FOREST OWNERS ASSOCIATION

SUMMER 2012/2013

NEW ZEALAND FORESTRY BULLETIN

REGISTER AND VOTE

FOREST OWNERS ARE STRONGLY URGED TO REGISTER AND VOTE YES IN THE FOREST VOICE REFERENDUM IN MARCH.

"The forest industry faces major challenges. To overcome them we need an industry that involves all growers, not just those who choose to belong to an industry association," says FOA vice-president Paul Nicholls.

A 'yes' vote in the referendum will see all forest growers paying a compulsory commodity levy on virtually all harvested forest products. This will increase the number of levy payers and therefore the amount of money available for industry-good activities.

The effect on individual growers will vary. Growers who currently do not contribute to industry-good activities will face an increase. For some of those forest growers who are currently paying voluntary levies there will be no change.

"It's important to get all growers paying their share. But it's even more important to get all growers in the industry loop, having their say and playing their part."

Nicholls, who is also a member of the board of the Forest Growers Levy Trust that's organising the referendum, says ownership of the country's forests is becoming more diverse. FOA members account for around 80% of the harvest, but only 65% of the planted forest area. As the forests planted in the 1990s are harvested, the non-member share of the harvest will grow.

"Getting the owners of these non-member forests involved in industry decision-making is critical. We need to be prepared for the harvest bulge so that harvest revenues are maximised and disruption is minimised."

Their involvement is also needed to ensure the industry's biosecurity defences are as robust as possible. The PSA disaster in the gold kiwifruit industry is a harsh reminder of what can happen. Unlike the kiwifruit industry, the FOA has long had a biosecurity monitoring programme with active grower involvement. But the levy will allow the programme to expand.

The levy is also the key for unlocking the profit potential of forestry. There is a strong belief among scientists that production per hectare could be doubled, thereby greatly improving grower profitability. There is also the potential to improve wood quality and the resistance of trees to pests and diseases, particularly those not yet present in New Zealand.

This vision is central to the NZ Forestry Science and Innovation Plan that has been enthusiastically adopted by the industry. But for this to be achieved a greater investment in research is needed – both the total sum, as well as the grower share.

About half of the funds raised by the levy will be used for research and development. In addition, it is expected forest growers will provide additional funding for projects that mesh with their company objectives.

"The reality is that in the long-run forestry has struggled to match returns from sheep farming on all except the most difficult country and, as we are learning, that country is difficult for forestry too, particularly at harvest," says Nicholls.

Paul Nicholls
We want our wonderful industry to realise its potential

"We need to increase profitability to the point where forestry can better compete for more productive hill country and where farmers are more open to planting a proportion of their properties in trees as part of a sensible business diversification strategy."

In the Forest Voice referendum, which is being held from 1 – 22 March, each owner of an eligible forest gets one vote. This vote will be counted two ways, per head and per hectare of forest.

To succeed, the referendum needs a dual majority. Because most FOA members support the Forest Voice proposal, it is expected that there will be a clear majority yes vote counted by hectares.

The per-head vote is not assured. There are many owners of small forests who are not involved in industry affairs.

"The FOA hopes they will register and vote yes. The whole thrust of the Forest Voice proposal is to give all forest growers, large and small, a voice in the affairs of their industry.

"To realise the potential of our wonderful industry, we all need to be taking part – having our say and paying our way. That's what it's all about," Nicholls says.

To vote in the referendum, all growers must register by phone, or on-line, even if they belong to the FOA or FFA. This is to ensure all growers have the same chance to have their say in shaping the industry's future.

www.forestvoice.org.nz

IN THIS ISSUE

OPINION – SHELDON DRUMMOND, CHAIR, FOA HEALTH SAFETY & TRAINING COMMITTEE

INDUSTRY SAFETY MUST IMPROVE

EVERYTIME SOMEONE DIES OR IS SERIOUSLY INJURED IN OUR INDUSTRY IT DRIVES ME TO HAVE OUR INDUSTRY DO BETTER.

All too often these tragedies are the result of a one-off bad decision by one person. We all make bad decisions, but in forest harvesting a bad decision can be fatal.

For outsiders who are aware of the industry's death and injury rate, it's easy to jump to the conclusion that forest owners and logging contractors don't care. That we are pushing our workers beyond their limits in pursuit of the mighty dollar.

But those critics don't live in our provincial towns and cities where everyone knows everyone else. The vast majority of us take safety very seriously, as you do when your crew members are friends, sons of friends or even members of your own family.

To understand what's going wrong, first look at what's going right.

In the 1990s, the fatality rate relative to logs harvested was nearly twice as high as it is now. Eight men died in one terrible year.

Forest owners and contractors decided this had to change. Working with what is now the Ministry of Business, Employment and Innovation (MBIE) and ACC, a detailed Code of Practice was developed, along with best practice guidelines. A web database, IRIS, was set up for recording incidents and near misses – allowing us to identify high-risk jobs or activities. Safety became a central part of industry training.

It worked. The accident rate fell by half, even though the harvest has since doubled, with much of the increase coming from steep hill country where the hazards are greater.

The trouble is, we reached a plateau. Each year between three and five people are still not going home alive to their families after work.

So three years ago, we all got together again to totally rethink everything we do.

We upgraded our IRIS database to make it easier to use and analyse. We revised and updated our Drug & Alcohol Code. We talked to other industries, from Air New Zealand to Comalco, to find out what we could learn from them.

We identified the areas of greatest risk – breaking out and felling – and did studies to identify every aspect of the job that contributes to hazards. We then changed the Code of Practice to eliminate those hazards.

We also learnt that the best way to achieve our goal of zero deaths and zero serious harm injuries was to create a safety culture.

Maybe it's our blokish Kiwi culture, where you never call a mate to account and rip-shit-and-bust is ok. But Kiwis are bad at safety and bad at speaking out when people are being put in harm's way.

We aim to change that. Sure, the new concise easy-to-read Approved Code of Practice and revised best practice guidelines will be absolutely essential. But they are useless if the guy on the hauler or putting a strop on the log has got his head full of hell because his missus walked out the night before.

The safety culture means everyone must immediately communicate safety concerns to the person in charge. And if those concerns are valid, the supervisor must act. Everyone must clarify unclear or unsafe instructions, listen to the views and concerns of others, and challenge unsafe behaviours by workmates.

If the hauler operator looks more morose and tetchy than usual, the crew leader or foreman will try to find out what's on his mind. All very unblokish, but it may save a life.

In the wake of the Pike River tragedy, we've looked for lessons that may go beyond coal mining. A shortage of trained safety inspectors is one of them.

About 20% of the harvest comes from forests not owned by FOA members using contractors who don't belong to the Forest Industry Contractors Association. Some of them are cowboys.

Having more MBIE forestry inspectors would make it easier for a worker to get action if they felt they were being exposed to unsafe work practices. Someone who could demonstrate the right way to do things, or shut the whole show down if necessary.

But even if more suitably trained individuals could be retained as inspectors, they can't be everywhere at one time. So for the responsible majority of forest owners and the crews they want to keep safe, the answer has be to apply the new Code and to develop a culture where safety comes first.

This month, harvest crews came back to work after their summer break. To get their minds back on safe work practice, they're having Safe Start breakfasts. This forest owner initiative reaches around 2500 workers each summer – most of the frontline workforce.

In March and April, safety will again come to the forefront, with the rollout of the new Code of Practice. Forest owners, contractors and crew members will spend two hours learning about the new Code, the major changes from the existing Code and what it means for their daily work.

Meanwhile, forest owners are helping fund a major research programme that aims to mechanise harvesting and extraction – removing on-the-ground workers totally from the areas of greatest risk.

There is a lot going on by way of developing and rolling-out safety improvements within the forest industry.

There is uniformity among our FOA executive and within the Health Safety and Training Committee that safety is to receive maximum emphasis.

Safety is the biggest challenge facing forestry. Developing solutions that work is far more complex than our critics suggest. But if it means that I never have to go to the tangi or funeral for someone killed in a forest, it will be worth every cent.

ESSENTIAL EARTHWORKS GUIDE

FOA transportation committee chair Brian Pritchard, associate minister for primary industries Nathan Guy and FOA chief executive David Rhodes at the parliamentary launch of the *NZ Forest Road Engineering Manual* and associated *NZ Forest Road Engineering Manual Operators Guide*

Forest owners now have access to detailed information about carrying out earthworks that meet today's environmental standards, thanks to the efforts of a team led by Brett Gilmore of Pan Pac Forestry.

New Zealand's plantation forests are increasingly grown on tiger country. To harvest them, you need highly skilled roading engineers and operators who can construct low-cost, fit-for-purpose roads, culverts and landings. They in turn need a source of reliable information about what works and what doesn't work in difficult terrain and across a wide range of soil types.

Launching the *New Zealand Forest Road Engineering Manual* and associated *NZ Forest Road Engineering Manual Operators Guide* at parliament, associate minister for primary industries Nathan Guy complimented the Forest Owners Association for taking the lead. He also praised Gilmore for putting a huge amount of work into the project.

"Road engineering is one of the most technically challenging and expensive parts of forestry. This manual documents best practice and provides all forest owners – large and small – with access to relevant up-to-date information."

He said the publications were well-timed, because many owners who established forests in the 1990s are starting to make plans for developing their infrastructure. Many of these will be smaller owners harvesting for the first time.

The annual harvest is forecast to climb to a projected 35 million cubic metres a year from the early 2020s. This could equate to 14,000 km of new harvest access roads in the next 10 years, at a cost of around a billion dollars.

"The guidance on sediment control and erosion will be of particular value to these owners, and links nicely with the National Policy Statement for freshwater with a wider environmental impact view," Mr Guy said.

FOA transport committee chair Brian Pritchard said building roads through the bush was a core forestry skill, but in recent years harvesting crews have found themselves working more frequently in steep hill country.

"This has tested the roading and landing making skills of forest owners and contractors at a time when council water quality plans have been paying greater attention to the run-off of silt and other debris.

"But to their great credit, forest owners and contractors have risen to the challenge. They have identified practices that have performed well under storm conditions in very difficult country. They have also identified those practices that don't perform well.

"The Manual and Operators Guide is the end result of this collaboration. It is also a beginning – an essential starting point for anyone, not just forest owners, contemplating building unsealed access roads in the New Zealand back country."

On behalf of the FOA, Pritchard thanked everyone involved in the revision and publication of the Manual and Operators Guide. Brett Gilmore, Glen Mackie, Kelvin Meredith and Peter Weir of the project team were supported by numerous technical reviewers who are named at the front of each publication.

FOA ENDORSES FORUM REPORT

The FOA has endorsed the Land & Water Forum's final report.

"Collaborative decision-making means everyone has their interests taken into account and everyone compromises. But with 100 individuals and 60 stakeholders involved – among them some of the most powerful pressure groups in the country – it's not surprising that there was intense and passionate negotiating, right up to the final moment," says environmental committee chair Peter Weir.

"We believe the interests of forest owners are best served by collaborative decision-making and for national bottom lines to be set for the state of New Zealand's rivers, lakes, streams, wetlands and aquifers."

Weir says forest and other land owners need to know what standards they have to meet in a particular catchment. This will ensure the regulatory debate focuses on how those standards are going to be met and in what time frame.

For forestry, an important issue has been the interests of land owners planning to plant forests in low rainfall catchments. These have been largely protected. But before investing in new land uses including afforestation in the headwaters, the report says the downstream effects need to be accounted for.

The collaborative process pioneered by the Land and Water Forum is now being applied to land and water plan making processes by some regional councils.

"This will require active engagement by forest owners with others on catchment committees. Environment Canterbury's zone committees are examples of this," says Weir. He cautions that the time commitment for forest owners in these collaborative processes should not be under-estimated, but that's the nature of the process.

Possibly great country for forestry, but the downstream effects first need to be accounted for

FROM WOOD TO GAS TO DIESEL

RESEARCHERS AT CANTERBURY UNIVERSITY ARE TURNING FOREST WASTES INTO LIQUID FUELS IN THE LABORATORY.

They are now refining their technologies with the aim of developing a practical and economic package that will provide a medium to large sawmill with an extra income stream. The project, which has been running for four years, was originally seeded by Selwyn Plantation Board and Canterbury University's Wood Technology Research Centre.

It is now funded by the Ministry of Business, Innovation and Employment from the public good science fund. According to Peter Weir, the FOA representative on a stakeholder group, this work by the university's Chemical & Process Engineering Department is world-leading.

The concept involves generating heat for wood drying kilns via wood gasification rather than combustion, with the producer gas then going through the Fischer Tropsch (FT) process to produce crude bio-oil. The FT process, which was developed in Germany in the early 1900s, is used by South Africa with coal as the feedstock to make diesel, but on a much larger scale than envisaged by the Canterbury team.

Indeed, the development of relatively small-scale plants is an over-riding objective of their work. Wood and forest waste has a low energy density, making it uneconomic to transport to the traditionally massive gas to diesel plants found overseas.

In a state of play published in the *NZ Journal of Forestry* in November 2011, Canterbury University researchers Chris Peniall and Chris Williamson said the technology was not far from being competitive, but given the volatility of crude oil prices, "government underwriting of investment in an FT plant may be necessary to get the first few sawmill installations over the line".

That's undoubtedly true of most biofuel technologies, especially given the recent rapid development of fossil gas extraction technologies. The resulting dramatic increase in fossil gas reserves will keep prices low for decades to come.

NZ Bioenergy Association executive officer Brian Cox says teams of scientists around the world are working on hundreds of different projects that all have a common aim – to break the world's dependence on fossil fuels as an energy source.

"At the moment the jury is out on all of them. Many are now operating pilot plants and a few on a commercial scale, but only with substantial subsidies from the state."

He estimates it may be 5-10 years before any of the technologies compete on price with fossil fuels in an unsubsidised New Zealand market. However work by researchers such as Canterbury University may be able to reduce that timeline.

"We're trying to encourage people to keep their minds open to all the possibilities. Woodscape has the right idea, they're looking at 40-odd technologies including gasification. Each one has different attributes and it is important to match the attributes of each technology to the specific needs and capabilities of each investor.

"But I'm very confident that one or more of them will have a place in the wood processing industry here. Forestry is one NZ industry that is of sufficient scale to make biofuel production viable."

Cox emphasises that the decisions made by wood and paper processors will not just be about the viability of biofuel production per se. "Waste fibre can be used to make engineered wood products and biochemicals as well as liquid fuels. The decisions they need to make will be quite complex. However the good news is that we can expand planting, so we have more than enough fibre for all uses. It is not a matter of either/or but all."

Norske Skog, the Norwegian owner of paper mills on both sides of the Tasman, has already made its decision with the aid of a $250,000 sweetener from the government, with the prospect of more funding coming from the Primary Growth Partnership.

According to the *NZ Herald*, it is investing in a $50 million biofuel test plant at Kawerau. Using technology developed by Australian company Licella it expects to produce 125,000 barrels of bio-crude a year from radiata pine sawdust.

The Licella process uses a catalyst to convert heated moist sawdust under pressure into bio-crude which can then be refined into diesel and petrol. Using a 10,000 tonne Licella module, one oven-dry tonne of woody biomass produces 2.7 barrels of oil at a cost of $US50-55 a barrel, according to the company.

Whether this will be the output at Kawerau remains to be seen. However Cox is pleased to see investors, technology developers and end-use customers coming together with an existing wood processor to meet the growing demand for biofuels. This mirrors what's happening overseas.

Scion's biofuel scientists will be helping them get the process working, while continuing to work on their own bio-fuel programme that involves the use of enzymes to convert chemically pulped softwood into simple sugars. (*Forestry Bulletin*, Spring 2012) This route has the potential to produce a much wider range of bio-products than the Licella offering.

Even if Norske Skog and Licella are successful, this does not mean that work at

Prof Shusheng Pang with the steam gasifier developed and in operation at Canterbury University since 2007 . He and his team are getting closer to their goal of developing a plant that will enable a medium to large sawmill to use wood waste to meet all its energy requirements and produce bio-fuel for sale

Canterbury will be for nought. As mentioned above, the economics of the Canterbury University's technology do not depend on having massive scale.

So where has the Canterbury team got to?

Like Licella they are developing liquid transport fuels from biomass. This involves gasification and gas cleaning followed by FT synthesis of syngas into liquid fuel.

"Because biomass has a low energy density, we have developed gasification technologies both for pure biomass and for other higher energy density feedstocks," says programme leader Prof Shusheng Pang.

Such feedstocks have included pellets of radiata pine sawdust, blends of wood pellets and dried sewage, pellets of blended wood and coal/lignite, pellets of herbaceous crops, wood chips and bark.

A dual fluidised bed (DFB) gasifier for steam gasification has been designed, constructed and in operation since 2007. The gasifier generates producer gas with a high calorific value (11-14 MJ/Nm^3) and high hydrogen content (30-60%).

The gasifier has been optimised for high carbon conversion and high gas quality (low tar content). It can also produce syngas with H_2 to CO ratios ranging from 0.9 to 4.4, enabling the operator to tailor the syngas output to different applications including heat and power generation, FT synthesis of liquid fuels and hydrogen production.

The process has also been optimised for a range of parameters including the steam/biomass ratio, gasification temperature and catalytic bed materials.

Because biomass is produced over a wide area, the Canterbury team is also working on the conversion of low-energy wood chips into energy dense pyrolysis oil – or a slurry of pyrolysis oil and char – in mobile plants or near the forest. If this can be done successfully, it will greatly reduce the cost of delivering feedstock to a bioenergy plant.

A lab-scale fluidised bed (FB) pyrolysis reactor has been developed. This is being used to determine how to produce enough non-condensable gas to make the plant self-sufficient in heat while still producing substantial quantities of pyrolysis oil.

Pyrolysis oil quality is critical, because of its influence on the quality of the condensate that comes out of the FT plant.

Bio-crude produced from existing processes cannot be used directly in internal combustion engines because of its high oxygen and water content, instability, viscosity and the presence of entrained solids carried over from the pyrolysis reactor. Despite being studied world-wide, the costs of upgrading the bio-crude remain excessive.

Pang says this led his team to take a new approach. Biomass pre-treatments, catalytic FB bed materials and vapour condensation technologies are being integrated to reduce the levels of contaminants in pyrolysis oil. With cleaner pyrolysis oils going into the FT process, it should be possible to produce a diesel-like fuel that can be used directly in current internal combustion engines.

In order to produce clean syngas with required ratio of H_2 to CO, experiments are underway to test a new entrained flow gasifier by selecting the appropriate atomisers for spraying bio-oil and slurry. The effects of temperature, gasification agents and the ratio of gasification agent to feedstock ratio are also being investigated.

There are three contaminants that must be removed from the producer gases: tars; hydrogen sulphide - H_2S; and ammonia - NH_3.

Canola derived biodiesel is being used to scrub and strip tars, which can then be used to fuel combustion in the gasifier. A catalytic reactor has also been designed and constructed to simultaneously remove NH_3 and H_2S in a simple, low-cost, one-reactor operation.

Pang says this novel technology has a potential to replace the two or more reactors used in current technologies. Work is now focussing on identifying the most suitable catalysts and adsorbents, including natural substances readily available in New Zealand, as well as the optimal bed temperature and gas residence time.

Modifying the Fischer-Tropsch (FT) process itself, so that it suits the needs of the forest industry, is also in the sights of Professor Pang's team.

"Traditionally these plants are huge. But because of the nature of biomass we need to shift to smaller plants, even though it is contrary to conventional economic wisdom," he says.

"We have investigated two concepts to enable this shift. First, the use of combined heat, power and liquid fuel plants integrated into existing wood processing facilities and second, the development of microchannel reactors."

The heat generated by the FT process means there is a synergy with the heat and power requirements of a sawmill. Electricity can be generated from syngas to satisfy both the requirements of the FT plant as well as those of the sawmill.

"We have developed and tested a lab scale microchannel FT reactor using a cobalt catalyst. If this reactor was constructed on a commercial scale we expect it would be capable of producing 100 barrels of liquid fuel a day. At this scale it would be less than a tenth of the size and a third of the cost of a slurry FT reactor, the best of the available technologies," Pang says.

Watch this space.

WORKING TOGETHER

Forest research will be better co-ordinated in a commodity levy world.

FOA research committee chair Peter Clark says grower contributions to forest research have always been funded by voluntary levies. Each major research area has its own funding collective, made up of representatives of contributing growers.

"A downside of this has been poor co-ordination of the overall research effort. So under a commodity levy, all pan-industry research will come under a single umbrella."

Until a levy is in place, an interim committee is being set up to perform this co-ordination role. It will be made up of five industry representatives (4 nominated by the FOA and 1 nominated by FFA) and two science experts.

Clark says total funding for forest growing research is currently about $21 million a year. Of this, about $3 m is sourced from growers and $18 m from government.

"We are totally focussed on achieving the objectives of the New Zealand Forestry Science and Innovation Plan. This means we have to come up with the funding needed to achieve those objectives and to make sure those funds are efficiently spent."

At its December meeting the FOA board decided to recommend to the Forest Growers Levy Trust that grower research funding should remain at $3 million a year. This means baseline funding to support the priorities in the Science and Innovation Plan is assured for several years.

Additional grower funding will come from companies and coalitions investing in projects that cannot be described as truly pan-industry, but which mesh with their own goals or priorities.

Clark says there are a number of projects in this category that will continue when or if the levy is in place. "I personally think this is a good outcome. There will be an overall increase in grower funding, but there will be a core that comes from the levy. Pan industry research will have greater funding stability. It will also offer protection against defections from the current voluntary model when forests change hands."

RUAPEHU ERUPTION ON HOLD

THE RUAPEHU DISTRICT COUNCIL IS REOPENING CONSULTATION ON A BYLAW CHANGE THAT COULD SEE FOREST OWNERS PAYING TWICE FOR ROAD MAINTENANCE.

Ohakune township with Mount Ruapehu in the distance. Proposed levies on logging trucks by the district council have upset forest owners

Like all rural land owners, forest owners pay annual rates to their district council, largely for road upgrades and maintenance. But under the proposed bylaw they may also be required to dip into their pockets before and after logging.

The Ruapehu Council failed to notify affected forest owners or the Forest Owners Association of the proposed change and reopened consultation only when the FOA made the attorney-general aware of its members' concerns.

FOA transportation committee chair Brian Pritchard says forest owners make little use of roads while their trees are growing: "So when it's time to harvest, they expect public roads they've been paying rates for to be ready for logging vehicles. We don't expect to pay twice."

Rural properties in the Ruapehu District with land values in the $2-3 million range pay around $4000-$6000 a year in rates. Of this, the council earmarks about 85 per cent for 'land transport'. This means the owners of a 500 hectare radiata forest with a $5000 annual rates bill might pay $150,000 in rates (2012 dollars) over the life of their forest, $127,500 of it for roading.

The proposed bylaw will give the council the power to restrict the class of vehicles using a road. "This will allow the council to initiate discussion and share any costs fairly with the road user if damage occurs as a result of uses like forest harvesting, quarrying or dairy conversions."

Pritchard says the council will have all the power in the resulting negotiations. "If you don't like the council's definition of fair, what would you do? Leave your forest unharvested?"

The mechanism for alerting the council that a forest is being harvested is a proposed change in land use definitions in the district plan. A new discretionary land use, 'forest harvesting' will be created.

The proposed bylaw change appears to have had no media coverage. The Bulletin has also been unable to find any mention of it in the council's 2012-2022 Long-term Plan, 2012 Annual Report or website. Yet for owners of economically marginal forests in steep hill country, it could be the last straw.

Like many councils, Ruapehu is in a financial squeeze. It has linked future rate increases to the consumer price index, even though costs in its biggest area of spending – roading – are largely driven by the upwardly volatile oil price.

"At the same time, many of its roads, bridges and culverts are coming to the end of their life. A past policy of deferring maintenance to sometime in the distant future is coming home to roost," Pritchard says.

"Sheeting home the resulting costs to forest owners is unfair and illogical. Until the council has consulted with forest owners it is not in any position to determine whether or not the proposed bylaw is reasonable. As such, it leaves itself open to judicial review."

The FOA met with the council in October, at which the council agreed to reopen consultation. This process is expected to begin soon.

OVERLOAD AT YOUR PERIL

Strict enforcement of road user charges is making it more costly to truck logs.

Until recently, truckers could load standard rigs in the forest to 45 tonnes – 1 tonne more than the legal maximum, knowing there was a load tolerance of up to 1.5 t over the limit. This is because on-board electronic scales are not always accurate on the uneven ground of forest landings.

To protect themselves from being fined for paying insufficient road user charges (RUCs), operators would buy enough for a 46-t vehicle. This is no longer possible under the new RUCs law which came into force on 1 August. RUCs are now sold on the basis of vehicle type, with a maximum of 44 t for a standard rig.

"Although the 1.5-t load tolerance is still in place you are no longer able to purchase additional RUCs to cover loads above 44 t. Any operator exceeding the 44-t maximum now runs the risk of being assessed for unpaid RUCs," says FOA transportation committee chair Brian Pritchard.

This means that truckers need to load below the 44 t limit as indicated on their on-board scales, to avoid being pinged for an accidental overload. This is effectively a 5% reduction in productivity.

The NZ Transport Agency (NZTA) introduced the new RUC regime on 1 August as part of a simplification drive. The FOA is discussing its concerns with NZTA and a meeting has been arranged with minister of transport Gerry Brownlee.

Simple or more complicated? Either way it's costing us money

NO MEN ON THE SLOPE

THE FUTURE OF STEEP SLOPE FOREST HARVESTING LEANS HEAVILY TOWARD MACHINES.

The ClimbMAX at work
Always safer, usually does a better job and often more economic per tonne harvested

Leading the pack is the ClimbMAX Steep Slope Harvester. It is being built by Trinder Engineers in Nelson, but the vision and the lion's share of the investment comes from Nigel Kelly of Kelly Logging.

When it goes commercial later this year the price tag is expected to be close to $1 million. But it does a better job in most circumstances, keeps workers out of harms way and is often more economic per tonne harvested.

Kelly is operating three prototypes and says the ClimbMAX is "right on the cusp of being commercialised".

The breakthrough that makes the ClimbMAX so successful is the technology that allows a winch and tracks to work in synch. The winch system, aided by a stability blade, allows the operator to safely manoeuvre and operate on slopes steeper than 35 degrees.

Future Forests Research (FFR), supported by PGP funding, was involved in 2010 and 2011 in studies to assess the productivity benefits of a ClimbMAX prototype.

FFR chief executive Russell Dale says felling rates of 800 tonnes of a wood a day were achieved on slopes exceeding 35 degrees. The productivity rate was up to 40% higher than conventional manual felling and breaking out.

"These early trials in conjunction with grapple extraction systems show that significant productivity improvements are achievable."

Russell Dale
FFR studies showed that the ClimbMAX could increase productivity on steep slopes by up to 40%

When the *Forestry Bulletin* talked to Kelly, he had just been harvesting windthrow on slopes steeper than 35 degrees. Normally this would be a high-risk and potentially high loss job. This time he did it without any men on the slope. In this situation the ClimbMAX was "hugely favourable" in terms of cost and log yield.

Often the main benefit comes from using the machine to bunch stems for the swing yarder or hauler, increasing payloads and enabling production to be maximised from the primary mover. Kelly also says it really comes into its own in awkward areas that are hard to reach and where care needs to be taken, such as around riparian areas and neighbour's boundaries.

Trinder's Kerry Hill says the felling head is directional. Because it virtually lifts the cut stem off the stump, it can be laid where the operator wants it. Some operators say this results in fewer breakages, but more research is needed to quantify this.

The environmental benefits are likely to vary with the soil type and Kelly says independent information is needed before drawing any conclusions. Scion has been hired to come up with some objective answers.

Both Kelly and Hill are very careful not to over-sell the machine they have developed. Hill also points to market research carried by FFR two years ago that said only 30 machines would be sold in the first five years.

Kelly is more optimistic.

"I have a gut feeling that what we are doing is right for where the industry is going. The sector will come round. It's just a matter of time.

"The ClimbMAX enables us to manage steep slopes more professionally. Sometimes it's cheaper. Sometimes it's the same. But it's dramatically safer and we invariably get a better result.

"Ultimately, when we go commercial, forest owners and contractors will make their own decisions about what works for them.

"But things are changing. It's getting harder to attract and retain staff and some good workers are simply unwilling to work in very difficult country.

"Also, harvesting and breaking out is hazardous. As an industry do we want to keep getting the news headlines we have been having?"

Before Kelly Logging started developing the machine, he says it was a specialist cable yarder company ... like a train on one set of tracks.

"With the ClimbMAX we have multiple tracks. We now go to a job with an open mind and ask ourselves what's the best way to harvest the block. It's a totally different way of doing business."

www.trinder.co.nz

FOREST OWNERS ASSOCIATION

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NEWS IN BRIEF

GOOD PROGRESS WITH HPMVS

Good progress continues to be made opening up sections of state highway for high productivity motor vehicles (HPMVs).

Structural assessment of State Highway 33 between Rotorua and Tauranga has shown that it is now capable of HPMV loading up to 62 tonnes. This is a key route for forestry, connecting the Central North Island to the Port of Tauranga.

The Mohaka Bridge on State Highway 5 between Taupo and Napier has been upgraded and this route is now full HPMV capable to 62 tonnes.

Some routes that were earlier thought to need upgrading are opening up without any need for investment; Wellington to Masterton via the Rimutakas is one example.

"On the negative side we continue to have issues with Local Roading Authorities and their lack of funds to upgrade bridges," says FOA transport committee chair Brian Pritchard.

"We are having discussions with NZTA on this issue and will be raising it with minister Brownlee when we meet with him to discuss related issues."

On the positive side, the Police, industry and NZTA have worked together on a Memorandum of Understanding (MoU) that addresses a number of concerns raised by industry about enforcement of HPMV permit conditions.

The changes set out in this MoU took effect from the 1 January 2013 and provide operators with certainty that they can operate their HPMV's without being unfairly penalised for minor permit infringements.

Enforcement officers may now apply concessionary weight tolerances to HPMVs. The vehicle gross combination mass now has a tolerance of 500 kg above the permit gross weight across all axle sets. Steering axles have a tolerance of 300 kg on a single axle or twin-steer axle set. All other axle sets within a combination have a tolerance of 1000 kg on any axle set.

BATS IN AUCKLAND PLANTATION

Deciding where to place bat monitoring boxes.
Left to right: Roeland De Koning, student, University of Auckland; Ben Paris, Auckland City Council, Assoc. Professor Stuart Parsons, University of Auckland and Andrew Warren, Rayonier Matariki

A colony of threatened long-tailed bats in Riverhead Forest north-west of Auckland is being monitored by Auckland University biologists. Rayonier Matariki which operates the forest under Crown Licence is helping with funding.

Riverhead Forest is a radiata plantation at the head of the Waitemata Harbour that is popular with walkers, horse riders and mountain bikers.

Rayonier Matariki Northland regional manager Andrew Warren says the colony was located during a recent biodiversity survey by Auckland City Council.

He says Rayonier Matariki is committed to preserving endangered and threatened species of flora and fauna, and actively implements protection programmes in its forests.

"We will be keeping an eye out for the bats and working with University of Auckland students to identify and monitor them.

Once we understand numbers and sites we can plan our operations so as to limit effects on the population."

Associate Professor Stuart Parsons of the University of Auckland says automatic recorders that pick up the bats' sonar waves will be used to locate the bats and their level of activity.

BETTER FLOOD PREDICTION

Effective management of run-off is a key forest management skill. Without it, infrastructure can fail and silt and debris can enter waterways.

With funding from the FOA, a NIWA tool for predicting floods has been refined to enable accurate flood predictions to be made for small basins.

The Water Resource Explorer (WRENZ), is a web database with a map interface. Users zoom in on a catchment and click on a river of interest. They can then interrogate the database to get flood magnitudes for a range of return intervals.

Using this information, in conjunction with the table on p 123 of the NZ Forest Road Engineering Manual, it is possible to calculate the size of culverts needed to cater for floods of a given magnitude.

WRENZ: *http://niwa.co.nz/webmodel*

Instructions for using WRENZ:

http://www.nzfoa.org.nz/file-libraries-a-resources/cat_view/30-environment/43-water

LEES MOVES ON

Long-time FOA promotions committee chair Lees Seymour has resigned from the FOA executive committee.

Seymour has been a strong supporter of the *NZ Wood* initiative which is co-funded by the FOA, the Wood Processors Association and the Pine Manufacturers Association.

He is replaced on the FOA executive by David Cormack, chief executive officer of Wenita Forest Products, a major Otago-based forest owner.

FOA vice-president Paul Nicholls replaces Seymour on the *NZ Wood* board.