

The destruction caused to the landscape in the process, whether the destruction of views, the eradication of moorland birds, or the changes in the ecology and acidity of rivers, has been a source of continual criticism from environmentalists. They have found the Commission's internal method of vetting planting applications unsatisfactory.

Reorganisation of the Commission is likely to form a key "green" element in the Conservatives' election manifesto, now being drawn up by Central Office. It builds on the reforms of forestry finance in the 1988 Budget.

A plan for reforming the Commission has been drawn up by Mr Robin Cutler, its new Director General, and his plan for Britain has been approved in principle by Ministers.

He has recommended separating the two parts of the Commission: the Forestry Authority, the regulatory body that examines planting applications, and the Forestry Enterprise, the nationalised industry which owns more than two million acres of woodland all over the country and is responsible for promoting planting in the private sector.

The separation of the regulatory body from the rest of the Commission could prepare the way for privatisation of the nationalised industry side within a few years.



Incredible ministerial statement on native forestry

Sir,

I read with incredulity the joint statement on indigenous forest policy attributed to three Ministers of the Crown, namely John Falloon, Simon Upton, and Denis Marshall. Their statement starts off by saying that "the Government is committed to maintaining and enhancing existing areas of indigenous forest in New Zealand". They go on to say that any future production from indigenous forests must be on a sustainable basis, and with this in mind, the tight operating prescriptions that Government has determined will apply in future, are:

***The rotation period within a sustained management plan must be 20% greater than the age of the fully mature forest to ensure that some mature forest is always maintained for wildlife habitat.**

What, pray, is the age of a fully mature forest in relation to our indigenous forests? Is it the average age of all species in the canopy, the age of the oldest

individual on each hectare, the average life-span of the dominant species, the life-span of the most numerous merchantable species?

Given that the age of a fully mature forest can be based on some arbitrary criteria, how can the age then be measured? Ring counting on most old indigenous trees is usually impossible unless a complete disc (without heartrot) is available, and an accuracy of $\pm 20\%$ would be quite normal.

If it is desired to always retain some fully mature (= natural?) forest for wildlife habitat, why not specify this? Why not state that 20% of any forest area shall be reserved from logging, at least until the first-logged area has returned to its original state?

***In indigenous podocarp forest and virgin or substantially unmodified beech forest, harvesting can only be by single tree or small group harvesting with low impact techniques such as helicopter logging or use of chainsaw mills and wooden tramways.**

Most red and mountain beech forests are not in an all-aged steady-state condition, but instead suffer periodic catastrophes which result in waves of regeneration which are more or less even-aged over areas which can be up to several hectares in extent. The concept of virgin forest in this situation is thus obscure. Does virgin mean untouched by man or does it mean in a steady state? Likewise, does substantially unmodified mean modifications by humans alone, or by any natural agency? Should forest severely affected by pinhole or *Inglisia* be regarded as less unmodified than forest selectively logged for podocarps or sawlogs, for instance?

If single trees or small groups are harvested within beech forest, there is a high risk that pinhole borers will breed in the stumps and damaged trees, and later kill or damage surrounding trees. Average timber quality, already low in most beech forests because of pinhole, will be further depressed in future. Does this matter? Or should it be a requirement that all stumps and other potential breeding material be removed from the site or rendered unsuitable (how?) for pinhole?

The examples given of low impact logging imply that hauling logs along the ground does not qualify as low impact logging. Yet surely most of the logging done in European selection forests involves ground hauling, and this is low impact par excellence. The main reason for this is that there are long-established access tracks through the forest, and substantial new tracking is not involved, but the tracks had to be put in initially. Does the selective logging done by tractor at Pureora 30 years ago qualify as low-impact? Does the group logging

done by tractor at Whirinaki 10 years ago qualify? Would relogging these areas now by tractor, extracting just a few valuable logs, qualify?

***In already significantly modified (for example, previously logged, mined or fire-damaged) beech forests, coupe (clearing) size shall be determined on a case-by-case basis taking account of ecological values.**

Why should some form of coupe felling be allowed in significantly modified beech forest but not elsewhere? What is the rationale behind this requirement? Is it because of the high levels of pinhole borers in modified forest? Or is this forest considered to be of such less value to wildlife that coupe logging is permissible? Has this been verified by studies of the wildlife values of modified forest and the effects of coupe logging on wildlife?

***The rate of extraction of species of indigenous trees shall be less than the net gross increment.**

What is a net gross increment? Previous statements have referred to the net increment, but in an all-aged forest the average net increment is zero. So is this another way of saying that these forests can't be logged? Or does it mean that in years when there is little natural mortality, logging is permitted, but in years when natural mortality is high, some trees have to be restored?

If the Government is serious about its commitment to maintain and enhance existing areas of indigenous forest in New Zealand, then whether any future production is sustainable or not is a relatively unimportant issue. The main requirement is to ensure that the forests are regenerated, but this isn't even mentioned in the joint statement.

It is highly likely that far more privately owned indigenous forest will be lost in future because it has failed to regenerate, than would ever be lost from unsustainable logging. This is not to suggest that logging should be uncontrolled – only that there are a lot more important actions required if Government is serious in its commitment.

For a start, it could require all landowners to protect any indigenous forest on their land from all agencies that could jeopardise the future existence of that forest. In particular, domestic and feral stock would need to be excluded, wild animals and weeds would need to be controlled to the extent that adequate regeneration occurred and could develop to maturity, and adequate fire protection would be needed. Is the Government prepared to take the necessary action?

If Government wants to allow some harvesting of indigenous forest but also wants to ensure that some old forest is

always present, then the logical course of action is to reserve a part of the forest from logging, or to set arbitrary rotation ages to ensure that any coupe logging always retains mature forest. For instance, a rotation of 150 years in beech forest, and 300 years in non-beech forest, would ensure that mature trees are always present.

To control overcutting, not more than 1/30th of the area of beech forest, or 1/60th of the area of non-beech forest could be cut in any five-year period. A further constraint could be that in non-beech forest, coupe size could be restricted to less than say 1 ha, but there is no good scientific reason for having such a restriction in beech forest, and many good silvicultural reasons for not having such a restriction.

Ensuring that any production from indigenous forests is on a sustainable basis is only important if it is intended that production continue well into the future. Unsustainable production jeopardises future production, but it need not jeopardise the future existence of the forest, nor its value as wildlife habitat, if appropriate safeguards are adopted.

If sustainable production is an objective, then yield control on an area basis is probably the best option for coupe logging, provided that the forest is stratified into major yield types so that the most economic areas are not all logged first. In selection forests, the harvested yield, plus any natural mortality, should not exceed the gross increment, and this would require a periodic inventory check.

However, sustainable production involves more than just yield control. Regeneration after logging, whether natural or artificial, needs to be assured, the regeneration needs to be protected, and the new crop needs to be silviculturally treated to ensure that the quality of produce is at least maintained, and preferably enhanced. None of these issues is mentioned in the joint statement.

The whole tenor of the joint statement appears to be to control logging, but it does not address the real issues to which the Government claims to be committed – that of maintaining and enhancing existing areas of indigenous forest in New Zealand. Until the Government does address these issues, I think we are entitled to be sceptical of their commitment.

Dudley Franklin

'Flat earth' flavour

Sir,

Two articles in NZ Forestry Vol. 35(4) have a curiously "flat earth" flavour.

"Prospects for New Zealand Forestry" (p. 6) shows a naive belief in free market forces to provide future wood supplies, despite the fact that, since the dawn of civilisation, free market forces have treated forests as a mine to be exploited to extinction (being the most profitable option), a process which is still continuing. It is interesting to compare this simplistic belief with the article on p. 24, where it is said that the Chilean Government "adopted a free market approach in all areas of the economy **except for forestry**". And why, pray, do so many countries insist on statutory replanting of logged forests? Are we to assume they are daft?

The other example of "flat-earthery" (if I may call it so) is on p. 3, which exhibits a distressing belief that everything will continue as it is for ever. It is stated that the world's wood needs can be supplied from a land base of "little more than 10% of the present area of forest in the world". I suggest the originator of this strange idea should consult "State of the World", being the "Worldwatch Institute Report on Progress towards a Sustainable Society", published by Unwin in 1990.

World population in the year 2000 is expected to be 6.251 billion. There are something like three billion hectares of potential commercial forest, plus about 900 million hectares of savannah woodland, which I will leave out of account here, although it provides huge amounts of vital firewood. Wink Sutton gives a figure of 3.55 billion tonnes of wood used annually (about half of which is firewood). So let's say the world uses around 2 billion tonnes of industrial wood annually. World population (1990) is 5.292 billion, so per capita wood consumption is around 0.38 tonnes per annum, excluding firewood.

If we can provide that quantity from one-tenth of the potentially commercial forests (300 million hectares) the yield would need to be 6.67 tonnes per hectare per annum. It is, however, very doubtful if a mean worldwide figure of this magnitude would ever be achieved; a more likely maximum is 4 tonnes, which would require a commercial forest area of 500 million hectares, or 17% of the total forest area.

If, however, world demand reaches the New Zealand level of 2 tonnes per capita per annum, then the volume required world-wide would be, by the year 2000, 2 x 6.251 billion or 12.5 billion tonnes. At a yield of 4 tonnes per hectare per annum, this demand would require

the whole of the area of potential commercial forest, still excluding firewood.

And how much forest land will be cleared for food production in view of an increasing world population and ongoing degradation of farm land?

The article assumes that only present conventional uses of wood will continue indefinitely into the future. Say, however, that wood is needed for the production of all those articles now provided from mineral oil, including liquid fuels and a host of ligno-chemicals? Then prognostications based on an uncritical and cursory look at the present situation would be astronomically wrong.

I am loath to bandy figures of this kind around, but still I don't like to be hoodwinked and grossly misled into believing the unbelievable.

Geoffrey Chavasse

Global forest interactions

Sir,

The ideal of sustaining tropical forest yields is often mentioned. While it is true that experiments show that this is possible, if you examine the data you will see that building all weather roads, logging with ground-based heavy machinery, and logging lesser-known species are not referred to. However these activities are all mandatory for modern loggers if their operations are to be profitable. While the volume yielded by a second logging of any area may be similar, there will not be a similarity in species or quality.

The conservation of the remaining area of native forest cover must be supported but surely this is only one aspect! To ensure the survival of 5 billion people, who use wood every day to cook their food, requires the replanting of some 20 million hectares per year of fuelwood plantations. To offer economic opportunities to many people a further 15 million hectares of industrial plantations must be planted each year. To cater for roughly double the world population in about a generation's time these figures ought to be doubled.

K.D. Marten

Forestry or log farming

Sir,

Foresters in New Zealand, like those overseas, are prepared by education and training for a profession dedicated to managing forest and soils for a multitude of purposes. Yet to much of the public,