

plant; EM examination of specific tissues; leaf-hopper transmission; and comparison with Flax Yellow Leaf MLO DNA.

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Influences of site and discount rate on silviculture

Sir,

In Cpt 236 of Oji Sankoku's Mohaka Forest we were shown a stand grown on the "Timberlands Regime" – 250 pruned stems per ha at age five, with very heavy branching following at age eight. Evidence, it was suggested, of the disastrous consequences of thinning too heavily too early.

Yet on the journey back from this ridge-top stop we passed without comment through a ravine where scattered radiata were growing straight, tall, and with fine branching despite no tree competition.

The contemporary wisdom seems to be that competition inhibits branch size. Older foresters have long held that shelter, rather than competition, is the critical determinant, and that high stocking controls branch size and encourages height growth by providing mutual shelter for the crop trees. On sites sheltered from the wind the "Timberlands regime" might look much more attractive in terms of both height growth and branch size than it would on a windswept ridge. No doubt Carter Holt or FRI staff could easily put this proposition to the test. It would be unfortunate for the profession to make a rushed judgement against heavy early thinning for the wrong reasons.

Having said that, I am not a proponent of low early stocking. At the risk of gaining (or reinforcing) a reputation for idiosyncrasy, I suggest that those who say that such regimes are economically attractive but silviculturally repugnant have the wrong end of the stick. The weakness of heavy early thinning is that it sacrifices crop volume, quality of the upper logs and revenue per hectare-year on the altar of the 10% discount rate. In other words, the economic viability of heavy early thinning hinges on the propriety of the 10% rate, which is in turn dependent on the overall rate of capital accumulation in the global economy. My contention is that over time discount rates can be expected to follow a sigmoid path – the "S" curve so familiar to foresters in tree and stand growth. I

have put this argument before, based upon the analysis of surplus value in the economy, though foresters may prefer to see it in terms of simple biological analogy. As we all know, a fixed discount rate equates to an exponential rate of capital growth, and biological systems do not sustain exponential growth rates indefinitely. Once the external environment is fully utilised the system comes under increased internal stress, and growth decreases or ceases altogether.

If the global economy does conform to the laws of natural growth, then we can expect rates of return on capital to drop, and the emphasis to shift more toward maximisation of yield and nett revenue, meaning higher stockings, commercial thinning, and longer rotations. In other words, the regimes considered appropriate to the period before the global economy entered the exponential growth phase, may come back into force if, and when, we move onto the top of the "S" curve.

Those who remember me advancing this case against short rotation regimes in 1978 may feel that the intervening 15 years have not entirely vindicated my position. I am prepared, however, to wait another 15 years for a more conclusive verdict, for or against!

Geoff Fischer

Institute links with Whirinaki initiative

Sir

In the deserved praise handed out to the Napier Section of the Institute of Foresters in May, I was surprised that a major commercial initiative which that section successfully brought off in 1966 received no mention.

The Napier Section conceived and ran a large public meeting which launched the concept that as the 16 million cubic feet of wood available per annum from the Kaingaroa 320 million cubic feet 20 year sale roughly matched the volumes then predicted from the Hawkes Bay State Forests 20 years hence, then by allocating the bulk of that Kaingaroa sale to an envisaged Hawkes Bay processing plant, such a plant could be operative 20 years earlier than the HB wood supplies would allow.

On the panel for that meeting were the backbench MP for Hastings, Duncan MacIntyre, the then Deputy General of Forestry, Priestley Thomson, plus the local Harbour Board and County, chaired by the local NZIF Section Chairman.

Soon after, Duncan MacIntyre became

Minister of Forests, thence followed the 1969 Forestry Development Conference, which allocated to HB a number one priority for extra planting to achieve wood-based exports. Thence soon followed the successful tender of the Carter Holt Kokosaku Sangyo Consortium for a sawmill and pulp mill initially conceived to operate at the Napier Wharf, but eventually to become the PanPac Mill at Whirinaki. This history is used to demonstrate that the Institute, through knowledge, foresight and drive, can influence major strategic commercial decisions and developments; in this case one whose benefit to the region is now well established.

Ross Usmar

Sustainable yield

Sir,

May I refer to Paul Smale's letter in Vol. 38(2), which caused me some dismay. The fact is that forest crops, which may take up to 150 years to mature, are in a different category from beef or strawberries. Those countries which found, within the last three centuries, that their forest resources were well nigh exhausted (e.g. Japan, Germany, Finland) understand perfectly well that a sustained yield of wood is imperative for their well-being, and legislate accordingly. The impending world-wide wood famine (see "State of the World, 1993" pp 16-17) reinforces the wisdom of these countries.

We have been led into a semantic and philosophical quagmire where words no longer mean what we thought they did. "Natural" finds its way into innumerable advertisements, but it no longer means the opposite of "un-natural". I was recently offered "organic honey" although I foolishly thought that all honey is organic; it certainly isn't "inorganic"! "Sustainable use of resources" has been obfuscated by the Resource Management Act because it is there applied to non-renewable resources which, by definition, can't also be sustainable. The word has come to mean "rationing until the resource is totally consumed", with the pious hope that something else can be found to replace it. And why sustainable yield should not apply to forests as much as to land I fail to understand. Land can be sustainable if it produces nothing.

What your correspondent is championing is the current orthodoxy that every thing must be decided by the market (that is, by those who control the levers of economic power), whereas it is patently obvious that the market can't deliver welfare, and can't look forward much beyond its