

indigenous forest, only to be interrupted by plantations and agriculture. It may be that pine trees facilitated an increase in biodiversity but "good biodiversity" is not measured by the number of species. Biodiversity, which refers to the indigenous component, is about the gene pool, species, ecosystems and landscapes naturally occurring. "Good" biodiversity has nothing to do with a greater number of species. There are more exotic plant species in New Zealand than native. It is about recognising and protecting that which is unique to New Zealand.

This means protecting and restoring ecosystems that have been modified or degraded through past use, including in the case of the pumice lands, shrubland ecosystems and successional phases. We have a responsibility, in particular to future generations, to ensure nature's successional and evolutionary processes take their course at least in representative areas in the land. It may be that the pine plantations are now a valuable resource and that we all need wood. However, the market is coming to view the plantations as more of an asset if they incorporated native protected ecosystems. Furthermore, I would question the amount of wood that we need, considering the huge amount of paper and packaging wastage. Recent reports by Friends of the Earth (UK) and Rainforest Action Network (USA) re-commended that sustainable consumption levels will require cuts in wood consumption of 65% in the UK and 75% in the USA.

Grant Rosoman
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Barr responds – a pertinent answer?

Sir,

The editorial in the last issue of the NZ Forestry (August 1995) journal leads with this quotation, "... ask an impertinent question and you are on the way to a pertinent answer".

It is a stimulating piece of writing which moves me to so many pertinent answers that I scarcely know which to select. But it also could stimulate some that could be classed as impertinent, coming from one who has spent 60 odd years in farming and only 50 interesting years in forestry.

Yes, I think there is an ever-growing trend to growing timber on faster rotations – good fat pruned logs at 30 years. But do these regimes need to be of higher capital input? I think not. Nor do they have to be of higher volume at the expense of quality, pruned pine, cypress or eucalypt.

When farm foresters became interested in forestry as a diversity in land use, regimes suggested to us were to plant six feet by six (2500 sph) with mandatory blanking up. Then came the killer, a working plan as long as your arm; thin and prune, thin and prune down to 400 sph: far too many. It was a work-heavy and expensive job imposed on busy people. Were these the "robust forests" of the past of which the editor writes? I hope not. I would expect the "robust forests" to be the Fenton board regimes, or some that Sutton advocated for clearwood production.

Agroforestry – Low Input and Simple
Later in his article, the editor writes of a low-input system with its "organic" or "permaculture" connotations and its "hippy" undertones.

Let me set out one of several low-input farm-forestry regimes. Yes, we do have hippies in our ranks; very welcome they are too, and often stimulating.

This is a common agroforestry regime:

1. Plant 450 s/ha pines in groups of three at 8 metre centres, or in pairs if of aged cuttings.
2. Sail or stability prune any bushy top heavy trees at 18 months – a few hours work per hectare.
3. At three years of age or height 3-4 metres, form prune the selected trees. This is the start of the pre-emptive pruning (as first proposed by Franklin). The method involves removing any ramicombs, correcting the leader if necessary, removing any coarse rogue branches and lightening any basket whorls. If aged cuttings are used, the form will be good and little work is needed. This operation takes less than a minute. A tree selection can be made at this stage and surplus trees removed.
4. A clear lift is made at DBH 12-14 cm and continued up to 10-11 cm, which usually leaves a green crown of three metres or half total height. Under the pre-emptive pruning regime the correction of the residual green crown is then done, tidying up basket whorls (the big trouble), leaders and so on. Epicormics are rubbed off, even in the lower whorls of the green crown.
5. This pruning procedure is repeated to a height of either 6.3 or 8.5 metres.

Is this high technology? I think not. But it is certainly low-input as to work and capital. After working on this method of silviculture even in my late eighties, I found pruning to be a pleasure. My teenage grandsons could be taught the rudiments in a few hours. Forestry can be a simple procedure compared to farming.

Foresters' Attitude to Change
Foresters have a name for being very suspicious of change. Why else would they

have stuck to those fundamentalist regimes of 60 years ago until the recent past? A train trip from Hamilton to Rotorua through the back end of the Mamuku Forest can be typical of what one sees around the back roads of the Pumice Plateau, masses of dead and dying trees. I think timber regimes of the present should be simplified, keeping basic ends in view. Perhaps a look across the fence to observe what the farm foresters are doing would help.

Farm foresters have adopted other work-easy regimes: the one-shot silviculture over gorse (as proposed by Bunn); the group plantings of one eucalypt at 10-metre spacings surrounded by four close-planted pines (Terlesk); close-spaced, in-row planted pines and eucalypts wide-spaced between rows (MacKay, Barr, Tombleson and Moore); eclectic thinning of close-planted double rows of pines through gorse: I could go on. All of these regimes are low-input and efficient methods of growing early pruned fat trees.

This is not intensive silviculture, it is "Timely Tending" (Barr and Colley). As Mick O'Reilly, one of our Farm Forestry members, said at a seminar: "We do our thinning before we plant our trees".

I could go on but I will restrain myself, except to point out to foresters on the Pumice Plateau that they are growing pulp on some of the most sought-after dairy land in New Zealand. Large herds of 600-700 cows are being run on that potentially rich no-mud land. The largest cheese factory in the world has been built at Lichfield within sight and smell of Tokoroa. Watch it you lot!

Neil Barr

The Editor replies to Neil Barr

I seem to have netted some by-catch; certainly the targeted fish aren't biting. My arguments are not with farm foresters, who I think largely display the integrated decision-making to which I was referring.

Though in saying that, only considering agroforestry is also a mistake. Regime choice must relate to individual farmers' objectives, resources, and particularly to their constraints and options. Not everyone has the expertise, time, land or inclination to pursue agroforestry management, nor should they.

I think, more and more, that one of the most important considerations for forest growers, and especially for farm foresters, is having options. It means having some other "less commercially viable" species, or managing for a so-called "non-profitable" production thinning contingency –