

There is a mechanism listed for equitable funding of maintenance for low volume roads where councils may allow certain ratepayers to postpone payment until cash flow allows, or the service is used. Gisborne and Rangatieki District Coincils have talked about pay as you go, or accelerated road maintenance before to harvest options, but neither council has yet adopted such a strategy.

The maintenance costs reported by Wairoa and Stratford somehow do not add up. If the Transport Authority can do it for state highways based on road user charges, roughly a dollar a kilometre for a loaded log truck and trailer, and assuming a forestry average yield of one load per hectare each year – 900 tonnes a hectare when the forest is 30 years old – how can a targeted roading rates bill demand five to 10 times or more the rate that it is supposed to cost?

Road user charges are shared with a territorial authority, so the amount used to maintain state highways is considerably less than a dollar a kilometre. In 2009, Ruapehu District Council claimed that exotic forestry used roads at the rate of $4.69 per kilometre and that their local roads performed between 1.3 and 1.8 times the freight task of the nearby State Highways. Proposed forestry rates for some larger Upper Hutt properties, all less than five kilometres from State Highway 2, will be between $51 and $90 a hectare.

It is deliberately made obscure. Most forest owners are charged by a multiplier of capital value, not by land area, and no account is taken for distance travelled to state highways. The more expensive land values tend to be closer to state highways, so must pay a disproportionate amount of costs.

Rates costs are not trivial, especially if land values are skewed by factors unrelated to production potential. In the case of Upper Hutt, it is not yet clear whether small forests or permanent carbon forest will be exempted from the differential rate, or how much the rate will be.

I live in an area with numerous lifestyle blocks containing woodlots. Just down the road from me are two adjoining blocks, one with land valued at $267,000 a hectare, and the neighbouring larger block at $4,000 a hectare. If the latest version for differential rating of 290 per cent goes ahead, along with signalled general rates increases of 2.4-fold over 10 years, one owner will pay $4,000 a hectare in rates by 2034, and the other $60 a hectare, for the same service and much the same projected road use. None of these costs include the Greater Wellington component.

Some effects

Our branch committee used calculations for nett present land values to illustrate to the council what the effects of differential rating might be on forest businesses. This is a form of discounted cash flow analysis, where costs are amortised at real interest rates until harvest. It does not

take into account actual land value or percentage return on the capital value. It only looks at costs and projected returns for the crop.

Forestry costs include annual rates bills as well as planting, release spraying, pruning and pest control. Nett returns used – sale price minus the cost of harvest and transport – were optimistically set at $35,000 a hectare. Therefore, various costs and returns can be set into a spreadsheet and you can perform analysis to see what the forest discount rate would be to break even.

The analysis determined that for growers of medium to larger forests, rates are a significant part of their costs. For rates to go up by the projected amount within 10 years, seven-fold for those on 100 per cent rating and 9.4 fold for those on rural 75 per cent rating, for Upper Hutt the rates is projected to be $51 to $219 a hectare a year. This significantly reduces their income to an extent that commercial forestry would no longer be viable.

Land owners may be tempted to switch land use, either to grazing, lifestyle subdivision or convert to native or carbon forest. However, many of the forests were planted before 1990, and therefore have carbon liabilities estimated at well over $40,000 a hectare. This will be the actual cost to be paid to change the land use from forestry to follow the Emissions Trading Scheme regulations.

In the medium term, high rates will result in a severe drop of land values because land use changes are unlikely. Historically, there have been very few local sales of larger scale plantation forests, and special tax relating to sales of land with standing planation trees – the cost of bush – constrains the sale of small forests. This, compounded with Greater Wellington proposing to prohibit steeper slopes from harvest, is putting a lot of pressure on the forestry sector. I fear that some forest owners will simply walk away and abandon their land.

Business tax

If the proposed 290 per cent differential rating on forestry goes ahead and includes my own lifestyle block, I would be foolish to continue with a woodlot. The amortised cost of the projected annual rates bills over 33 years is about 4.7 times higher than the value which the highest quality trees could produce. Something within me says, whatever it takes, the chainsaws and matches are ready. Something also says, the biodiversity and avoided erosion benefits are priceless.

I am asking Upper Hutt City Council to consider benefits to the community in terms of ecosystem services. If they do proceed with targeted forestry business rates, it would be fairer to have a rate per

hectare rather than one based on capital value, and equitable to charge other rural industries at a similar rate.

The motivation of our local council is unclear and seems to change. We thought that we had downplayed the risk of damage to infrastructure, so the argument drifted to a business tax. Businesses within the commercial precinct have always had to pay higher rates, justified by the council services provided. However, city businesses can usually pass their costs on. Now the scrutiny is on businesses in the rural sector, and we are promised a review of rural ratings here, but I am holding my breath. Six months on and preliminary discussions are just started in late December.

Plantation forestry is not the only industry being targeted for rates. Territorial authorities in the Bay of Plenty and Gisborne are adding the cost of a licence to grow gold kiwifruit to the capital valuation and charging rates accordingly. This has implications across the horticulture sector.

Instead of road maintenance costs being recovered through rates, the Wellington branch of the NZFFA would prefer a road toll applied to logging trucks at harvest time. In my own case, the distance covered is between the forest and nearest state highway, allowing for return trips to the port or to mills at Levin or Wairarapa. We do not see why a local road toll should be greatly different from road user charges collected, which as mentioned earlier is about a dollar a kilometre for a truck and trailer.

Eric Cairns is secretary of the Wellington Branch of the NZFFA and leads the project on the submissions to the Upper Hutt City Council on differential rating for forestry.

New Zealand Forest and Wood Sector Forum a year on

Neil Cullen

This new pan sector body, the New Zealand Forest and Wood Sector Forum, was formed more than a year ago. The aim was for the various sector associations to work on issues of common interest or concern and where appropriate, to act as a spokesperson and point of contact for the industry with the government and other relevant bodies. The 10 participating organisations signed an accord stating the principles and aims of the forum and the mechanics of how it would operate and be funded.

Important principle

The first and most important principle states that –

> The forum stakeholders will promote the interests of the sector by engaging in the forum to openly and without bias, discuss and seek resolution of issues affecting the sector to achieve the best overall interest for New Zealand.

This guiding principle has been generally adhered to. The first meetings have involved a degree of getting to know each other and appreciating how the viewpoints of the various sectors are coming from different angles, but in total represent the wider forest industry. Broadly speaking four of the organisations – the NZFFA, the New Zealand Forest Owners' Association, the New Zealand Institute of Forestry and Nga Pou a Tane – represent the forest growing side of the industry.

Three others – the Wood Processing and Manufacturing Association, the Timber Industry Federation and the Bioenergy Association represent the processors and three more – the Forest Industry Contractors' Association, the Forest Industry Safety Council and the Log Transport Safety Council represent the contractors and workers involved. There are many overlaps with several organisations being involved in more than one part of the industry. At the final meeting for 2024 it was decided that three additional associations would be invited to join the forum to add more representational breadth.

No funding

In recognition of the constrained current financial state of the industry, the forum has been largely self-funded by participants. There have been eight meetings which included quarterly catch-ups with the Ministry for Primary Industries and Te Uru Rakau personnel and involved the minister when he is available. The option of joining meetings via the internet has saved on travel expenses.

At the first meeting it was recognised that this coalition government has a different attitude to industry from the previous Labour government which favoured government led industry transformation plans. Minister of Forests Todd McClay has told us he wants the initiatives for change to come from industry and that he will support where he can and where they meet with their objectives. This has obviously required a reassessment by Te Uru Rakau and the forum members to make sure there is an alignment between our priorities and what the government is seeking from the forest industry.

At a recent meeting, the head of Te Uru Rakau Sam Keenan explained that the government and Te Uru Rakau's broad aims are to raise the nation's gross domestic product by producing higher value products and supporting the transition to a low emission economy. The government has a focus on markets with an objective of doubling the value of exports in the next 10 years. The ways of achieving those targets are –

- Encouraging growth, jobs and export revenue
- Low emission solutions and products
- Improving land-use resilience adaption
- Providing carbon removal to support climate change.

Fortunately, these aims correspond well with the priorities the forum has identified for direct action over the next two years. These are –

- Expanding the social licence by promotion of non-wood benefits from forestry and wood processing
- Growing and diversifying our export markets
- Increasing domestic demand for wood products using recognition of embodied carbon
- Improving wood and residue supply for domestic processing and feedstock for the bioeconomy.

The emphasis on diversifying markets has seen several visits by the Minister to India and log exports are now a regular part of trade with that nation. Vietnam is also a country with high growth potential and a recent delegation from there confirmed that they are looking for more raw material to expand their $16 billion export trade of furniture.

Wood first

The local processor closures we have seen this year have included a medium scale sawmill, a pulp mill, a wood recycling plant and a paper mill. This all indicates that margins are very tight in that side of the industry and one adverse movement in production costs can be terminal. Increased domestic demand for timber products would be to everyone's advantage and this should slowly take place as interest rates drop and more new houses and buildings are started.

The government has options that it could use to increase demand by stipulating a wood first policy for crown funded buildings. This could just mean that wood options must be considered, not necessarily mandated, but the Minister for Forestry has stated that they do not want to pick winners so will not go down that route. The forum is sceptical of the rationale behind this policy and as it is a continuation of what occurred with the previous administration.

There is reason to believe it is mainly the result of the strength of lobbyists for concrete and steel rather than a philosophical objection to favouring sustainable, natural products which embody carbon. Our group will keep pushing on this issue and pointing out the advantages for New Zealand in using more wood and in particular, engineered products such as cross laminated timber.

The use of wood for bioenergy is undoubtedly going to increase. More than 10 per cent of New Zealand's energy currently comes from bioenergy and this is predicted to increase to 25 per cent by 2040. Fonterra recently announced it is set to convert two coal boilers to wood pellets at its Clandeboye site in south Canterbury in the latter part of 2025.

Huntly power station, which burns 300,000 tonnes of coal in an average year and over a million tonnes in a dry year, has successfully tried using wood pellets from Canada. Owner, Genesis Energy have indicated they could convert the plant permanently to wood pellets in three to four years and are prepared to sign up to a 10 to 20-year supply contract. The large volume of wood residues, offcuts or low grade logs required for such projects are not easily obtained and some will need to come from specifically grown forests such as short rotation eucalypts. The forum will work with the Ministry for Primary Industries to ensure supply and demand for these products are all aligned.

Development conference

There are number of problems facing the forest industry which have been highlighted this year. They include a very uneven forest area and age class distribution, and the fact that almost 70 per cent of our annual harvest is exported as logs mainly to one market, China. The vagaries of that market mean a stop-start nature to harvesting, especially for small-scale growers, resulting in an unsustainable business model for many contractors.

Relying on just one species – radiata pine – leaves us exposed to disease risk which has been made clear by the devastation caused to radiata in Spain by *Lecanosticta acicola*. With climate change we can expect more extreme weather which may mean that a more diverse forest estate is required to cope with changing weather patterns. New and different types of wood processing industries are also required but there is insufficient confidence for the necessary capital investment.

The social licence for the industry has been diminished by the damage caused by the cyclones and the resistance to new blanket mono-species afforestation in rural communities. An idea suggested by experienced forester Hamish Levack, and supported at the last forum meeting, is to hold a national forest development conference in 2026 to consider these issues. Among its aims would be to –

- Organise the sustainable supply of wood by region
- Expand domestic wood processing
- Encourage the growing of alternative species profitably
- Develop better relationships with dissenting environment groups and rural critics
- Ensure that the necessary supporting resources are in place.

Such a conference could see a significant resetting for our industry and with the backing of the forum would have wide support.

Lack of resources

What factors are constraining the forum from being more effective? The main restraint is simply lack of resources. All the participants are giving up their time freely and the work for their own organisation is a priority. As a result, work on how the action plans are progressed is fitted in when possible. What has not been a factor is the attitude of the representatives which has been positive and collegial. All recognise that the collective has greater power than the individual organisations and by working together, more can be achieved for the industry.

Neil Cullen is President of the NZFFA.

New eucalypt leaf beetle in the North Island

Toni Withers and Brendan Gould

A new eucalypt leaf beetle, *Paropsisterna morio* has been found to be established in the Bay of Plenty and Waikato, following a recent investigation by Biosecurity New Zealand. In October 2024 the shiny black adult beetle was encountered in Rotorua.

Scion reported this find to Biosecurity New Zealand and it was subsequently confirmed that the infestation was widespread and well established with over 40 adults and larvae located in Rotorua. Subsequently, chrysomelid expert Chris Reid from the Australian Museum confirmed the species to be *Paropsisterna morio*. Molecular analyses then showed the beetle in Rotorua is the same beetle species found in Maketu by a kiwifruit grower in February 2024 and photographed in Te Puke in November 2023. Biosecurity New Zealand's investigation concluded that this beetle is widely established in the Bay of Plenty and Waikato and that eradication is not feasible.

The effect this new beetle will have on eucalypt species is uncertain, but preliminary surveys suggest it prefers the *Symphyomyrtus* eucalypts, just like some other pests. It is possible preferred host trees may suffer even more leaf defoliation, but this remains to be seen. In Australia *Paropsisterna morio* is endemic but uncommon in Tasmania and parts of the mainland where it has been found on *Symphyomyrtus* species of eucalypts. To date it has been collected from *E. viminalis*, *E. nitens, E. nitens x grandis* hybrid, *E. macarthurii, E. nicholii* and *E. cinerea*. While experimental determination is needed, it may probably also feed on other species in New Zealand including *E. ovata, E. gunnii, E. globulus, E. maidenii* and *E. quadrangulata*. Scion staff plan to conduct some eucalypt health surveys in the North Island in early 2025 which may reveal the host range more definitively.

Challenges with detection

It appears this species has evaded earlier detection because it is fully nocturnal, with larvae and adults hiding beneath strips or cracks in the bark during the day. Depending on the species of eucalypt this can often be high up in the crown. It is easier to look for the beetles on species of eucalypt which shed their bark in ribbons lower to the ground.

Paropsisterna morio larvae appear very similar to *Trachymela sloanei* larvae, but the larvae are hairier at all instars. Egg batches are often laid under the bark. The presence of black hairs on the embryo gives the eggs a dark grey colour, turning to reddish black as they develop.

Pest management options

Ways to manage any of the eucalypt leaf beetles are limited to biological control, chemical control, and growing resistant seedlots or species. Research has recently revealed that Sparta, with the active ingredient spinetoram, can be effective against larvae and adults of eucalyptus tortoise beetle and the foliage is likely to retain some pesticidal activity for one to two weeks although this requires experimental verification. A priority for research will be to test if this organic pesticide has similar activity against *Pst. morio*. Geoff Allen, Adjunct Associate Professor in Entomology at University of Tasmania, reports that, due to the rarity of sighting *Pst. morio* in Tasmania, only one parasitoid has yet been reared from it, a new to science *Microctonus* species braconid wasp which attacks and kills adult beetles. Current integrated pest management strategies for managing other species of eucalypt leaf beetles in New Zealand will need reconsideration in light of this new threat. If you find this new beetle under the bark on your trees please put photographs of it on to iNaturalist or Find-A-Pest to help us track its geographic range.

Interestingly *Paropsisterna morio* was described by Fabricius in 1787 as *Chrysomela morio*. This was from beetles collected on Captain Cook's third and final expedition from Adventure Bay on Bruny Island, Tasmania in January 1777, when the ship *Resolution* stopped for supplies on its way to New Zealand. It was only the second paropsine described by taxonomists and this original beetle's type specimen is at British Natural History Museum London.

Toni Withers is a Senior Entomologist at Scion and Brendan Gould, Director Biosecurity and Risk for the Forest Owners Association and the Forest Growers Levy Trust and photographs were supplied by Bryce McQuillan Photography.

Back to the future for small scale forest owners

Kelly Coghlan

There are thousands of small-scale forest owners throughout New Zealand ranging from ownership of under five hectares to over 100 hectares. They are all exposed to the vagaries of log markets, increasing environmental regulations, an uncertain Emissions Trading Scheme market and many with no succession planning.

The closure of the Forest Service in 1989, and sale of crown forests to international offshore investors highlighted New Zealand radiata pine plantations being seen as a lucrative investment opportunity. With these new international forest investor owners came access to lucrative export markets, opening the opportunity for many ports to begin log exports, which also provided new markets for private owners.

Logs a commodity

Private investors flocked to the industry, enticed by the promotion of future high demand for New Zealand timber. This was compounded by the price of logs which soared, reaching record highs in the mid-1990s fuelled by strong demand from Japan and South Korean markets. This boom period saw widespread planting, mainly on second class land. In 1994 and 1995 record planting of new forests was achieved as individuals invested privately or through the development of joint ventures and forest syndicates.

However, with success came challenges. One of the primary concerns which emerged was that logs are a commodity with prices fluctuating due to varying supply and demand. There was an immature market which experienced six months of record prices based on fear rather than genuine demand.

The Asian financial crisis of 1997 and 1998 hit the forest industry hard, significantly affecting log prices. The average price for radiata pine logs plummeted causing significant financial reassessment for many private growers. This volatility added a layer of complexity resulting in withdrawal of investment for new planting for the next 20 years. Private owners found themselves at the mercy of these external forces, working through periods of abundance and scarcity in log values.

The envionment

As the new millennium dawned, another challenge loomed on the horizon – environmental regulations. With increased awareness of sustainability and conservation, forestry practices came under scrutiny. In 1991 the New Zealand government introduced the Resource Management Act, which aimed to protect the environment and promote sustainable land use. These regulations, while protecting the environment, added significant costs to plantation operations further affecting profitability. Recently increasing regulations are about to be introduced in respect of slash management after the recent cyclones on the East Coast.

Among these challenges, the concept of forest values gained prominence. Beyond the monetary worth of timber, stakeholders began to recognise the broader benefits which forests provide. The concept of carbon sequestration gained traction, with forests being recognised as a natural sink for carbon dioxide. In 2008, the government launched the Emissions Trading Scheme which aimed to help reduce greenhouse gas emissions. This incentivised carbon sequestration by trees, offering opportunities for plantation owners to participate in carbon trading and offset their emissions. This marked a significant change in how forests were perceived – from mere resources to essential players in the environmental agenda.

Through the ups and downs, the radiata pine woodlot plantations in New Zealand persevered. Private owners, faced with challenges old and new, demonstrated resilience and adaptability. They accepted innovation, implemented sustainable practices and integrated environmental consideration into their operations. The forests that once stood solely as sources of timber now stand as beacons of responsible stewardship and ecological significance.

A complex tapestry

Reflecting on the evolution of commercial forestry from 1990 we see a story of transformation and growth. The challenges of log values, environmental regulations, forest values and the Emissions Trading Scheme have shaped the industry, pushing a re-evaluation of their practices and priorities. What began as a simple investment opportunity has evolved into a complex tapestry of economic, environmental and social consideration, highlighting the intricate relationship between forests and society.

Over recent years there has been an increasing lack of confidence from private forest owners to invest in new plantations, to re-establish following the harvest, undertake silviculture regimes or to join or remain in the Emissions Trading Scheme. The reputation of small-scale forestry continues to be eroded, labelled as a boom or bust investment across the total supply chain. Private forestry investment once considered as an investment for future generations is now threatening to become a potential liability. This perception is a little unfair and often based on unfounded or unrealistic expectations established 20 or 25 years earlier.

Future considerations

Supply and demand

The record new planting of the mid-1990s meant that New Zealand would experience a wall of mature wood from 2023 to 2030. The increased demand for logs, mainly from China, between 2014 and 2020 resulted in increased prices with many forest owners selling standing forests to offshore buyers who harvested forests when the trees were as young as 22 years. It makes you wonder who was responsible for policing the Overseas Investment Office conditions of these forest sales to international buyers, with clear-felling immature forests being a big negative.

The log harvest in New Zealand is influenced by a complex interplay of factors, ranging from global market dynamics, environmental operational regulations and ownership structure. Understanding these factors is crucial for predicting future trends in harvest volumes and for developing sustainable forestry practices.

New Zealand's main global markets throughout the 1990s were South Korea and Japan, markets which had been identified as being sunset log markets rather than expanding. Fortunately, China stepped in to become the primary export market for logs, which now poses several potential consequences. First, the significant concentration of log exports to China exposes New Zealand to economic vulnerability, especially in the event of a strained political relationship or an economic downturn in China – the current situation. Approximately 90 per cent of log exports are directed to China makes New Zealand highly susceptible to any disruption in this market. Moreover, relying heavily on a single market increases the risk of price volatility potentially affecting New Zealand's forestry sector.

Limited options

Diversifying export destinations could mitigate these risks by reducing dependence on China, but unfortunately there are limited options. India was expected to be the new emerging log market, but this has not matured as hoped and will not do so for some years. Currently the dominance of China in the log export strategy is limiting our flexibility to respond to changing global market dynamics, highlighting the importance of reducing the annual harvest to ensure

long-term price and supply stability for the industry.

Ideally New Zealand should have increased domestic processing. However, there has been a steady closure of processing plants over the past 30 years. Due to a range of factors, such lack of investment in new technology, many mills relied too much on a New Zealand wood framing market, inconsistent log supply and price, along with finding it difficult to be competitive in international markets.

General summary

There is a decline in Chinese demand for radiata pine logs, recently leading to a drop in volume and price. This decline has been year-on-year and is attributed to several factors.

Reduced construction and timber demand

China's construction activity has slowed down along with weak property market, highlighting a similar trend that occurred in Korea in the 1990s. Therefore we can only expected that China log market will eventually find a new base level.

There has been a continual increasing demand to import partly processed or fully processed timber. This is competing with logs, because many export customers are adopting a timber procurement strategy. This, compounded with reduced volume and demand, will continue to constrain log prices

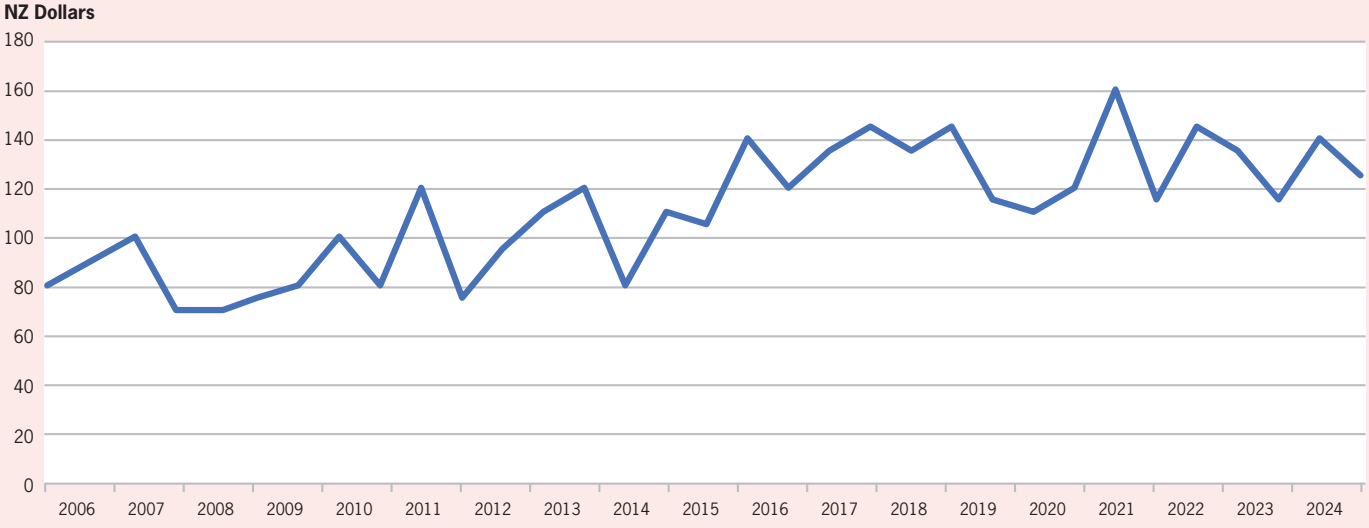
The future of the Asian markets for radiata pine logs remains uncertain while the current global slowdown in demand for logs means little market growth opportunity. The greater move towards timber imports from many Asian countries presents problems for the forest industry. New Zealand needs to adapt and diversify forest products to compete in export markets by focusing on adding value, market diversification, sustainability and innovation

There is a need to produce higher value timber products such as sawn timber and engineered wood to meet evolving market demands. To do this we require investment confidence to reinvest in processing facilities and a log resource to carter for increased processing.

New markets need to be found for radiata pine logs and timber, including emerging economies in Asia and other regions but there are questions over increasing market opportunities for raw logs. India will continue to mature but there will be continual competitiveness from other countries. We also need, as a long-term objective, to invest in sustainable forestry practices and develop innovative technology to enhance product efficiency.

Future markets for New Zealand radiata pine logs will depend mainly on mainly global economic conditions, Asian demand, China's domestic timber supply and overall domestic demand for building materials. The forestry industry needs to adapt to these changing dynamics to ensure its long-term sustainability and competitiveness. For too long forestry has operated on a production-based mentality, forcing by default a price-taking culture rather than a long-term strategy of adding value.

Composite log sale price from 2006 to 2024



Under the covers

If you pull back the covers from the last 30 years of private woodlot forestry, not a lot has changed. The national private harvest has increased, as expected, due to the significant planting in the 1990s. Regional domestic production has declined for many reasons and is unlikely to return as export markets continue to influence forest values with commodity log prices.

Over recent years more private owners are expressing disappointment with their forest returns. This is concerning because the sentiment has an eroding effect on the private sector of the industry. The original investment in forestry for many was intended to be inter-generational but many now consider it as a future liability rather than a prudent investment as the next generation consider a forest investment too risky and difficult to leave early.

It is interesting to reflect just how fast the last 30 years have gone and many are entering second forestry rotation. Not a lot has changed since the 1990s planting boom. There are still people working with a passion, along with regional contractors all known to each other in one way or the other. The concern is that there are few coming behind us with the passion required to accept the future challenges of private forestry.

What we have learned

If you are an owner of a private forest woodlot and the forest has not been converted to a permanent Emissions Trading Scheme carbon forest, you have probably just harvested in the last couple of years or will harvest over the next five years. Considering the above article, you would have to wonder what the future is in owning a woodlot and what the best succession strategy will be. In addition, depending on the land ownership structure, the forest area may have to remain in trees for another rotation.

While the facts expressed may seem or appear negative for private forest owners, there are very few if any who have not recovered their original investment plus interest over the first rotation. Therefore, it must be expected that the second rotation will be as good or a better investment than the first if expectations are realistic. For new forest investments under the Emissions Trading Scheme averaging structure there should be a reasonable return on investment with positive cashflow and two income opportunities.

Keep planting

Looking forward there is no question that there will continue to be challenges across all aspects of the investment, especially considering the 25-year to 30-year nature of a tree crop investment. There is no question that wood is a renewable resource and the world will always need wood. The message is to keep planting new forests, replant after harvest and stay positive because forests produce many more benefits than just dollars.

The one criticism of private owners is their inability to work together. Their perceived view is that they know best how to manage a harvest or market a woodlot. What is becoming increasingly apparent is you need to know what you have and the best way to manage this is to invest in appointing an independent forest manager. Private growers also need to be aware that their collective contribution to the national forest industry is highly valued. Do not under-estimate the composite value you provide to New Zealand.

Kelly Coghlan is Director of Taml Forestry in Taranaki.

Action group trip to Taranaki

Cynthia Barnard

Another successful Action Group field trip took place on a weekend in late October to Taranaki, organised by Vaughan Kearns and Paul Silcock.

First was a visit to Pukeiti, famous for its rhododendrons which were in full flower for our visit. A highlight was a short meeting in the nursery with Stuart Robertson, the Regional Council manager of Pukeiti. Amazingly, this 360-hectare property is looked after by only five full-time staff. A major task is keeping the native bush from swamping the rhododendrons and other plants along with a predator-free initiative. There are now over 100 kiwi living on the property.

Our next stop was Rotokare Barrett's Reserve to look at kauri planted in the 1940s not intended for timber but as a gift to the community. Josh, the arborist for the New Plymouth District Council, told us they had been thinned some years ago. There is no kauri dieback here yet, but some of these trees have died from armillaria, and many show signs of this disease, which Josh thinks might have been encouraged by leaving the slash from thinning piled under the trees.

The next stop was Brooklands, where there are kauri, rimu and totara dating from the 1930s. Here we saw a very large old radiata pine, possibly the biggest in the country depending on how you define it. There was also a gigantic macrocarpa, the oldest in New Zealand, planted in 1865. This tree has been struck by lightning

Rhododendrons nestled into native bush

Fred Cowling kauri plantation

Jeremy Thomson and Paul Silcock in the redwoods

at least three times. A large *Abies grandis* or grand fir nearby gave Vaughan Kearns the opportunity to describe to us how this species is being looked at as a possible replacement for radiata pine. It has similar timber qualities and can be chemically treated in the same way.

Redwood as king

For Saturday and Sunday, redwood was king. The first visit on Saturday was to Makara the property of Jeremy Thomson, a long-standing member of the NZFFA. The farm is situated in the varied terrain between where the volcanic ring plain ends and the steep hills start. It is 405 hectares in total, with approximately half in pasture and 150 hectares in production forest – 60 hectares are redwood, 50 hectares radiata pine and most of the rest is mainly cypress with some eucalypts.

Jeremy acknowledged the help and inspiration provided by the NZFFA over the years. He recounted how after he had planted his first small radiata blocks, Leith Knowles had told him to stop messing about and get into planting seriously. Bill Libby told him that redwoods would do well here, and gave him 17 of the Kuser clones. The initial 1997 planting of the clones was our first stop, and we made a number of stops at other redwood planting.

Kuser clones

Paul Silcock and Charlie Low explained the Kuser clones to us. There are 200 clones altogether, and it is important to know that they were not selected as the best available, but are a sample collection of the whole natural range of redwoods. At this 1997 planting, the 17 clones were planted in separate blocks, and we could see a fat clone, a double-leader clone and a wobbly clone.

It was mentioned that there is a widespread perception that New Zealand-grown redwood is not as good quality that grown in the Unted States. Paul Silcock told us that some years ago he took samples of New Zealand redwood to an industry symposium in the United States, and nobody there could tell the difference.

Cypress trial

After a delicious lunch in Jeremy and his partner's beautiful garden seriously upping the bar for future farm forestry events, we headed further inland to Nick Kovaleski's property. Here we stopped to look at another cypress trial, three years old, again with original *ovensii* planted as comparison for the new hybrids. Then we moved on to where Nick has built a new bach to stay in while he works on this part of his property. It is a showcase of locally grown and milled timbers. Inside was an impressive dining table, made from London plane very carefully sawn to show the characteristic fleck.

Last visit for the day was an old 1941 redwood stand, believed to have been planted as a memorial to those soldiers already killed in WW II. These trees were enormous and an intrepid team under Paul Silcock clambered down a steep bank to measure two of the largest.

Natives and cryptomeria

We started Sunday by visiting the property of David and Noeline Sampson. David was born on this property and for many years they ran Cedar Lodge Nursery, famous for its conifers, including fancy and dwarf cultivars. David has also taken to planting natives, and

our first stop was a 2008 totara plantation following a radiata pine harvest. They are very close-planted and pruned.

We moved on to look at a block of the cryptomeria clone Egmont, planted in 2009. David discovered this variety about 40 years ago in a local garden. He took cuttings and found they rooted easily and were easily managed in the nursery. At that time Taranaki was having a boom in horticulture, and this clone proved ideal for shelterbelts, being naturally narrow, trimmable, very healthy and wind-tolerant. The nursery promoted it and it has been very widely planted for that purpose.

The second property that day was further inland in the hill country. It is an area of about 46 hectares and was bought by a group of friends around 30 years ago. A radiata pine harvest has been made and now they are replanting with the aim of having a permanent forest with biodiversity. Some eucalypts remain from the early planting which they are still milling. Steve, who manages the block, said he is still learning how to handle timber and is having fun at the moment, but not making money.

Even more redwoods

Our final site visit was Kingheim's Spring Creek forest, in the very steep hills just west of Whangamomona, beside the Forgotten Highway. These 600 hectares were a sheep and beef block including along with over 100 hectares of native bush. It was bought in 2012 after having been on the market for several years. From 2012 onwards they have been planting redwoods each year. It was a radiantly healthy contrast to some of the radiata pine we had seen the day before. The block we looked at was one of the earliest planted.

Paul explained that the intention here is not to clear fell, but to carry out continued sustainable harvest. They are planting their own hybrid clones. Managing three pruning lifts is difficult logistically. Paul said it cost about $2.50 per metre for pruning but when carried out on time, adds good value.

Paul said there had been some local antagonism about the block being used for forestry with the perception that forestry destroys rural communities. But one of those present said in his father's time his sheep and beef block supported two families and a few single shepherds. Now, due to technological advances he can run it single-handed, so forestry does not deserve all the blame.

Again at this site there was some discussion about how to get the big forest owners to look at redwood, not just radiata pine. Redwood is a weaker timber than radiata, but it was pointed out that you just need to adjust the timber dimensions and spacing.

There were lots of thought-provoking discussions and insights this weekend, too many to mention in the space of one article. Thanks to Vaughan and Paul for organising the visits, which were a most valuable experience and also good fun.

Measuring one of the biggest trees

Redwoods planted in 2012

Cynthia Barnard is a regular contributor to Tree Grower for these action group field trips.

On the edge of memory
Forest Service leases 1965 to 1974

Howard Moore

Back in the 1990s when we were all fitter, sharper and more energetic than we are today, I became a world expert. I hear your jaws drop in astonishment, but it is true, and if you want you can become one too. The trick for anyone seeking to reach those dizzying heights quickly and without argument is first to choose a really obscure topic, preferably one local to New Zealand and globally ignored, and second to choose one which is so old that all of the real experts who lived and breathed it years ago are dead.

Of course, these suggest a boring subject that no-one cares about, so becoming a world expert may not only be a real slog, it might prove to be quite hollow. Some autistic people might be able to handle that but many of us would be somewhat discouraged. However, if you were really lucky and found someone with a desperate need, willing to pay you to become an expert, it would be different.

I was really lucky. For a short time I was paid to become an expert on the New Zealand Forest Service leases of Maori land. This was important at the time but seems rather ho-hum now, except it revealed some remarkable examples of clever thinking and successful investment in regional development. Happily, both of those help enrich our understanding of joint ventures.

Why leases?

For both of our Gen X readers, back in 1955 when the world was young and all, a national forest survey found that managed native forests were incapable of providing even 20 per cent of our domestic timber needs. This and other pressures led the Forest Service to begin a second major round of planting in 1960. The aim was to plant 10,000 hectares a year for 40 years, and establish a national exotic forest estate with a spread of age classes for the planted trees. Rolling land banks were developed to provide continuity of planting by region.

The main emphasis was on State forests and planting marginal land by farmers. Companies were handicapped in part by the tax regime which was biased towards farming. By 1963 company forests totalled less than 13,000 hectares, compared to other private forests of 120,000 hectares and Crown holdings of over 200,000 hectares.

At the National Forestry Development Conference of 1969, national planting targets were reviewed and increased to 20,000 hectares a year for 20 years on the back of growing confidence in export markets. Tax changes were introduced to help forestry companies and farm foresters. The Forest Service offered a major log sale of nine million cubic metres over 20 years, which was won by Carters who promptly built the Whirinaki mill.

Tasman and NZ Forest Products' combined bid for the log sale was unsuccessful and this, together with the result of the Forestry Development Conference, made them realise they should be more self-sufficient. Both accelerated their efforts to increase their own forest holdings by leasing and buying land.

Uneasy mix

The conference also focused on forestry as a tool for regional development. The Forest Service responded by adopting regional supply catchments, suitable for maintaining local forest industries. A second National Conference in 1974/75 generally endorsed the merging of regional development aims with the economic aims of the Forest Service. This uneasy mix of objectives within the department persisted until it was restructured in 1987.

While all this was going on indigenous forests were still being clear felled for timber, and the Crown was accumulating large areas of cutover. Some was being cleared and converted to farms and exotic forests, but there was more and more of it. A number of forestry companies expressed an interest in acquiring particular areas, such as the Mamaku plateau, for their own use.

The Crown was reluctant to sell the land and there was no provision in law for it to lease it for forestry. However, in 1964 it amended the Forests Act to give itself that freedom, and opened discussions with Tasman Pulp and Paper, NZ Forest Products and others over the long-term lease of Crown land for production forests.

At the same time it was engaged in discussions with the Maori owners of the Parengarenga, Tainui Kawhia and Otakanini Topu blocks over the establishment of commercial forests to control sand drift. Naturally the owners refused to sell, and as their land could not be

taken under the Public Works Act, the Crown also had to consider becoming a potential lessee.

The Forest Service realised they had to design a lease which could be widely used and appropriate whether they were lessee or lessor. At a meeting in February 1965, they decided on two basic principles –

- That it must 'be apparent that Crown was not attempting to gain better terms for itself than it was prepared to grant to others...'
- That 'division of the profits must be fair and clearly understood by both parties.'

The basics decided

Their first idea was profit sharing. The lessee would recover costs along with compound interest, and then share the residual profit with the lessor in an agreed ratio as payment in lieu of rent. But this meant the lessor would wait decades for a return and the lessee would have to keep annual cost records for the lease until harvest. Remember this was 1965. No-one owned a computer and all records were manual. Keeping track of costs for 10 years was normal, but after that most files were either archived or destroyed.

Mulling this, someone suggested that they might share the stumpage, assuming the shares were determined in advance by modelling the forest costs and revenues. It would avoid the need to keep and disclose financial records, pre-empt any arguments over interest rates, and allow for early returns to both parties from production thinning. Good idea. They promptly thrashed out the basic terms for a stumpage-based lease –

- 'The lessor makes the land available at a peppercorn, nominal or economic rent
- The lessee establishes and manages a forest thereon in accordance with an approved working plan
- From the production thinning stage onwards stumpage, probably based on market value, is received for the produce and is shared on a predetermined basis between lessor and lessee
- The lessor's share covers rental he has foregone, together with compound interest thereon, plus the current rental plus a share of profits
- The lessee's share covers the compounded costs of establishment and management including rent if more than peppercorn, plus a share of the profits
- The proportion of the shares 80:20, 90:10, 50:50 to be agreed by negotiation between the parties, based on the results of the investigations by Economics Division...'

At the conclusion of the meeting, Matt Grainger of the Economics Division was asked to develop a leasing formula around these principles.

A lease developed

It was easy to model costs and revenues, because the Forest Service had all that information. However, Grainger puzzled over how to value the land owner's input. The Parengarenga, Tainui Kawhia and Otakanini Topu lands had no 'market' values because they were not for sale. Nor had they produced any trees, so their productive values could only be inferred. A fair rental assessment of those blocks could only be made when the trees were mature, but he needed a starting figure.

Grainger turned to land expectation values to estimate what he called the 'appropriate rental value for this block of land for forestry purposes.' There were two steps –

- First, assume a real rate of interest to apply to all costs and revenues so that all present and future cash flows could be expressed in the same terms at maturity.
- Second, subtract the compound forest costs at maturity from the compound harvest revenues to give a measure of the future value of the contribution of the land. This 'contribution' could be regarded as an investment by the lessor, compounded forward at the same rate of interest as the costs of the lessee.

Grainger chose 6.5 per cent real pre-tax as the rate of interest, as this appeared to be typical for pastoral farming at the time – those were the days. Commercial forestry had higher risks and deserved a higher rate of return, but anything over 6.5 per cent would reduce the land owners' contribution too much. Farming was the default land use, and no-one would provide land more cheaply simply to allow a more risky activity.

The future value of the lessor's 'contribution' above determined one share of gross stumpage. The future value of the lessee's forest costs determined the other. The land owner's share was expressed as a royalty, or percentage of the gross stumpage.

A lease refined

By July 1965 Grainger had most of these ideas sorted but proximity bothered him. Distance from market was a factor of the land, but it affected stumpages and so affected the lessee. If freight costs were low, should the lessee earn the same percentage of the higher stumpage?

Although the Director General thought so, Grainger was less confident and he knew that while the parties might agree on everything at the beginning, they would be bound to disagree on something later. He started work on a review clause:

> 'to insure against injustice arising from circumstances it is impossible to foresee, it has been decided to … make provision for either side to call for revision at the end of the first 25 years…'

The Director General accepted this, but before the Forest Service could enter into any leases the Treasury had to sign them off. Miscommunication ensued. After a lot of confusion and debate, an interdepartmental committee was set up to review the leasing scheme. When it sorted things out in 1968 Grainger's review clause stood –

> 'Any call for a revision of royalty must rest upon the facts and circumstances of the time; consequently the parties to the lease must mutually agree as to both the method of approach and also the relevance of evidence. Wherever the two parties cannot agree the services of an arbitrator must be invoked...'

As well as the Grainger lease, the terms of reference of the interdepartmental committee required them to study alternatives. One was cash rental leases, and a substantial paper on these was submitted by Grainger's boss Williams, who disliked the royalty scheme and argued it paid higher rentals than the land owner was entitled to – Grainger's interest rate of 6.5 per cent was too low. His paper was considered but the committee rejected the cash rental scheme he advocated, because land values for forestry at the time were too low to set commercial rents. That sounds weird today, but domestic timber was under price control until 1984. Unless you were exporting, log prices were terrible in 1968.

In their final report the interdepartmental committee endorsed the stumpage sharing lease Grainger had developed. It was subsequently used by the Crown for leasing the Mamaku plateau to NZ Forest Products of 14,000 hectares, and for leasing land from Ngati Tuwharetoa for the Lake Taupo Forest of 23,000 hectares and Rotoaira Forest of 10,000 hectares.

A lease superseded

Six years later, when the Forest Service had gained more confidence in leasing and was starting to respond to demands for regional development, it reviewed the idea of cash rental leases. Williams was pleased. He briefed the new Director General, Andy Kirkland, who took it up with Treasury in May 1974. Treasury was supportive, but asked the Forest Service to earn a return on investment of 10 per cent a year.

Kirkland combined the Treasury guidelines with Williams' suggestions, and proposed stumpage sharing leases based on the relative contributions of the lessee and lessor 'after the fact' where the parties' respective inputs would be recorded and compounded forward at 10 per cent, and stumpage shared in proportion. Williams documented these principles in a formal submission to the Minister of Forests in July 1974. They have remained relevant, and are still used today in some leases and Forestry Rights.

In his paper Williams also noted that the Valuer General was now prepared to value land for forestry according to its 'highest and best use' and reasonable land values would now be available for determining rents. This was a seismic shift. Up to that point the Forest Service as lessee had negotiated the following Grainger leases –

Lake Taupo – June 1969
Tainui Kawhia – June 1969
Otakanini-Topu – August 1969
Parengarenga A – December 1969
Rotoaira – committed in December 1973, signed August 1974.

Although the Valuer General's decision made future work on the leases redundant, the agreements that the Forest Service had already negotiated remained in place for at least one rotation. The land owners bought out

the leases for Parengarenga A, Otakanini-Topu and Tainui Kawhia 30 years ago, while the Lake Taupo and Rotoaira leases were progressively surrendered on the harvest of the first rotation. The Mamaku lease – with the Crown as lessor – may still endure, as the forest is just a short haul to the Kinleith mill with tar-sealed, off-highway access.

A graceful decline

The approval Andy Kirkland received in 1974 to negotiate further leases did not make life a lot easier. The Forest Service was still being squeezed between Treasury's demands for a 10 per cent return on investment, and demands for more regional development. The two aims looked mutually exclusive, particularly since suitably productive land close to markets was being sought not only by the Forest Service, but also by private forestry companies such as NZ Forest Products, Odlins and Tasman.

Despite the difficulties, over the following 10 years the Forest Service went on to write another 15 or so leases of Maori land, sometimes for three forest rotations. Of course, they were pressured by land owners and politicians into planting some blocks such as Tokorarangi on East Cape, which were remote, steep, erosion prone or all three. Inevitably, some of their projected returns were more than a little optimistic. However, they were creating regionally important assets, protecting land, employing locals and meeting the political objectives of the day. They had a social ethic, a social licence and were unafraid to make decisions.

The records show that when negotiating leases it often took years to agree the details. There were lawyers, advisors and maps. With Maori leases there were sometimes thousands of land owners who needed to reach a consensus. Once an agreement was reached, things generally ran smoothly until the trees were mature and there was a whiff of financial returns. By then the elders had died and their places had been taken by the next generation who had not been part of the negotiations and who had ideas of their own.

The Crown itself changed, the Forest Service was disbanded and State Forests were sold. Inevitably the leases were re-litigated and gradually surrendered and while different terms were negotiated in each case, every lease ended with dignity, on terms that gave benefits to the land owners and a fair return on investment to the Crown.

Other leases

The Forest Service was not the only government department involved in forest leases. In 1986, working with Taitokerau Forests Ltd, the Board of Maori Affairs arranged 14 cash rental leases across Northland based on expected returns of 10 per cent a year. The land owners were paid rent and they were also to receive a share of the profits. This bold initiative started well but came unstuck in 1992, when the board was transformed into Te Puni Kokiri.

In the restructuring the legal agreements were lost and funding stopped, leaving hundreds of land owners more than somewhat annoyed, and 4,000 hectares of trees untended. The project languished until 1996, when Treasury faced the difficult choice of writing off all of the investment or providing a new financial package to carry the forests through to maturity. It chose the latter. Fresh legal agreements were signed, rents and silviculture were resumed and all costs were met with interest pegged at a margin above the government stock rate.

On completion of the harvest in 2017 the forests produced $236 million. Treasury doubled its money, $27 million had been invested in infrastructure and there was an $11 million surplus for the land owners. Reports at the time deemed the project a great success, but left a number of questions about who would pay for replanting and possibly expanding the forests.

Looking back to the 1960s, the problems faced by the Forest Service then are irrelevant today. What to do with cutover native bush? How to make money under price control? Where to plant regional supply forests? Leases helped them answer these questions. Over 10 years, with little to draw on as precedents, a few intelligent people worked hard to design forestry leases that were fair and workable, with reasonable returns to lessees and lessors.

In hindsight, they did a good job. What they achieved was clever, useful and for a time important. Like other things we might find at the edge of memory.

Howard Moore, now NZFFA treasurer, for a while was an expert on Forest Service leases of Maori land.

Branch and action group contacts

All the branches and action groups now fall into the same category in the NZFFA rules. This should not make a lot of difference but it does make it easier to set up new action groups. Contact names are listed below for branches and action groups.

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Are you a member of the NZFFA?

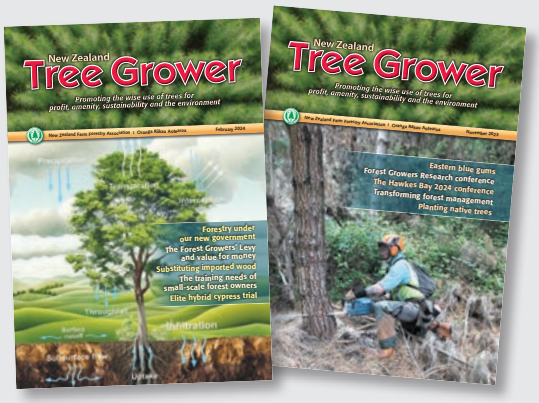
The New Zealand Farm Forestry Association has been around for over 50 years and has around 1,500 members. There are 32 active branches and special interest groups.

If you are reading this issue of the *Tree Grower* you are probably already a member, but could well just be a casual reader or subscriber. If you are a member of the NZFAA, you could make a gift membership to a friend or relative.

You are welcome to join even if you have no trees.

Why join the NZFFA?

Tree Grower



You will get four copies a year of the *Tree Grower*, the best source of information about growing trees in New Zealand.

Field days

Your branch will hold regular field days where you can see what other farm foresters have grown, where they may have made mistakes, and what trees grow well. This is an opportunity to mix with other like-minded tree growers.

Action groups

If you want to know more about cypress, eucalypts, redwood, blackwood or indigenous trees, then you can have the opportunity to join one or more of these groups. Many are involved in field trials that you can join and help with.

Annual conference

This is held in a different region every year. The conference is mainly field days and gives attendees the chance to visit farm forestry properties, QE II Trust covenanted areas, logging sites or other places of interest. It is also an opportunity to attend the AGM, meet up with up to 200 other members of the NZFFA and have a good time.

How to join

Joining is very simple. Copy the form below, complete the details and send it to:
NZFFA, PO Box 10 349, The Terrace, Wellington.
Alternatively email the copy to admin@nzffa.co.nz

You will get some free back issues of *Tree Grower* and all your membership privileges. If you have have no trees or have up to 10 hectares of trees the membership cost is only $134. For 10 to 40 hectares the cost is $192 a year. For over 40 hectares of trees the cost is $270 a year.

I would like to join the NZFFA ❑ $134 a year ❑ $192 a year ❑ $270 a year

Please debit my credit card: ❑ Visa ❑ Mastercard

Number: ☐☐☐☐ ☐☐☐☐ ☐☐☐☐ ☐☐☐☐ Expiry date: ☐☐ / ☐☐

Name on card: _____ Signature: _____

Address: _____

Email: _____ Phone: _____ Postcode: _____