advantage to the forestry industry, with most being concentrated at the forest growing level. The country's factor endowments are well suited to tree growing, especially the fast-maturing radiata pine. Coupled with direct State involvement in R & D and tree growing, New Zealand has developed a considerable advantage over its rivals in plantation forestry. (Entrican and others pointed this out long ago.) Our advantage is likely to become more prominent in coming years as a result of a growing world scarcity of high-quality timber, due to overcutting, conservation and increasing logging costs of native forests. To attract individual firms into more investment in afforestation Government has an important role. It needs to create an atmosphere of stability, confidence and reliability, and to enhance the determinants of competitive advantage.

Farmers need to be targeted because the great majority of New Zealand land available and suitable for afforestation—about five million hectares—is on farms.

This major turnaround in thinking is to be applauded. But can we be so positive about another recent Government forestry initiative?

In the run up to the election, Prime Minister Mike Moore announced that Pureora, the scene of a tree sitting protest led by Auckland conservationist Steve King in the late 1970s, was still divided by three Crown-owned exotic forests covering 6000 ha. The Government, through the "Native Forest Restoration Trust", was going to pay for this 6000 ha to be converted back to podo-
carpus. No technical information about how this was going to be done has been provided yet, and it is understood that neither the Department of Conservation nor the Ministry of Forestry was consulted about the decision.

Professional foresters, of course, ask themselves: Would there be more net environmental benefits if the existing exotic forest tracts were left and 6000 ha of rimu, totara, or even radiata pine afforestation was carried out elsewhere?

Hamish Levack

Phenoxies, phobias and forestry

If the United States military hadn't over-dosed the Vietnamese ecosystem with 2,4,5-T contaminated with dioxins, what would be the public perception of pesticide usage today? Probably not very different. Lead emissions from cars, and Rachel Carson's book "Silent Spring" were but two of the concerns voiced over chemical and pesticide use and the dispersal or accumulation of residues in the environment. Today we may have pesticide or radioactive residues literally raining down on areas hundreds or thousands of miles away from the application site. But then a similar effect happens after each volcanic eruption; so the process is not new. So how concerned should we be about pesticides in the New Zealand environment, and more specifically, how responsive or responsible are forest managers to this problem? If nothing else is clear, environmental concerns are here to stay and the issues are not tackled on level playing fields. Publicity, politics and human emotions will always override scientific reasons and economic justifications.

A recent article entitled "Chemophobia" reviewed the New Zealand situation from an agricultural perspective. The authors pointed out that usage of chemicals had increased enormously over the last 40 years, on the justification of productivity increases, reduced labour inputs, profitability maintenance and meeting export requirements. They stressed that chemicals can be harmful to non-target organisms if used carelessly or in excess. This was true for the era of first and second generation pesticides like the arsenicals and DDT. Quoting a recent survey of food hazards, the reality now is that pesticide residues come a long way after microbiological and natural poisons—but the public perception is exactly the reverse. Testing of primary products and groundwaters in New Zealand has shown that contamination is rare, generally below international guidelines or undetectable.

This should not lead to complacency as scientific evidence may be substituted by alternative value judgements or political decrees. Increased monitoring, better accountability and disposal of surplus chemicals, and above all more education and training of users should continue to be essential objectives.

The New Zealand forest, sorry, vegetation, manager should be particularly sensitive to these issues and concerns. Radiata forests form the largest monoculture agribusiness; herbicides make up over 60% of the pesticides sold in New Zealand; scrub weed control is by far the largest end-use for herbicides. Forestry may use only 4-8% of all herbicides in New Zealand but it is a conspicuous use and still tainted by the 2,4,5-T saga.

There have been calls overseas to reduce national use of pesticides by 25% within the next five years and 50% within ten years—it would appear that the first target has already been met in New Zealand for herbicide use. The recent "Pesticides: issues and options for NZ" publication shows that herbicide use in forestry and pastoral agriculture has dropped steadily in recent years. There is by one calculation an apparent 25% decrease of product applied per forest hectare. Rates equivalent to 3-4 kg/ha a.i. may be estimated for establishment forestry. Comparative use rates are 0.11 kg/ha on pastoral land; 2.66 kg/ha in horticulture and 2.04 kg/ha for grain and pea crops—based on 1987 figures.

Why should this reduction have happened in forestry? One of the reasons undoubtedly is the harsher economic climate over the last five years. Manage-

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ment has had to become more cost-effective and there has been a switch from broadcast application to more spot or line application of herbicides. Newer chemicals, with very effective adjuvants developed in New Zealand for our specific problems, have reduced the range of products and rates required for good weed control. This is one instance where our more liberal registration laws have been to our advantage and allowed rapid introduction of these newer products and technologies.

Three Avenues

As forestry still has the conspicuously highest use rates for herbicides, it can expect further criticisms and pressures to reduce them. There are three avenues that can be followed to overcome these criticisms.

The first is to inform and educate the public of the reasons for chemical use and the benefits and risks which may result. Good examples of such strategies will be found in the US and Forestry Canada programmes, and some chemical companies such as Monsanto NZ who produce very informative literature and host visits by overseas experts. A disastrous home example was the AGCARM “There’s a greenie in your gumboot” type literature which was totally confrontational.

But you can’t inform others or plead your innocence if your staff don’t know what or why they are using specific chemicals. Aerial application is still essential at times, but what do the public know of the safety and risk assessments you have made? More promotion and explanation of present land management methods are needed. To achieve that, much better training of staff at all levels is essential. This is probably the single most cost-effective option possible at present. So what are the forest owners doing about it? What is their annual budget? How many of their staff have been trained to specific levels? Do you know? I don’t!

The long-term solution to reduced chemical use is either in more effective and efficient application or the use of more “natural” alternatives. There is potential in both these approaches and some research has been initiated, but the overwhelming message from last year’s international meeting on “Alternatives to the chemical control of weeds” was how little we knew about these options and how much less was being done for forestry purposes. This may be a “national” interest but forest sector support could give it a much-needed boost to its image and ultimately reduce its operational costs.

So what will the public perception be of pesticide use in ten or 20 years’ time?

And how will forestry be perceived? A good question – and it’s up to all of us to do something about it from now on.

J.A. Zabkiewicz
Plant Protection Chemistry
Forest Research Institute

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Pray for a wet summer
and keep your hoses crossed

There was plenty of promise in the
Hensley Review (see NZ Forestry, Vol
34, No. 4, February 1990); an expanded
Rural Fire Fighting Fund (RFFF),
regional co-ordination of fire based on
the new regional Government reorganisa­
tion, the setting up of a National
Rural Fire Authority (NRFIA) as well as
a National Rural Fire Advisory Com­
mittee (NRFAC) and immediate imple­
mentation of some supporting legisla­
tion. A new Forest Rural Fires Act
would follow.

The establishment of the NRFIA and
the NRFAC with limited powers are the
only two positive achievements to report
so far. The NRFAC and NRFAC were set
up by Cabinet and Ministerial decree
rather than by legislative action.)

Staff have been appointed to the
NRFIA (New Zealand Forestry, August
1990. Vol. 35 No. 2). Rural fire records
and training material have been trans­
ferred to the NRFIA from the Ministry of
Forestry (MOF). The responsibilities of
the Secretary of Forestry and MOF con­
tained in the Forest and Rural Fires Act
1977, Fire Service Amendment Act 1987
and various Regulations have been trans­
ferred to the Chairperson of the
New Zealand Fire Service Commission
by memorandum.

The Minister of Internal Affairs has
appointed members to the NRFIA.
Two meetings have been held to date
with the objective of assisting the Fire
Service Commission with the initial
work of the NRFIA.

There has been no progress with the
introduction of the new RFFF for this
fire season; no appointment of Regional
Fire Co-ordinators by Regional Councils
and no new legislation to back up the
Hensley Review recommendations.

The original recommendation on the
RFFF has been radically changed by a
new proposal. There is no interim legisla­
tion or new Forest and Rural Fires Act.

NEW FIRE LEGISLATION IS BADLY
NEEDED
The lack of legislation will cause some
serious concern in the rural fire sector