

# Complacent about biosecurity? Ten reasons why you shouldn't be

Bill Dyck<sup>1</sup>

New Zealand plantation forestry – the most sustainable in the world! Or have we just convinced ourselves that it is? Yes, we might be good at growing trees quickly, and we have also been able to demonstrate real environmental benefits, but are we doing enough to protect our investment, both in trees but also in trade?

I suggest that a strategy that focuses on quarterly profits, including eliminating “non-essential” costs is incompatible with a longer-term need to protect our forests and trade. Given the influence of accountants running our forest industry today, what chance is there for biosecurity and forest health issues to get a look in – after all forest protection is only a cost and immediate benefits are very difficult to see.

So, if you have been feeling complacent about forestry biosecurity and the health of our forests, here are 10 good reasons why you shouldn't be.

## 1. Existing pests and diseases are costing us more than \$150 million/yr

It's come as a big surprise to many forest managers that between three diseases alone, Armillaria, Cyclaneusma, and Dothistroma, industry is losing about \$150 million/year in radiata pine production and the financial loss has been increasing steadily (if not exponentially) in the last decade. Forest Research presented these findings at a February 2002 workshop sponsored by MAF and FOA. They are based on field surveys conducted throughout New Zealand.

There are also economic costs from insects. For example, according to MAF figures, if painted apple moth gets away it could result in an economic impact of between \$50 and \$350 million. However, insects are relatively easy to control compared to some fungi – provided we're allowed to spray.

## 2. Even bigger threats are sitting offshore

In Collard's (1996) book *Alien Invaders – the Continuing Threat of Invading Species*, he uses the “New



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Zealand Nightmare” to illustrate the threat of biological invasion. He points out that while historically biological invasions happened about once every thousand years or so, today with increasing trade and travel they are much more frequent.

While we already have some serious diseases in New Zealand there are a large number of even scarier ones waiting to get in. Pine pitch canker is by all accounts the most frightening of the bunch as its recent venture into California has put radiata pine on that state's endangered species list. It's also now established in pockets of South Africa and Chile. There are also western gall rust, Asian gypsy moth, nun moth, numerous bark beetles, pinewood nematode (is radiata really safe from this?) and many other pests for which we really don't understand the potential threat to radiata pine, other exotics, or our native forest species. It's certainly not easy to determine how serious a disease or insect will be to radiata pine simply by its name as who would have predicted the defoliating powers of the tomato fruit worm or the painted apple moth on radiata pine?

## 3. Australia is too close

New Zealand foresters can be accused of taking a radiata-centric view of the world, as radiata pine is



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basically all that we plant, but is it because we really think it's such a wonderful species, or because we are afraid to plant anything else? Is it too risky to plant eucalypts and acacias in New Zealand, given the ease by which pests and diseases may invade? But if it's too risky to plant those genera here, perhaps it's even more risky to plant them in Australia. Or will the natural biological control agents keep things in balance?

#### 4. We don't look for what we can't see

It's easy to see insects, especially the big colourful ones, but fungi, bacteria, viruses and nematodes are another story. Our quarantine inspection and forest surveillance systems are pretty well geared up to spot insects that might enter the country and we also detect some fungi that sneak in on packaging and other material – but only if they are fruiting. We have very little chance of detecting bacteria or viruses and in fact most fungi, primarily because we don't really look for them, and also because we lack the skills to identify them.

#### 5. We can't look everywhere

Not only do we not look for everything, we also don't look everywhere – or even close to everywhere. MAF inspects 100% of imported used vehicles and regularly finds Asian gypsy moth egg masses and other things attached in obscure places. However, the inspection rate for shipping containers is closer to the 25% level, and even that inspection isn't thorough but is really looking for the more obvious things. Of course we can't afford to look everywhere and reducing biosecurity risk is really about playing the odds and doing the best with the limited resources available.

The industry does spend over \$1 million/year on forest health surveillance and the programme is considered to be one of the best in the world. However, despite the best intentions of the dedicated inspectors they can really only pick up the more obvious insects and fungal fruiting bodies and we've been lucky in the past that a vigilant public has reported white spotted tussock moth and painted apple moth finds in Auckland. But were these detected because they are both unusually attractive caterpillars, and why did we totally miss Monterey pine aphid until it was spotted on NZ avocados being imported into Australia?

#### 6. Some successes but also some failures

We have had some success eradicating unwanted pests, including recent ones like the white spotted tussock moth and the gum leaf skeletoniser. I suggest that we can also assume that our border protection and forest surveillance system gives us confidence that we've also kept out many nasty pests, given that they don't appear to be here.

However, we should be concerned that more than 250 new forest pests have become established in New Zealand since 1958, although fortunately most aren't doing a great deal of damage. We have also failed so far to rid ourselves of Dutch elm disease, although we've held it in check in parts of Auckland, and we're struggling to get on top of painted apple moth.

#### 7. Townies are out of touch

"Sociological risk" is probably one of the greatest

threats to New Zealand's forests, particularly as the ever-increasing urban population becomes less in touch with its rural roots. We're experiencing this today with a significant backlash to aerial spraying in Auckland for the control of painted apple moth, and to a large extent we are seeing similar polarised views over genetic engineering.

Sociological risk may be our Achilles heel when it comes to defending our borders as poorly informed, or unconcerned immigrants and travellers smuggle in prohibited goods, potentially containing pests and diseases that could damage our production and conservation estates. The rapidly increasing trend to "chemical reduction" is likely to make it extremely difficult to control pests in the future.

#### 8. Communication gaps between science, MAF and industry

While there is generally a good willingness to work together, it doesn't always happen, and the strategies and priorities and also the pest and disease databases of industry, research providers and Government Departments don't totally mesh. The MAF-chaired Forest Biosecurity Consultative Committee is doing a good job discussing issues and these are being translated into action. And while the industry-chaired Forest Products Export Committee (focused on biosecurity) has had a number of good wins, their reluctance to invest in research to prove the efficacy of fumigation methods should be of concern, given the value of the overseas markets potentially being put at risk.

#### 9. Very limited investment in research

The budget for Forest Research's forest health research programme has remained relatively static over the last decade and only small amounts of industry funding trickle into the programme. Industry has very little say on how Government funding in this area is spent, but does meet several times a year to discuss how the Forest Health Research Collaborative should invest \$70,000/year. Contrast this situation to the 50 dedicated researchers working on forest pest and disease issues in South Africa and the strong support they receive from their local industry.

#### 10. Difficult to recruit new researchers

Perhaps one of the more serious causes for concern is the lack of new researchers being trained and recruited to deal with issues of tree fungi, insects, bacteria, nematodes, viruses, etc. Of particular concern to the New Zealand industry should be the difficulty that Forest Research is having in attracting a new leader to their Forest Health and Biosecurity research programme, despite many years of trying.

#### Concluding Comments

While we certainly shouldn't be complacent with regard to biosecurity, we can take some pride in what we do as an industry to prevent incursions compared to other sectors and also to other countries. However, that will be small comfort if we aren't prepared for pine pitch canker when it eventually gets here – and it will get here!