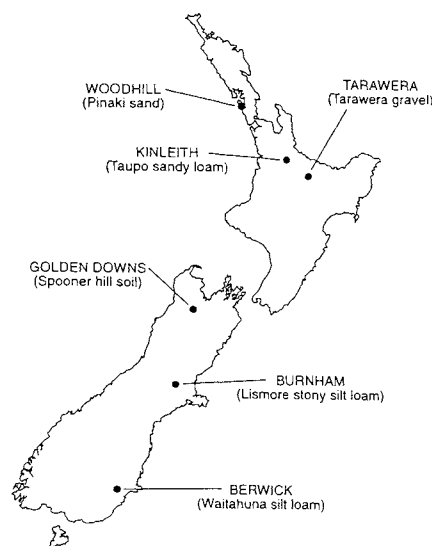


drainage class, slope, surface boulders, and other properties that would either affect productivity and silvicultural options or limit management. In addition, a USDA Forest Service silviculturist in New Hampshire (Bill Leak) felt compelled to develop Habitat Types based on parent material differences in granitic glacial till. Hence, I chose the "amazing mixture of geology, topography and/or detailed soil classification" to describe the soils and sites our trials are located on. I was concerned about conveying the important differences among trial sites. Perhaps the best choice would have been the soil type name followed by some term describing whether it was on a sand dune or a sandy pumice or sandy alluvium.

In any case, soil scientists need to be aware that some elements of soil classification are too broad to be useful in distinguishing among soils without an armful of technical books; and need to ask what might be required to make the information more user friendly. I am also aware of the increasing difficulty in obtaining the required background technical bulletins, as we shift to Hewitt's system, and as New Zealand pursues corporate research organisations. It is not easy to take a soil type name as a starting point and find out all one needs to know about that soil to manage it properly, or to understand how it differs from another soil type. And we know how deficient the New Zealand soils data base is for interpreting the limitations of soils for intensive forestry purposes. Perhaps we could discuss this some time.

Below is a copy of a revised map, which hopefully is technically correct! Thanks again for your feedback. I am concerned that if we do not address the issues you raised in your letter, and that I mentioned above, we will be managing New



Zealand forests in the dark, and it will be impossible to achieve the sustainable dream of which we speak.

Tat Smith

Effects of discount rate

Sir,

Dr R. Fenton states "If regime B, say, is ahead at a 10% discount rate it is very likely to be ahead at three per cent", and refers to his paper in the NZ Journal of Forestry Science 2(3) p 382. In the context, "ahead" obviously means "has a higher land expectation value".

In response, I would suggest that rotation lengths will be determined not so much by the LEV, as by the rate of increase in liquidation value of forests. So long as the liquidation value is perceived to be growing faster than the discount rate, the rotation will, in the normal course, be extended.

Given a high premium for logs of large size, a change in the discount rate from 9% to 4% predicates an extension of the economic rotation from 27 to 35 years. Dr Fenton might be willing to accept these indicative figures: they do suggest that a dramatic change in discount rate is necessary to cause an eight-year increase in the economic rotation length.

Nevertheless, I do not believe that postulating the possibility of 4% discount rates within the next 30 years should qualify me to "join the Flat-earth Society". From 1900 to 1956 yields of high-grade corporate bonds in the United States rarely exceeded 4%, and 4% remains the borrowing rate for many Japanese corporations. The high rates experienced in Western economies in the second half of this century may prove to be either anomalous or illusory, or both.

My original letter attempted to suggest that our consideration of the matter of discount rates has lacked a historical perspective. The fact that I am what Dr Fenton describes as a "zero-interest doctrinaire" neither inhibits, nor, in my own opinion, disqualifies me from an intellectual study of the methodology of discounted cash flow analysis.

He suggests that successfully addressing the "choice of discount" rate problem would warrant the award of a Nobel prize, implying, perhaps, that it is futile to make the attempt. I believe he overstates the case. There is much to be gained from a diligent study of the existing information on economic rates of return, and only

modest academic abilities are required to carry out the task.

The point I wish to make is that we should not underestimate the pace of change, nor should we neglect to study its dynamics. Twenty years have elapsed since Dr Fenton's ground-breaking studies, and while his methods may remain unchallenged, new economic circumstances, new technologies, and another two decades of experience may yet point us in different silvicultural directions from those indicated in 1972.

Geoff Fischer

Irrelevant academia

Sir,

In a recent "Economist" I saw by chance an advertisement for positions, including the Chair, in the School of Forestry in Christchurch.

Much to my surprise, nowhere was there any mention of the rapidly rising economic importance of forestry in New Zealand, and of the corresponding importance of training, research and the development of a philosophy of sustainable forest practice, of the need for the stimulus of ideas.

Do I read into this a subconscious yearning for dreaming spires and knowledge gained entirely for its own sake, in brief, of the British disease of a contempt for commerce?

John Purey-Cust

CRI staffing

Sir,

In a recent issue (May 1994, p 35) Colin O'Loughlin remarked on the losses of science staff from NZFRI and Landcare Research since the formation of Crown Research Institutes (CRIs). Members of the Institute may be interested in the following data on the situation pre- and post-CRI formation for Landcare Research.

Over the five years pre-CRI formation science staff losses (researchers and technical staff) from the predecessor organisations were as shown in Table 1.

These staff losses amount to 24% of the science staff of these components of FRI and DSIR in 1987.

By research area, and by year, the staff losses were as shown in Table 2.

Table 1

Organisation	Resigned/ Retired	Redundant	Total Lost	Replacements	Net Loss
FRI	10	11	21	5	16
DSIR Land Resources	30	29	59	11	48
DSIR Fruit & Trees	11	7	18	0	18
DSIR Plant Protection	2	3	5	0	5
TOTAL	53	50	103	16	87

Table 2

Research Area	Net Staff Losses	Gross Losses by Year
Plant systematics and ecology	10	1987 - 2
Animal and insect systematics and ecology	19	1988 - 27
Land and soil sciences	38	1989 - 23
Soil conservation plant materials	20	1990 - 5
		1991 - 21
		1992 - 24

Since the formation of Landcare Research the situation is as follows.

In late 1992, three indemnified staff were made redundant (two in insect systematics/plant ecology, one in plant physiology). As a consequence of staff relocation from Taita and Rotorua, 23 science staff were made redundant, of whom 15 have been replaced to date. Five science staff working on conservation trees were made redundant in 1993 after major funding cuts. The remaining staff in this area have now been transferred to HortResearch and AgResearch. There has been a small staff turnover in GIS and plant ecology research with minor losses, and there have been increases in staff in vertebrate pest ecology and control methods, social and economic sciences.

At present, Landcare Research's science staff (including team leaders, scientists and technicians) is 255, the same as on July 1, 1992. There have been changes in the balance of staff capabilities consistent with our research strategy and the need to reduce some duplication between the preceding organisations.

From a situation of net losses averaging around 15 per year (about 4% per year) for the five years pre-CRIs and following some inevitable losses from the relocation plans, our science staffing has

now stabilised at July 1, 1992 levels and is being rebuilt. High-quality professional research staff in plant ecology, animal and plant physiology, plant and insect systematics, weed pathology, soil microbiology, water and nutrient transport processes, waste treatment, vertebrate pests, resource economics and rural sociology have been recruited from Australia, Canada, South Africa, the United Kingdom, and USA as well as from within New Zealand. We expect to increase science staffing in 1994/95 by at least ten.

For the first time in several years for staff transferred from some former agencies there is now a formal training budget and programme. Landcare Research has invested 3% of total personnel costs in staff training in 1993/94, and has budgeted to spend at least 2%, and up to 3% of personnel costs in 1994/95. We are currently supporting 20 postgraduate students and expect this to increase to 25 in 1994/95.

Turnover rates for science staff remain low in comparison to general community rates. Some turnover is healthy for an organisation as it brings new and fresh ideas and enables progression for staff. Before restructuring there was a lack of replacement of staff because of steadily declining funding. Now we are recruiting

high-quality staff from the New Zealand and international pools both as replacements and as new positions are created.

For the 1994/95 year Landcare Research has obtained almost \$1 million more PGSF funding than in 1993/94. In addition, we anticipate at least \$1m more non-PGSF research contracts than in 1993/94. Together, this will enable the creation of at least ten new research positions.

In summary, the situation for science staff in Landcare Research's fields of interest is now vastly more healthy than at any time since 1986.

Andy Pearce
Chief Executive
Landcare Research New Zealand
Ltd

Elm disease still threatens

The detection programme for Dutch elm disease in Auckland will continue this summer, the Minister of Forestry, John Falloon, announced recently.

"After extensive surveys last summer, the Ministry of Forestry identified 10 locations of the disease in the Auckland area," said the Minister.

"This is a significant reduction from the 19 locations in the previous year. However, it still means that the disease could spread to other elms in the city," he said.

"We will continue to survey the 12,200 recorded elm locations in Auckland for any signs of the disease. Every elm will be checked three times, beginning in mid-November and finishing in mid-March 1995," said Mr Falloon.

Areas in Auckland of particular concern are Remuera, Cockle Bay and Howick, where beetle traps have shown a significant level of disease.

Dutch elm disease was first detected in Auckland in December 1989. Visible signs are wilting branches with curled yellow or brown leaves falling from the tree prematurely. The symptoms usually appear first on one or several branches and then spread to other parts of the tree. The whole tree may wilt and die within a week or two.

"We are fortunate that the disease is confined to the Auckland area. Prompt action from the Napier City Council enabled the Ministry of Forestry to eradicate the disease there. No further evidence of the disease has been found," said Mr Falloon.