FOREST OWNERS ASSOCIATION

Bulletin

New Zealand Forestry News Spring 2025

Fire season reality check

P7

Protecting plantations, people and reputation

Risk management sits at the heart of all good forest management. It's about doing things that protect people, the environment, asset value and cash flow.

Fire and pest management are central to that, yet both have been hot topics in the media lately. Forestry is often portrayed as part of the problem. In reality, there is plenty of evidence to suggest these negative portrayals couldn't be further from the truth. Commercial forest owners are among the most active investors in reducing fire and pest risks across rural New Zealand.

In 2022 the New Zealand Farm Forestry Association (NZFFA) and New Zealand Forest Owners Association (NZFOA) published their *Quantifying Forest Industry Investment in Fire Risk Management* report[1]. It showed that in 2021, commercial forest owners invested $21.4 million in total fire protection costs, with $11 million of this directed specifically to fire protection activities.

↑ Plantation forest owners' pest control efforts often extend to protecting native species like kākābeak. Photo; Dick Veitch

Compared with many parts of the world, New Zealand's annual plantation forest losses to fire remain low – typically ranging from 300 to 1200 hectares per annum since the 1980s. When fires do start, they can cause intense localised damage and attract national headlines, but these events tend to be the exception rather than the rule.

Those of us familiar with the rural fire environment know that fires often originate outside commercial forests – on farms, in regenerating native vegetation, from powerlines, human activities, or lightning strikes – all are sources of ignition.

> **Commercial forest owners are among the most active investors in reducing fire and pest risk across New Zealand**

For decades, our members have invested heavily in rural fire preparedness, readiness and response planning. Forest owners and their staff have provided a well-trained, on-call firefighting force across New Zealand. These resources have long supported the Department of Conservation (DOC) and Fire and Emergency New Zealand (FENZ), providing critical capability to protect rural communities and landscapes both within and beyond commercial forest boundaries.

Although legislation and responsibilities have evolved in recent years, forest owners remain deeply engaged and invested in fire readiness and response – a vital part of New Zealand's wider rural risk management framework.

On top of that, forest owners collectively invest millions of dollars each year in pest control to protect their forests and the wider environment.

There is, of course, a business imperative in this: unmanaged feral animals such as deer, goats, pigs, possums, rabbits, hares and wallabies can devastate young forests, compromising establishment and survival. But the benefits go well beyond the balance sheet. Forest owners also invest in pest control to enhance biodiversity – protecting native species such as kākābeak (Ngutukākā) and kiwi, both of which thrive within plantation forest boundaries when pests are managed effectively.

At times when forestry is under the microscope, the importance of a strong, unified industry voice cannot

1. https://www.nzfoa.org.nz/images/FOA_Fire_Investment_Report_A4_FA_Web_spreads.pdf

Cover image; Craig Robertson

↑ Unmanaged ungulate populations such as deer compromise forest establishment and survival

be overstated. The NZFOA exists to represent and advocate for its members – ensuring that accurate information, professional standards and evidence-based perspectives are heard in public discussions and policy settings.

Our strength lies in our members. Individual forest owners do the hard work of managing risk on the ground – through investments in fire protection, pest control and sustainable management practices. The Association's role is to connect that effort to the national conversation, to ensure that decision-makers and the public understand the scale of that contribution and to act on behalf of members when the industry's interests are challenged or misunderstood.

This is my last column as President of the NZFOA.

My two-year tenure – as is customary for the role – has flown by. While this term may seem like a short stint, the Association's structure provides strong continuity: Presidents typically serve as Vice President for the two years prior to assuming the top role, the intention being to provide a four-year period of leadership involvement. This approach delivers stability while allowing for a healthy turnover of new ideas and perspectives.

Occasionally, it has been suggested that the NZFOA Presidency and Executive Council membership looks like a rotation of "jobs for the boys". I can assure you this is not the case. During my presidency, two women were elected to the Council, not as a tokenistic gesture, but because they were the best candidates. These two individuals have brought valuable skills and insights to the table – both as forestry professionals and as business owners operating at the coal face of forest operations.

Diversity of thought is essential in any leadership group and the NZFOA benefits from a broad range of perspectives. Our Executive Council holds memberships and leadership roles from a range of other key stakeholder Associations and groups, including the NZFFA, the Game Animal Council, Forest and Bird, Ngā Pou a Tāne, the New Zealand Institute of Forestry and the Wood Processors and Manufacturers Association, to name a few. Our chief executive, Dr Elizabeth Heeg, represents our membership on international forums, ensuring New Zealand's forestry voice is heard on emerging issues such as market access, tariffs and the European Union Deforestation Regulation (EUDR), to name a few.

As we approach our next Annual General Meeting in April 2026 and the annual election of Executive Council members, consider this: if you are a leader of a member organisation and believe you can contribute to improving the NZFOA's performance for its members, then step up and put your name forward when nominations open in February.

Interest has been strong in recent years, with several positions contested – a healthy sign of an active and engaged membership. That energy and diversity are what keep the Association dynamic, relevant and ready to meet the challenges ahead for our forest owners.

Matthew Wakelin, NZFOA President

Forestry at the climate and compensation crossroads

October brought yet another windthrow event for our sector, with early estimates suggesting around 1000 hectares of damage across Otago and Southland for large-scale growers. Reports from small-scale growers remain patchy, but it's clear that many have sustained substantial losses too.

Our thoughts are with all those affected – this is a particularly difficult blow at an already challenging time for forestry.

This series of events has raised questions about insurance and the growing risks associated with powerline setbacks – particularly given the fires that ignited around power lines during these storms. While newer plantings established under the current regulatory setbacks appear to have performed well, there are still legacy plantings and shelter belts that prove why those regulatory changes were necessary.

Several foresters and farmers have said to me that the storm damage was patchy and difficult to predict. The increasingly erratic and intense nature of these storms presents an ongoing adaptation challenge for many primary industries. For forestry and farming, that means ongoing recalibration and adjustment of practices to hit a moving and seemingly unpredictable target.

> **The increasingly erratic and intense nature of these storms presents an ongoing adaptation challenge for many primary industries.**

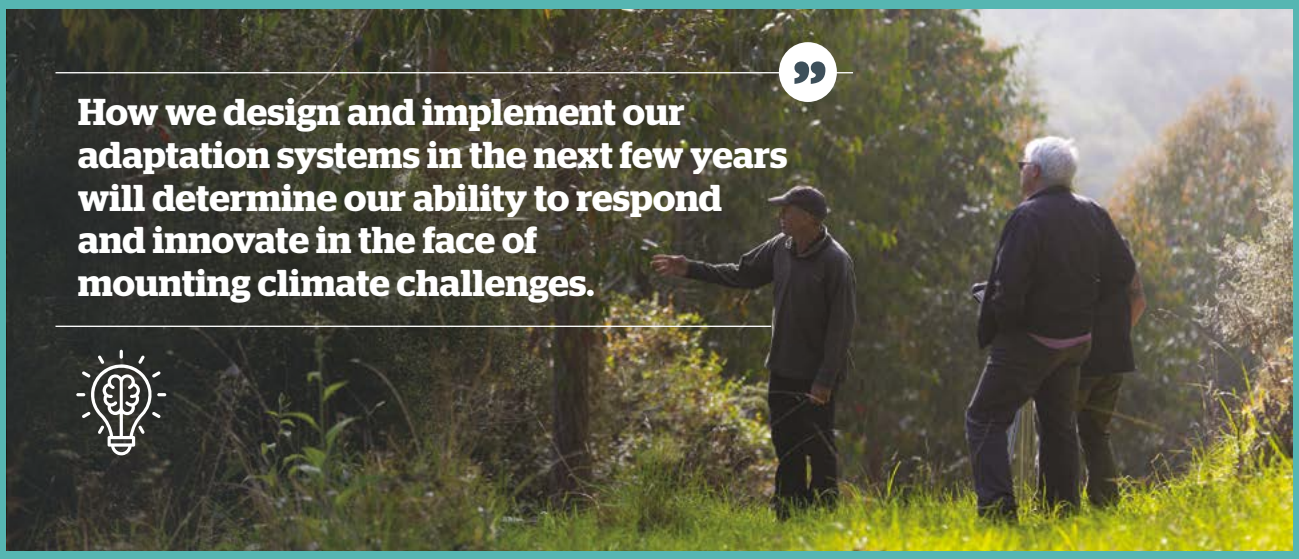
Science is going to be critical in determining how we respond. Earth Sciences New Zealand is leading a major climate adaptation research programme supported by $11.9 million in funding to identify barriers to adaptation and accelerate action.

At the *Adaptation Futures* conference in Ōtautahi Christchurch in October, Climate Change Minister Hon Simon Watts released the *National Adaptation Framework* – an important milestone for our food and fibre network. The framework includes several welcome initiatives, including a *National Flood Map* which will combine national datasets with detailed local information. The map is anticipated to be launched in 2027. The framework also empowers Standards New Zealand to develop two new nationwide standards for flood modelling and risk analysis. New legislation is also set to be introduced into the House, requiring adaptation plans in priority areas, dovetailing with the evolving Resource Management System.

For foresters dealing with financial losses and damage on the ground today, these long-term initiatives are all promising but will seem a long way off. Two questions I'm asked consistently following such events are what compensation is available for changes in productive area and how Emissions Trading Scheme liabilities will be managed.

In regions like Tairāwhiti Gisborne **20-30%** of forests may need to be retired, potentially affecting up to 100,000 ha of forests and farmland.

The Government's signals on compensation for lost productive land – essentially a form of managed retreat – have been mixed, at best. The Independent Reference Group on climate adaptation recommended in July that central government should stop all property buyouts for climate-related disasters beyond 2045. To put that in forestry terms, trees planted in 2017 would reach harvest age that year, meaning that we will essentially be coming to the end of the current pine rotation. No forest is purchased or



How we design and implement our adaptation systems in the next few years will determine our ability to respond and innovate in the face of mounting climate challenges.

managed with perfect foresight, but if the Government endorses this plan, now is the time to understand what public support there will be for management changes at harvest in the 2040s.

In some cases, such as where there has been a Treaty settlement or Crown-funded planting, there may be more of a case for government support for managed retreat of productive forest areas. But in regions like Tairāwhiti Gisborne where 20 to 30 percent of forests may need to be retired, potentially affecting up to 100,000 ha of forests and farmland – Gisborne District Council's upcoming budget request to the Crown will be a test of how well local government can secure national backing for large-scale adaptation.

Science is going to be critical in determining how we respond.

Under the ETS, a provision allows for a "temporary adverse event suspension" if a forest has been damaged by a natural disaster or other adverse event. However, this mechanism – only introduced in 2023 – has yet to be fully tested under conditions like those we've just experienced. To qualify, the forest must be expected to be reestablished and eventually store the same amount of carbon as before the event. This is more achievable for windthrow damage than for areas affected by landslides, where re-establishment can be far more difficult.

How we design and implement our adaptation systems in the next few years will determine our ability to respond and innovate in the face of mounting climate challenges. Our sector must continue to advocate for a strong partnership with government – one that supports us with sound science, modern technology and a policy environment that enables resilience rather than restricts it.

Dr Elizabeth Heeg, FOA Chief Executive

A shared investment in forestry's future

November marked a significant milestone for New Zealand's forest growers.

The new *Commodity Levies (Harvested Wood Material) Order 2025* came into effect on 18 November, ushering in another six years of collective investment in the growth and resilience of our plantation forests.

Nearly 90 percent of voters in the 2024 levy referendum supported renewal, representing 99.6 percent of productive hectares. This strong mandate reflects a clear message – forest growers value working together to achieve outcomes that no individual could deliver alone.

Levy-funded investment has become one of forestry's quiet success stories.

It underwrites the work no single grower could achieve – safeguarding biosecurity, supporting science and innovation, improving safety and strengthening our licence to operate with the public. From the response to *Phytophthora pluvialis* to the rollout of forest road safety standards and the National Fire Plan, levy investment has provided the foundation.

The levy is our shared commitment to progress. It funds research, health and safety, biosecurity and advocacy that lifts every grower and keeps us united, proactive and ahead of the curve.

The levy isn't just a financial contribution – it's a shared investment in forestry's future. In 2024 alone, the Harvested Wood Material levy saw $10.2 million invested in initiatives that lift the entire sector. Other sectors show the same logic at work. Dairy, horticulture, sheep, beef and seafood all use commodity levies to pool resources, accelerate research and amplify their voice. Forestry's levy ensures we can stand shoulder to shoulder with them, contributing evidence-based solutions and advocating effectively for our sector.

For the first levy year (18 November 2025 – 31 December 2026), the rate will remain at 33 cents per tonne (excl. GST), with a maximum allowable rate of 45 cents during the six-year term (2025 – 2031). The Trust has committed not to raise the rate during the first year and will only do so thereafter provided there is majority support from levy payers.

Forest Growers Levy Trust chief executive Dr Elizabeth Heeg says renewal of the levy shows the industry's growing maturity.

"This is about collective strength and resilience," Elizabeth says. "As forest growers, we're navigating challenges that are bigger and more complex than ever – from climate change to biosecurity threats.

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of levy funds were invested in initiatives that lifted the entire sector in 2024

"The levy is our shared commitment to progress. It funds research, health and safety, biosecurity and advocacy that lifts every grower and keeps us united, proactive and ahead of the curve.

"Renewing the levy shows that forest growers are stepping up together, investing in resilience and advocacy to shape forestry so the industry thrives for generations to come."

All forest owners pay the levy when harvested wood material is sold, enters a mill, or is exported. Levy collection itself will continue to be managed by Levy Systems on behalf of the Trust.

To all who participated in the referendum and consultation process – thank you. This renewal is a vote of confidence not just in the levy, but in forestry's shared future. The feedback we received – both supportive and critical – is vital to ensuring levy investment continues to evolve, reflects growers' priorities and delivers value across the board.

It's your levy, your investment and your legacy.

Fire season reality check

↑ Andy Warren is the Bay of Plenty regional manager for Matariki Forests

Last year's fire season was the first time in several decades that a Restricted Fire Season was not invoked in the Coromandel District as the Christmas holiday period approached.

Historically, the Thames-Coromandel District Council (TCDC), as a territorial authority with rural fire responsibilities, would implement a Restricted Fire Season during the Christmas-New Year peak – regardless of weather conditions – due to the huge population influx and the associated risks.

For the first six years after FENZ took on Rural Fire Management, the restriction and requirement for a fire permit continued in the TCDC area over the holiday period no matter what the weather conditions were.

Additional fire restrictions and controls were also common during other high-visitor periods, such as the annual Beach Hop event in February – March.

But Christmas 2024 marked a departure from this practice.

A season of weather and fuels

This decision came about in late December 2024 following a dynamic period of fire weather conditions in Northern Waikato and the Coromandel Peninsula. Strong winds and hot days were alternated with regular rainfall. The moisture spurred fine-fuel growth, while sun and wind rapidly dried those fuels between rain events – though not enough to fully desiccate them.

Beyond the communities, these fire conditions are also highly relevant for plantation forests. Rapidly drying fine fuels, combined with strong winds, increase the likelihood of fires spreading into and through forest blocks, threatening both timber assets and operational infrastructure. Even short-duration fires can damage young plantings, compromise seedling survival and create long-term economic losses.

Effective fire-season settings are therefore critical not only for public safety but also for safeguarding forestry investments and maintaining continuity of operations.

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Fire seasons

Build-up Index (BUI) and the degree of grass curing (GC%) are the most relevant fire weather indices to monitor where there is a mixture of forestry and grasslands as the predominant fuel types.

The following fire risk condition thresholds are used for declaring or revoking a restricted and/or prohibited fire season.

Grass Curing (GC%)	Build Up Index (BUI)		
(%)	0–35	35–60	>60
0–50	Open	Open/Restricted	Restricted/ Prohibited
50–80	Open/Restricted	Restricted	Prohibited
>80	Restricted/Prohibited	Prohibited	Prohibited

↑ Matrix for Fire Season Change: *2024–2027 Waikato District Fire Plan*, p.46

Under the *2024–2027 Waikato District Fire Plan*, FENZ – in consultation with partner land managers, stakeholders and the public – adopted two modelled Fire Weather Index (FWI) attributes, the Build-Up Index (BUI) and Grass Curing (GC), as primary drivers for fire-season setting changes.

As a partner land manager, I have always understood that the broader Fire Risk Conditions listed in the fire plan exist to inform and influence seasonal fire-setting decisions. It was on this basis that we supported using BUI and GC as key indicators – provided they were considered alongside the full suite of risk conditions.

Neighbours bordering our Tairua Forest on the southeastern edge of the Coromandel peninsular – binding Whangamatā, Opoutere, Onemana, Pauanui and Tairua townships together – expressed confusion and concern as Christmas approached.

Local residents live with a continuous awareness of fire risk, but the impending influx of an estimated 100,000 visitors, many in 'holiday mode', did not trigger the usual move in fire lighting control from an 'Open' to a 'Restricted' fire season.

Residents' anxiety over the risk was not hypothetical.

Beach-party bonfires on Christmas and New Year's Eve – and even the 'rotisserie-style'

↑ An estimated nine hectares of vegetation were consumed by a wildfire that broke out along Black Jack Road, Kūaotunu in the Coromandel Peninsula on 11 January 2025

cooking of a full-grown Angus bull – alongside salt-desiccated scrub – made for perfect conditions for a fire to start and spread. These fine foreshore fuels are not modelled in the FWI, nor are they captured well by the highly variable GC measurement. These foreshore fuels border forest plantings and isolated community properties, forming a vulnerable urban-rural interface.

Eventually, changing weather prompted TCDC to impose a Restricted Fire Season on 10 January 2025. A wildfire occurred the following day on Black Jack Road, Kūaotunu, burning through fuels similar to those surrounding the beachside campgrounds and isolated communities of the peninsula.

For me, it is a sobering thought that the fire vegetation-fuel mix surrounding many Coromandel communities and campgrounds – particularly during peak holiday population surges – matches those same fire fuels consumed in recent fire events (as per the example above).

Because ultimately, the most effective wildfire management isn't reactive – it's proactive.

Increased population, creating congestion on limited access and variable road standards, all conspire against safe and simplistic evacuation in many of these communities.

Ongoing discussions with FENZ Waikato have raised possibly moving long established Remote Automated Weather Stations (RAWS) to "better" locations to reflect weather conditions and the possibility of setting alternate FWI criteria for "legal ability" to enable Fire Season change that accounts for population influx during holiday periods, not just weather.

For me, two questions remain:

1. Is 'reduction' still the primary focus of FENZ vegetation fire management?
2. With twelve identified and recorded 'Fire risk conditions' listed in the *2024 – 2027 Waikato District Fire Plan*, why is any change required? The risk condition narrative already covers the circumstances requiring appropriate consideration and action.

These conditions already describe the circumstances needing consideration and action – yet last season demonstrated that weather-only metrics can fail to capture the full risk, especially when communities swell with holiday visitors.

FENZ has an opportunity this fire season to ensure that fire management accounts not just for indices and models, but also for real-world risk: population influx, vulnerable urban–rural interfaces and high-risk fuels that aren't fully captured by standard measurements.

Because ultimately, the most effective wildfire management isn't reactive – it's proactive.

Let's prevent fires before they start, not scramble after they've ignited.

Andy Warren is the Bay of Plenty regional manager for Matariki Forests. He holds a long-standing community interest in the Coromandel, where the company manages 12,000 hectares of forest, originally established in the 1920s.

Collaboration key to managing forest fire risk

↑ Photo; Veronica Clifford

When fire tore through Ikea's Pōrangahau Forest over six days in October, the dramatic footage left many assuming plantation forests are the main cause of New Zealand's wildfires.

But forest managers and fire experts agree the reality is far more complex.

While forest fires can burn intensely, they are neither common in our country nor poorly managed by our sector. Forestry companies are among the country's best-prepared land managers when it comes to fire prevention and response – investing heavily to protect their forests, staff and neighbouring communities.

Radio New Zealand aired local frustrations from farmers and neighbours about block management not long after the Pōrangahau fire.

New Zealand Forest Owners Association chief executive Dr Elizabeth Heeg says most responsible forest owners and forest managers have detailed fire plans outlining access routes and water sources for the block.

"No forester or landowner wants a fire," she says. "Incidents like Pōrangahau underscore the shared nature of rural fire management and the need for collective prevention across land uses.

"That's one of the reasons the NZFOA is working with Federated Farmers and attended the Governance and Administration Select Committee earlier this year – advocating for more resources for FENZ so that rural fire service is sufficiently supported."

The Association has a dedicated NZFOA-NZFFA Fire Committee that works with fire experts to provide forest owners with guidelines and tools. They also work to dispel forest fire misconceptions.

Juken New Zealand Limited (JNL) national general manager of forests and Fire Committee chair Sean McBride says that the visual impact of a forest fire is a significant factor in perpetuating myths.

"A forest fire will burn with more intensity and generally won't spread quite as quickly as a grass fire; it's just the potential impact of a forest fire that is often greater."

The Fire Committee also works closely with the forest research arm of the Bioeconomy Science Institute – Scion, including their lead fire ecologist and wildfire researcher, Dr Shana Gross.

"People often look to forests because when they do burn, they burn really hot, as there are more fuels present," says Shana. "Take a man-made bonfire as an example, the more logs you put in, the hotter it's going to get."

By contrast, grass fires ignite and spread quickly but burn out fast. Grass fires do not contain as many heavy fuels, Shana explains.

"They can produce large flames under the right conditions, but it's not as

noticeable because they burn so quickly."

Brief but frequent grass fires don't generate the same dramatic images that a forest fire does, and that, Shana says, may be one reason the public perception is skewed.

Available data suggests that most fires begin in grasslands, not forests.

"It makes sense if you think about the fundamentals of fire behaviour," says Shana. "Grass fires are really easy to ignite and can spread rapidly when there's fuel and when grass is dry."

Heavier forest fuels, on the other hand, hold more moisture and require sustained ignition to burn.

"Imagine you're lighting a bonfire again, it's often really hard to start unless you have all the fine fuels, such as twigs and needles," says Shana. "You can't just go in with the big sticks."

Grasslands are full of those fine fuels, whereas established forests generally are not, except in very young stands with dense grass layers beneath.

In 2021 and 2022, the forestry sector collectively invested $21.4 million in fire protection. This included the cost of insurance, fire experts, training and equipment for 1.35 million hectares of plantation forest. Insurance is by far the most significant cost, at $10.8 million, but training and operational spending also make up a substantial share of the cost of managing fire risk.

↑ Waikakaho Valley Forest in Marlborough lost 400-hectares of trees to a wildfire in 2015. Photo; Veronica Clifford

Trained forestry crews and contractors are also then available to support neighbouring landowners and rural communities if a fire breaks out. This is a significant resource available to New Zealand's national rural fire response capacity.

Research into wildfires is evolving and could eventually see the development of better ways of detecting and managing fires but Shana says people remain the best way to spot a fire.

Sean McBride says preparation and talking with your neighbours are key to fire prevention. He urges forest managers to review the *Forest Fire Risk Management* guidelines developed by the Fire Committee and implement its recommendations.

Shana agrees that preparation and communication are crucial, saying summer risks rise when dry conditions, wind and human activity coincide.

"The number one cause of wildfires is from escaped pile burns ignited by humans," she explains.

The more forest owners are aware of what their adjacent landowners are doing, the easier fire management will become.

"It's important to have those discussions because fire doesn't know boundaries," says Shana. "Unfortunately, fires will happen and anything can burn."

Simple steps, such as mowing grass along stand edges, maintaining access and escape routes, ensuring ponds or water supplies are available and restricting public access on high-risk days, can make a significant difference.

Sean reinforces the same message, the key thing is to be aware of the conditions, both the present and forecasted conditions, with regards to fire risk.

"Be sure to work with your neighbours and the wider community," says Shana. "The majority of wildfires in New Zealand are accidents, very rarely are they intentional; so we should focus on improving awareness, education and prevention together."

Wildfires are inevitable, but awareness, preparation and rural communities working together are the best ways to prevent and manage fire risk.

In 2021 and 2022, the forestry sector collectively invested

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Feature

Balancing timber and talons

↑ Capable of flying at speeds of up to 200 kilometres an hour and catching prey larger than itself, the New Zealand falcon is one of our most spectacular birds

Timberlands' sustainability manager Colin Maunder has long championed the delicate balance between forestry and conservation – and this year, his efforts were formally recognised with the *2025 Wingspan Raptor Award*.

The award marks a significant milestone – not just for Colin, but for New Zealand's forestry sector as a whole. It celebrates how the country's plantation forests have learned to balance productivity with biodiversity.

The story of this enduring partnership began in 1994 with a chance discovery of breeding kārearea (New Zealand falcon) in Kaingaroa Forest – New Zealand's largest plantation and one of the Southern Hemisphere's biggest, spanning 2900 square kilometres. The discovery did more than update our knowledge of the bird's distribution; it motivated foresters to rethink how harvesting, roading and silviculture could coexist with a threatened species.

> **Forestry can be a really safe spot for certain species.**

That realisation sparked a collaboration between Wingspan National Bird of Prey Centre – which is dedicated to education on native birds of prey and their conservation – and Timberlands; a partnership that continues today.

Early efforts focused on protecting a handful of nests in Kaingaroa Forest; three decades later, the programme has matured into a comprehensive monitoring network. Lessons learned on how to manage kārearea, where and how they like to nest and how forestry can coexist with these birds now sit firmly within operational plans, crew training and certification audits – proof that commercial forestry and conservation can thrive side by side.

Under Colin Maunder's guidance, Timberlands became the first forestry company to formally embed kārearea-friendly practices into its Forest Stewardship Council (FSC) certification. This demonstrated that careful scheduling and nest protocols could protect wildlife without compromising safety or productivity.

Colin, who has focused on sustainability for 23 years with Timberlands, also championed the *Timberlands Restorative Development Goals,* which integrate kārearea protection into a broader biodiversity strategy. His philosophy is simple but powerful: forestry and falcons can prosper together when management is responsible and consistent.

Although plantation landscapes are commonly criticised as artificial, they have been found to make excellent falcon habitat when managed well.

↑ A young kārearea chick tucked into its nest

Capable of flying at speeds of up to 200 kilometres an hour and catching prey larger than itself, the New Zealand falcon is one of our most spectacular birds – as evidenced by taking out the title of Forest & Bird's 2025 *Bird of the Year* competition.

A magpie-sized raptor that feeds predominately on live prey, kārearea often nest among woody debris and scrape nests on open ground in recently logged areas or forest edges. Nearby mature stands offer perches and vantage points to hunt prey.

Wingspan general manager Ineke Milner says kārearea do best in forests where there is cutover right next to mature stands of trees.

Successful coexistence of forestry and conservation depends on recognising risks before they occur...

These mosaics create rich feeding grounds.

"Slash and open grass encourage populations of sparrows, finches and rabbits – the falcons' favourite prey," Ineke says.

Even invertebrates play a role. A recent PhD confirmed their abundance in forest ecosystems and their presence in kārearea diets.

"We believe the highest population of kārearea is now found in forestry but only where it's well managed," Ineke says. "However, good habitat means little without predator control. Stoats, cats, pigs and possums can destroy nests or kill chicks in a single night.

"Good pest control is absolutely vital to the sustainability of the karearea."

Successful coexistence of forestry and conservation depends on recognising risks before they occur, Colin explains. Poorly timed harvesting or roadworks can collapse nests or drive birds away, for example.

"Kārearea like nesting in cutovers, so operations have to keep that in mind. Sometimes they'll nest right next to our harvesting area and so we change course to give them space and let them fledge," he says.

Crews are now trained to identify aggressive falcon behaviour – an unmistakable sign of a nearby nest. Adjusting work zones or delaying operations allows chicks to fledge safely.

Across Kaingaroa, the falcons adapt easily as stands mature, shifting to new nesting areas as canopies close. Though national population estimates vary, Colin believes there are about 5000 birds, with around 200 breeding pairs within Kaingaroa. During spring and summer, kārearea are a frequent sight for anyone working in the forest.

Building a model partnership

When Wingspan launched plans for its new National Bird of Prey Centre, Timberlands contributed $500,000, giving other funders confidence to join.

"Their [Timberlands] support – especially during tough financial times – has kept us going," Ineke says.

↑ Colin Maunder (pictured here) was awarded the *2025 Wingspan Raptor Award* for his dedication to kārearea conservation

Timberlands has also provided radios, signage and security around active nests, trained staff as Unmanned Aerial Vehicle (UAV) pilots and off-road operators, sponsored annual surveys across multiple forests and funded postgraduate research that informs national best practice.

Over time, this collaboration has evolved into clear operational protocols that any forestry company can adopt on a voluntary basis to support kārearea protection.

"We've worked closely with Timberlands and the wider industry to create forestry guidelines [for kārearea]," Ineke says. "It's not just about compliance – it's about culture."

That culture runs deep.

"It's not just Colin who's environmentally savvy," she says. "We go out into the forest and the guys on the tools are pointing out the kārearea they've sighted and reported. It's not greenwashing – it's education and action making a difference."

Ineke believes the next step for forest owners nationwide is to adopt similar principles.

"All forest managers should showcase the kārearea guidelines, educate their teams and where possible, support Wingspan," she says.

She also sees potential for expanded research across plantation landscapes, providing opportunities for postgraduate study and practical conservation gains. A new PhD project in the Kaingaroa Forest Estate is already exploring interactions among raptors and other forest species.

Kaingaroa's kārearea population has shown that successful coexistence relies on planning for birds at every rotation stage, embedding nest protocols into daily operations and maintaining constant predator control. Equally, there's a need to invest in staff capability and science and establish long-term partnerships with conservation experts.

Leadership from people like Colin Maunder and Timberlands has proven that modern forestry can deliver timber, jobs and conservation outcomes in the same landscape, Ineke says.

"Forestry can be a really safe spot for certain species."

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Facts over fear: Evidence-based insights from the Nelson-Tasman storms

Thirty hectares of the most notably impacted coastline in the Nelson-Tasman region were mapped for storm debris using validated methodology across 59 assessment plots

Two severe storms struck the Nelson-Tasman region in June and July, triggering widespread flooding, landslides and debris flows. In the aftermath, litter of all kinds – from tree fall to orchard infrastructure and general storm detritus – was deposited along the Tasman Bay coastline.

The Forest Growers Levy Trust and Te Uru Rākau – New Zealand Forest Service – commissioned an independent survey to assess the volume, origin and character of that debris.

Independent analysis found that just

5%

of storm debris came from harvest residues (slash)

Thirty hectares of the most notably impacted coastline in Tasman Bay were mapped using previously validated methodology previously across 59 woody debris assessment plots.

Independent analysis found that just five percent of storm debris came from harvest residues (slash) – with most material originating from native trees, weathered wood and other land uses.

The methodology has been reviewed by an independent statistician and found to be statistically valid.

Slash was recorded in only two plots. A single plantation stump measuring 850mm in diameter accounted for the majority of the overall five percent slash count.

Another six percent of the total Large Wood Debris (LWD) identified was classified as other plantation-origin conifer. For example, posts, timber, bins and firewood. Native wood made up 11 percent of the total woody debris volume.

A large majority of the surveyed material did not come from commercial forests. That is, 21 percent was a mix of non-plantation tree species – eucalypt, willow, poplar and native species.

A significant amount of debris measured was heavily weathered indicating long-term transport through river systems or prior

↑ Twenty-seven rain gauge sites across Nelson and Tasman recorded their highest June total rainfall on record

↑ Storm-induced damage to Cable Bay Road. Photo; Sarah Biddiscombe

deposition that likely preceded the June-July storm events. Forty percent of the overall wood recorded was too weathered to confidently identify species or source.

Importantly, most debris pieces were small, with 73 percent measuring less than three metres in length. No full-size plantation trees were recorded.

Motueka recorded the highest volume of debris (204 m^3/ha), comprised mostly of weathered wood from mixed origin. In relative terms, that's about six shipping containers over the 12.89ha sample area (approx. 24 football fields). Rabbit Island recorded the highest proportion of forestry slash – with 26 percent plantation-origin debris noted.

By contrast, more than half (54 percent) of the debris sampled in Kaiteriteri was from native trees with no plantation slash found. Similarly, the woody debris surveyed at Mārahau and Ruby Bay was dominated by non-plantation tree species or unidentifiable debris.

What the study highlights is that not just plantation forests, but all woody vegetation – and even other land uses – are vulnerable to storm impacts.

All land use types – plantation, non-plantation and conservation estate – were affected, particularly vegetation on erosion-prone land. In some areas, damage to riparian plantings and vulnerable infrastructure (e.g. boardwalks and orchard bins) was evident in the debris mix.

While some plantation forests do exist on erosion-prone terrain, it's worth noting that peer-reviewed studies consistently show that forests reduce erosion risk compared to other land uses, particularly during storm events.

This work reinforces the value of independent, data-driven analysis in shaping informed conversations around land use, storm resilience and community outcomes.

Read Tasman Bay Storm Event July 2025 Report here

https://www.nzfoa.org.nz/resources/file-libraries-resources/environment/environmental-reports/936-tasman-bay-storm-event-july-2025-interpine-woody-debris-assessment/file

Forest Shield a foundation for greater forest health

> At its heart, Forest Shield is designed to proactively strengthen New Zealand's forest biosecurity system in response to increasing global threats.

The roots of Forest Shield can be traced back to a sister forest half a world away.

In 2024, a group of New Zealand and Australian forest experts travelled to Spain's Basque Country – a region once thriving with radiata pine production, now struggling under the weight of forest diseases.

For those that walked among those stands, it was a sobering glimpse of what could happen in New Zealand if vigilance around forest health waned.

A collective realisation arose – that New Zealand's forest growing sector has a window of opportunity to act early, strengthen its forest biosecurity and prevent the same fate. From that shared sense of urgency, the programme Forest Shield was born.

After a period of careful planning, *Forest Shield* has gained momentum as a cornerstone initiative to future-proof New Zealand's forest biosecurity.

Recent months have seen good progress, with robust governance structures established and key project milestones taking shape.

A dedicated Steering Group has been established and met for the first time in November, marking a major milestone in the programme's progress. The Steering Group brings together senior leaders from across forestry, government, research and other biosecurity-focused plant sectors. Participants include Port Blakely managing director and New Zealand Forest Owners Association Executive Council member, Phil Taylor; NZFOA chief executive, Dr Elizabeth Heeg; Ministry for Primary Industries chief biosecurity officer, Pete Thomson; Forest Biosecurity Committee chair and New Zealand Farm Forestry Association representative, John Simmons; Kiwifruit Vine Health chief executive, Leanne Stewart; and Bioeconomy Science Institute – Scion – general manager, Tara Strand.

The group will guide programme governance, ensure alignment with sector priorities and oversee delivery – including the development of a business case for future investment.

> One of the most consistent lessons from Europe was that awareness is the first line of defence.

↑ A diseased forest in Basque Country, Spain

At its heart, *Forest Shield* is designed to proactively strengthen New Zealand's forest biosecurity system in response to increasing global threats. The initiative will build on lessons learned overseas to enhance the country's prevention, surveillance, diagnostics and response capabilities.

The programme's initial phase will deliver a comprehensive review of the current system, quantify the economic value of proposed improvements and prepare a business case to support a five-year, industry-led investment programme enhancing prevention, surveillance, diagnostics and response capabilities. Sector engagement and participation in the biosecurity system will also be key components.

Alongside the Steering Group, a Programme Advisory Group (PAG) is being formed, with members already identified from industry, research and government to provide expert advice, technical input and strategic guidance, ensuring the programme meets its objectives and delivers real value to forest growers and the wider sector.

A strategic review, led by a prospective independent expert with extensive forestry governance experience, will evaluate the system's governance, funding and resourcing structures – identifying opportunities to strengthen and future-proof forest protection.

To support delivery, a programme manager with deep biosecurity risk assessment experience has also been appointed. This role will be central to ensuring milestones are met across the various workstreams and that collaboration across the sector remains strong.

One of the most consistent lessons from Europe was that awareness is the first line of defence. Effective biosecurity relies on every part of the sector – from forest owners to contractors and communities – understanding the risks and their role in preventing and responding to them.

A dedicated communications and engagement focus will therefore run throughout the *Forest Shield* programme, supporting proactive outreach, building trust and ensuring informed decision-making in any future incursion.

Forest Shield is industry-led, with support from the Forest Growers Levy Trust and the Ministry for Primary Industries. Designed to be adaptive, innovative and collaborative, the programme leverages international partnerships and sector expertise to protect New Zealand's forests from emerging biosecurity threats.

With governance structures in place, advisory and review groups established and a clear roadmap for action, *Forest Shield* is now well-positioned to deliver on its vision: a resilient, future-ready biosecurity system that safeguards the economic and environmental value of New Zealand's forests for generations to come.

Timber at scale: How mass timber buildings point to a wood-first future

↑ Air New Zealand's new aircraft hangar features the largest single-span engineered timber arch in a Southern Hemisphere hangar. Photo; Air New Zealand

Think of a modern city and you're likely to imagine corridors of steel and concrete. But modern engineered wood is rapidly reshaping what large buildings can be – sustainable, lighter, faster to assemble and visually extraordinary.

New technologies in manufacturing and prefabrication now make it possible not only to imagine major commercial buildings made of wood, but to work, live and even service aircraft inside them.

Nothing demonstrates this shift more clearly than Air New Zealand's new aircraft hangar at Auckland Airport, which features the largest single-span engineered timber arch in a Southern-Hemisphere hangar.

Spanning 98 metres and rising 36 metres high, Hangar 4 encloses a vast 10,000 square metres under a single sweeping timber arch that runs uninterrupted from ground to roof. The space is large enough to accommodate two A320s and a 787-9 Dreamliner. It is also a striking architectural gesture: a roof that seems to float, held aloft by a single, elegant timber curve.

Air New Zealand's general manager of aircraft maintenance and delivery, Brendon McWilliam, says the decision to build in timber was driven by the airline's commitment to a long-term sustainability strategy.

"We've designed this hangar with the next 50 years in mind," Brendon says. "Timber allowed us to create a space that not only meets operational needs but also showcases leadership in sustainable construction."

The primary structure combines Laminated Veneer Lumber (LVL) from Nelson Pine with Cross Laminated Timber (CLT) manufactured by XLam – a Trans-Tasman innovator in mass-timber solutions.

The building is an engineering achievement in its own right: 4081 CLT elements weighing 387 tonnes and 3060 LVL elements at 282 tonnes, lifted into place with precision.

It took a year to build the foundations and substructure but only ten weeks to erect the trusses. Each timber arch – spanning nearly a football field – was lifted in a single pick, reducing site activity and risk. By contrast, the hangar's 28-metre-high steel door, which required steel for deflection control, had to be split into three pieces and propped into place.

Inside, the hangar is bright, calm and surprisingly quiet. A high-performance Ethylene Tetrafluoroethylene (ETFE) roof delivers daylight while managing glare and heat, reducing operational loads. The timber frame flexes rather than fractures during seismic events and the material naturally resists corrosion – essential in an aviation and coastal environment. The result is not just a functional building, but an environment that supports wellbeing through natural light, warm materials and quieter acoustics.

↑ Hangar 4 is expected to store carbon for decades, likely beyond 60 years. Its sustainability performance earned it a 6 Green Star certification. Photo; Studio Pacific

Studio Pacific Architecture's founder and sustainability lead, Evžen Novák, says Hangar 4's form is defined by five drivers: safety, functional efficiency, buildability, affordability and sustainability.

"The original driver was achieving a low-carbon outcome for the building and sustainability in general," he says. "You get this extraordinary space and the timber makes it doubly extraordinary."

Mass timber also offers carbon benefits that traditional materials cannot. During growth, trees absorb carbon from the atmosphere and store it in their biomass – biogenic carbon that remains locked inside the wood for as long as it is in use.

Hangar 4 is expected to store carbon for decades, likely beyond 60 years. Its sustainability performance earned it a 6 Green Star certification – placing it in the highest category of world-leading sustainable commercial buildings.

Studio Pacific used similar principles when designing the Nelson Airport Terminal: mass timber for reduced embodied carbon, natural ventilation to reduce operational energy and locally sourced materials to limit transport emissions. The result is a building that looks and feels like its region – and performs accordingly.

A core reason Hangar 4 succeeded is the level of coordination early in the process. Prefabrication was central. XLam worked with structural engineers Dunning Thornton to take the design from concept to a fully resolved, buildable solution.

CLT panels were manufactured at one of XLam's plants then shipped to Auckland for pre-assembly with LVL components, then transported to site for installation by NZ Strong.

XLam construction manager Daniel Jones says the project's success reflects a shared commitment.

"Working on a project with everyone focused on the end product created a high level of collaboration," he says.

XLam's network stitched together the entire supply chain: Nelson Pine for LVL, HTL laminating truss chords, R.R. Bramley making steel brackets and base plates, MATH Carpentry undertaking assembly, Spax and Rothoblaas supplying engineered fixings, Cutek providing treatment, 4D handling interisland freight and Pukekohe Hiab delivering to site.

NZ Strong project director Jimmy Corric says relationships were as important as planning.

"NZ Strong, Studio Pacific Architects, XLam – our companies all have great relationships," he says. "The client is happy; the building is functioning well. I think it's the model of success."

Early engagement also matters. Evžen says Hangar 4 demanded total alignment from day one.

"A 98-metre span hangar is no place for trial and error. You need the perfect storm – an engaged client, an architect who knows what they're doing, an engineer, the fabricator, the builder. Everyone must understand how timber works at this scale."

Large commercial timber construction delivers practical advantages that engineers and contractors increasingly appreciate.

A wood-first approach not only reduces construction emissions but strengthens New Zealand's forestry and wood processing sectors.

In steel buildings, large spans often require extensive temporary propping before services can even begin. With mass timber, that propping is frequently unnecessary.

"When using timber in general building typologies, the lack of propping is a huge benefit," says Jimmy. Because floors do not require prolonged shoring, building services can start earlier.

"That's a real benefit. Arguably it's faster in some instances and once the industry develops even more, I think there'll be speed gains to be had."

When the team tested the market in 2018, the timber option came in slightly cheaper than steel. While both materials have cost cycles, the lesson holds: mass timber is competitive when designed for manufacture, coordinated early and procured through a mature supply chain. Timber also avoids corrosion problems and performs well in fire, with large-section timber charring to protect its structural core.

Air New Zealand took a bold step in choosing timber.

"When the design of Hangar 4 began, choosing timber was unconventional," Brendon says. "There were no local examples of timber structures on this scale to reference."

But their decision is helping pave the way for others. Across the country, major clients and design firms are now embracing mass timber.

The new Tauranga City Council building, designed by Warren and Mahoney Architects, is comprised of more than 2000 tonnes of mass timber across its 10,400 square metre footprint. Featuring CLT floors and cores, LVL beams and columns and glulam colonnades, it is a fully New Zealand-sourced timber structure – LVL from Nelson Pine, CLT from Red Stag Timber and glulam from Techlam.

Red Stag TimberLab business development manager Andrew French says the building is efficient, regenerative and sustainable – but importantly, it's also an exceptional place to work.

"With careful, correct design, mass timber just works," he says. "It fits the build process,

↑ Tauranga City Council's new building is another mass timber masterpiece, championing 2000 tonnes of timber. Photo; Tauranga City Council

installs quickly and aesthetically, it's much nicer than sitting at home looking at white GIB all day."

Nelson Airport Terminal is another example, its LVL and plywood structure expressing the regional landscape. With 610 cubic metres of radiata pine storing more than 600 tonnes of carbon, the timber here is not a finish – it is the structure.

Together, these projects – Hangar 4, Tauranga City Council's building and Nelson Airport – show that mass timber is no longer experimental. It is delivering architecturally rich, high-performance buildings across multiple sectors, from aviation to civic administration to public transport.

A wood-first approach not only reduces construction emissions but strengthens New Zealand's forestry and processing sectors. For forest owners, large timber buildings signal growing, stable demand. Daniel from XLam says this creates a positive loop: steady project pipelines give manufacturers confidence to expand capability, invest in new products and build expertise – drawing further investment into the supply chain.

Stable demand means more processing, more advanced manufacturing, and more high-skill jobs in design, fabrication and installation, plus deeper knowledge in fixings, treatments and façade systems.

Andrew says supporting locally grown and processed timber powers the circular economy, too. When markets value long spans, stiffness, low carbon, fire performance and seismic resilience, New Zealand's radiata resource and processing capability can respond – lifting utilisation and value per cubic metre.

These buildings collectively demonstrate that mass timber is not only viable for large structures in New Zealand; it produces beautiful, sustainable, people-centred places. The next step is ensuring that considering timber becomes standard practice.

A wood-first policy need not be a mandate but a clear signal: design teams should assess mass-timber options early in the process. As Jimmy Corric puts it, "No one material builds any building. But is timber the right answer in many buildings? Yes".

The supply chain is strengthening, with capability and experience increasing through each successful project.

A wood-first approach would accelerate momentum already underway, reduce the carbon cost of construction and send a long-term demand signal that benefits New Zealand's forest growers and processors for decades to come.

The building is an engineering achievement in its own right:

4081
CLT elements weighing **387 tonnes** and

3060
LVL elements at **282 tonnes**, lifted into place with precision.

Spring on steroids

It has been one of the windiest starts to spring in recent years, with September and October delivering nearly non-stop damaging westerly gales, heavy rains producing flooding in our western regions, fires in eastern regions and even unusually late southern snowfall.

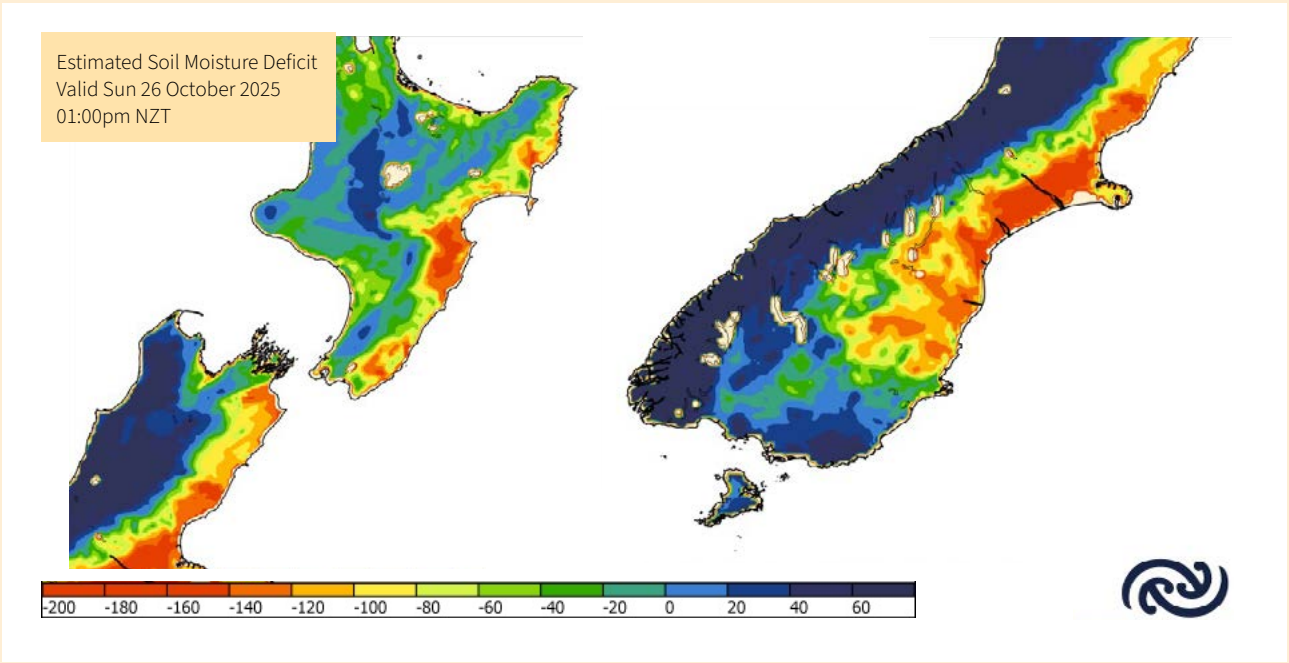

Figure 1: A snapshot of estimated soil moisture levels on 26 October 2025. Orange colours indicate significant soil moisture deficit, while red colours indicate severe soil moisture deficit. Blue colours indicate soils at saturation (or at runoff). The effects of the westerly winds this spring are very clear on the soil moisture deficit maps – with flooding rains (runoff) on the West Coast South Island and dry and hot conditions stripping out the soil moisture in eastern areas

For forestry, this combination has meant elevated windthrow risk, delay to operational activities and high variability in access conditions across both islands.

Constant spring westerlies saw soil moisture drop across eastern regions, escalating the fire danger.

Old school forecasters might say this was Mother Nature making up for lost time – since winter was relatively settled under High pressure to our east. Others may point to the recent stratospheric warming (SSW) – a rare Southern Hemisphere event, known to disrupt normal weather patterns allowing unsettled, stormy and cold conditions to penetrate further north than usual.

This phenomenon occurs when the high-altitude polar vortex around Antarctica breaks down (around 30-40km high), allowing temperatures at this height to markedly increase.

The last two events were observed in 2002 and 2019.

For forest managers, these disrupted patterns help explain the intense swings seen between drying winds, extreme gusts, flooding and snow.

Spring impacts

Against a background of persistent westerly gales, several major weather events had direct impacts on rural sectors.

Severe nor-west gales in the North Island caused significant power outages in the Coromandel Peninsula and western Bay of Plenty on 13 and 14 September.

MetService issued several rare red severe weather warnings this spring too.

The first was issued for the Canterbury High Country and foothills and also west of SH1 south of the Rakaia River, for 21 September.

A second series of red wind warnings were issued for Wellington, Wairarapa, Marlborough, all of Canterbury and also coastal parts of Southland and Clutha between 22 and 23 October. This second red warning was forecast to be more severe than the first and produced widespread and significant damage to powerlines, buildings and forest blocks.

Constant spring westerlies saw soil moisture drop across eastern regions, escalating the fire danger. Downed powerlines under high winds added ignition risk. A fire burnt its way through 245-ha of trees and vegetation in Pōrangahau Forest in Central Hawke's Bay and multiple large grass and scrub fires broke out in Kaikōura during these wind events, highlighting the tight coupling between wind, fuel dryness and risk.

In contrast, western regions experienced repeated flooding rains. Heavy rainfall on 14 October caused significant flooding across Waitomo, Ruapehu and Taupō districts. An unusually late and heavy snowfall on 27 October affected Otago and parts of Canterbury too, compounding the impacts of the damaging wind events, with thousands of homes still without power during the cold conditions.

These contrasts are well-illustrated in the soil-moisture snapshot from 26 October (Figure 1), with saturated western soils and severe deficits east of the ranges – a pattern that has forced forest operators to manage both flood risk and fire risk simultaneously, depending on region.

Rainfall (% above/ below normal)	**Nov–25**	**Dec–25**	**Jan–26**	**Feb–26**
Whangārei	+15%	+24%	+19%	+2%
Auckland Airport	+1%	+15%	+14%	-5%
Hamilton	-7%	+2%	+7%	-2%
Tauranga	+4%	+19%	+21%	-5%
Gisborne	+1%	+36%	+31%	+3%
Napier	+17%	+32%	+30%	-10%
Masterton	-14%	+10%	+8%	-13%
Kelburn	-11%	+6%	+2%	-6%
Paraparaumu	-24%	0%	-3%	-18%
Palmerston North	-25%	+4%	+3%	-23%
Whanganui	-22%	+4%	+4%	-25%
New Plymouth	-19%	+5%	+3%	-15%
Taihape	-15%	+4%	+8%	-19%
Raetihi	-16%	-3%	0%	-12%
Taupō Airport	-15%	-1%	+9%	-9%
Taumarunui	-24%	-11%	-1%	-12%
Te Kūiti	-17%	-5%	+3%	-6%
Nelson Airport	-14%	+12%	+3%	+7%
Blenheim	-14%	+13%	+14%	+4%
Kaikōura	-21%	+34%	+4%	+5%
Culverden	-28%	+34%	+6%	+10%
Darfield	-30%	+23%	-11%	+6%
Christchurch Airport	-31%	+35%	-13%	+11%
Ashburton	-19%	+24%	-11%	+4%
Geraldine	-14%	+16%	-11%	-1%
Timaru	-12%	+25%	-16%	-2%
Tekapō	-21%	+7%	-21%	-11%
Omarama	-24%	+7%	-20%	-13%
Dunedin Airport	-12%	+15%	-8%	-3%
Ōamaru	-14%	+21%	-14%	0%
Balclutha	-14%	+11%	-10%	-6%
Cromwell	-30%	-9%	-22%	-16%
Wānaka	-25%	-7%	-26%	-20%
Queenstown	-28%	-11%	-22%	-18%
Alexandra	-28%	-4%	-16%	-9%
Gore	-11%	-3%	-9%	-5%
Invercargill	-9%	0%	-5%	-7%
Westport	-22%	-4%	-19%	-7%
Hokitika	-16%	-1%	-17%	-8%
Haast	-9%	+3%	-11%	-7%
Milford Sound	-5%	0%	-4%	-3%

Figure 2: Monthly rainfall forecasts (anomalies as percentage of monthly normal rainfall), based on 6 October European Centre for Medium-Range Weather Forecasts (ECMWF) ensemble forecast scheme. This type of long-range forecasting does 'bounce around', meaning we recommend getting an updated seasonal prediction regularly.

Summer climate drivers

The Pacific Ocean remains in neutral territory but is approaching La Niña thresholds. Most climate models forecast a weak and brief La Niña at the start of summer, although it is touch and go on whether it even qualifies. Most models forecast a return to neutral conditions near the end of summer.

Either way, a general La Niña-type atmosphere is expected to linger across New Zealand this summer (December to February, overall).

That means highs parked over the South Island, with more easterly winds than usual over the country. Across New Zealand, a hotter than usual summer is forecast, with a more 'muggy' and 'humid' climate possible for northern and eastern areas, rather than 'hot'.

For forestry, prolonged heat and humidity could increase forest health and biosecurity pressures, such as pest and disease activity. Warmer temperatures may also lead to earlier soil-moisture deficits, affecting seedling survival and the establishment of new plantings.

Expect generally settled summer weather but with intermittent rain events from sub-tropical lows and or the possibility of ex-tropical Cyclones for northern and eastern areas, especially.

For the industry, these systems could mean a rapid shift in conditions from high fire danger to flooding or access disruptions, requiring flexible planning and tight weather monitoring.

As rainfall anomalies (Figure 2) will vary month-to-month, it's advisable that forest managers and planners refresh seasonal guidance regularly to support decisions around staffing, fire risk management, roading programmes, planting and harvesting schedules.

Georgina Griffiths is a MetService meteorologist with more than 30 years' experience.

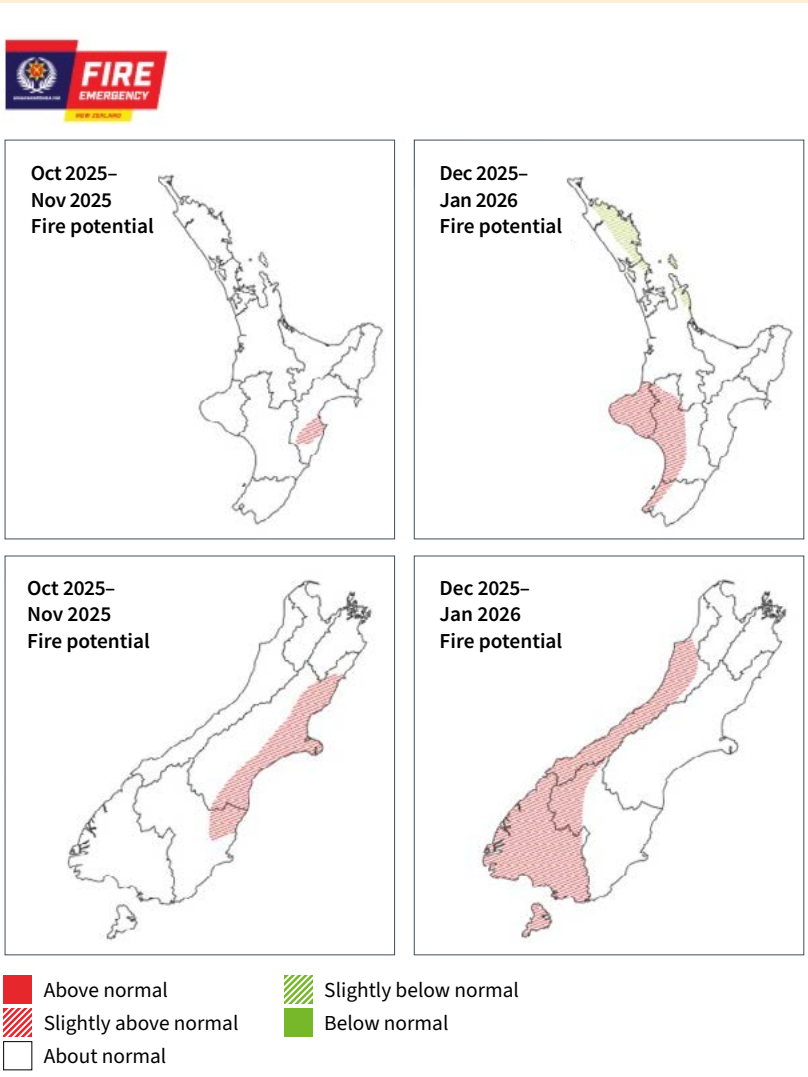

Figure 3: Fire potential over the next three months for the North and South Islands based on assessment of the current conditions as well as the effects of climate predictions for the October – November (left) and December – January (right) periods

A general La Niña-type atmosphere is expected to linger across New Zealand this summer

The science shaping tomorrow's forests

What does the future of New Zealand forestry actually look like?

More than 120 people – researchers, forest owners, managers, contractors and industry partners – gathered in Auckland this October to answer that question at the Forest Growers Research Conference.

Over three days, the sector took a rare collective pause to examine the ideas, technologies and systems that will shape our forests over the coming decades.

Forest Growers Research chief executive Dr Paul Adams said the conference was a showcase of the incredible breadth and value of the industry's $5 million per annum levy investment into forest research and development.

"From biosecurity preparedness to advanced breeding technologies and digital automation, delegates saw firsthand how research translates into tangible operational benefits," Paul said.

> **Prevention costs far less than a crisis response**

Several recurring themes emerged from the conference: innovation that must be tailored to New Zealand conditions, technology that's reshaping work across the value chain, a pre-emptive forest health mindset and genetic advances.

We are tackling the challenges of New Zealand's tough terrain

New Zealand's rugged landscapes have long challenged forest technology and the conference reinforced this reality: solutions built for flat, predictable ground overseas simply don't apply here.

Presentations on PlantMax adaptation, mechanical pruning robotics, slash grapple design and precision GPS all pointed to the same conclusion – our unique environment requires bespoke innovation that's costly and slow, yet success could give us a real competitive edge.

Claire Stewart's *long and winding road* presentation captured this neatly: innovation in forestry only succeeds when the right context, culture, capability and collaboration come together.

Technology is boosting productivity and safety for people across the value chain

A strong message ran through the automation and robotic sessions: tools like automated planting and robotic pruning aren't about replacing people – they're about keeping people safe, closing labour gaps and enabling access to terrain no longer viable for manual operations. In the lab, robotics can replace highly labour-intensive tissue culture steps.

Digital innovations are tackling these challenges across the value chain: machine learning and image acquisition for embryo selection, precision GPS for accurate planting, remote sensing for monitoring chemical thinning, robotic approaches to mechanical pruning and teleoperation for safer harvesting.

Contractors provided a practical reality check: successful uptake of mechanisation depends

not just on technology but on suitable terrain, manageable costs and skilled operators.

Bioeconomy Science Institute – Scion – human factors scientist, Brionny Hooper, reminded the sector that resilience starts with a safer and healthier workforce. Her research positioned worker wellbeing as a strategic asset rather than simply a compliance issue.

Turning data into action

Multiple presentations showcased impressive data capture: Controller Area Network (CAN)-bus data logging from harvesters; environmental monitoring in greenhouses; landscape-scale sensing for genetic performance and 25 years of breeding trial data. The technology to capture data exists but the challenge is converting that information into decision-making tools that drive improved operational outcomes and decisions.

The Forest Flows hydrology team demonstrated this clearly, explaining how complex data must be distilled into intuitive tools. Their proposed forest hydrology kit, now under consideration for Primary Sector Growth Fund support, is designed to do exactly that.

Investing before the crisis hits

With global pest and disease pressures accelerating, forest health was a hot topic with prevention and preparedness highlighted as being key.

> **From biosecurity preparedness to advanced breeding technologies and digital automation, delegates saw firsthand how research translates into tangible operational benefits**

"Prevention costs far less than a crisis response," Paul Adams told delegates – a point underscored by sobering South African case studies from Steven Dovey, showing that native pests can switch hosts to exotic species.

The sector's proposed Forest Shield programme represents a fundamental shift from reacting to incursions, to building whole-of-system resilience in advance. The updated biosecurity scorecard reinforced there is room for improvement across the entire system from governance to domestic pathways and industry-led proactivity.

Strategic propagation and the genetics frontier

The conference highlighted the promise and real-world practicalities of capturing genetic gains.

Large-block trials showed that translating breeding improvements into production forests is complex. Controlled-pollinated seedlots with different GF Plus ratings often performed similarly, underscoring the challenge of moving from breeding values to operational outcomes.

2025 Forest Growers Research Awards

The 2025 Forest Growers Research conference also celebrated outstanding achievement across the forest research and operational communities during an Awards dinner. Forest Growers Research Board chair Jason Syme acknowledged eight recipients for their leadership, innovation and long-term contributions to New Zealand forestry.

- **Innovation that Enhances Sector Value:** Sam Middlemass (Matariki Forests) – recognised for developing a chemical thinning technique that has more than doubled crew productivity.
- **Science of International Quality:** Dr Steve Wakelin (BSI – Scion) – for leading the transformational Tree Root Microbiome project.
- **Sector Engagement:** Dr Simeon Smaill (BSI – Scion) for his exceptional ability to translate complex science into accessible insights over his 20-year career.
- **Research Participation and Implementation:** Simon Papps (Manulife) – recognised for his 40-year career bridging research and industry practice to advance forest management.
- **Contribution to a Science Team:** Andy Dick (Logiztix) – for his leadership of the Automated Log ID project.
- **Young Scientist:** Georgia Dickson (BSI – Scion) – for her research using virtual reality to explore how different forest environments affect worker wellbeing.
- **Inspiring Leadership:** Dr Peter Clinton (BSI – Scion) – who has mentored more than 30 students over 35 years.
- **Supporting Research Award:** Alison Wilson (BSI – Scion) – for her tireless efforts in coordinating complex field work, managing communications and ensuring research programmes run smoothly.

The awards celebrate the collaborative effort underpinning forest research and the people turning long-term science into sector-wide value.

↑ Sam Middlemass (right) from Matariki Forests – winner of the Innovation that Enhances Sector Value Award

↑ FGR conference field trip participants at Woodhill Forest

Speakers made it clear that Strategic propagation choices are critical, determining the pace and scale of genetic deployment. No single method fits all situations – whether vegetative propagation or tissue culture, decisions must account for breeding programme maturity, species biology, cost and scalability. Emerging technologies – robotics, AI and bioreactor systems – are making scaling of clonal forestry a real possibility, enabling more rapid propagation to replace trees lost during any future biosecurity incursion. Research into gene editing has shown that targeted mutations indistinguishable from natural variation can be created. But realising benefits for disease resistance, improved wood properties and climate adaptation depends on having the propagation systems to deploy these improvements at scale. Tissue culture then becomes the deployment pathway for gene technology advances.

Meanwhile, traditional breeding successes continue: dryland eucalypts showed stem-form improvements of up to 53 percent, illustrating that with the right deployment systems, substantial genetic improvements are achievable.

Field trip: research in action

The final day took delegates across West Auckland into the field to translate research into practice.

Nga Rakau Nurseries showcased automated propagation lines producing 80 million plants annually and Riverhead Forest demonstrated Matariki Forests' chemical thinning programme, refined from research trials to 100 percent target-tree success.

Woodhill Forest, a long-term joint venture with Ngāti Whātua o Kaipara, highlighted species trials, environmental protection work and establishment practices.

Harvesting equipment was demonstrated by Manulife Investment Management, illustrating modern equipment capabilities.

It was a powerful reminder that good research only matters when it reaches the ground.

Research making a difference

Across all sessions, one message endured: new knowledge only creates value when it's adopted.

Forestry's long validation cycles make this difficult, but communities of practice, strong industry engagement and ongoing feedback loops between practitioners and researchers are key to turning ideas into operational change.

This year's conference showed a sector leaning confidently into what's next – strengthening capabilities, investing in resilience and ensuring research continues to be one of forestry's most powerful strategic assets.

FOREST OWNERS ASSOCIATION

The New Zealand Forestry Bulletin is published three times a year by the New Zealand Forest Owners Association.

Please acknowledge the New Zealand Forest Owners Association as the source when republishing stories or abstracts from the Bulletin.

Publication date November 2025.

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