

# Wood Matters – February 2016

## Clarky's Comment - February

The slow recovery of international dairy prices, strong performance of horticulture crops and the rise in interest in cultivating manuka for honey production cause me to reflect on the value to NZ of a diversified portfolio of productive land use. At exports of \$242 million (Year end June 2015) the honey industry is a well-established sector. It has been growing fast and still has potential for massive expansion. Furthermore manuka is an indigenous plant that thrives on some of our steepest most erodible hill country where it is difficult to harvest pine trees without causing stream sedimentation.

Foresters are considering what parts of their most problematic land should not be dedicated to a second crop of pine trees given the environmental and safety challenges of harvesting some steep land in Northland, East Coast and Marlborough in particular. The option of income from honey production from those parts of the land unsuitable for pines should make these decisions easier.

New Zealand relies heavily on its productive soils and clean water for our economic well-being. As land managers or owners we are on this earth for just a very short time. The prosperity of future generations of New Zealanders would be enhanced if the land use decisions we made properly align with what the ecosystem can sustain over the very long term. As recently noted by Westpac economists the on-going exclusion of the agriculture sector from the ETS has the consequence of distorting land use decisions in favour of the more polluting activities. Apart from other sectors having to pick up the tab for agriculture's greenhouse gas emissions, there are many catchments where the true cost of freshwater pollution is avoided by those profiting from the land. The Waipa and Waikato river catchments are clear cases where land use policies need to change.

I spent a portion of my early working life cutting manuka down to make way for sheep and pine trees. But growing manuka for honey ticks a lot of boxes in terms of a sustainable land use.

## Log Market - February



**Peter Weblin**  
Chief Marketing Officer  
PF Olsen Limited

Two months has passed since the last Wood Matters Log Market Report [we took the traditional January Wood Matters holiday]. During those two months, export log prices fell in January and rallied again in February to end up pretty much at December levels again. Domestic log prices have continued to strengthen on the back of solid demand, especially for pruned logs. Pruned log prices in excess of \$200/JAS m3 or tonne are now reasonably common-place, at least in the Central North Island and Northland for both export and domestic supply.

### Export Log Market

As speculated in our December report, January prices fell based on a CFR price drop [CFR is the price logs sell for in US\$ at the destination port]. This was partly offset by favourable movements in the NZ\$: US\$ cross rate and, believe it or not, further reductions in [already very low] ocean freight costs (mainly lower bunkers – ship fuel oil). Modest firming of CFR price and a continued favourable NZ\$:US\$ cross rate and ocean freight rates saw the export log price rally again in February to recover almost all of January’s reduction.

With the A-grade CFR in China at around the [relatively low] price of US\$116/JAS m3, it is not stimulatory for North American log supply. The strengthening trend of the US\$ adds to the decreasing competitiveness of log exports from the USA. This will help keep a lid on excessive inventory build beyond the expected increase through Chinese New Year.

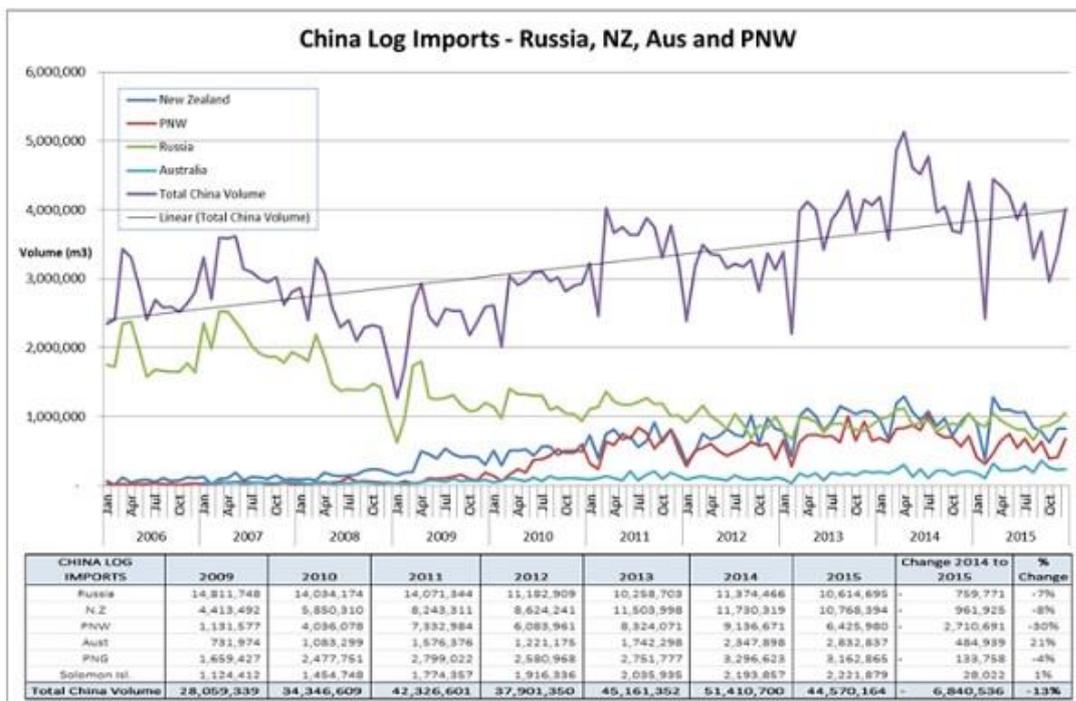


Chart courtesy Pacific Forest products

The chart above shows 13% lower log exports to China from the main supply countries in 2015 compared to 2014. Notably, 3 of the top 5 supplying countries volume is down by single digit percentage reductions (NZ, Russia and PNG) but PNW (the Pacific North West) is down 30%. Australian supply is against the trend, up 20% at 2.8 million m3 in 2015.

The drop in log imports was partially offset by higher imports of lumber but overall imports of logs and lumber were down from 77 million m3 in 2014 to 71 million in 2015; a decrease of 6 million m3 or 7.7%. Since it is unlikely that Chinese domestic log harvest increased during this period [probably the opposite], this decrease is likely to represent lower overall consumption of wood products as housing starts languished and economic growth faltered.

China log inventory has fallen from 2.7 million m3 as we last reported in December to 2.4 million m3 just prior to the Chinese New Year holidays, but is expected to increase again to around 3.6 million m3 by the end of this month.

China’s economic prospects are being dogged by falling GDP growth. It has a weak (although improving) real-estate market, a large and inefficient state sector, a weak heavy industrial sector, high debt, and an opaque financial system. Growth in the domestic/consumer market and services is not yet sufficient to fully offset these economic weaknesses. However, we must remember that even though China’s 2015 GDP growth came in at 6.9%, it’s off a high base being the world’s second largest economy. Even growth rates of 6-7% will create significant increases in demand for goods and services, including wood products. China is also well-positioned to benefit from the improving South Korean and USA housing markets and is investing heavily in export-oriented wood processing such as lineal mouldings, doors and edge-glued panels.

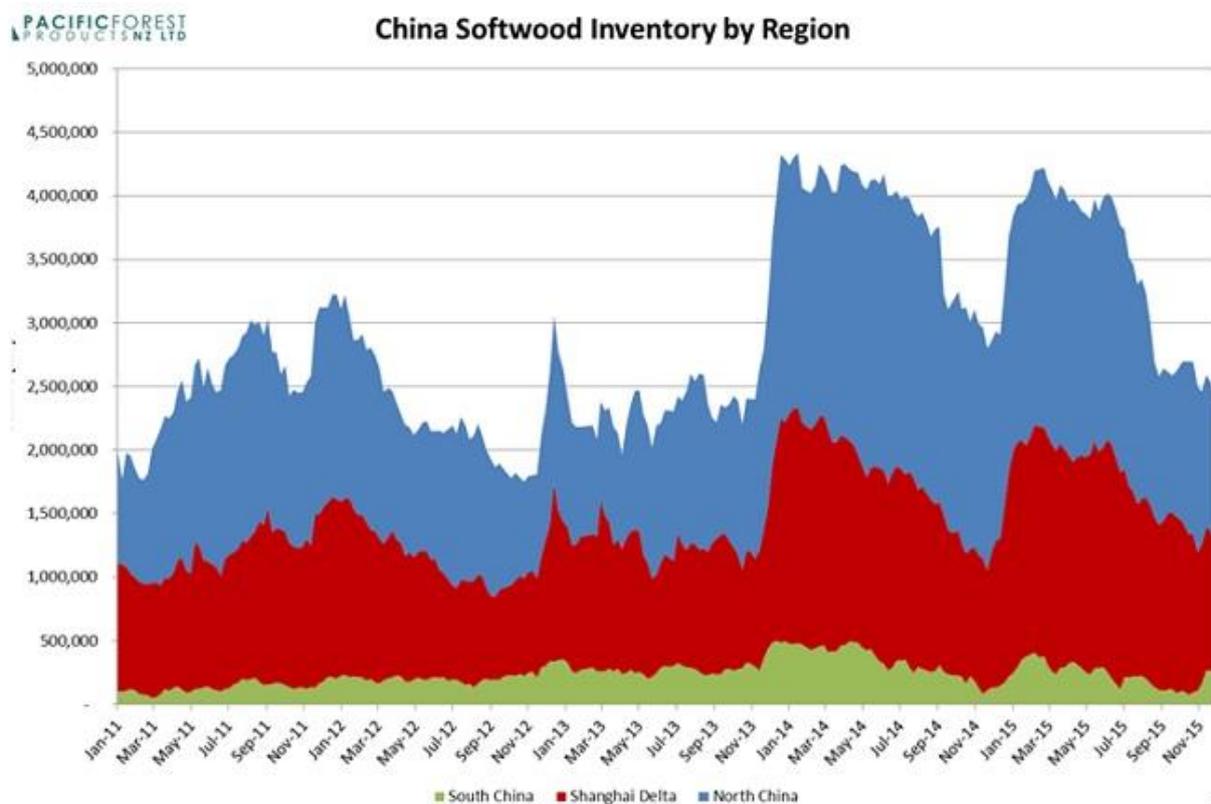


Chart courtesy Pacific Forest Products

India is a bright spot, with a high GDP growth combined with an increasing appetite for softwood logs and lumber based on dwindling supplies of domestic and South Seas hardwoods (e.g. Teak from Myanmar). Annual wood consumption growth in India is reported at a healthy 20%! The IMF forecasts India's GDP growth rate at 7.5% for 2016 and 2017. However, exporters are currently taking a cautious approach as India is starting to show signs of over-supply, despite good medium/long term potential.

Japanese and Korean demand and price for logs is steady and a useful alternative to the otherwise China-centric market orientation. Korea continues to slowly reduce in importance, however, as demand moves from logs to more lumber and processed wood products. Despite this, Korea is still our second largest market with 2.2 million m3 of logs exported from New Zealand to Korea in 2015.

Ocean freight continues to track historically at very low rates, based on freight capacity over-supply and very low bunker (ship fuel oil) prices. Neither of these drivers are expected to change significantly this year. We hear reports of ocean freight rates routinely in the mid-high teens (US\$/JAS m3). This will cause some serious financial stress to leveraged ship owners.

## Domestic Log Market

Domestic log demand and price continues to be strong. Pruned and unpruned structural logs are particularly sought after. Some log processors are desperate for logs and prepared to pay top dollar to attract reliable, quality supply. The pruned log market is supported by the depreciating NZ dollar boosting returns for high-value products such as clear boards sold into the USA and Europe. Structural logs are benefiting from strong local construction demand and steady demand from Australia.

Whilst New Zealand GDP growth will weaken with the lower dairy pay-outs, tourism and the construction sector are booming. And whilst the house price appreciation in Auckland has unfavourable socio-economic implications, it is unlikely to pose a substantial threat to the economy, at least at the moment. Demographics will continue to support a strong housing market for the foreseeable future. In any case, recent figures show that the Auckland market may have cooled for the time being, perhaps due to the new rules imposed by the government last year.

A firmer housing market is also spreading around most provincial regions since the last quarter of last year. Turnover is up significantly, with prices following. This will be supportive of domestic demand for wood products.

Australia is experiencing a surge in approvals for 4 storey+ residential dwellings, up 24,436 units year-on-year (ending Nov 2015), a 50% increase! However month on month approvals were down 2.7% suggesting the peak may have been reached. In addition, approvals for free-standing houses is falling. Overall the data indicates that the longest new dwelling boom in history has ended. This will put pressure on an economy that is well into a significant decline in investment in the resources sector due to soft metal and mineral prices.

Australian lumber imports in the last year have continued to increase from Europe and decrease from the USA, driven largely by a much lower depreciation of Australian dollar against the Euro than the US\$.

## PF Olsen Log Price Index to February 2016

The PF Olsen log price index rose two points from \$119 in January to \$121 this month. It is now \$36 higher than its cyclical low of \$85 in November 2011 and \$17 above the two-year average and \$18 above the five-year average.



*Basis of Index: This Index is based on prices in the table below weighted in proportions that represent a broad average of log grades produced from a typical pruned forest with an approximate mix of 40% domestic and 60% export supply.*

## Indicative Average Current Log Prices – February 2016

Log Grade	\$/tonne at mill	\$/JAS m <sup>3</sup> at wharf
Pruned (P40)	195	198
Structural (S30)	112	
Structural (S20)	99	
Export A		127
Export K		120
Export KI		108
Pulp	51	

*Note: Actual prices will vary according to regional supply/demand balances, varying cost structures and grade variation. These prices should be used as a guide only and specific advice sought for individual forests.*

**Outlook:** On the balance of probability we are looking at steady log pricing at about current levels for the rest of the year. One thing is for sure, however, this will not happen!

## Forestry and the Emissions Trading Scheme - February

A review of the New Zealand Emissions Trading Scheme commenced at the end of 2015. The priority issues of the ETS review are to consider whether transitional measures should be removed or phased out. Transitional measures include the 2 for 1 subsidy and the \$25 fixed price option, which effectively caps the cost of emissions at \$12.50 per tonne. The transitional 2 for 1 has not affected all sectors equally, with the forestry sector required to surrender 1 for 1 for any emissions. Not to mention agriculture which continues to be excluded from the ETS altogether, effectively a subsidy.

A recent report by the New Zealand Institute of Economic Research assesses the economic impacts of removing these transitional measures. The modelled impact of removing the 2 for 1 subsidy, at a carbon price of \$25/tonne, is a reduction of only 0.1% of GDP. Even at a carbon price of \$50/tonne the impact to the NZ economy is negligible at a reduction of only 0.2% of GDP!

The removal of the transitional measures will have the effect of increasing the demand for NZUs and therefore raising the price. As part of the review Professor Bruce Manley has modelled the predicted impact of an increased carbon price on afforestation. He finds limited afforestation at a carbon price below \$15, increasing to 50,000 hectares per years at the as yet fairy tale carbon price of \$50/tonne. Afforestation is just one positive outcome of a higher price on carbon. The Ministry for the Environment's recent ETS evaluation document states that due to the low carbon price over most of CP1 the ETS had not significantly influenced domestic emissions or business. A higher price on carbon will ensure businesses consider their emissions due to the costs imposed on their business, which will be the driver to the uptake of emissions reduction technologies

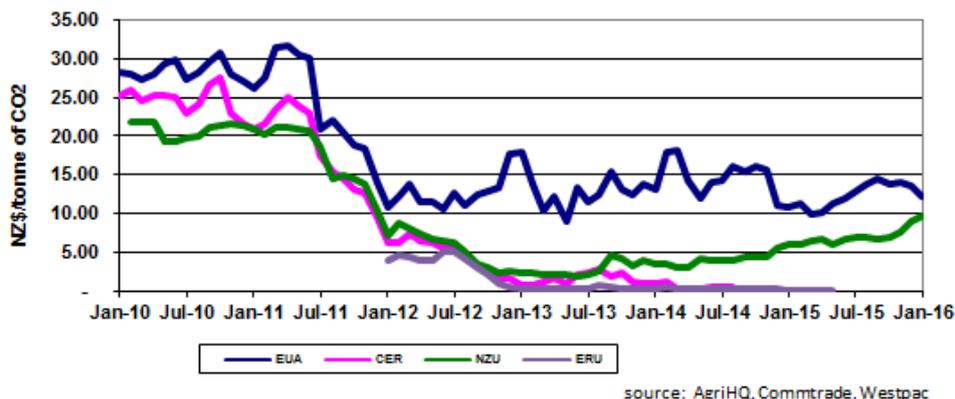
The removal of the transitional measures is the first step in strengthening an ETS that has been largely ineffective to date, with considerable more work to be done.

### Price Update

The NZU market had traded between around \$9.25 and \$9.60 over the past month, currently trading at around \$9.25 per NZU.

The figure below shows the recent carbon credit prices for EUAs, CERs, NZUs and ERUs. Note that from 1st June 2015 only NZUs or New Zealand AAUs are valid units in the NZ ETS. EUAs are valid units for trading within the European Union.

Figure 1: Recent Carbon Prices - NZ\$/t CO2e – Real (CPI adjusted)



## Pan Pac invests in growth down south



Pan Pac Forest Products (Otago) Limited is planning a significant investment and expansion of its sawmilling and drying facilities in Otago. General Manager Michael Reaburn says the plan involves consolidating operations and roles at the Milburn site which will be substantially redeveloped.

The plan involves building a new kiln and installing a new boiler at the Milburn mill. Construction will take just over a year and is due for completion in April 2017.

“We’ll continue to operate from both Milton and Milburn during construction, but the aim is a new, single site, state of the art production facility that will double existing capacity.” says Mr Reaburn. “We expect the kiln will be locally sourced however some specialist equipment will need to come from Europe and North America.”

The two plants currently produce 50,000 cubic metres of radiata pine lumber from Otago and Southland a year. When the expansion is completed, Milburn will be producing 100,000 cubic meters, with site capacity for further expansion. About 85 per cent of the product is destined for the export market and we intend to ship the product out through Port Chalmers.

“Once we’ve upgraded Milburn, the facility at Milton will be closed and operators will transfer to the expanded facility. We currently employ 29 people across both sites – that will increase to 35 once Milburn is up to speed.” The aim is to use local contractors and suppliers wherever possible, with work due to start this February.

Pan Pac bought the sawmilling and drying assets at Milburn and Milton in November 2014 when the previous owner Southern Cross Forest Products was placed in receivership.

"The Otago operation is an important part of Pan Pac's growth plan. It will help them meet the expanding demand for lumber in the Asian market," says Mr Reaburn. "It was the first investment Pan Pac made outside our base in Hawke’s Bay and this new investment reflects our ongoing confidence in the people, plant and region," he added.

Source: WoodWeek

## PF Olsen Container-grown seedlings out-performed Bare-root Seedlings in field trials



Dr Wei-Young Wang  
Seed Orchard and Tree Breeding Manager

Selection of tree-stock type greatly affects the establishment and initial growth of new Radiata pine plantations. The two main stock types used in New Zealand plantation forestry are bare-root and container-grown seedlings. Bare-root tree-stocks are typically grown in the soil of field nurseries and containerised tree-stocks in special media mix in plastic containers. Container tree-stocks are the predominant tree-stock type in forestry applications in most countries around the world. New Zealand, for some reason, has continued to predominantly use bare-root tree-stocks although container stocks are becoming increasingly popular.

Container-grown seedlings, unlike bare-root ones, retain their intact root system in a fertile growth medium plug after lifting. This “packed lunch” stays with the tree-stock all the way to its new home planted out on site. This makes container-grown tree-stocks more resistant to water stress, reduces seedling mortality and promotes rapid initial growth after planting. It also makes them less susceptible to poor planting practice.

In collaboration with Rayonier NZ Ltd, PF Olsen conducted a field trial to evaluate the performance of PF Olsen container-grown tree-stocks in the field. The trial was planted in 2014 on three Rayonier cut-over sites – Topuni Forest in the Northland, Maramarua Forest in South Auckland and Lismore Forest near Whanganui.



The container-grown tree-stocks used in the trial were grown from stand-select seeds at PF Olsen’s container tree-stock nursery near Waiuku (south of Auckland). The stand-select seeds were coated with a Trichoderma mixture for potential beneficial endophytes prior to sowing. The commercial bare-root tree-stocks were grown from GF19 seeds (2 sites) and CP seedlot

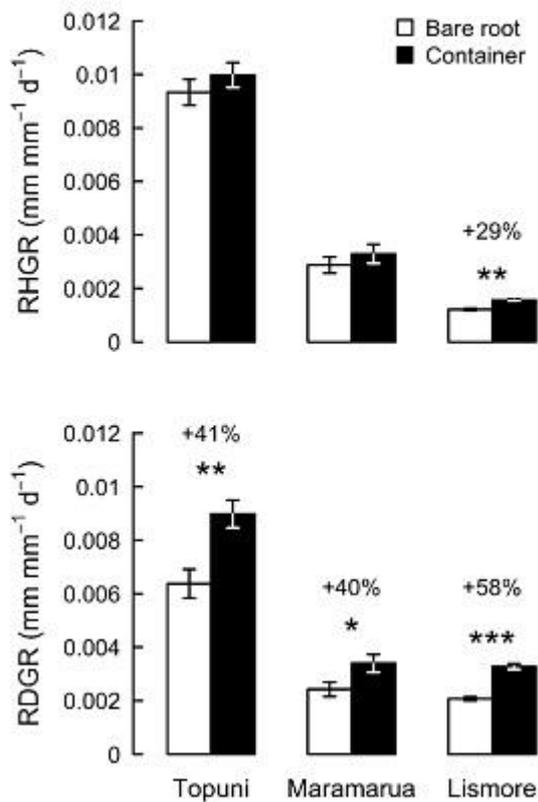
(1 site) at nurseries in Rotorua and Northland. The bare-root tree-stocks were not treated with Trichoderma. The trial was in a randomised complete block design with five replicates and a minimum of 10 subsamples per block. Seedling height and diameter was measured at the time of planting and again at 122 days at Topuni, 350 days at Maramarua and 299 days at Lismore after planting.



The results showed no significant difference in mortality between the two tree-stock types in all three trial sites. The relative height growth at the Topuni and the Maramarua sites did not differ significantly between the two tree-stock types but the container-grown seedlings at Lismore site had significantly higher height growth (+29%) compared to the bare-root stock.

The major difference between the two tree-stock types is their relative diameter growth rate. Across all three sites, containerised seedlings showed 41 – 58% higher relative diameter growth than bare-root seedlings and the differences were statistically significant (see graph below).

The use of different genetic material for the two tree-stock types prohibited a joint analysis and direct comparison between bare-root and containerised tree-stocks. However, with the combination of container-grown and beneficial *Trichoderma* endophyte inoculation, even tree-stocks with inferior genetics (stand-select) can out-perform GF19 and CP bare-root seedlings and champion an early start in the field.



## Lead Indicators that could help to better predict the markets

Imagine a supply chain with a constant cost structure, constant supply, constant quality and a constant market demand. In the real world change is the only constant. All industries forecast and spend a considerable amount of time (and money) attempting to predict the future. Lead indicators are pre-runners of actual events that are likely to impact an industry in the near future. The TradingEconomics website (<http://www.tradingeconomics.com/>) collate hundreds, if not thousands, of indicators that could be used to predict future market movements. These include markets, trade, government, housing and business variables for approximately 200 countries. For example, drawing on the data in TradingEconomics, Figure 1 illustrates the building permit approvals (dollar values) over the past decade in New Zealand and the number of building permits approved in Australia.

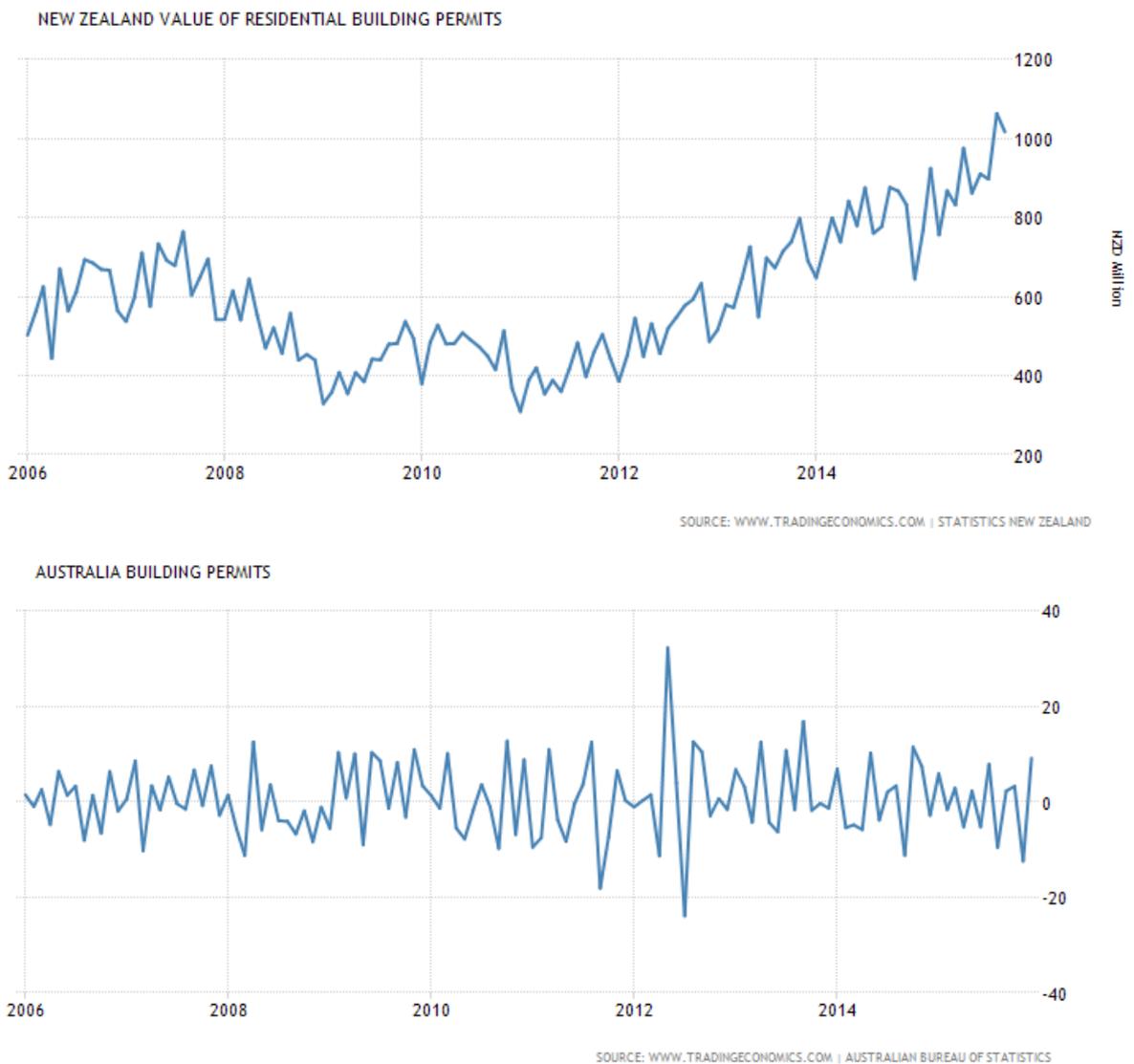


Figure 1. Building permit approval data made available by governments and collated by the TradingEconomics website.

Lead indicators can also be generated through internet scraping methods. Valuable information can be gathered with sufficient understanding of markets and internet usage. Figure 2, for example, shows the relationship in the USA between the number of web site visits to real estate brokers (blue line) and furniture removal companies (orange line). Increases and reductions in real estate activities had an obvious subsequent spill-over effect on furniture removal companies.

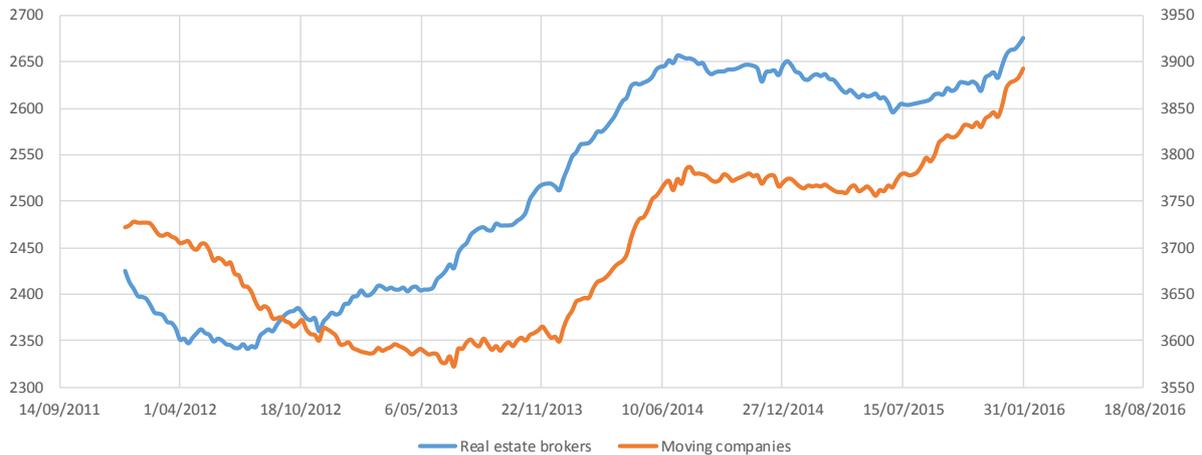


Figure 2. Internet activity levels for real estate agents and furniture removal companies in the USA over time.

In the previous financial year Ford noticed a clear lead between commercial vehicle sales and passenger vehicle sales in China. This also makes sense; because when commercial vehicle sales go up, business is good and soon people will be purchasing new private cars in the same region. Forklift sales is a possible strategic lead indicator for wood product consumption. When a business purchases a new forklift they basically say: “We are planning to load and off-load things so that they can be moved around”. The ResearchAndMarkets group (<http://www.researchandmarkets.com/>) generate forklift industry reports that could be valuable to other industries. An increase in the number of forklifts in an industry will correspond with increasing numbers in wooden pallets and packaging material. Figure 3 illustrates indexes of internet activities that can be associated with forklift purchases and maintenance in five countries where New Zealand timber and logs are sold.

## Making positive changes in the workplace by reducing drug and alcohol use

The idea that a person would take drugs then go to work in a safety-sensitive situation where impairment could lead to serious harm is very disturbing to most people. Indeed, in some industries such as air transport we would regard it as entirely inappropriate.

However, around New Zealand, in numerous work situations including the most safety sensitive this is exactly the situation; and forestry is not immune. Thankfully, the forestry industry has said goodbye to the 'bad old days' where, for example, our (PF Olsen) historical records show, one in every six workers tested for drugs (16%) produced a positive drugs test.

After six years of our random testing programme, those numbers are much improved. Currently one in every 17 workers (5.8%) produces a positive test when tested at a PF Olsen managed worksite, and we are forever working to reduce that number by understanding where our hotspots are and introducing targeted initiatives.

One of those hotspots is silviculture, where the workforce is more seasonal in nature and attracts a greater number of new entrants. Here drug-testing results can be as high as 50%! While some dismiss silviculture saying it is 'low risk and drug testing is not required', PF Olsen considers it to be a vitally important area to have in our focus. Indeed, working with silviculture crews, that house the 'future of the industry' is a key focus of the Company's 'journey toward zero'.

To that end, PF Olsen Ltd has not only been testing silviculture workers, we have been working with them to design programmes that will ensure a maximum number of the workers stay 'drug free' while working on our sites. Understanding 'where the workers are at' in thinking and in knowledge provides a vital key to making the changes that are required. In this article we highlight some of that thinking, the challenges and changes the workers face.

The following are some excerpts from a conversation (interview) with a worker who has had some big life changes in the last year or so. We also discuss some of the interventions that led to the changes.

NB: the worker's expressions are largely unedited.

### Then

*"I used to be in a crew where some of the guys took drugs, me too every now and then but only in the weekends, it wasn't easy to have them (the drug takers) in the crew, it bothered me but financially we had to keep them."*

*"I sometimes picked them up in the morning; I always had to wait and then all the way to work they argued over who owed what to who, it was just b\_\_s\_\_! All day it was in the back of my mind that the supervisor was going to turn up any moment and they would be caught, I was always worried about that. At knock off, they were coming down and in a bad mood, they argued about everything and stressed the whole crew. They took a lot of days off and did a bad job of things, every week we had to do reworks, they were lazy and couldn't follow instructions. When we were thinning those guys were using chain saws, sometimes we have to walk in hard places over bumpy ground, it's pretty easy to fall."*

*"A while ago now I had to grow up. The boss and our supervisor found out and they put their foot down, we were now going to be tested more often, you had to be on board and clean, or not"*.

## The PF Olsen response (interventions):

This silviculture crew was randomly selected for drug and alcohol testing early in 2015. The results were quite alarming. Of those that submitted to the testing (a number refused and simply walked off the job), around 50% were positive for cannabis (THC).

PF Olsen was told by one of its major forest owner clients that while they are happy with the overall reduction in drug taking, they could not accept this result, or indeed any result other than 'zero'. That client asked PF Olsen to think of ways to improve and to reach this target.

Whereas it would have been easy to terminate the crew, it was decided to give them a last chance. The principal has attended a Reasonable Cause Testing workshop, and the principal and crew attended follow up education for offenders and the crew they work in, both provided by PF Olsen. The crew now work under very close scrutiny and they will participate in a specially designed programme commencing in the new planting season.

## Now

*"We are a clean crew, there is so much less stress, before it was a 10 (on the stress scale) now it's about 3 and that's stress about the job not those guys and their smoking and no more talking b\_\_s\_\_! Everything runs better and the quality of the work is better."*

*"Myself? It's helped in all aspects of my life I'm not so shy to talk now. I can have a conversation and even talk to the supervisor, before I would say as little as possible. I feel confident about trying new things, I've stepped up. It's not been easy, I started drinking a bit and had to have some counselling. As a crew we do better work, we don't have to do things twice, we can make a plan in the morning and we know what to do. Everyone is at work, we get more done and we make much better money, we're a good team."*

## Industry Supports Focus on Automation



Russell Dale  
R&D Manager  
NZ Forest Owners  
Association

The current Future Forests Research programme that has helped deliver the ClimbMax harvester, CutoverCam and the Alpine Carriage and has catalysed a new round of innovation in steep country harvesting, ends on 30th June of this year.

Over the last 15 months an extensive round of consultation with large and small forest owners, contractors and other interested stakeholders has been undertaken by FFR to identify where the industry priorities lie and the focus for a future research programme. This has involved workshops in Rotorua, Gisborne and Balclutha to identify research themes and research projects and industry has then been asked to rank and prioritise these. Smaller groups of industry people have helped develop the framework for a new research programme.

The outcome of this consultation process was support for more automation across a wider range of forest operations, from silviculture, thinning and clear felling as well as early capture of log attributes to aid subsequent log allocation and decision making. Progressing the development of a robotic tree feller building on “the stick insect” concept developed in the current programme has come through as a high priority from industry people. Improving the efficiency of supply chains by eliminating duplication of activities, such as log measurement was identified as another priority. Early capture of this information and attaching the information to the log via a tag system has the potential to streamline downstream supply chain management.

The outline of the new programme is summarised in an FFR report “Priorities for Future Harvesting and Logistics Research.” The programme has a vision of adding value through automation and the goals of the programme are to:

- Increase the efficiency of forestry supply chains through implementing remote control, teleoperation and semi automation in production processes
- Eliminate all manual tasks in tree felling, extraction, log making and measurement
- Reduce waste and realise more value from the forestry resource
- Reduce average harvesting costs of ground based and hauler operations

Introduction of new technology to labour intensive and hazardous activities will help solve future labour shortages and make forestry a more attractive career option for a new generation of forest workers.



*An example of what the future may look like. The prototype “stick insect” tree felling machine.*

## Staff changes - February 2016



Patrick (Paddy) Wilkins joins the Rotorua Harvesting team working closely with Jared Lee. Paddy has a Bachelor of Commerce (Agriculture) and a graduate diploma in Forestry (2014). Originally from Tauranga, Paddy has had a year off travelling overseas. His interests include cricket, skiing, tramping and abseiling.



Ryan Drummond commences the graduate programme with 2 months assisting the Environmental Team before joining the Forestry team for the planting season. Ryan graduated from Canterbury University in 2015 with a Bachelor of Forestry Science. During his time at university he was Executive on the Forestry Society committee (2014), and worked for Juken as a summer student.